BASELINE RISK ASSESSMENT

S&W Sawmill Facility, Darby, MT

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ACRONYMS AND ABBREVIATIONS

ADAF	age-dependent adjustment factor
ADD	average daily dose
ATSDR	Agency for Toxic Substances and Disease Registry
BaP	benzo(a)pyrene
BaPE	benzo(a)pyrene equivalents
bgs	below ground surface
BRA	Baseline Risk Assessment
CalEPA	California Environmental Protection Agency
COPC	chemical of potential concern
COPEC	chemical of potential ecological concern
CSF	carcinogenic slope factor
CSM	conceptual site model
CTE	central tendency exposure
EcoSSL	Ecological Soil Screening Level
EPA	U.S. Environmental Protection Agency
EPC	exposure point concentration
EPH	extractable petroleum hydrocarbon
ERA	ecological risk assessment
Facility	S&W Sawmill Facility
HHRA	human health risk assessment
HPAH	high molecular weight polycyclic aromatic hydrocarbon
Integral	Integral Consulting Inc.
IPC	International Paper Company
IRIS	Integrated Risk Information Service
IUR	inhalation unit risk
Kd	partition coefficient
Koc	organic carbon partitioning coefficient
Kow	octanol-water partitioning coefficient

LADD	lifetime average daily dose
LOAEL	lowest-observed-adverse-effects level
LPAH	low molecular weight polycyclic aromatic hydrocarbon
MassDEP	Massachusetts Department of Environmental Protection
MBMG	Montana Bureau of Mines and Geology
MCL	maximum contaminant level
MDEQ	Montana Department of Environmental Quality
MNHP	Montana Natural Heritage Program
NAPL	non-aqueous phase liquid
NOAEL	no-observed-adverse-effects level
OEHHA	Office of Environmental Health and Hazard Assessment
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCP	pentachlorophenol
PPRTV	provisionally peer-reviewed toxicity values
p-RfC	provisional reference concentration
p-RfD	provisional reference dose
RAGS	Risk Assessment Guidance for Superfund
RBCA	risk-based corrective action
RBSL	risk-based screening level
RfC	reference concentration
RfD	reference dose
RI/FS	remedial investigation/feasibility study
RME	reasonable maximum exposure
RSL	regional screening level
SSCL	site-specific cleanup level
SVOC	semivolatile organic compound
TCDD	2,3,7,8-tetrachlorodibenzo-*p*-dioxin
TEF	toxicity equivalency factor
TEQ	toxicity equivalency

UCL	upper confidence limit
VOC	volatile organic compound
WOE	weight of evidence

1 INTRODUCTION

1.1 PURPOSE AND OBJECTIVES

On behalf of International Paper Company (IPC), Integral Consulting Inc. (Integral) has prepared this baseline risk assessment (BRA) for the S&W Sawmill Facility (Facility) in Darby, Montana, in support of the remedial investigation/feasibility study (RI/FS) process. The RI/FS is being conducted to address releases of pentachlorophenol (PCP), polycyclic aromatic hydrocarbons (PAHs), petroleum hydrocarbons, and dioxins and furans that may have been released as a consequence of wood treatment or other operations at the Facility.

The purpose of this BRA is to evaluate baseline risks to human health and the environment associated with the Facility and to develop site-specific cleanup levels (SSCLs) for the Facility. The BRA evaluates risk for conditions prior to implementation of any remedy. The objectives of the BRA are as follows:

- Develop SSCLs for the Facility that will be protective of human health and the environment.
- Apply a more complete data set to evaluate baseline risks to human health and the environment under current and reasonably anticipated future uses of the Facility.
- Support development of remedial alternatives in the feasibility study.

This BRA considered all of the environmental data collected for the Facility between January 1, 1998, and December 31, 2012, and uses soil data collected between January 1, 1998 and December 31, 2012, and groundwater data collected between January 1, 2008 and December 31, 2012, for the BRA (see Section 4). The BRA was conducted in a manner consistent with current MDEQ guidance and with additional, site-specific directions provided by MDEQ in the following comment documents and meetings:

- Comments on the 2006 draft BRA and related documents (MDEQ 2010, 2011a, 2012a, 2012b)
- A meeting between MDEQ, IPC, and IPC's consultants on June 20, 2012
- Directions provided by MDEQ via email and conference calls prior to and following the 2012 draft BRA (MDEQ 2012c, 2012d, 2013a, 2013b, 2013c, 2013d; Integral 2013).

1.2 OVERVIEW OF APPROACH

This BRA includes both a human health risk assessment (HHRA) and an ecological risk assessment (ERA). The general approaches used in developing these are discussed below.

1.2.1 Human Health Risk Assessment

The HHRA portion of this BRA evaluated the potential for developing noncancer health effects and/or cancer as a result of exposures to Facility-related chemicals of potential concern (COPCs). Cancer risks were evaluated using U.S. Environmental Protection Agency's (EPA's) default approach of assuming that carcinogenic compounds act via a non-threshold mechanism (i.e., there is some potential for cancer risk regardless of the level of exposure). The specific methods for evaluating noncancer hazards and cancer risks are explained in more detail in Section 6.

The HHRA was conducted in a manner consistent with state and federal guidances. Key Montana state guidance documents considered included the following:

- MDEQ's (2012e) web site *Frequently Asked Questions* (accessed June 2012)
- MDEQ's (2011b) *Montana Vapor Intrusion Guidance*
- MDEQ's (2009) *Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases*
- MDEQ's (2012f) *Circular DEQ-7 Montana Numeric Water Quality Standards*.

Some portions of MDEQ's guidance are drawn directly from risk assessment guidance developed by the Massachusetts Department of Environmental Protection (MassDEP). Therefore, when MDEQ guidance on a particular topic was not available, MassDEP's (1995) guidance for risk characterization was consulted.

Key federal guidance documents consulted included the following:

- USEPA's (1989a) *Risk Assessment Guidance for Superfund* [RAGS]*Volume 1 Human Health Evaluation Manual (Part A)*
- USEPA's (2011) *Exposure Factors Handbook*
- USEPA's (2004) *Risk Assessment Guidance for Superfund Volume I Human Health Evaluation Manual Part E Supplemental Guidance for Dermal Risk Assessment*
- USEPA's (2009a) *Risk Assessment Guidance for Superfund Volume I Human Health Evaluation Manual Part F Supplemental Guidance for Inhalation Risk Assessment*
- USEPA's (1996, 2002a) *Soil Screening Guidance User's Guide* and *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites*
- USEPA's (2005a) *Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
- USEPA's (2005b) *Guidelines for Carcinogen Risk Assessment*

- USEPA's (1991) *Risk Assessment Guidance for Superfund Volume I Human Health Evaluation Manual Part B Development of Risk-based Preliminary Remediation Goals*.

1.2.2 Ecological Risk Assessment

The ERA section of the BRA presents a problem formulation approach that considered:

- Ecosystems potentially at risk
- Ecological receptors
- Chemicals of potential ecological concern (COPECs)
- COPEC fate and transport
- Potential ecological effects associated with COPECs
- Assessment endpoints.

The problem formulation was conducted in a manner consistent with USEPA (1997a) ERA guidance.

1.3 DOCUMENT ORGANIZATION

The remainder of this document is organized as follows:

- Section 2: Facility History and Setting
- Section 3: Conceptual Site Model
- Section 4: Data Summary
- Section 5: Selection of COPCs
- Section 6: Human Health Risk Assessment
- Section 7: Ecological Risk Assessment
- Section 8: Site-Specific Cleanup Goals
- Section 9: Summary and Conclusions
- Section 10: References.

Several appendices are included to provide supporting detail, as follows:

- Appendix A: S&W Sawmill Investigation Database: 2013 Updates
- Appendix B: Screening the Beef Consumption Pathway
- Appendix C: Screening Levels

- Appendix D: COPC Screening and Calculations for Intake, Risk, and Cleanup Levels
- Appendix E: Summary Statistics for Exposure Point Concentrations
- Appendix F: Land Use
- Appendix G: Exposure Parameter Averaging; Risk and Hazard Apportioning
- Appendix H: Dioxin and Furan Toxicity
- Appendix I: MNHP Reports on Species of Concern
- Appendix J: Well Logs.

In addition, an exhibit provides the equations for each of the exposure pathways evaluated in the HHRA.

2 FACILITY HISTORY AND SETTING

This section describes the location, history, and general setting of the Facility. Much of this information was presented previously in the remedial investigation report (Arrowhead/Douglass 2004) and was used here to develop the CSM discussed in Section 3.

The use of the term "Facility" in this report is consistent with the definition of Facility in Montana Code Annotated, Section 75-10-701(4)(a)(ii), which is "any site or area where a hazardous or deleterious substance has been deposited, stored, disposed of, placed, or otherwise come to be located." MDEQ has interpreted this to mean any property where concentrations exceed background levels and selected screening levels. Therefore, the Facility includes the historical wood treating operational areas of the S&W Sawmill property, other areas of the S&W Sawmill property, and adjacent properties where chemicals associated with historical wood treating operations that occurred at the S&W Sawmill have migrated.

2.1 FACILITY LOCATION AND HISTORY

2.1.1 General Facility Information and Location

The former S&W Sawmill is located in Sections 10 and 11, Township 3 North, Range 21 West, Montana Prime Meridian, north of Darby, Montana as shown on Figure 1-1. It was operated on part of the mill property that was owned by Darby Lumber, Inc. Parcel B is currently owned by IPC.

The original mill property consisted of four parcels totaling 62.54 acres as shown on the tract map in Figure 1-2. The wood-treating operations of the S&W Sawmill were reportedly contained on Parcel B, which is 28.88 acres located west of U.S. Highway 93 and south of Bunkhouse Road. Additional parcels where relevant activities occurred included the following:

- Parcel A, 5.8 acres located north of Bunkhouse Road, was sold to Doug Walker in 1996, repurchased by Darby Lumber, Inc. in 1998, and purchased by IPC in 2013. It is not currently being used.
- Parcel C, 15.86 acres located east of Highway 93, was purchased by Terry Bergman in 1999. It is currently subdivided into parcels used for commercial purposes[1].
- Spigot Resources property, 10 acres located directly south of Parcel B, is owned by Spigot Resources Inc. It is not currently developed.

[1] A deed restriction on these properties prohibits residential use (Vines and Vines 2004). This deed restriction has not been approved by MDEQ as provided for in Mont. Code Ann. § 75-10-727.

- An additional 2 acres south of the Spigot Resources property that contain a bank and a supermarket and are largely paved.

The parcel that contained the S&W Sawmill wood-treating operations (Parcel B) is bordered on the north by Bunkhouse Road; on the west by Bachman Enterprises, LP (a manufacturer of log homes that was formerly known as "Timberline Log Homes" but is currently inactive), skate park, and the local rodeo grounds; on the south by the Spigot Resources property; and on the east by U.S. Highway 93. Located north of Bunkhouse Road are Parcel A and pasture lands owned by Phyllis Parmenter and Rocky Cassell. Located farther to the north are several residences, additional pasture land, an automotive repair business, and a salvage yard. Across Highway 93 to the east are several residential and commercial properties and the Darby Cemetery. These features are shown on Figure 1-2. Based on the results of sampling conducted during the remedial investigation, the supplemental soil sampling investigation, and the drainage ditch soil sampling investigation, portions of the properties surrounding the former sawmill are considered part of the Facility.

2.1.2 Facility History

Currently there are no active sawmill or wood treating operations at the Facility. S&W Sawmill reportedly treated wood from approximately 1961 to 1978 using chlorophenolic formulations mixed with diesel fuel. Most of the historical production area is currently fenced (Figure 1-2) to prohibit casual access to areas with higher concentrations of Facility-related chemicals. A brief history of operations follows. More details are available in the remedial investigation report (Arrowhead/Douglass 2004).

It has been reported that for the first three years of operation, before a pressure treating operation was initiated in the fall of 1964, wood was treated in a dip tank. The dip tank was found during the second phase of the remedial investigation, at the location shown on Figure 1-2. The primary chlorophenolic formulation used for dipping was reportedly a commercial-grade PCP product manufactured by Monsanto®. The wood was reportedly treated by submerging it in the dip tank and soaking it for a period of time ranging from a few hours to as many as 24 hours. Currently, available information from past investigations indicates that the PCP was mixed with diesel fuel and stored in one or more above-ground storage tanks in the Support Building (Figure 1-2).

After the pressure-treating operation was initiated, wood to be treated was reportedly placed in the retort vessel, and the vessel was placed under a vacuum to lower the pore pressure in the wood. The vessel was then filled with the PCP treating solution and pressurized with steam to allow the PCP to penetrate the wood pores. Interviews with former employees, conducted during the remedial investigation, indicated that during approximately the first two years of treating operations with the retort, pressure was released from the retort vessel after each treatment cycle and the remaining liquid was discharged through a 4-in. line to a blow-down

pond (Figure 1-2). The treated wood was reportedly removed from the retort vessel and stored on the ground in the northwest section of the fenced area.

The blow-down pond was an earthen depression constructed prior to 1964 and, based on aerial photographs, was located partially beneath what is now the fire pond (Figure 1-2). The blow-down pond was constructed explicitly to receive boiler blow-down (i.e., solids that had built up in the boiler over time) as part of the mill operations, but also received discharge from the pressure-treating operation during its first two years. The current fire pond is a lined pond that was constructed in the 1980s at the same location as the blow-down pond to store water for fire protection at the mill. The fire pond is still in place, but it is bermed and does not collect runoff from the site. It contains only precipitation and is no longer used for fire protection.

Figure 1-2 shows one of the main irrigation ditches at the Facility. There are two drainage ditches on Parcel B. The first ditch originates near the Break Room building, flows north in a culvert under Bunkhouse Road, and terminates in a depression just north of Bunkhouse Road. This depression was referred to as a "sump" in early investigations. Originally it was believed that this ditch carried runoff from the former treating area but, during the remedial investigation, it was determined that storm water from the former treating area flowed into the second ditch.

The second ditch flows north through a culvert that crosses the treating area and joins an open drainage ditch that flows east along the south side of Bunkhouse Road. The combined ditch turns north and flows under Bunkhouse Road, joining an irrigation return ditch that flows north across the Cassell property. This ditch system potentially received releases from the sawmill and wood treating operations, although former employees reported that no discharges from plant operations were intentionally routed into the ditch. Eventually the irrigation return ditch joins a larger irrigation return ditch on the Skroch property and the combined ditch continues to flow north.

2.1.2.1 Possible Historical Releases

The discharges from the first two years of retort operations to the blow-down pond were likely the primary source of soil contamination in the former treating area. Releases likely also occurred as a result of treated wood dripping onto the ground at the treated-wood storage area and around the pressure vessel. Former employees acknowledged that miscellaneous small spills occurred near the treating area, and storm water may have carried chemicals into the irrigation ditch on the Cassell and Skroch properties, discussed above. Once impacted, surface soils likely served as a source for passive release mechanisms (Section 3.1.1).

2.2 FACILITY SETTING

The Facility is located in the Bitterroot Valley, approximately 30 miles north of the Idaho border on state Route 93. This section summarizes the information on the environmental setting of the Facility, including the topography, geology, meteorology, hydrogeology, demographics, land use, groundwater use, and Facility utilities as provided in the remedial investigation report. More detailed information is presented in the remedial investigation report (Arrowhead/Douglass 2004).

2.2.1 Topography

The topography of the Facility is essentially flat with an approximate elevation of 3,875 ft above mean sea level. Located 0.25 mile to the west of the Facility are the foothills of the Bitterroot Mountains. These mountains drain east to the Bitterroot River, which is located approximately 0.5 mile east of the Facility (Figure 1-1).

2.2.2 Geology and Soil Types

The geologic parent material at the Facility is the coarse-to-medium-grained intrusive igneous rock of the Idaho batholith. A dominant rock type of the batholith is light gray, coarse-to-medium-grained quartz monzonite with subordinate grandiorite. The main mineralogic components are plagioclase feldspar, potassium feldspar, and quartz with 15 percent or less hornblende and biotite. The Facility lies in unconsolidated sand, gravel, silt, and soil that include glacial drift, and reworked glacial drift and Tertiary sediments. Kaolinite and halloysite clay minerals predominate in residual well-drained soils, whereas montmorillonite is found in soils of dry lower elevations or poorly drained areas.

2.2.3 Meteorology

Climate information was obtained from the Weatherbase website (weatherbase.com), which contains 113 years of records. The data were collected at the Darby, Montana, reporting station.

The average annual temperature in Darby is 45.7°F, with monthly averages ranging from 26.6°F in January to 66.1°F in July. Average maximum temperatures range from 35.7°F in January to 84.4°F in July. Average minimum temperatures range from 17.5°F in January to 47.8°F in July.

The annual average precipitation in Darby is 15.7 in., resulting in a semi-arid climate. The highest average monthly precipitation occurs in June (1.9 in.). The lowest average monthly precipitation occurs in July (0.9 in.). Average annual snowfall, included in the above precipitation values, is 39.7 in. Maximum average snowfall occurs in February (9.2 in.) and minimum average snowfall occurs in September (0.2 in.).

2.2.4 Hydrology and Hydrogeology

The Bitterroot River, which is less than 0.5 mile east of the Facility, is the closest major surface water body to the Facility (Figure 1-1). Surface runoff from Parcel B enters a ditch that runs under Bunkhouse Road and connects with an irrigation return ditch that runs north through the Cassell property and eventually discharges into a larger irrigation return ditch on the Skroch property (see Section 2.1.2 for additional details on ditches near the Facility). The irrigation return ditch contains water seasonally between April and August or September during some, but not all, years. The ditch is about 3 to 5 ft across. When water is in the ditch, it is typically about 1 ft deep on the Cassell property and up to 4 ft deep on the Skroch property.

Surface water in the area is used for watering stock, irrigation, and recreation. The pervious soils and extensive farming generally minimize surface runoff except during flood irrigation, high intensity storms, or snow melt while the ground is frozen. Seepage losses are high from many of the tributary streams as they enter the valley-floor and canals divert the remaining flow.

Groundwater quality in the Bitterroot Valley is generally good. Groundwater tends to contain higher concentrations of total dissolved solids than surface water. Groundwater on site generally flows to the northeast. Groundwater levels fluctuate seasonally (approximately 6 to 10 ft) across the site due to irrigation practices in the area. From June through September, recharge from irrigation results in depth to groundwater across the site ranging from approximately 3 to 11 ft below ground surface. When irrigation is turned off for the winter season (October through May), depth to water ranges from approximately 9 to 15 ft below ground surface.

A search conducted of the Montana Bureau of Mines and Geology (MBMG) web site in September 2013 identified 192 wells located in Sections 2, 3, 10, and 11 in the vicinity of the Facility. Of these wells, 47 were located within a 0.5-mile radius of the Facility. The list of wells installed prior to 2005, copies of well logs provided by MBMG, and locations of the wells are presented in the remedial investigation report. Copies of MBMG domestic well logs for wells constructed from 2005 forward within 0.5-mile of the Facility are provided in Appendix J. Two of the closest upgradient wells and six of the closest downgradient wells were selected for sampling during the remedial investigation.

2.2.5 Demographics

The Facility is located north of the town of Darby, Montana. The primary releases occurred on Parcel B, which has historically been an industrial/commercial site. Parcel B has historically been bordered primarily by agricultural properties used for livestock grazing. Currently, small mixed residential/commercial areas are located east of Parcel B, across Highway 93, and northeast across Bunkhouse Road (Figure 1-2). There are approximately 30 residences within

0.5 mile of Parcel B. Three of the properties north of Parcel B are still used for grazing: the Parmenter and Cassell properties, which are not separated by a fence, and the Skroch property.

2.2.6 Current and Future Land Use

The S&W Sawmill is no longer active as a wood-treating operation or a mill. All equipment has been sold and removed from the property; several buildings and structures have also been demolished or removed. In approximately 2001 to 2002, some of the remaining buildings on the eastern portion of the property were leased and used for production and storage by the Bitterroot Truss Company. The property is currently vacant.

The future uses of Parcels A and B may be commercial or industrial. The properties are located in an unincorporated area north of the Town of Darby. The Darby (2011) Growth Policy includes a goal of encouraging properly located, light industry to improve local job opportunities, particularly along the railroad and possibly on north Highway 93, which would be in the vicinity of the Facility. Adjacent properties are residential or used for recreational purposes. IPC purchased Parcels A and B on May 24, 2013, and intends to place deed restrictions on the properties prohibiting residential use, but no such restrictions are currently in place.

As with Parcels A and B, the remainder of the Facility is located in an unincorporated area north of the Town of Darby, which is currently not zoned but which could be annexed into the Town of Darby, and thus be subject to zoning, in the future. Properties to the north of Parcels A and B are used for residential, commercial, and/or agricultural purposes. Properties to the east are used for residential and commercial purposes. The Spigot Resources property to the south is currently used only for parking during rodeo events and for harvesting knapweed weevils during summer months. Properties to the west are used for commercial and recreational purposes.

Properties listed below have been sampled for this project (Figure 1-2). The property uses based on observations made during site visits and discussions with local property owners are indicated, along with the "property type" recorded in the Cadastral database.

Property Name	Observed Current Use	Property Type in Cadastral Database
Parcel A	Vacant	Commercial rural
Parcel B	Vacant	Commercial rural
Spigot	Vacant	Commercial rural and vacant land rural
Cassell	Agricultural	Vacant land rural
Parmenter	Agricultural	Agricultural rural

Property Name	Observed Current Use	Property Type in Cadastral Database
Skroch	Agricultural	Agricultural rural and farmstead rural
Chaney[2]	Residential	Residential rural
Peirano Tract B	Residential	Residential rural
Renfroe	Residential	Residential rural
3WT	Commercial	Commercial rural
Milton	Commercial	Commercial rural
Peirano Parcel B	Commercial	Residential rural
Peirano Tract A	Commercial	Vacant land rural
Robak	Commercial	Commercial rural
Smith	Commercial	Commercial rural
Stevenson	Commercial	Residential rural
Vintage	Commercial	Commercial rural
Right of way	Roadway	Exempt property
Cemetery	Cemetery	Exempt property
Rodeo	Public recreational	Exempt property
School	Public educational	Exempt property

A restrictive covenant (Vines and Vines 2004) on the DVN subdivision prohibits residential use of these properties. However, language in the covenant allows the restriction to be lifted. Also, this deed restriction has not been approved by MDEQ as provided for in Mont. Code Ann. § 75-10-727. Because the Facility is located in an area without zoning, the future uses of most parcels could potentially include residential use, with the exception of the cemetery, school, and rodeo grounds.

Although the Parmenter and Cassell properties are under different ownership, livestock grazing on the Parmenter property have access to the irrigation ditch that flows through the Cassell property. The irrigation ditch also flows through the Skroch property to the north.

2.2.7 Water Classification and Use

According to ARM 17.30.1006, the classification of groundwater at the Facility is Class 1, which includes groundwater with specific conductivity less than 1,000 microSiemens/cm at 25°C. Uses protected under Class 1 include public and private water supplies, culinary and food

[2] The Chaney property was recently purchased by Benjamin and Betty Ricciardi.

processing, irrigation, drinking water for livestock and wildlife, and commercial/industrial purposes (ARM 17.30.1006).

According to ARM 17.30.607, the classification of the Bitterroot River is B-1. Uses protected under Class B-1 include drinking, culinary, and food processing after conventional treatment; bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply (ARM 17.30.623).

There are two wells on Parcel B that were formerly used for plant operations (Figure 1-2): the pumphouse well and the office well. The pumphouse well was formerly used to supply the mill fire system in the event of a fire, and periodically used by the City of Darby to provide additional supply during times of high demand. Before the Darby Lumber Co. mill was closed, this well was also used to supply the boiler. During 1998, the pumphouse well was disconnected from the city system. The office well was used while the mill was in operation to supply potable water to the office.

The locations of groundwater wells are shown on Figure 1-2. Eleven private wells (1001 through 1011) were sampled at variable frequencies, up to 22 times each, between 1988 and 2011. Two of these (1004 and 1008) are considered upgradient. Two production wells used during sawmill operations (2001 and 2002) were sampled four times between 1988 and 2001. Twenty-three monitoring wells on Parcels A and B were sampled at variable frequencies, up to 23 times each, between 1999 and the present. Groundwater data are summarized in Section 4 of this report.

2.2.8 Existing Utilities

During the remedial investigation, a licensed surveyor located all major site features including buildings, test pits, major roads, and monitoring wells. All new wells and locations sampled during the remedial investigation were also surveyed for accurate placement on the base map. A utilities map obtained from Darby Lumber Co. showed only the sawmill operations fire protection system. The only underground utilities located during the remedial investigation near the former treating area were power and telephone lines to the former treating building (which entered on the east side of the building) and some buried utilities along Bunkhouse Road on the south side of the road.

3 CONCEPTUAL SITE MODEL

The CSM provides a succinct depiction of the sources of COPCs, historical and current fate and transport pathways at the Facility and the ways in which people and ecological receptors could be exposed to Facility-related COPCs (Figures 3-1 and 3-2). It presents historical sources of chemicals related to the sawmill operations, migration pathways to environmental media, potential exposure media, receptors, and exposure routes.

An exposure pathway is defined by four elements (USEPA 1989a):

- A source and mechanism of chemical release to the environment (e.g., spills to surface soil)
- An environmental receiving or transport medium (e.g., soil, groundwater) for the released chemical
- A point of potential contact with the medium of interest (e.g., exposed surface soil or air)
- An exposure route (e.g., ingestion, dermal contact, or inhalation) at the contact point.

An exposure pathway is considered "complete" if all of four elements are present.

3.1 FATE AND TRANSPORT PATHWAYS

The primary source of contaminants at the Facility was the treatment of lumber during the period from 1961 to 1978, which occurred on Parcel B. Following release of treatment chemicals into the environment, physical transport mechanisms, including tracking, surface runoff and subsequent surface water flow, wind-borne deposition and groundwater flow transported contaminants to other properties around the Parcel B.

3.1.1 Parcels A and B

The primary source and release mechanisms of COPCs in the environment of the Facility are believed to be spills and leaks of wood-treating solutions containing PCP in a diesel-based carrier solvent to surface soils during facility operations. This occurred primarily within the treating area, which was located in the fenced area in the northwestern corner of Parcel B, and the areas where wood was stored after treatment. These spills and leaks resulted in soils becoming a primary source medium (Figure 3-1). Surface soil contamination reached various areas around Parcel A and other parts of the Facility via tracking, surface runoff, and wind transport. In addition, a ditch running south to north through Parcel B received surface runoff from sawmill operations, transported it off the property to the north into an irrigation return

ditch traversing the Cassell property, and eventually discharged to a larger irrigation return ditch on the Skroch property.

Once wood-treating chemicals had been released to surface soils, leaching may have moved some materials into subsurface soils and eventually groundwater. The seasonal rise and fall of the groundwater table, which is large because of local irrigation practices, created a smear zone of non-aqueous phase liquid (NAPL) in the subsurface soil.

Facility-related chemicals in surface soils can be adsorbed by soil particles and transported in air as dust particles or, if volatile, can be released from soil or groundwater into air as vapors. These vapors can accumulate in enclosed spaces such as trenches or indoor air.

Soil containing the wood-treating chemicals can contact plant roots via porewater, if the chemicals are dissolved in porewater. Facility-related chemicals that are hydrophobic are not readily taken up by plants and translocation into aboveground plant tissue is limited for lipophilic compounds because these sorb to lipid rich tissues in the roots of the plants (Wild and Jones 1992). The surface of Parcel A has some vegetation (trees and sparse grasses), while the surface of Parcel B is currently largely denuded.

Media on Parcels A and B to which humans could be exposed include surface and subsurface soils, groundwater, outdoor air (including dust and vapors), vapors in indoor or trench air, and plants. Ecological receptors, if present, could be exposed to surface soils, dusts, and vapors in outdoor air, and through the ingestion of plants, soil invertebrates, and other prey on the property. A summary of the sources, release and transport mechanisms, exposure pathways and routes for human and ecological receptors is provided in Figure 3-1.

3.1.2 Parcels Other than A and B

Surface soil contamination of properties south, east, and north of Parcels A and B is believed to have occurred through deposition of airborne particulates, historical surface runoff into the ditch system, and tracking of soils during sawmill operations. The drainage ditch that ran across Parcel B transported contaminants northward, across several parcels to its confluence with the main irrigation return ditch along the Skroch property. COPCs associated with sawmill operations have been observed in the main irrigation return ditch. Leaching from contaminated surface soils in the portion of the ditch on the Cassell property may have transported some COPCs to shallow subsurface soils along the ditch. Soil contamination in the northern reaches of the ditch on the Skroch property is present in concentrations above screening levels throughout the top 2 ft of soil in the ditch.

COPCs present in groundwater can be transported via dissolved phase processes (advection, diffusion, adsorption to aquifer solids), via migration of free NAPL (expected to be very limited), or by facilitated transport mechanisms such as colloidal or micellar transport.

Groundwater flow beneath the Facility is generally to the northeast. To date, COPCs have been detected in groundwater under Parcel B, Parcel A, the Parmenter property, the Renfroe property, the Robak property, and a portion of the Chaney[3] property east of Parcel A across Highway 93 (Figure 1-2).

Detailed fate and transport modeling is being conducted as a separate effort to evaluate the leaching pathway and groundwater transport beneath the Facility. Fate and transport modeling will not be completed until after submittal of the draft of this document. If that modeling results in changes to the CSM, the CSM will be updated in an attachment to the fate and transport modeling report.

As discussed for Parcels A and B, surface soils containing COPCs can be re-suspended as dust in air and volatile COPCs may volatilize into outdoor, indoor, or trench air. In addition, soil containing the COPCs can adhere to plant roots.

The Skroch and Parmenter properties are currently used for livestock pasture. Both the Cassell and the Skroch properties are located along the irrigation ditch. Livestock on the Parmenter property have access to the ditch on the Cassell property. Animals grazing in the ditch may take up COPCs from plants and soil adhered to those plants while grazing in this limited area or they may ingest COPCs in surface water when it is present.

Media to which humans could be exposed on parcels other than A and B include surface and subsurface soils, ditch surface water (when present) and sediments/soils, groundwater, air (including dust and vapors), plants (as home-grown produce), and beef. Ecological receptors could be exposed to surface soils, ditch surface water (when present) and sediments/soils, dust and vapor in air, and through foraging on the property.

3.2 HUMAN RECEPTORS AND EXPOSURE ROUTES

Based on the CSM, the potential human receptors to be evaluated in the HHRA were identified for the Facility. Table 3-1 summarizes the current and potential future receptors identified for Parcels A and B and for other parcels. These receptors are discussed below. Complete exposure pathways considered to be associated with potentially significant exposures were evaluated quantitatively in the HHRA. Complete exposure pathways considered to be associated with minor exposures were evaluated qualitatively.

[3] Now the Ricciardi property.

3.2.1 Parcels A and B

Parcels A and B are currently vacant and not used for any purpose. The groundwater beneath these parcels is not used for any purpose. The former wood treating area is currently bounded by a 6-ft high fence, and signs are posted warning that trespassing is prohibited. Graffiti has been observed on some of the buildings, however, indicating that trespassing has occurred there. Therefore, trespassing is the only human activity that may currently be occurring on these parcels that was considered appropriate to evaluate in the HHRA. Workers conducting environmental sampling are required to comply with a health and safety plan and to wear protective clothing to minimize exposures.

These parcels may be re-developed in the future for commercial or industrial purposes, although there are currently no zoning laws or covenants in place to prevent future residential use. In either case, new construction would be required. Therefore, for the HHRA, it was assumed that potential future receptors could include residents, commercial or industrial workers, and construction workers (Figure 3-1).

3.2.1.1 Current Conditions

Currently, the property may be accessed by trespassers who may traverse it to get to other properties or who may scale the fence to access the former treatment buildings. Trespassers could have direct contact with surface soil, including incidental ingestion and dermal contact, and inhalation of airborne dust while on the property.

While trespassers could also inhale outdoor air containing volatile COPCs originating from soil and groundwater, if any, results of the vapor intrusion evaluation conducted by Douglass (2011) indicated that inhalation of vapors outdoors is not likely to be a significant exposure route for trespassers. Soil vapors were screened to select COPCs but, consistent with MDEQ direction (2010), the potential risks associated with inhalation of vapors were not evaluated in the BRA. The feasibility study will consider actions potentially necessary to control vapor inhalation exposures.

3.2.1.2 Future Conditions

One potential future use for Parcels A and B is commercial and/or industrial. Future workers could contact surface soils (incidental ingestion and dermal contact) and inhale dust, and these are the potentially compete pathways evaluated quantitatively for future workers in the HHRA (Figure 3-1). If a well were drilled on the property, then workers could use groundwater as a drinking water source during their workdays. As discussed above for trespassers, inhalation of vapors in indoor and outdoor air is possible. Ingestion of groundwater and inhalation of vapors were not evaluated quantitatively in the HHRA per MDEQ (2010) direction, but

groundwater concentrations were compared with MDEQ (2012f) groundwater quality standards (Section 6.5) and SSCLs were calculated for soil vapors in indoor air (Section 8).

As required by MDEQ, future residential use was also considered for Parcels A and B. For the purposes of this risk evaluation, potential future residents were considered to have the same possible exposure routes as workers (Figure 3-1). In addition, residential groundwater usage, if any, would be more extensive and prolonged than usage by workers, and future residents could also have gardens and eat home-grown produce. Published studies indicate that plant uptake of lipophilic chemicals such as PCP and dioxins and furans is limited to binding to the roots (ATSDR 1995, 1998; USEPA 1993a; Wild and Jones 1992). While Facility soils are not conducive to gardening without amendment, because they are sandy, gravelly, and contain cobbles, consumption of home-grown root vegetables was included as a potential complete exposure route for future residents. In addition, dioxins and furans are lipophilic chemicals that can be stored in human body fat, leading to the potential transfer of these compounds to the lipid portion of breast milk. Therefore, exposure to infants as a result of breastfeeding was also considered a potentially complete future exposure route and evaluated quantitatively.

During the vapor intrusion investigation (Douglass 2011), the support building was the only building investigated at the Facility with an exceedance of the adjusted residential indoor air screening levels, with the exceedance occurring during the second of two sampling periods. There were no exceedances of the adjusted industrial indoor air screening levels. The report also noted that a small amount of oil had been spilled in the building prior to the second sampling, which may have contributed to this exceedance. However, based on the concentrations detected in indoor air and the sub-slab soil vapor, it appears that the naphthalene measured in indoor air in the support building may not have been related solely to subsurface conditions. Based on the nearly identical concentrations in indoor air and sub-slab soils, and the lack of consistent detections of naphthalene in indoor air in the study, it is unlikely that the naphthalene measured in the indoor air sample was the result of vapor intrusion from soil gas.

Because the observed naphthalene concentration may not be related to subsurface conditions, and because the buildings on Parcel B are not likely to be representative of potential future residential structures, the vapor inhalation route was not evaluated quantitatively for the hypothetical future residential scenario in the HHRA. However, as the indoor air sampling did identify exceedances of residential indoor air screening levels, mitigation measures or additional indoor air sampling may need to be considered if residential buildings are constructed on Parcels A and B in the future. SSCLs were calculated for potential future residents and commercial/industrial workers exposed via indoor air and for potential future construction workers exposed via air in a trench.

Regardless of future use, some redevelopment of Parcels A and B will likely occur. Construction workers excavating soils while digging a building foundation or a utility trench

could contact surface and subsurface soils and inhale outdoor dust or vapors accumulating in a trench or excavation. Construction workers could also occasionally come into contact with shallow groundwater accumulating in the excavation.

The groundwater evaluation was conducted for residential exposures, which were assumed to be more extensive than the occasional groundwater contact that might occur for excavation construction worker (if any), so the groundwater exposure assessment for residents is adequately protective of a construction worker. As a result, construction workers' exposures to groundwater were not evaluated quantitatively in the HHRA but are discussed in the risk characterization.

3.2.2 Parcels Other than A and B

Sampled properties to the north of Parcels A and B are currently used for residential (Peirano Tract B), commercial (Peirano Tract A, Peirano Parcel B, and MRD), or agricultural (Parmenter, Cassell, and Skroch) purposes. A road right-of-way (Bunkhouse Road), which has been sampled, lies between Parcels A and B. Properties to the east are used for residential (Chaney[4] and Renfroe) and commercial (Milton and DVN Commercial Subdivision) purposes. The Town of Darby Cemetery also lies to the east. The Spigot Resources property to the south is currently used only for parking during rodeo events and harvesting knapweed weevils during summer months. Properties to the west are used for commercial (Stevenson) and recreational (rodeo grounds and school track and tennis court) purposes. Additional information on property uses is presented in Section 2.2.6.

Because there is no zoning to control property uses in the area, it was assumed that properties currently used for commercial purposes could potentially be used for residential purposes in the future. It was assumed, however, that the rodeo grounds, school track, and tennis court would remain under recreational use, and that there would be periodic occupational exposures associated with the maintenance and management of these properties. In addition to the residential and occupational exposures just described, a trespasser scenario and a construction worker scenario were evaluated for each of the properties. It was assumed that the cemetery would continue to be used as such in the future, with potential trespasser, infrequent worker, and construction worker scenarios.

3.2.2.1 Current Conditions

Residents and workers could contact surface soils (incidental ingestion and dermal contact) and inhale dust. Based on the results of indoor air sampling on Parcel B (Douglass 2011), where soil concentrations are higher, inhalation of vapors in indoor and outdoor air on other parcels is not

[4] Now the Ricciardi property.

expected to present a significant exposure route. As discussed for Parcels A and B (Section 3.2.1.2), residents could also eat home-grown produce and infants could be exposed through breast feeding.

For properties located along the irrigation ditch north of Bunkhouse Road, the only known soil contamination occurs within the ditch itself. Residents or workers on these properties could have direct contact with ditch soil during outdoor activities. People could also contact surface water in the ditch when it is present. During times when surface water is present in the ditch, the surface soil in the ditch would be considered sediment. Incidental ingestion of sediments is considered to be similar to soil, but dermal adherence is expected to be higher for sediment than for soil, and windborne dust is not expected to be derived from sediment.

Residents or workers could also be exposed to COPCs in groundwater if groundwater wells provide drinking water and/or water for other household uses. At present, COPCs have been detected in groundwater under three properties, one of which is used for residential purposes. The household water for the one affected residence is being supplied by a new well that has not been affected by releases from the Facility. Therefore, no current household use of contaminated groundwater is occurring.

Ingestion of beef grazing on the Parmenter, Cassell, and Skroch properties may potentially be a complete exposure route if cattle graze in the ditch or drink surface water from it. Therefore, this exposure route has been considered as required by MDEQ (2011a).

As discussed in detail in Appendix B, concentrations of dioxin and furan congeners in the beef of cattle assumed to be grazing on the Parmenter and Cassell properties and the Skroch property were estimated using models for plant uptake and for cattle uptake and metabolism. This analysis indicated that the modeled beef concentrations for all of the properties were below the mean concentrations in beef intended for human consumption (USDA 2009). Based on this evaluation, the consumption of beef from cattle grazing on the Parmenter and Cassell properties and the Skroch property was not expected to increase dioxin and furan exposures above exposures typically associated with commercial beef. Therefore, this exposure route was not evaluated further.

Currently there are no residents on the Skroch, Parmenter, or Cassell properties and individuals who work there are expected to have infrequent exposure while maintaining and inspecting fences and performing similar tasks in the area of the ditch. These workers could be exposed through incidental ingestion of and dermal contact with ditch soil, inhalation of outdoor dust, and contact with surface water in the ditch, when it is present.

People visiting the Town of Darby recreational properties west of Parcel B (rodeo grounds, high school track, and tennis court) and workers maintaining those facilities could be exposed to COPCs through incidental ingestion of and dermal contact with surface soils, and inhalation of

dust. Adolescent trespassers could be exposed through incidental ingestion of and dermal contact with surface soils and inhalation of dust.

3.2.2.2 Future Conditions

As for current residents and workers, future residents and workers could be exposed via direct contact with surface soil and inhalation of dust. Future residents could consume home-grown produce, and infants could be exposed through breast feeding. Potential future exposures to COPCs in groundwater were also evaluated. Future construction workers could be exposed through incidental ingestion of and dermal contact with surface and subsurface soils, inhalation of dust, and inhalation of vapors from groundwater accumulating in a trench.

3.3 ECOLOGICAL RECEPTORS AND EXPOSURE PATHWAYS

Figures 3-1 and 3-2 illustrate the exposure pathways and receptors to be evaluated in the ERA, based on discussions with MDEQ (2012c). As discussed in Section 7, the following receptors were selected as being of concern for the ERA based on trophic level and exposure to bioaccumulative COPECs in their foods as well as direct contact with soil: vagrant shrew (*Sorex vagrans*), American robin (*Turdus migratorius*), and various species of snakes. The complete exposure pathways identified for all portions of the Facility include inhalation of dust and direct contact with soil (including incidental ingestion and dermal contact). Inhalation exposure is possible, but is considered minor, and is not addressed quantitatively. Additional complete exposure pathways present on parcels other than A and B include direct contact with soil and water in the irrigation ditch (including incidental ingestion and dermal contact). Ecological receptors and exposure pathways are discussed in more detail in Section 7.

4 DATA SUMMARY

This section provides a summary of the investigations and data collection efforts that have been conducted at the Facility. It then provides a summary of the resulting data sets.

4.1 SITE INVESTIGATIONS

Twelve site investigations have been undertaken on the Facility since the early 1980s. The six earliest of these were not included in this report because of their ages and limited information about their quality and locations. The BRA includes data collected as part of the Phase I Remedial Investigation and since (i.e., 1998 and later). At a meeting with MDEQ on April 9, 2013, it was determined that soil data collected between January 1, 1998 and December 31, 2012, and groundwater data collected between January 1, 2008 and December 31, 2012, were the most suitable and representative for the BRA. Therefore, the following sections do not include data collected outside of these date ranges. Soil/sediment and groundwater sampling locations included in the investigations are shown in Figures 4-1 and 4-2.

4.1.1 Final Draft Comprehensive Remedial Investigation Report, 2004

In October 2004, Arrowhead Engineering, Inc. published a *Final Draft Comprehensive Remedial Investigation Report* containing sampling data collected on various occasions from November 1998 to July 2002. This report characterized the nature and extent of releases or threatened releases of hazardous or deleterious substances on the site. The purpose was to evaluate risk to human and ecological receptors at the Facility and to develop and evaluate remediation strategies. This study included the collection of 69 surface soil and 76 subsurface soil samples. Samples in the remedial investigation were analyzed for purgeable hydrocarbons, semivolatile organics, ferrous and total iron, PCP and other chlorinated herbicides, dioxins and furans, and petroleum hydrocarbons.

This Remedial Investigation also included the collection of a total of 98 groundwater samples from 14 monitoring wells; resulting data are not included in this BRA, consistent with the agreement reached in the April 9, 2013 meeting with MDEQ.

4.1.2 Soil Sample Results Memorandum, 2007

A memorandum regarding “Soil Sample Results” on the east-adjoining Al Milton Property was prepared by Arrowhead Engineering, Inc. in December 2007. This report contained results for seven soil samples collected on Oct 12, 2007 in response to an MDEQ requirement that soil samples be collected from the Milton property to investigate possible PCP contamination from the former burn-pile (as per an MDEQ letter dated September 4, 2007).

4.1.3 Preliminary Surface/Subsurface Soil Investigation (Parcel B), 2009

A *Preliminary Surface/Subsurface Soil Investigation (Parcel B)* was published by PBSJ (2009) to identify the potential presence of hazardous substances and assist in the determination of whether Parcel B could be excluded from Comprehensive Environmental Cleanup and Responsibility Act designation. This study included the collection of five surface and five subsurface soil samples from the eastern portion of Parcel B, which were analyzed for extractable petroleum hydrocarbons (EPH), dioxins and furans, and PCP.

4.1.4 Soil Sample Results - Former Sump Investigation, 2010

An additional soil sampling investigation was presented in a report titled, *Soil Sample Results - Former Sump Investigation* (Arrowhead 2010). The report described soil sampling conducted in three test pits near the former sump (adjacent to the former planer building) on December 14–15, 2009 as well as the background soil sampling conducted in a test pit on the rodeo grounds southwest of Parcel B on December 9, 2009. A total of nine samples from three test pits were analyzed for dioxins to comply with the outcome of a public meeting with MDEQ on August 5, 2009 and a letter from MDEQ dated November 18, 2009. The seven samples from near the former sump were also analyzed for PCP.

4.1.5 Final Vapor Intrusion Investigation Report, 2012

Investigations were conducted on March 25–27, 2010 and December 15, 2010, to determine if vapor intrusion represented a potential exposure pathway on Parcel B. The results of the analysis of 23 subsurface, eight sub-slab, two outdoor and four indoor vapor samples for benzene, toluene, ethylbenzene, and xylenes; naphthalene,;and petroleum hydrocarbons were presented in the *Final Vapor Intrusion Investigation Report* (Douglas 2011).

4.1.6 2010 and 2011 Supplemental Soil Sampling Investigation, 2012

In order to further characterize the extent of COPCs in soil outside the currently fenced area of Parcel B, as directed by MDEQ letters dated April 2, 2010, October 6, 2010, and June 30, 2011, 161 surface and 28 subsurface soil samples from 101 sampling locations were collected during June and November 2010 and April and August 2011. Samples were analyzed for dioxins and furans, petroleum hydrocarbons, organochlorine pesticides, and chlorinated herbicides (including PCP) and results were reported in a report titled *Supplemental Soil Sampling Investigation - 2010 & 2011* (Arrowhead 2012).

4.1.7 Final Drainage Ditch and Soil Sampling Investigation Report, 2012

Additional soil sampling conducted in and near the irrigation drainage ditches on properties north of Parcel A during April and May 2012 was summarized in the *Final Drainage Ditch and*

Soil Sampling Investigation Report (Arrowhead 2012). This sampling was conducted as directed by MDEQ in letters dated December 9, 2011, February 13, 2012, and February 21, 2012, to further characterize the extent of COPCs on the Peirano Trust, Parmenter, and Skroch properties. During these sampling events, 48 discrete surface soil samples were collected in and near the drainage ditch. All of the shallow (0–6 in. below ground surface [bgs]) samples were analyzed for PCP and dioxins and furans; if a given sample exceeded the PCP or dioxin and furan screening level, then the next deeper sample from the location was also analyzed. Particle-size analysis was only performed on samples analyzed for dioxins and furans. All samples were analyzed for total organic carbon.

4.2 DATA SUMMARY

The sections below provide a summary of the data considered in the BRA. Matrices addressed by this summary are: surface and subsurface soil and "sediments"; soil vapor; and, groundwater samples. Discussions of soil, soil vapor, and groundwater include tabular sample counts by parameter class, excluding all duplicate and reanalyzed samples. Sampling locations are shown in Figures 4-1 and 4-2.

Note that throughout this BRA, the higher concentration of a primary sample and a duplicate is used to represent a particular location (where duplicates were run, the results for the primary sample and the duplicate sample were not averaged; the higher concentration was used). A primary sample and duplicate sample together are counted as "1" in the sample counts herein.

A total of eight results were rejected during data validation and were not included in the BRA analyses. All eight results were for dioxins and furans in soil. Six of the rejected values were from samples collected on June 6, 2010. In these cases, the results exceeded the linear range of the instrument, so the sample was diluted and rerun. The results of the original analysis were rejected in favor of the results of the analysis of the dilution. Two of the rejected results were from samples collected on November 18, 1998. These results were reported as rejected during the Remedial Investigation data validation effort, but available records do not indicate why.

4.2.1 Surface and Subsurface Soil

Nearly 400 soil samples have been collected to date. Tables 4-1 and 4-2 describe these samples by the chemical classes for which they were analyzed and by depth, determined by the bottom of the sample's given depth interval (e.g., a sample depth of 5–8 ft was counted in the 6–8 ft range). Additional duplicate and laboratory replicate samples were not included in these counts.

Between 1998 and 2012, 233 individual surface and subsurface soil samples were collected from Parcels A and B. Table 4-1 contains detailed sample counts by parameter class and depth.

Between 1998 and 2012, 141 individual surface and subsurface soil samples were collected from outside Parcels A and B. Table 4-2 contains detailed sample counts by parameter class and depth.

4.2.2 Soil Vapor

A total of 39 soil vapor and air quality samples counts (excluding duplicate and laboratory replicate samples) were collected within parcels A and B; all these samples were collected in 2010. Table 4-3 contains detailed sample counts by parameter class.

4.2.3 Groundwater

A total of 127 unique groundwater samples were collected from Parcels A and B between 2008 and 2012. Sample counts by year and well number are provided in Table 4-4. Duplicate and laboratory replicate samples were not included in this count. Wells and parameters sampled on Parcels A and B have varied over time depending on the purpose and scope of each investigation. Yearly parameter classes for the sample counts in Table 4-4 are described in Table 4-5. Since 2008, 86 unique groundwater samples have been collected outside Parcels A and B. Sample counts by year and well number are provided in Table 4-6. Duplicate and laboratory replicate samples were not included in this count. Wells and parameters sampled outside of Parcels A and B have varied over time depending on the purpose and scope of each investigation. Yearly parameter classes for the sample counts in Table 4-6 are described in Table 4-7.

Wells numbered 3###.0 are completed between 19 and 27 ft bgs, wells numbered 3###.l are completed between 23 and 30 ft bgs, and wells numbered 3###.2 are completed between 58.5 and 91 ft bgs.

5 SELECTION OF COPCS

Chemicals detected during all site investigations were evaluated to select Facility-related COPCs for human health to be carried forward into the quantitative estimation of risk in the HHRA. The COPCs selected for direct contact with soil, consumption of groundwater, inhalation of soil vapors, and leaching from soil to groundwater are shown in Table 5-1. The data available for the Facility were summarized in Section 4.

5.1 DATA SELECTION AND TREATMENT

For the purposes of the HHRA, the concentration of each carcinogenic dioxin and furan congener in a sample was multiplied by its toxicity equivalency factor (TEF) to derive an equivalent concentration of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD). These were then summed to produce a TCDD toxicity equivalency (TEQ) concentration. This process is explained in more detail in Section 6.4.3.3, and in Appendix A. TEQ concentrations were calculated by assigning one-half of the detection limit to nondetected results.

Individual carcinogenic PAHs were screened for the purpose of selecting the PAHs that would be included in the calculation of benzo(a)pyrene (BaP) equivalents (BaPE). BaPE were calculated in a fashion similar to TEQ using relative potency factors, as explained in Section 6.4.3.1; these calculations were automated in the updated database, as described in Appendix A. While the individual carcinogenic PAHs were considered during the screening process, BaPE concentrations were used for calculating exposure point concentrations (EPCs) (Section 6.3.2), which is the standard approach in HHRA.

Results rejected during data validation were not used for screening or risk calculations. The rejected data are discussed in Section 4.2; additional discussion of treatment of validation results in the database is provided in Appendix A. All J-flagged results, which are considered estimated quantities, were used in screening and risk calculations. Results of laboratory split samples were not included in the database received by Integral, so only the result for the original sample was included. The maximum results for field duplicate samples were included in the screening process, which is the approach required by MDEQ. Additional details on data treatment are provided in Appendix A.

One of the samples collected and identified as a surface water sample was actually collected below the liner of the fire pond during the remedial investigation. This sample was treated as groundwater in the BRA because it is not actually a surface water sample.

5.2 SCREENING LEVELS

Screening for the HHRA was conducted using the human health screening concentrations presented in Tables D2.1 through D2.4.

5.2.1 Soil Screening Levels

Soil screening levels were selected in a step-wise manner consistent with MDEQ's (2012g) soil screening process flowchart (Part 1) and comments provided by MDEQ (2010). The Step 1 flowchart identifies the risk-based screening level (RBSL) values available in the *Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases* (RBCA) (MDEQ 2009) as the primary source for screening levels. The surface soil residential RBSLs for groundwater <10 ft, which are the most conservative, were used to screen soils. These RBSLs consider both direct contact with soil and leaching to shallow groundwater. When RBSLs were not provided for a detected constituent, USEPA's (2013a) regional screening levels (RSLs) for residential soils were used as screening values.

EPA's RSLs for cancer are based on a target cancer risk of 1×10^{-6} and are, therefore, consistent with MDEQ (2009) guidance for screening. However, EPA's RSLs for noncancer effects are based on a target hazard quotient of 1.0, which is not consistent with MDEQ (2009) guidance for screening noncarcinogens using a screening level based on a hazard quotient of 0.1. Therefore, when EPA's RSLs based on noncancer effects were used for screening, those values were divided by a factor of 10 to derive comparable RSLs based on a target hazard quotient of 0.1.

For the following detected constituents, no RBSLs or RSLs were available: acenaphthylene, benzo(g,h,i)perylene, and phenanthrene. The petroleum hydrocarbon range RBSL for C11–C22 aromatics was used as a surrogate for C10-C22 aromatics. Detected parameters without screening levels were not included as COPCs, but rather were evaluated qualitatively in the uncertainty analysis (Section 6.6).

There are no readily available sediment screening levels provided by either MDEQ or EPA for the protection of human health. In addition, surface water is only intermittently present in the ditch so that sediment within the ditch is wet only during active irrigation and can be considered soil for substantial portions of the year. Therefore, sediment concentrations were screened using the soil screening levels.

In addition to the risk-based screening required for identifying COPCs for the BRA, an additional screening is provided for soil COPCs leaching to groundwater. Soil leaching screening levels were selected in a step-wise manner consistent with MDEQ's (2012g) soil screening process flowchart (Part 2). Similar to Part 1, the Part 2 flowchart identifies the RBSL values available in the *Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases* (MDEQ 2009) as the primary source for calculating screening levels for soil leaching. When

RBSLs were not provided, the flowchart was followed for consideration of EPA maximum contaminant level (MCL)-based soil leaching screening levels as well as the human health standards from Montana's groundwater quality standards (DEQ-7) (MDEQ 2012f).

The soil leaching screening values are provided in Appendix C.

5.2.2 Groundwater Screening Levels

For screening groundwater, the following hierarchy was followed: Montana's groundwater quality standards (DEQ-7) (MDEQ 2012f), EPA's MCLs for drinking water (USEPA 2012c), and MDEQ's RBCA Tier 1 RBSLs (MDEQ 2009). In the absence of standards or screening levels from these sources, the November 2013 EPA RSLs for tap water were used. The DEQ-7 standards are based on a target cancer risk of $1x10^{-5}$, while EPA's RSLs are based on a target cancer risk of $1x10^{-6}$. RSL values for groundwater parameters with a carcinogenic endpoint were multiplied by 10 for use as screening levels in this HHRA. For RSLs with a noncancer endpoint, the tap water RSL was used at a hazard quotient of 1 similar to the DEQ-7 values for human health. Chemicals with neither MDEQ criteria nor RSLs not included in the quantitative risk assessment but were discussed in the Uncertainty Analysis (Section 6).

MDEQ (2012f) water quality standards for surface water for protection of human health were used for screening surface water data.

The values considered when developing the screening levels are shown in Appendix C.

5.2.3 Soil Vapor Screening Levels

Screening levels for soil vapor data are risk-based values from EPA and MDEQ. The May 2013 RSLs were used as a primary source of screening levels for both residential and industrial scenarios (USEPA 2013a). The industrial air screening levels were used to identify COPCs for two scenarios: a potential future industrial/commercial building and a potential future trench/excavation scenario. The residential RSLs were used for evaluating a potential future residential scenario. RSLs for noncarcinogenic compounds were adjusted by a factor of 0.1 as required by MDEQ. Because petroleum fractions are not included in the RSL table, the screening values for these compounds were taken from the air-phase petroleum hydrocarbon vapor intrusion calculator (MDEQ 2011d).

In addition to screening against risk-based criteria, the soil vapor data were also compared to the indoor air background study (MDEQ 2012h). These values represent statistical interpretations of indoor air in residences in Montana that are not impacted by vapor intrusion.

The screening and background levels for evaluating the soil vapor to ambient air (both indoor and within a trench/excavation scenario) are provided in Table D2.3.

5.3 SCREENING APPROACH

Only analytes detected at least once in a given medium were included in the screening for that medium. If the maximum detected concentration for an analyte in a given medium was below the applicable screening level, then that constituent was eliminated as a COPC for that medium. If the maximum detected concentration exceeded the screening level, then the analyte was selected as a COPC for that medium. If a carcinogenic PAH was detected at least once in a medium, regardless of whether the maximum detected concentration exceeded the screening level, then it was retained as a COPC for the purpose of calculating BaPE. Details of the screening process are provided in Appendix C.

5.4 COPCS

The COPCs for soil/sediment, groundwater, soil vapor, and soil leaching are summarized in Table 5-1 and are discussed below. The COPCs were carried forward for use in calculating potential risks and hazards in the HHRA. COPCs for soil vapor and soil leaching are summarized in Tables D2.3 and D2.4 (Appendix D).

5.4.1 Soil

Although different soil depths are typically associated with different exposure scenarios (e.g., surface soil for trespasser exposures and subsurface soils for construction), the entire soil dataset was screened as a single medium of concern. This was a conservative screening method because the maximum concentration measured, regardless of depth, was compared with the screening value.

Several types of data pertaining to petroleum mixtures are available including certain aliphatic and aromatic fractions as well as "total extractable hydrocarbons," "total purgeable hydrocarbons," "EPH equivalent," and "EPH screen." The available data for individual petroleum fractions were included in the screening process and five petroleum fractions were selected as COPCs. The data from older petroleum analytical methods (total extractable hydrocarbons, total purgeable hydrocarbons, EPH equivalent, and EPH screen) were not screened and were not included in risk calculations because more recent, more reliable petroleum data are available. The exclusion of these analytes is discussed in the uncertainty analysis (Section 6.6).

The maximum detected concentration of BaP exceeded its screening level, so it was selected as a COPC. Benzo(a)anthracene, chrysene, and indeno(1,2,3-cd)pyrene were also detected. Their maximum detected concentrations were less than their screening levels; however, they were selected as COPCs for the purpose of calculating BaPE in soil (Section 6.4.3.1). The other carcinogenic PAHs were not detected in soil and were not included in the calculation of BaPE for soil.

Based on the screening approach described above, the following COPCs were identified for both surface and subsurface soils at the Facility:

- Ethylbenzene, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene
- BaPE, including BaP, benzo(a)anthracene, chrysene, and indeno(1,2,3-cd)pyrene
- PCP
- TCDD TEQ
- Petroleum hydrocarbon fractions C5–C8 aliphatics, C9–C12 aliphatics, C9–C10 aromatics, C9–C18 aliphatics, and C11–C22 aromatics (including C10–C22 aromatics).

Human health risks associated with possible exposures to these COPCs in soils were evaluated quantitatively for the exposure pathways and receptors shown in the CSMs (Figures 3-1 and 3-2).

5.4.2 Soil Leaching to Groundwater

All soil data collected were included in the data for screening the soil migration to groundwater pathway. Maximum detected concentrations were used for screening purposes. Based on this screening approach, the following COPCs were identified for the soil leaching pathway:

- Ethylbenzene
- Naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene
- PCP
- TCDD TEQ
- 2,4,6-Trichlorophenol
- Petroleum hydrocarbons include C9–C10 aromatics and C11–C22 aromatics (includes C10–C22 aromatics).

Only the identification of COPCs for the soil leaching pathway is provided in this report. The leaching pathway will be evaluated and reported as a separate effort.

5.4.3 Groundwater

Similar to the approach used for soil screening, groundwater data from all wells were combined for the purposes of screening.

"Total purgeable hydrocarbons" were detected in groundwater but because there was no screening level available, they were not included in the quantitative portion of the HHRA.

They were, however, discussed in the uncertainty analysis (Section 6.6). More recent petroleum data reported in terms of specific petroleum hydrocarbon ranges were screened instead.

The maximum detected concentration of BaP exceeded its screening level, so it was selected as a COPC. Additional carcinogenic PAHs detected in groundwater included benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. These five PAHs were selected as COPCs for the purpose of calculating BaPE in groundwater (Section 6.4.3.1) despite the fact that in some cases their maximum detected concentrations were less than their screening levels. Chrysene was not detected at all in groundwater and, therefore, was not included in the calculation of BaPE for groundwater. The inclusion of carcinogenic PAHs that did not exceed screening levels in the calculation of BaPE concentrations is a conservative approach.

The following COPCs were identified for groundwater at the Facility:

- BaPE, including BaP, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene
- PCP
- TCDD TEQ
- 2-Methylnaphthalene.

Human health risks associated with possible exposures to these COPCs in groundwater were evaluated by comparing groundwater concentrations with DEQ-7 groundwater standards (MDEQ 2012f) and EPA screening levels (USEPA 2012b) (Section 6.5).

5.4.4 Surface Water

Only one surface water sample was collected from the irrigation ditch; it was analyzed for PCP and this constituent was not detected. The detection limit for this sample was below the MDEQ water quality standard for surface water (1 μg/L), so surface water was eliminated from further consideration in the HHRA. If chemicals are detected in surface water samples collected in the future, they will be screened, and risks will be evaluated (if appropriate) in an addendum to the BRA.

5.4.5 Soil Vapor

For screening inhalation exposures to both indoor air and ambient air in a construction (i.e., trench or excavation) scenario, the subsurface soil vapor data from the recent vapor intrusion investigation (Douglass 2011) were compared to risk-based screening criteria. Only those samples which were identified as subsurface soil vapor samples (and not sub-slab soil vapor) were included in the screening. The sample IDs for these soil gas monitoring locations were

VMP-1 through VMP-12. Soil vapor data from both monitoring rounds (March 2010 and December 2010) were included.

The subsurface soil vapor data were screened for two potential future scenarios: indoor air (both residential and industrial) and construction scenarios. To identify COPCs, the maximum detected soil vapor concentrations across Parcels A and B were compared against the screening levels.

Based on this screening, the following COPCs were identified for all scenarios (residential, commercial/industrial, construction):

- Benzene
- Ethylbenzene
- m,p-Xylenes
- o-Xylene
- Naphthalene
- Petroleum hydrocarbons, including C5–C8 aliphatics, C9–C12 aliphatics, and C9–C10 aromatics.

At MDEQ's direction, the COPCs identified for soil vapor were not included in the risk calculations for this BRA, but SSCLs for soil vapor were calculated for potential future development at the Facility. Soil vapor SSCLs are provided for residential, commercial/industrial, and construction work exposures in Table 8-3.

During the vapor intrusion investigation (Douglass 2011), the support building was the only building investigated at the Facility with an exceedance of the adjusted residential indoor air screening levels, with the exceedance occurring during the second of two sampling periods. The report also noted that a small amount of oil had been spilled in the building prior to the second sampling, which may have contributed to this exceedance. There were no exceedances of the adjusted industrial indoor air screening levels; however, the data do not provide assurance that commercial/industrial screening levels would not be exceeded if the buildings were adequately sealed and heated. It is not likely that the indoor air concentration detected in the support building is attributable to the sub-slab soil gas because, if that were the source of the indoor air, an attenuation factor of less than 10 would be highly unlikely (USEPA 2012a). As the indoor air sampling did identify exceedances of residential indoor air screening levels, mitigation measures or additional air sampling may need to be considered if residential buildings are constructed on Parcels A and B in the future (Douglass 2011).

6 HUMAN HEALTH RISK ASSESSMENT

This section presents the HHRA for the Facility. The objective of the HHRA was to evaluate the potential health risks for human populations who may be exposed to COPCs in environmental media associated with the Facility and to develop SSCLs. The risk assessment process was designed to incorporate conservative assumptions to ensure that potential risks for a given population would not be underestimated. Therefore, estimated risks and hazards that exceed MDEQ's target levels should not necessarily be interpreted to mean that health effects will occur within the population(s) of interest but rather that additional evaluation may be warranted. The HHRA results will be considered in the feasibility study, along with other factors, to identify appropriate remedial actions (if any) that will be protective of human health.

6.1 RISK ASSESSMENT PROCESS

To evaluate baseline risks, the HHRA addressed the potential for adverse human health effects under current and potential future exposure scenarios at the Facility. When selecting and evaluating future scenarios, it was assumed that no remedial actions will take place, that there will be no reduction of COPC levels due to natural attenuation, and that no new land use restrictions will be adopted for any portions of the Facility. This approach is consistent with the role of a baseline assessment for an RI/FS.

Based on the CSM (Section 3), the following receptor scenarios were evaluated for current uses (Table 3-1):

- Resident children and adults on every property currently used for residential purposes
- Commercial/industrial workers on every property currently used for commercial/industrial purposes and, with a limited exposure frequency, on pasturelands, cemetery, rodeo, and school grounds
- Trespassers on every property
- Recreational visitors at the rodeo and school grounds.

The following receptor scenarios were evaluated for the potential future uses (Table 3-1):

- Resident children and adults on every property except the cemetery, rodeo, and school grounds
- Commercial/industrial workers on every property, using a limited exposure frequency for the cemetery, school, and rodeo grounds
- Construction workers on every property
- Trespassers on every property

- Recreational visitors on the school and rodeo grounds.

The HHRA consisted of the following tasks:

- Hazard identification (Section 6.2)
- Exposure assessment (Section 6.3)
- Toxicity assessment (Section 6.4)
- Risk characterization (Section 6.5)
- Uncertainty analysis (Section 6.6).

6.2 HAZARD IDENTIFICATION

As discussed in Section 5, the chemicals selected as COPCs for soil included the following:

- Ethylbenzene, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene
- BaPE, including BaP, benzo(a)anthracene, chrysene, and indeno(1,2,3-cd)pyrene
- PCP
- TCDD TEQ
- Petroleum hydrocarbons, including C5– C8 aliphatics, C9–C12 aliphatics, C9 to C10 aromatics, C9–C18 aliphatics and C11–C22 aromatics.

The chemicals selected as COPCs for groundwater include the following:

- 2-Methylnaphthalene
- BaPE, including BaP, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene
- PCP
- TCDD TEQ.

COPCs selected for soil vapors include the following:

- Benzene
- Ethylbenzene
- m,p-Xylenes
- o-Xylene
- Naphthalene

- Petroleum hydrocarbons, including C5–C8 aliphatics, C9–C12 aliphatics, and C9–C10 aromatics.

Risks were not evaluated for exposures to soil vapors; the potential need to control vapor intrusion will be evaluated during the feasibility study. Soil vapor SSCLs for residential, commercial/industrial, and construction work exposures are provided in Table 8-3 to be protective of future redevelopment.

6.3 EXPOSURE ASSESSMENT

An exposure assessment was conducted for soil and sediment to support the calculation of noncancer hazards and cancer risks. No exposure assessment was conducted for groundwater because, per MDEQ (2012b) direction, hazards and risks were not calculated for groundwater exposures. Instead, groundwater concentrations were compared to the groundwater screening levels discussed in Section 5.2.2. The groundwater screening levels are DEQ-7 values when available or RBCA or RSL values when DEQ-7 values were not available. The groundwater evaluation is presented in Section 6.5.

The human receptors evaluated for soil are summarized in Table 3-1, and include the following.

Residents

Resident children (ages 1 to 6 years) and adults (ages 7 to 30 years) were evaluated quantitatively under the current scenario for properties currently used as residences, and under the hypothetical future scenario for all properties except the cemetery, rodeo, and school grounds. Residents were assumed to be exposed through incidental ingestion of surface soil, dermal contact with surface soil, inhalation of airborne dust derived from surface soil, and ingestion of home-grown garden produce. Resident infants (age 0 to 1 year) were assumed to be exposed through the ingestion of breast milk from mothers who had been exposed as described above.

Workers

Commercial/industrial workers present for a standard work week were evaluated quantitatively under the current scenario for properties currently used commercially and under the future scenario for all properties except the cemetery, rodeo, and school grounds. Workers present for limited periods of time were evaluated under the current scenario for the pasturelands and under the current and future scenario for the cemetery, the rodeo, and the school grounds. These adults were assumed to be exposed through incidental ingestion of surface soil, dermal contact with surface soil, and inhalation of airborne dust derived from surface soil.

Recreators and Trespassers

Recreational visitors were evaluated quantitatively under the current and future scenarios for the rodeo and school grounds. Trespassers were evaluated under the current and future scenarios for all properties. Recreational visitors and trespassers were both assumed to be adolescents between the ages of 6 and 18 years, and to be exposed through incidental ingestion of surface soil, dermal contact with surface soil, and inhalation of airborne dust derived from surface soil.

Construction Workers

Construction workers were evaluated for all properties. These adults were assumed to be exposed through incidental ingestion of surface and subsurface soil, dermal contact with surface and subsurface soil, and inhalation of airborne dust derived from surface and subsurface soil.

Human intakes resulting from exposures to COPCs were estimated using exposure algorithms (equations) and assumptions regarding such parameters as intake rate, exposure frequency, and exposure duration. Intake estimates represented the daily dose of a chemical taken into the body, averaged over the appropriate exposure period. Intakes were typically expressed in milligrams of chemical per kilogram body weight per day (mg/kg-day). For the inhalation route, exposures were expressed in the form of an exposure concentration (mg/m^3) rather than an intake to be consistent with the toxicity parameters for this route. Exhibit 6-1 presents the equations for the exposure routes evaluated quantitatively in the HHRA. The variables shown in the equations, which are known as exposure factors, varied depending on the receptor population being evaluated.

Intakes were expressed as either average daily doses (ADDs) for noncancer hazards, or lifetime average daily doses (LADDs) for cancer risks. ADDs were averaged over the period of exposure while LADDs were averaged over a lifetime (USEPA 1989a). Equations and intake calculations specific to each exposure route are presented in Appendix D.

For every exposure route, it is expected that there are differences among individuals in the level of exposure that may occur, due to differences in intake rates, body weights, exposure frequencies, and exposure durations. This variability within a potentially exposed population can result in a wide range of average daily intakes.

In recognition of this, two exposure metrics were developed. These included the central tendency exposure (CTE) and the reasonable maximum exposure (RME) estimates (USEPA 1989a). The CTE is estimated using exposure parameters that are considered reflective of average exposures within a population. The RME is a conservative estimate of exposures that is considered to be the highest exposure that is reasonably expected to occur while still falling within the realm of possible exposures. Although estimates of RME are typically used to develop risk-based SSCLs for a facility, estimates of CTE are provided for insight into the range

of exposures that may occur at the Facility and the degree of conservatism associated with the RME estimates.

For each of the scenarios evaluated, the intake of each COPC was estimated for each complete exposure route. This process involved completing the following tasks:

- Identification of exposure units that represented the areas where each receptor was most likely to come into contact with soil (Section 6.3.1.)
- Calculation of EPCs as estimates of the average concentrations in a given exposure medium across the exposure unit (Section 6.3.2)
- Identification of exposure parameter values (Section 6.3.3).

Each of the steps in this process is discussed in the following sections.

6.3.1 Exposure Units

Each individual property for which there were sampling data available was treated as a separate soil exposure unit because it was assumed that individuals who resided or worked on that property could potentially obtain the majority of their exposures there.

Individual monitoring wells and domestic supply wells were treated as separate exposure units because it was assumed that if people used any of those wells they might obtain most of their drinking water from a single well. For monitoring wells, this was a conservative approach because these wells are not currently used as domestic water supplies. However, it was assumed to be possible that new drinking water wells could be drilled in those areas in the future.

6.3.2 Exposure Point Concentrations

To estimate the magnitude of exposure, a soil EPC was calculated for each COPC in each exposure unit. For the RME case, the EPC was a conservative estimate of the average chemical concentration that a receptor was likely to contact over time (USEPA 1989a) and was derived as an upper confidence limit on the arithmetic mean concentration (UCL). For the CTE case, EPCs were calculated as simple averages.

In the case of soil/sediment, EPCs were derived based on existing analytical data. Averages and UCLs were calculated using EPA's ProUCL 4.1 software (USEPA 2002b, 2010b). ProUCL provides recommended values for the average and the UCL concentrations based on the distribution characteristics and sample size of the underlying data set. Nondetected values were identified to ProUCL and the program determined internally how to handle them. If the UCL exceeded the maximum detected concentration in the data set, the maximum value was used as the EPC for the RME case (USEPA 1992). The maximum concentration was also used

for the RME case when the number of samples in an exposure unit was less than 10 (MDEQ 2010). Arithmetic averages were used in all cases as the EPCs for the CTE case.

Averaging was not conducted for groundwater data because people using a well for domestic purposes would likely acquire most of their drinking water from the same location. For each parcel, the maximum concentration detected during the most recent round of sampling was identified as a conservative representation of current conditions on that property. In addition, the maximum concentration detected during the most recent five years of sample (beginning in 2008) was also evaluated to address potential variability in groundwater concentrations over time.

For other exposure media that were not sampled, EPCs had to be modeled. These included concentrations in dust, concentrations in home-grown produce, and concentrations in breast milk. The approaches used to estimate these EPCs are discussed in Section 6.3.2.2.

Statistical summaries of the data sets used to calculate EPCs are provided in Appendix E. EPCs are summarized in Appendix D (Tables D3.1 through D3.6).

6.3.2.1 Data Treatment

Soil data collected between January 1, 1998, and December 31, 2012, were used for calculating EPCs. Groundwater data collected between January 1, 2008, and December 31, 2012, were used for groundwater EPCs. Using a more recent data set for groundwater allowed for the potential effects associated with constituent migration across the Facility and natural attenuation to be incorporated into the HHRA. Older groundwater data may no longer be representative of current conditions.

As discussed in Section 5, analytical results that were rejected during data validation (flagged as "R") were not included when calculating EPCs. However, estimated values (flagged as "J") were included in calculations.

The following three soil samples were collected as composite samples with aliquots on multiple properties:

- SSC-47 (Renfroe and Milton properties)
- SSC-49 (Milton and Robak properties)
- SSC-50 (Robak and Smith properties).

In each of these cases, the composite sample result was included in the data set for both of the applicable properties.

TEQ and BaPE concentrations were calculated for individual samples (see Sections 6.3.3.3 and 6.3.3.1, respectively). Because all 17 of the carcinogenic dioxin and furan congeners were detected at least once at the Facility, all of the congeners were included in the calculation of TEQ. When calculating TEQs, nondetected results were assigned one-half the detection limit per MDEQ requirements.

Some of the carcinogenic PAHs were never detected at the Facility and were not included in the calculation of BaPE. For soil, the BaPE calculation included BaP, benzo(a)anthracene, chrysene, and indeno(1,2,3-cd)pyrene (Section 5.4.1). When one of these four PAHs was not detected in a soil sample, it was assigned one-half the detection limit. The other three carcinogenic PAHs[5] were not included in BaPE calculations for soil. For groundwater, the BaPE calculation included all of the carcinogenic PAHs except chrysene (Section 5.4.3). When one of the six PAHs was not detected in a groundwater sample, it was assigned one-half the detection limit.

At the direction of MDEQ (2012b), when there were duplicate sample results, the maximum result from each set of field duplicates was used in determining EPCs for the risk calculations.

6.3.2.2 EPCs Derived Using Modeling

EPCs for media not sampled (i.e., airborne dust, home-grown produce, and breast milk) were derived using the models discussed below. The calculated EPCs are shown in Appendix D (Tables D3.3 through D3.6).

Airborne Dust

EPCs for fugitive dust in air were estimated from the soil EPCs using a particulate emission factor and the following equation.

$$Cf = Cs/PEF$$

Where:

Cf	=	steady-state chemical concentration in air (mg chemical/m^3 air)
Cs	=	soil concentration of chemical (mg chemical/kg soil)
PEF	=	generic particulate emission factor (m^3 air/ kg particulate)

The particulate emission factor relates the chemical concentration in soil to an estimated chemical concentration in airborne dust. USEPA (1996) provides a generic particulate emission

[5] Carcinogenic PAHs not included in the calculation of BaPE for soil were benzo(b)fluoranthene, benzo(k)fluoranthene, and dibenz(a,h)anthracene.

factor of 1.36×10^9 m^3 air/kg soil for residential soil, assuming a vegetative cover of 50 percent over the study area.

Home-Grown Produce

Root uptake for dioxins, furans, PCP, and carcinogenic PAHs is considered a minor pathway. These chemicals appear to adsorb to the root surfaces rather than to be translocated to other parts of the plant (ATSDR 1995, 1998; USEPA 1993a; Wild and Jones 1992). MDEQ required that PCP, dioxins and furans, and BaPE be evaluated for the gardening scenario because of their potential for bioaccumulation. The sandy/gravelly nature of soils in Darby makes it difficult to cultivate plants without amending the soil, thereby decreasing COPC concentrations. Nevertheless, it was assumed that residents could grow vegetables in a garden with existing soils and no soil amendments.

EPA's Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities (USEPA 2005a) was used to estimate the COPC concentration in root vegetables (belowground produce). Dioxins, furans, PCP, and BaPE adhere primarily to the outer layer of the roots of plants and are not taken up into above ground plant tissue; therefore only the ingestion of root vegetables was modeled.

The following equation was used to model root uptake (USEPA 2005a, Equation 5-20B):

$$C_{root} = \frac{C_{soil} \times RCF \times MC \; x \; VG_{rootveg}}{\mathrm{Kd_s} \times \mathrm{CF}}$$

Where:

C_{root}	=	chemical-specific concentration of COPC in root vegetable (mg/kg dry weight)
C_{soil}	=	chemical-specific concentration COPC in surface soil (mg/kg)
RCF	=	chemical-specific root concentration factor (unitless)
MC	=	adjustment for moisture content in root vegetables (14 percent)
$VG_{rootveg}$	=	empirical correction factor for below-ground produce (unitless)
Kd_s	=	chemical-specific soil/water partition coefficient (L/kg)
CF	=	conversion factor (1 kg/L)

The root concentration factor was the ratio of the chemical concentration in the root to the concentration in the soil. The correction factor for below-ground produce addressed the potential for the equation to overestimate vegetable concentrations for lipophilic chemicals. The soil/water partition coefficient reflected the partitioning tendency of the chemical between the soil and water phases. Root vegetable concentrations were adjusted from dry weight to wet weight to be consistent with intake rates expressed in wet weight. The average moisture

content in root vegetables was assumed to be 86 percent (USEPA 2011, Table 9-37), and the adjustment factor was 100 minus 86, or 14 percent.

Breast Milk

The potential exposure of a nursing infant to dioxins and furans, BaPE, and PCP in mother's breast milk was evaluated for the residential scenario. It was conservatively assumed that a mother could be exposed to the COPCs through combined incidental ingestion of soil/sediment and dermal contact with soil/sediment. Intakes through inhalation of dust were not included in the calculation of total maternal dose because risk characterization for the inhalation pathway used exposure concentrations rather than intakes. Ingestion of produce was not included because of substantial uncertainties associated with that exposure pathway (Section 6.6).

The mother's intake of bioaccumulative COPCs was assumed to partition into body lipid stores and become available in breast milk, primarily in the fat of the milk (breast milk lipid). The EPCs in breast milk were calculated from the total daily intake of the mother multiplied by a chemical-specific biotransfer factor used to estimate the portion of the dose expected to partition into breast milk lipid, consistent with the approach that MDEQ has used at other sites (e.g., MDEQ 2001). The breast milk biotransfer factors used by MDEQ were 0.92 for dioxins and furans, 0.44 for BaP, and 0.6 for PCP. The following equation was used to calculate the EPCs for COPCs in breast milk:

$$C_{bmilk} = Total\ Dose\ \times\ BW_m \times B_{bmilk} \times CF$$

Where:

C_{bmilk}	=	concentration of chemical in breast milk lipid (mg/L)
Total Dose	=	maternal dose from all routes (mg/kg-day)
BWm	=	maternal body weight (kg)
B_{bmilk}	=	chemical-specific breast milk biotransfer factor (days/kg milk lipid)
CF	=	conversion factor (1 kg/L)

The maternal dose was calculated using age- and gender-specific body weights (Appendix E). An average body weight of 72.2 kg was assumed for the nursing mother, representing females aged 15 to 44 years (USEPA 2011, Table 8-10). The breast milk biotransfer factor was the chemical-specific ratio of chemical concentration in breast milk lipid to the intake (dose) of the chemical by the mother.

6.3.3 Exposure Parameters

Exposure parameters are variables used in the risk equations to describe the magnitude of potential intake of COPCs in Facility media. These parameters are typically selected in

accordance with state and federal guidance, where available, or from peer-reviewed studies of environmental exposures, taking into consideration site-specific factors. In the absence of available data, professional judgment is sometimes used. For this HHRA, the following sources, listed in order of priority, were used to identify parameter values.

- MDEQ (2012e) FAQs document (updated to be consistent with USEPA [2011])
- Personal communications/correspondences with MDEQ (June 2012 meeting and subsequent emails)
- USEPA's (2011) *Exposure Factors Handbook*
- Professional judgment.

The equations used to calculate intakes are shown in Exhibit 6-1. Appendix D (Tables D4.1 through D4.4) provides summaries of the exposure parameter values selected for each receptor and exposure route and the sources for those values. In many cases, parameter values were averaged over multiple age ranges, and sometimes also multiple body parts, to derive the input parameter. The approaches used to complete this averaging are outlined in Appendix G and discussed below. Table D4.5 provides values for chemical-specific parameters used to evaluate exposures.

6.3.3.1 Parameter Definitions

This section provides general definitions of the parameters used for intake calculations. Some parameters (e.g., body weight) were consistent across multiple exposure routes for a given receptor and such parameters are described first. Discussions specific to individual exposure routes are presented subsequently.

Exposure frequency describes the number of times in a given year that the receptor is considered to come into contact with environmental media. This parameter varied by exposure scenario.

Exposure duration describes the length of the exposure, in years, for each receptor. The duration for residential exposures was assumed to be the length of time an individual resides at the same location. The exposure duration for industrial workers was based on length of employment. For trespassers, exposure duration represented the number of years during which an individual was assumed to engage in such behavior.

For most exposure routes, a dose is calculated and expressed as the mass of COPC per unit of ***body weight*** (in kg) per unit time. Age-specific body weights that were relevant to the modeled receptor were averaged to derive the average body weight during the period of exposure. Inhalation exposures were evaluated using concentrations rather than doses, so body weight was not included in exposure averaging for this route.

As noted above, doses were averaged over a unit of time known as the ***averaging time***. The averaging time was expressed in hours for the inhalation route and in days for other routes. For cancer risks, averaging time was assumed to be a lifetime, defined as 78 years or 28,470 days (MDEQ 2012e). This approach conservatively assumed that any exposure during a lifetime could potentially result in a carcinogenic response, even after the exposure has ceased. For threshold noncancer hazards, averaging time was assumed to be equal to the exposure duration.

A number of ***conversion factors*** were used in various equations to convert the units of the intake factors to correspond with the units of the toxicity values. Conversion factors are provided in the equations shown in Exhibit 6-1 and in Appendix D.

Parameters for Soil/Sediment Exposures

There are two routes of direct exposure to soil/sediment: incidental ingestion and dermal contact.

It was assumed that individuals would incidentally ingest COPCs in Facility soil/sediment as a result of hand to mouth contact. The amount actually ingested depends on the degree of access to bare soil/sediment and the personal hygiene practices of the individual (e.g., frequency of hand washing). Young children generally have higher soil ***ingestion rates*** than adults because they engage in more hand-to-mouth behavior than do adults. For the residential scenario, ingestion rates specific to young children and adults were averaged. Data on sediment ingestion are very limited; consequently the soil ingestion rate was conservatively assumed to also be representative of potential sediment ingestion. The soil/sediment ingestion rate was expressed in terms of mg soil/day.

Skin surface area, expressed in cm^2, represents the amount of skin that is available for soil/sediment contact. For the residential scenario, exposed surface areas were averaged across multiple ages.

Event frequency, which occurs in the dermal contact equation, represents the number of skin contact events per day. The standard approach is to assume that there is one event per day and that soil that adheres to the skin remains on the skin throughout the day.

The ***dermal absorption fraction*** is a unitless, chemical-specific value that represents the portion of the COPC in soil/sediment that crosses the skin barrier to enter the blood stream.

The ***adherence factor*** describes the amount of soil/sediment that adheres to the skin after contact. It is expressed in terms of mg/cm^2-event. Adherence is influenced by soil type, moisture content, intensity of contact, and skin characteristics of the exposed body part. For the residential scenario, adherence factors specific to young children and adults were averaged (Appendix G).

Parameters for Dust Exposures

Exposure time represents the time (in hours) spent inhaling airborne dust particles from the Facility or the time spent indoors at a residential or commercial/industrial building where inhalation of soil vapors (as either ambient air or indoor air) may occur.

Parameters for Home-Grown Produce Exposures

The ***ingestion rate*** represents the amount of home-grown root vegetables ingested by residents. Ingestion rates specific to root vegetables were used because it is only root vegetables that are likely to contain dioxins and furans, PCP, and BaPE (Section 3.2.1.2). For the residential scenario, ingestion rates specific to young children and adults were averaged using a time-weighted approach (Appendix G). Produce ingestion rates were presented in terms of g produce per kg body weight per day.

Parameters for Breast Milk Exposures

The breast milk ***ingestion rate*** for infants represents the amount of the lipid fraction of the milk consumed on a daily basis (mL milk lipid per day). The focus is on the lipid fraction because bioaccumulative chemicals, including the COPCs for this HHRA, tend to bioaccumulate in that fraction of the milk. The breast milk ingestion rate was averaged over multiple ages during the first year (Appendix G).

Evaluation of Groundwater Exposures

Traditional exposure parameters were not used in the evaluation of groundwater. Instead, per MDEQ (2012b), groundwater concentrations were compared with DEQ-7 standards (MDEQ 2012f), because MDEQ has determined that the DEQ-7 standards are the cleanup levels. Groundwater concentrations of 2-methylnaphthalene, which has neither a DEQ-7 standard nor an MCL, were compared with its RSL for tap water. The results of the groundwater evaluation are presented in Section 6.5.

6.3.3.2 Chemical-Specific Parameters

Chemical-specific dermal absorption factors were obtained from USEPA (2004) guidance and are shown in Appendix D (Table D4.5).

6.3.3.3 Resident Scenario

Residential use was evaluated as either a current or potential future scenario at every parcel, with the exception of the cemetery, rodeo, and school grounds. The resident was assumed to live at a given property for 18 and 30 years for the CTE and RME cases, respectively. The CTE value was based on the mean time residing in the same residence (USEPA 2011; Table 16.5), while the RME value was consistent with MDEQ (2012e) requirements. In both cases, for the

evaluation of potential carcinogenic risks, it was assumed that the resident would be a young child for the first 6 years of exposure and an adult for the remainder of the exposure duration. Noncancer hazards were evaluated assuming that exposures occurred as a young child. This provided the most conservative estimate of dose because averaging occurs over the period of exposure.

The average body weight for the young child was assumed to be 15 kg (MDEQ 2012e). The average adult body weight assumed for the remainder of the exposure period was 80 kg (USEPA 2011, Table 8-1).

Outdoor soil contact was assumed to occur 150 days/year for the CTE analysis and 270 days/year for the RME analysis. The RME value assumed that exposure to outdoor soil could occur daily for 9 months of the year but that snow cover and frozen ground would prevent exposures to surface soils during the three coldest months of the year (MDEQ 2012e). The CTE value, which was based on professional judgment, assumed exposure might occur 4 days/week for the 9 snow-free months. This accounted for time spent away from home at work, school, or childcare.

The soil/sediment in the irrigation ditch that is present on some properties represents a small portion of the total area of soil to which individuals might be exposed. It was assumed that exposure to soil/sediment in the ditch might occur 20 and 40 days/year for the CTE and RME cases, respectively. This represented assumptions of 1 and 2 days/week, respectively, from May through September. Properties located along the ditch include Cassell, Peirano Tracts A and B, Peirano Parcel B, and Skroch.

The child and adult were assumed to ingest soil/sediment at a rate of 50 and 20 mg/day, respectively, for the CTE case (USEPA 2011, Table 5-1). For RME exposures, it was assumed that children and adults would ingest soil/sediment at rates of 200 and 50 mg/day, respectively (MDEQ 2012e and USEPA 2011).

Soil/sediment contact with the head, hands, forearms, lower legs, and feet (child only) was assumed to occur during the 9 snow-free months of the year, for a total of 2,400 and 6,000 cm^2 exposed skin for the child and adult, respectively. A soil adherence factor of 0.1088 mg/cm^2 for adults was based on values measured for outdoor sport activities. An adherence factor of 0.0432 mg/cm^2 for children was based on values measured for outdoor sport (face) and daycare (other body parts) activities. These are default values provided by MDEQ (2013a) based on data from USEPA (2011).

Resident children and adults were assumed to inhale dust 24 hours/day, per MDEQ requirements.

Home-grown root vegetables were assumed to be eaten 350 days per year, with a two-week vacation away from home, which is possible if the garden produce is canned, dried, or

otherwise preserved. Ingestion rates for home-grown root vegetables (USEPA 2011, Table 13-62) were adjusted for a post-cooking weight loss of 34 percent (Phillips and Moya 2012). The CTE rates for the child and adult were 0.8 and 0.6 g/kg-day (wet weight), respectively, based on mean values (USEPA 2011, Table 15-1). The RME rates were 3.2 and 2.1 g/kg-day wet weight, respectively, based on 95th percentile values.

For breast milk exposure, it was assumed that an infant might ingest 26 and 41 mL breast milk lipid per day under the CTE and RME cases, respectively. These estimates are based on the mean and "upper percentile" values, respectively, as presented in EPA guidance (USEPA 2011, Table 15-1). The lipid content of the milk was assumed to be 4 percent (USEPA 2011). The infant was assumed to nurse 365 days/year during the first year of life (USEPA 2011; AAP 1997). The average body weight during the first year was assumed to be 7.8 kg (USEPA 2011).

For the calculation of SSCLs for exposure to soil vapors (as indoor air), residents were assumed to be present indoors for 24 hours per day for 350 days per year for the duration of their residence under the RME case. For the CTE case, adult residents were assumed to be indoors for 16 hours per day (USEPA 2011) and child residents were indoors for 19 hours per day.

6.3.3.4 Commercial/Industrial Worker Scenario

Properties that are currently used for commercial or industrial purposes, listed in Section 2.2.6, were evaluated using a standard commercial/industrial worker scenario discussed below. A modified version of the worker scenario was evaluated for the cemetery, rodeo, school grounds, and pasture lands (Cassell, Parmenter, and Skroch) under current land use, assuming a lower exposure frequency, because workers performing maintenance at these properties were not expected to be present for a full work week every week. All properties, with the exception of the cemetery, rodeo, and school grounds, were evaluated for standard commercial or industrial exposures under the potential future scenario.

Exposure frequency was the only parameter that differed between the standard and infrequent worker scenarios. It was assumed that a standard worker would be in contact with soil 187 days/year, as recommended by MDEQ (2012e), for both the CTE and RME cases. Workers on properties containing the irrigation ditch (Cassell, Peirano Tracts A and B, Peirano Parcel B, and Skroch) were assumed to have contact with ditch soil/sediment half as frequently (94 days/year), based on professional judgment. The infrequent worker was assumed to be present 45 and 90 days/year for the CTE and RME cases, respectively, based on 9 snow-free months and 5 or 10 work days/month, respectively, at the property (professional judgment). Workers were assumed to be present 8 hours per day.

All of the worker scenarios assumed an 80 kg body weight for an adult (USEPA 2011). Under the RME case, workers were assumed to work at the same location for a working lifetime of 25 years (MDEQ 2012e). The median tenure of 7.2 years for full-time workers (USEPA 2011)

was used for the CTE case. Workers were assumed to be present on the property for a full workday. Therefore, the exposure time for inhalation was assumed to be 8 hours/day (professional judgment).

Workers were assumed to ingest 20 and 50 mg soil/sediment per day under the CTE and RME cases, respectively (USEPA 2011; MDEQ 2012e). For both the CTE and RME analyses, it was assumed that the head, forearms, and hands would be exposed for a total of 3,500 cm^2 and that soil would adhere at a rate of 0.0956 mg/cm^2, based on outdoor sport activities. The values for dermal exposure parameters were provided by MDEQ (2013a) as default values based on data from USEPA (2011).

For the calculation of SSCLs for indoor air at a future commercial/industrial building, workers were assumed to be indoors for 8 hours per day under both RME and CTE cases for the occupational tenures noted above.

6.3.3.5 Recreator/Trespasser Scenario

The rodeo and school grounds were evaluated using a recreational scenario, consistent with current land use. A trespasser scenario was evaluated for all other properties. For the sake of simplicity, both the recreator and the trespasser were assumed to be adolescents, and they were evaluated using the same exposure assumptions.

For the RME case, the adolescent recreator/trespasser was assumed to visit the exposure unit for 13 years, starting at age 6 through age 18 years (MDEQ 2012e). The CTE case focused on ages 11 to <18 years (a total of 6 years), based on professional judgment, to represent children most likely to scale the fenced area on Parcel B, children most likely to attend the high school or frequent the skate park and rodeo grounds, and children most likely to engage in trespassing in general. The RME adolescent was assumed to weigh an average of 45 kg over the course of the exposure period (MDEQ 2012e). An average body weight of 51 kg was used to evaluate the CTE recreator/trespasser (USEPA 2011, Table 8-1). The recreator/trespasser was assumed to be present at the exposure unit 75 days/year (MDEQ 2012e), based on 2 days/week for the 9 snow-free months of the year.

The recreator/trespasser was assumed to ingest soil at a rate of 100 mg/day for the RME scenario (MDEQ 2012e) and at 50 mg/day (USEPA 2011) for the CTE analysis. For both the RME and CTE cases, it was assumed that the head, hands, forearms, and lower legs (4,400 cm^2) would be exposed during the 9 snow-free months of the year. A soil adherence factor of 0.0393 mg/cm^2 was assumed based on outdoor sport activities. The values for the dermal exposure parameters were provided as default values by MDEQ (2013a) based on data from USEPA (2011).

The recreator/trespasser was assumed to be present in the exposure unit for 2 hours/day for both the CTE and RME scenarios, based on professional judgment. This is likely to be very conservative for the trespasser but less so for the recreator. The goal was to identify an

exposure time that was within the realm of possibility for both activities. Because inhalation exposures contribute negligibly to total hazards and risks (Appendix D), potential underestimation of exposure time for the recreator is not considered a significant influence on the results.

6.3.3.6 Construction Worker Scenario

Construction workers could be exposed to Facility-related contaminants on any parcel within the Facility during construction of new buildings (e.g., during redevelopment) or renovation of existing buildings.

The construction worker was assumed to be an adult who weighed 80 kg (USEPA 2011, Table 8-1). For the RME case, an open excavation was assumed to be present for four months or 124 days (MDEQ 2012e). For the CTE case, a more limited excavation period was assumed with exposure for 25 days (professional judgment). The construction worker was assumed to breathe outdoor dust for the full 8-hour work day (professional judgment).

MDEQ (2012e) requires that a soil/sediment ingestion rate of 330 mg/day be used to evaluate potential RME exposures to construction workers (USEPA 2002a). For the CTE case, an ingestion rate of 100 mg/day was assumed, based on the recommendation of MassDEP (2002) for an enhanced soil ingestion rate. This value is considered protective because it is higher than both the mean adult soil ingestion rate of 50 mg/day reported by USEPA (2011) and the 75th percentile rate of 49 mg/day reported by Stanek et al. (1997).

For both the CTE and RME cases, it was assumed that the head, forearms, and hands would be exposed for a total of 3,500 cm^2 skin. A soil adherence factor of 0.2056 mg/cm^2 was based on construction activities. The values for the dermal exposure parameters were provided by MDEQ (2013a) as default values based on data from USEPA (2011).

For the calculation of SSCLs for future construction workers exposed to air in a utility trench, workers were assumed to be in the trench for 8 hours per day under both RME and CTE cases for the occupational tenures noted above.

6.4 TOXICITY ASSESSMENT

The purpose of the toxicity assessment is to summarize health effects that may be associated with exposure to the COPCs and to identify doses that may be associated with those effects. The focus is on effects associated with long-term exposures and on effects that could be associated with the chemical concentrations and pathways of exposure that are relevant in environmental settings. Risk assessment traditionally divides chemical health impacts into two categories, threshold effects and non-threshold effects, with different toxicity values for each category. This section begins with a discussion of the two types of toxicity values, followed by

a discussion of adjustments that must be made for chemicals that cause cancer through a mutagenic mode of action and discussions of the toxicity of each of the COPCs.

6.4.1 Toxicity Values

Noncancer health effects, which include such diverse outcomes as liver toxicity, skin toxicity, and developmental effects, are assumed to operate through a threshold mechanism such that a minimum dose level, or threshold dose, must be exceeded before an adverse effect may occur. At doses below the threshold dose, the body is assumed to metabolize and excrete the chemical and/or to repair incipient damage. The toxicity value used to evaluate noncancer hazards via ingestion is called the reference dose (RfD) and it is expressed in units of milligrams of chemical per kilogram of body weight per day (mg/kg-day). The toxicity value used to evaluate noncancer hazards via inhalation is called the reference concentration (RfC) and it is expressed in units of milligrams of chemical per cubic meter air (mg/m^3). The RfD or RfC is an estimate of the daily maximum level of exposure to human populations (including sensitive subpopulations) that is likely to be without an appreciable risk of deleterious effects during a lifetime (USEPA 1989a).

The chronic RfD or RfC is typically calculated by identifying the highest dose or concentration that did not cause observable adverse effects (the no-observed-adverse-effects level [NOAEL]) during the toxicity study. If a NOAEL cannot be identified, then a lowest-observed-adverse-effects level (LOAEL) is used. To calculate the RfD or RfC, the NOAEL or LOAEL is reduced by one or more uncertainty factors, as applicable, to account for differences between species, large heterogeneity within the human population, use of a subchronic study, use of a LOAEL instead of a NOAEL, and the adequacy of the available toxicological database.

Superfund guidance (USEPA 1989a) defines a subchronic exposure period as lasting two weeks to seven years. Subchronic RfDs are typically higher than chronic RfDs, sometimes by as much as an order of magnitude. In this HHRA, the child resident and construction worker scenarios fall into the subchronic category. Child receptors are usually evaluated using chronic RfDs because of concerns over higher susceptibilities. MDEQ requires the use of chronic RfDs for all scenarios, so hazards for the construction worker were also evaluated using chronic RfDs. This is discussed further in the uncertainty analysis (Section 6.6).

EPA uses a weight of evidence (WOE) classification system for identifying potentially carcinogenic (cancer-causing) chemicals. The WOE determination considers the strength of evidence from human studies, animal studies, and supporting studies such as microbial assays. WOE descriptions for the COPCs evaluated in this HHRA are a mixture of the previous and current categorization systems used by EPA. The new system uses descriptors such as “likely” or “inadequate” to describe the evidence of carcinogenicity in humans. The previous system used letter ratings: “A” meant there was sufficient evidence of carcinogenicity in human studies; “B1” and “B2” meant there was sufficient evidence of carcinogenicity in animal studies

with either some evidence in humans (B1) or no evidence in humans (B2); and "C" meant there was limited evidence of carcinogenicity in animal studies only.

In standard risk assessment practice, carcinogenic chemicals are assumed to operate through a non-threshold mechanism; any exposure to a carcinogenic chemical is assumed to contribute an incremental amount to an individual's overall risk of developing cancer. The toxicity value used to evaluate cancer risk via ingestion is called the carcinogenic slope factor (CSF); it is expressed in units of risk per milligram of chemical per kilogram of body weight per day [risk per mg/kg-day or $(mg/kg\text{-}day)^{-1}$]. The toxicity value used to evaluate cancer risk via inhalation is called the inhalation unit risk (IUR) and it is expressed in units of risk per microgram of chemical per cubic meter of air [risk per $\mu g/m^3$ or $(\mu g/m^3)^{-1}$]. IURs were converted to units of risk per mg/m^3 to be consistent with the units for airborne dust EPCs. The cancer risk estimated using a CSF or an IUR is the theoretical upper-bound incremental lifetime probability of an individual developing cancer as a result of exposure to a potential carcinogen, as estimated during the exposure assessment (USEPA 1989a). This risk is in addition to background cancer risks within the human population.

The CSF or IUR is typically calculated as an upper bound estimate of the slope of the dose-response curve, starting with the lowest dose tested in the toxicity study and extrapolating to zero using a linearized multistage model. The term "linearized" refers to the assumption that cancer potency below the lowest dose tested is linear. The term "multistage" refers to the assumption that a cell goes through a number of distinct stages in its progression to becoming cancerous.

Toxicity values were identified consistent with USEPA (2003a) guidance, as required by MDEQ. The preferred source for toxicity values was USEPA's (2013b) Integrated Risk Information System (IRIS) database, which is considered to have the highest reliability. The second preferred source for toxicity values was provisionally peer-reviewed toxicity values (PPRTVs), also available from USEPA (2013c). PPRTVs are peer reviewed on a smaller scale than are IRIS values. The third preferred source for toxicity values was the California Environmental Protection Agency (CalEPA 2008, 2009).

Because toxicity values were not available for the dermal route of exposure, they were extrapolated from the oral toxicity values by expressing the oral toxicity values in terms of the dose absorbed through the intestinal tract. This makes the toxicity value consistent with the expression of dermal intakes as absorbed doses. Each of the chemicals was assumed to be completely absorbed in the intestinal tract so the oral and dermal toxicity values were the same.

6.4.2 Considerations for Mutagenicity

For carcinogenic chemicals that are believed to operate through a mutagenic mode of action, which causes irreversible changes to DNA, USEPA (2005c) assumes that exposure during

childhood may result in higher carcinogenic risks than exposures that occur later in life, for the following reasons:

- More frequent cell division during development reduces the time available for repair of DNA lesions.
- Some embryonic cells lack key DNA repair enzymes.
- Some components of the immune system are not fully functional during development.
- Hormonal systems operate at different levels during different life stages.
- Induction of developmental abnormalities can cause predisposition to carcinogenic effects later in life.

To address this, EPA recommends that an age-dependent adjustment factor (ADAF) be used to address higher potential risks associated with early life exposures for mutagenic chemicals.

The carcinogenic PAHs are the only carcinogenic COPCs at the Facility that are believed to operate through a mutagenic mode of action (USEPA 2005c, 2012d). Thus, the cancer risks estimated for carcinogenic PAHs under the residential and recreator/trespasser scenarios, which involved exposures to children, were adjusted to account for early life exposures using ADAFs (Table 6-1). The application of ADAFs in intake calculations is shown in Exhibit 6-1.

6.4.3 Toxicity Criteria for the COPCs

This section provides a brief summary of the toxicity data used in evaluating COPCs. Toxicity values are summarized in Appendix D. Toxicity values for noncancer effects are shown in Tables D5.1 (oral/dermal) and D5.2 (inhalation). Toxicity values for cancer effects are shown in Tables D6.1 (oral/dermal) and D6.2 (inhalation). As discussed in Section 6.4.1, dermal toxicity values were derived from oral toxicity values.

6.4.3.1 Carcinogenic PAHs

Noncancer Toxicity Data

Noncancer toxicity data are not available from any of the sources consulted, so noncancer hazards were not evaluated for the carcinogenic PAHs.

Cancer Toxicity Data

Seven PAHs are considered carcinogenic, but sufficient data for risk assessment are available only for BaP. USEPA (2012d) has classified BaP as a probable human carcinogen based on animal studies, indicating carcinogenicity through multiple routes of exposure, and on positive results from genotoxicity assays. This is considered supporting, but inconclusive, evidence of carcinogenicity to humans.

The oral CSF of 7.3 (mg/kg-day)$^{-1}$ is the geometric mean of four CSFs derived using four modeling procedures and three data sets (USEPA 2013b). The datasets came from tests examining toxicity to mice and rats after dietary exposure to BaP. The data available for determining the oral CSF was considered by EPA to be less than optimal, but acceptable.

EPA does not provide an IUR for BaP, so CalEPA's (2009) value of 1.1 per mg/m^3 was used. This value was based on a study that observed respiratory tract tumors in male hamsters exposed via inhalation. The unit risk was calculated using a linearized multistage procedure.

While CSFs are not available for the other carcinogenic PAHs, USEPA (1993b) has developed an approach that uses available toxicity data to relate their carcinogenic potencies to the potency of BaP. For the purposes of the HHRA, the concentration of each carcinogenic PAH in a sample was multiplied by its relative potency factor to calculate a toxic equivalent concentration of BaP (BaPE). These compound-specific BaPEs were then summed to produce a total BaPE concentration, which expressed the carcinogenic potency of the PAH mixture in the sample as if it were all present in the form of BaP. Some of the carcinogenic PAHs were never detected in soil or groundwater, and these PAHs were not included in the calculation of BaPE. Those that were detected in soil and used to estimate BaPE concentrations in soil included BaP, benzo(a)anthracene, chrysene, and indeno(1,2,3-cd)pyrene. The PAHs included in the calculation of BaPE for groundwater were BaP, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. The relative potency factors are summarized in Table 6-2.

6.4.3.2 Pentachlorophenol

Noncancer Toxicity Data

An oral RfD of 0.005 mg/kg-day was developed for PCP based on the LOAEL from a study of dogs exposed via ingestion of PCP-containing gelatin capsules (USEPA 2013b). Calculation of the RfD incorporated a combined uncertainty factor of 300 to account for intraspecies variation (i.e. variation among humans), interspecies variation (i.e. variation in responses among different species), and the use of a LOAEL instead of a NOAEL. EPA had a medium level of confidence in this RfD, based on high confidence in the database and medium confidence in the study.

None of the preferred sources provide an RfC for PCP due to lack of adequate data, so noncancer hazard from inhalation exposure was not evaluated.

Cancer Toxicity Data

USEPA (2013b) classified PCP as "likely to be carcinogenic to humans" by all routes of exposure, based on evidence from oral studies in animals and epidemiological studies in humans. The CSF of 0.4 per mg/kg-day was based on the incidence of hepatocellular adenomas or carcinomas and adrenal benign or malignant pheochromocytomas in male mice after dietary exposure. Because a biologically based model could not be used with the data available, a

default multistage model with linear extrapolation from the LED_{10} (the 95 percent lower confidence limit on the dose eliciting adverse effect in 10 percent of the population exposed) was used. The accuracy of this model for predicting low-dose risks for PCP was unknown (USEPA 2013b). The IUR of 0.0051 per mg/m^3 is based on extrapolation from an oral study in which mice fed PCP in the diet developed liver tumors (CalEPA 2009).

6.4.3.3 Dioxins and Furans

Dioxins and furans constitute a large group of structurally related chemicals with varying degrees of chlorination. The most heavily studied member of the group is TCDD. EPA has been conducting an assessment of dioxin risks (the "dioxin reassessment") for nearly 20 years, but this process is not yet complete. During this period, there has been extensive, worldwide evaluation of the toxicological literature for dioxin and furans, and substantial disagreement remains within the scientific community as to the appropriate approach for estimating the toxicological potential of these compounds.

Noncancer Toxicity Data

USEPA (2013b) recently published an RfD of 7×10^{-10} mg/kg-day for TCDD, which is based on the results of two epidemiological studies of humans exposed to dioxins and furans during an industrial accident. EPA used physiologically based pharmacokinetic modeling to determine a LOAEL based on these data and then incorporated a combined uncertainty factor of 30 to address intraspecies variation and the use of a LOAEL instead of a NOAEL. EPA's confidence in the RfD was high due to high confidence in both the database and the studies upon which the RfD was based.

The inhalation RfC of $4x10^{-8}$ mg/m^3 was based on a study in which rats exposed for 2 years via the diet exhibited increased mortality; decreased weight gain; changes in blood and urine parameters; and tissue changes in the liver, lymph glands, lung, and blood vessels (CalEPA 2008). An uncertainty factor of 100 accounted for inter- and intra-species variability.

Although EPA does not have a policy on the calculation of TEQ for evaluating noncancer hazards, this HHRA also used the TEQ approach in evaluating the noncancer hazards associated with these mixtures, which is common practice.

Cancer Toxicity Data

Previously, EPA classified TCDD as a group B2 carcinogen. However, EPA has never published a CSF for TCDD in its IRIS database. EPA has historically used a linear dose response model to evaluate the potency of TCDD. There is, however, a growing consensus worldwide, including among members of EPA's Science Advisory Board and the National Academies of Sciences, that there is likely a threshold for TCDD's carcinogenicity and that it should be evaluated using a nonlinear, threshold approach; this issue is discussed further in the uncertainty analysis (Section 6.6.1.5). Per MDEQ (2012d) direction, cancer risks for TEQ were

calculated using the CSF of 1.3×10^5 per mg/kg-day and the IUR of 38,000 per mg/m^3, which were developed by CalEPA (2009). These values were based on a linear dose response model.

Seventeen of the dioxin and furan congeners are considered to act via the same mode of toxicity as TCDD, but toxicity criteria are only available for TCDD. There is information available, however, that relates the toxicity of the other 16 dioxin and furan congeners with chlorine substitutions in the 2,3,7,8 positions to the carcinogenic potency of TCDD (as discussed in Appendix H). For the purposes of this HHRA and consistent with standard practice, the concentration of each carcinogenic dioxin and furan congener in a sample was multiplied by its TEF to derive an equivalent concentration of TCDD. These were then summed to produce a TCDD TEQ concentration that was used to express the carcinogenic potency of the entire dioxin and furan mixture in the sample. All of the carcinogenic dioxins and furans were detected at least once in media at the Facility, so all were included in the calculation of TEQ. The TEFs used are summarized in Table 6-3 (Van den Berg et al. 2006).

6.4.3.4 1-Methylnaphthalene

Noncancer Toxicity Data

The Agency for Toxic Substances and Disease Registry (ATSDR 2014) developed a minimal risk level of $7\text{x}10^{-2}$ mg/kg-day for 1-methylnaphthalene based on an 81-week study of mice exposed via the diet that developed pulmonary adenomas and alveolar proteinosis. An uncertainty factor of 1,000 accounted for inter- and intra-species variability and the use of a LOAEL. No inhalation toxicity value is available for 1-methylnaphthalene.

Cancer Toxicity Data

USEPA (2008) developed a provisional oral slope factor of $2.9\text{x}10^{-2}$ per mg/kg-day for 1-methylnaphthalene based on a study of mice that developed pulmonary adenomas and carcinogemas and using the log-logistic model with linear extrapolation.

6.4.3.5 2-Methylnaphthalene

Noncancer Toxicity Data

USEPA (2013b) developed an oral RfD of 0.004 mg/kg-day based on the incidence of pulmonary alveolar proteinosis in male and female mice after 81 weeks of dietary exposure. A benchmark response level of 5 percent extra risk of pulmonary alveolar proteinosis was included to account for potentially greater susceptibility of humans to the critical effect. A combined uncertainty factor of 1,000 was included to address inter- and intra-species variations and deficiencies in the database. EPA's confidence in the oral RfD was low due to low confidence in the database and medium confidence in the study. EPA did not provide an RfC due to inadequate data.

Cancer Toxicity Data

There are inadequate data to determine whether 2-methylnaphthalene is carcinogenic (USEPA 2007a, 2013).

6.4.3.6 Petroleum Hydrocarbons

The following petroleum fractions were selected as COPCs in soil, groundwater, or both. The surrogates recommended for each fraction by USEPA (2009b) are shown in parentheses:

- Aliphatics C5–C8 (hexane [MassDEP 2003] for oral and hexane [USEPA 2013b] for inhalation)
- Aliphatics C9–C12 (mid-range aliphatic hydrocarbon streams [USEPA 2009c] for oral and inhalation)
- Aliphatics C9–C18 (mid-range aliphatic hydrocarbons streams [USEPA 2009c] for oral)
- Aromatics C9–C10 (pyrene [MassDEP 2003] for oral and high flash naphtha [USEPA 2009d] for inhalation)
- Aromatics C11–C22 (pyrene [MassDEP 2003] for oral and high flash naphtha [USEPA 2009d] for inhalation).

The toxicity data for the surrogates are discussed below.

Noncancer Toxicity Data

MDEQ (2009) provides an RfD of 0.04 mg/kg-day for aliphatics C5–C8 per MassDEP (2003). MassDEP's value is based on reduced body weight in rats exposed to hexane via gavage. An uncertainty factor of 10,000 was applied to account for extrapolation from animals to humans, potential presence of susceptible human subpopulations, and the use of a LOAEL from a subchronic study.

The RfC of 0.7 mg/m^3 is based on peripheral neuropathy in rats exposed via inhalation (USEPA 2013b). An uncertainty factor of 300 accounted for extrapolation from animals to humans, the potential presence of sensitive human subpopulations, and the use of a subchronic study. Confidence in the RfC is medium due to medium confidence in both the principal study and the database.

A provisional RfD (p-RfD) of 0.01 mg/kg-day was developed for midrange aliphatics based on increased liver and kidney weight and changes in blood chemistry observed in rats (USEPA 2009c). An uncertainty factor of 10,000 was applied to account for the use of a subchronic study, extrapolation from animals to humans, the potential for susceptible human subpopulations, and inadequacies in the database. There was inadequate documentation of the subchronic studies used to derive the p-RfD and there are no developmental or reproductive toxicity studies. Confidence in the p-RfD is low due to low confidence in both the critical studies and the database as a whole.

A provisional RfC (p-RfC) of 0.1 mg/m^3 was developed for midrange aliphatics based on nasal goblet cell hypertrophy observed in rats (USEPA 2009c). An uncertainty factor of 100 was applied to account for the use of a subchronic study, extrapolation from animals to humans, the potential for susceptible human subpopulations, and deficiencies in the database. Confidence in the p-RfC is medium, due to high confidence in the principle study and medium confidence in the database. There are no multigenerational reproductive toxicity studies and limited data on developmental toxicity.

Toxicity data were not available in the IRIS database for C9-C10 or C11–C22 aromatics, but MDEQ (2009) provided RfDs based on MassDEP's (2003) petroleum guidance. Most of the aromatic constituents are not considered carcinogenic by EPA or state agencies. The seven carcinogenic PAHs discussed earlier (Section 6.4.3.1) were evaluated separately.

MassDEP's RfD for C9-C32 aromatics was based on pyrene as a surrogate chemical (MDEQ 2009). The RfD of 0.03 mg/kg-day for pyrene was based on kidney effects observed in mice exposed for 13 weeks via gavage (MassDEP 2003). An uncertainty factor of 3,000 was used to account for intra- and inter-species variability, the use of a subchronic study, and lack of both toxicity studies in a second species and developmental/reproductive studies. Confidence in the RfD was low, based on medium confidence in the study and low confidence in the database.

The selected RfC of 0.1 mg/m^3 for C9-C10 and C11-C22 aromatics was developed by USEPA (2009d), based on a developmental study of high flash aromatic naphtha in which increased mortality and reduced body weight were observed among dams and fetuses in mice and rats exposed via inhalation. An uncertainty factor of 1,000 was applied to account for extrapolation from animals to humans, the potential for susceptible human subpopulations, use of a subchronic study, and use of a LOAEL. Confidence in the RfC is moderate due to moderate confidence in the principle study and high confidence in the database. The selected study was supported by studies of individual compounds in the C9–C18 aromatic fraction (i.e., isopropylbenzene and naphthalene) and additional studies of mixtures (i.e., trimethylbenzenes and a second high flash aromatic naphtha study).

Cancer Toxicity Data

Most of the petroleum hydrocarbons selected as COPCs are not considered carcinogenic. The exceptions to this statement are ethylbenzene, naphthalene, 1-methylnaphthalene, and the carcinogenic PAHs, each of which is discussed separately.

6.4.3.7 Ethylbenzene

Noncancer Toxicity Data

The RfD of 0.1 mg/kg-day is based on liver and kidney toxicity in rats exposed orally via gavage (USEPA 2013b). An uncertainty factor of 1,000 accounted for extrapolation from animals to humans, the potential presence of susceptible human subpopulations, and the use of a

subchronic study. Confidence in the RfD is low because of low confidence in both the principle study and the database.

The RfC of 1 mg/m^3 is based on developmental toxicity in inhalation studies of rats and rabbits (USEPA 2013b). An uncertainty factor of 300 accounted for extrapolation from animals to humans, the potential for sensitive individuals, and the absence of chronic and multigenerational reproductive studies. Confidence in the RfC is low because of low confidence in both the principle study and the database.

Cancer Toxicity Data

EPA considers ethylbenzene to have inadequate data on carcinogenicity, but CalEPA (2009) developed a CSF of 0.011 per mg/kg-day and an IUR of 0.0025 per mg/m^3 based on renal tumor data in rats and using the linearized multistage model with a lifetime weight average dose.

6.5 RISK CHARACTERIZATION

Risk characterization is the final step in the risk assessment process. In this step, information from previous steps in the risk assessment is integrated to synthesize an overall picture of Facility-related risk. The goal of risk characterization is to present and interpret the key findings of the risk assessment for use in risk management decision making. The risk characterization is considered critical for evaluating options concerning the best way to reduce risks, if needed, and protect human health and the environment. MDEQ also evaluates additional information in its decision making process as provided for in Mont. Code Ann. § 75-10-721. Risk results are discussed below and key uncertainties associated with these risk results are discussed in Section 6.6.

Estimates of potential health risks were quantified by combining the intakes estimated in the exposure assessment (Section 6.3 and Appendix D) with the toxicity values compiled in the toxicity assessment (Section 6.4). The risk estimates for complete exposure pathways identified for each scenario were combined to calculate total risk estimates across all pathways for each scenario.

Noncancer hazards and cancer risks are presented in Sections 6.5.1 and 6.5.2, respectively. The evaluation of groundwater concentrations is presented in Section 6.5.3. Additional perspective on background intakes of dioxins and furans, carcinogenic PAHs, and PCP is presented in Section 6.5.4.

The inhalation pathway for indoor air and ambient air is not included in the calculation of risks. Instead the evaluation of soil vapor results identified COPCs for which SSCLs were calculated (Section 8.3). The SSCLs can be used to evaluate indoor air sampling results if buildings are

constructed on the Facility in the future or to evaluate potential risks to construction workers in a trench during future development activities.

6.5.1 Noncancer Hazards

6.5.1.1 Method

The potential for noncancer adverse health effects to occur due to exposure to a given chemical at a given concentration is evaluated by comparing the estimated average daily intake (or dose) for ingestion and dermal contact with the RfD, and the exposure concentration for air with the RfC for inhalation. As described in Section 6.4.1, RfDs and RfCs are estimates of acceptable daily doses and concentrations developed by EPA and other agencies for use in HHRAs. EPA defines the RfD and RfC as estimates of a daily exposure level (or estimate of continuous inhalation exposure for the inhalation pathway) for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of deleterious effects during a lifetime (USEPA 1989a).

The ratio of the estimated average daily intake/exposure concentration to the RfD/RfC is called a hazard quotient. When one or more hazard quotients are added, either for multiple exposure pathways or for multiple chemicals, the sum is called a hazard index. If the hazard quotient or hazard index is less than 1, no adverse health effects are expected (USEPA 1989a). If the hazard quotient or hazard index is greater than 1, further risk evaluation may be needed. Results greater than 1 do not necessarily mean that adverse health effects will occur; risk is evaluated for hypothetical scenarios, not for actual conditions that have been documented empirically. Substantial margins of safety have been incorporated into the RfDs/RfCs. Adverse health effects may not be likely even if the hazard quotient or hazard index is much larger than 1. The ratio is not a measure of probability that adverse health effects will occur, but when the hazard index is less than 1, it can be concluded with a high level of confidence that there are no unacceptable risks to human health. Also, the level of concern for health effects to occur does not necessarily increase linearly as the RfD/RfC is approached or exceeded (USEPA 1989a).

The hazard quotient is calculated using the following equation:

$$HQ = \frac{ADD}{RfD} \qquad \text{or} \qquad HQ = \frac{EC}{RfC}$$

Where:

HQ	=	hazard quotient associated with exposure to the chemical via the specified route of exposure (dimensionless)
ADD	=	estimated average daily dose of the chemical via the specified exposure route (mg/kg-day)
RfD	=	Reference dose for the COPC (mg/kg-day)
EC	=	Exposure concentration (inhalation exposures) (mg/m^3)
RfC	=	Reference concentration for the COPC (mg/m^3)

The hazard index is calculated using the following formula:

$$HI = HQ_1 + HQ_2 + \ldots + HQ_i$$

Where:

HI	=	hazard index (unitless)
HQ	=	hazard quotient for the ith chemical or pathway

MDEQ (2012e) requires the hazard index for each scenario to be no greater than 1 for each target organ. In cases where a hazard index exceeds 1, USEPA (1989a) and MDEQ (2012e) allow COPCs to be segregated by target organs to derive separate hazard indices for chemicals that affect the same target organ. Hazard indices specific to target organs were not calculated for this risk assessment because in each case where the total hazard index across all COPCs exceeded 1, the hazard index for TEQ alone also exceeded 1 (Appendix D, Tables D9.1 through D9.7). Therefore, an evaluation of target organs would not change the conclusions concerning noncancer hazards. Target organs are listed in Appendix D, Tables D7.1 through D7.7.

Hazard indices for all receptors and all exposure pathways are discussed in the following sections and summarized in Appendix D. For the residential scenario, which involves both children and adults, noncancer hazards were evaluated only for the child. This is a more conservative (protective) approach when the intake (dose) is averaged over the period of exposure due to typically higher intake rates (e.g., soil ingestion) and lower body weights for the child.

Noncancer hazards for Parcels A and B are discussed together below, followed by a discussion of the other properties. Noncancer hazards for individual properties are provided in Appendix D. A summary of hazard indices for properties with one or more results exceeding

MDEQ's target value of 1 is provided in Table 6-4. Hazard indices specific to target organs are not presented because in every case where the total hazard index exceeds 1, the hazard index for TEQ alone also exceeds 1.

6.5.1.2 Parcels A and B

Hazard indices on Parcels A and B are predominated by the soil ingestion pathway. Dermal contact with soil contributes between 5 and 34 percent of total hazard indices, depending on the COPC. Hazard indices for inhalation of dust are between 4 and 6 orders of magnitude lower than for soil ingestion.

Hazard indices on Parcel A are predominated by TEQ, which elicits reproductive and developmental effects. In cases where the hazard index across all chemicals exceeds 1, the hazard index for TEQ alone also exceeds 1. On Parcel B, PCP and petroleum hydrocarbons (particularly aliphatics C9–C18 and aromatics C11–C22) make substantial contributions in addition to TEQ. PCP affects the liver; aliphatics C9–C18 affect the liver, kidney, and blood; and aromatics C11–C22 affect the blood.

Current Trespasser

Parcels A and B are currently vacant, so the only current exposure scenario is the trespasser. The trespasser was assumed to be an adolescent exposed via incidental ingestion of surface soil, dermal contact with surface soil, and inhalation of outdoor dust while visiting the parcels 75 days/year. The hazard indices for Parcel A are 0.07 (CTE) and 1 (RME). The hazard indices for Parcel B are 0.5 (CTE) and 3 (RME).

Potential Future Construction Worker

During future site redevelopment, a construction worker was assumed to be exposed via incidental ingestion of surface or subsurface soil, dermal contact with surface or subsurface soil, and inhalation of outdoor dust from surface or subsurface soil for four months. For surface soil exposures, the hazard indices for Parcel A are 0.03 (CTE) and 4 (RME). The hazard indices for Parcel B are 0.2 (CTE) and 11 (RME). For subsurface soil exposures, the hazard indices for Parcel B are 0.1 (CTE) and 6 (RME). Subsurface soil data are not available for Parcel A.

Potential Future Commercial Worker

A commercial/industrial worker was assumed to be exposed via incidental ingestion of surface soil, dermal contact with surface soil, and inhalation of dust on work days during the 9 snow-free months of the year. The hazard indices for Parcel A are 0.06 (CTE) and 1 (RME). The hazard indices for Parcel B are 0.5 (CTE) and 3 (RME).

Hypothetical Future Resident

A hypothetical child resident was assumed to be exposed via incidental ingestion of surface soil, dermal contact with surface soil, and inhalation of dust for the 9 snow-free months of the year. The hazard indices for Parcel A are 0.4 (CTE) and 27 (RME). The hazard indices for Parcel B are 3 (CTE) and 67 (RME).

As part of the hypothetical future residential scenario, the potential ingestion of home-grown root vegetables from a garden in non-amended soil was evaluated. The hazard indices associated with root vegetable ingestion are 0.04 (CTE) and 2 (RME) for Parcel A, and 0.5 (CTE) and 10 (RME) for Parcel B. The uncertainties surrounding the hazards for the root vegetable pathway are discussed in Section 6.6.

As an additional part of the hypothetical future residential scenario, potential exposure for an infant consuming breast milk from a mother exposed via soil, as described above, was evaluated. The hazard indices associated with breast milk ingestion are 0.05 (CTE) and 3 (RME) for Parcel A, and 0.3 (CTE) and 6 (RME) for Parcel B. The uncertainties surrounding the hazard estimates for the breast milk pathway are discussed in Section 6.6.

6.5.1.3 Parcels Other than A and B

A variety of land uses surround Parcels A and B. Each property was evaluated for the exposures under its current land use as well as potential future exposures. The exposure scenarios are as described above for Parcels A and B.

As with Parcels A and B, hazard indices are generally predominated by soil ingestion and by TEQ, with the exception of the road right-of-way where only PCP was analyzed.

Current Scenarios

The Spigot property is vacant, so the trespasser scenario was evaluated for current land use. The CTE and RME hazard indices are less than or equal to 1 for this scenario.

The current scenario evaluated for the agricultural properties (Cassell, Parmenter, and Skroch) was the infrequent worker exposed to surface soil via ingestion, dermal contact, and inhalation of dust for 90 days/year during fence repair and similar activities. The infrequent worker was also evaluated for the cemetery, the school grounds, and the rodeo grounds. All of the hazard indices are at or below 1 for this scenario.

A standard worker scenario was evaluated for eight properties[6] that are currently used commercially. All of the hazard indices are at or below 1 for this scenario.

The Chaney[7], Peirano Tract B, and Renfroe properties are currently used residentially. The hazard indices for the resident child at the Peirano Tract B property are 0.2 (CTE) and 4 (RME), and for consumption of home-grown root vegetables are 0.2 (CTE) and 2 (RME). All of the other hazard indices are less than or equal to 1 for the resident child. In addition, all of the other hazard indices for consumption of home-grown produce and for the breastfeeding infant are less than or equal to 1.

Potential Future Scenarios

In addition to the current scenarios discussed above, all properties were evaluated for a trespasser, a construction worker, a standard worker, and a resident. The CTE hazard indices for all of these scenarios are less than 1. The RME hazard index for the child resident at the Cassell property is 3 and RME hazard indices at each of the Peirano properties (Tracts A and B, Parcel B) are 4. The RME hazard indices for the construction worker at the Cassell property and at the Peirano properties are each 2. The RME hazard indices for consumption of home-grown root vegetables at Peirano Parcel B and Tract A are each 2. Except for the scenarios and properties discussed above, the RME hazard indices for all of the remaining scenarios and properties are at or below 1.

6.5.1.4 Summary of Noncancer Hazard Results

The following is a summary of the results of the noncancer hazard evaluation (Table 6-4) for current and future scenarios.

Parcels A and B

RME hazard indices exceed the MDEQ target of 1 on Parcels A and B for most of the scenarios evaluated, except the current trespasser and the future standard worker on Parcel A.

CTE hazard indices are below the target for most of the scenarios evaluated except the hypothetical future child resident on Parcel B.

Parcels Other than A and B

The CTE hazard indices for all scenarios at all properties are below the MDEQ target of 1. The RME hazard indices are less than or equal to 1 for most of the properties and scenarios evaluated except the current resident child on Peirano Tract B; the potential future child resident on the Cassell, Peirano Parcel B, and Peirano Tract A properties; the potential future

[6] 3WT, Milton, Peirano Parcel B, Peirano Tract A, Robak, Smith, Stevenson, and Vintage.
[7] Now the Ricciardi property.

construction worker on the Cassell property and each of the Peirano properties; and hypothetical future consumption of home-grown produce on Peirano Tract B, Parcel B, and Tract A. It should be noted that contamination on the Cassell and Peirano properties is expected to be confined to the irrigation ditch on the west sides of the properties. The Cassell property is a narrow strip of land that consists almost entirely of the irrigation ditch.

6.5.2 Cancer Risks

6.5.2.1 Methods

Cancer health risks are estimated as the incremental probability of an individual developing cancer over a lifetime as the result of exposure to carcinogenic chemicals. Because cancer risks from environmental exposures are usually very small, they are typically expressed in scientific notation. The notation 1×10^{-6} is used in the text and the notation 1.00E-06 is used in Appendix D. Both are equivalent to an increased probability of 0.000001, 1/1,000,000, or one in a million.

The term incremental probability reflects the risk associated with site-related exposure in addition to the background risk of cancer experienced by all individuals in the course of daily life. The lifetime probability of a male resident of the United States developing cancer is 1 in 2, which is equivalent to 5×10^{-1} (i.e., 0.5 or 500,000 in one million) (ACS 2011). The lifetime probability of a female resident of the United States developing cancer is 1 in 3, or 3×10^{-1} (i.e., 0.33 or 333,333 in one million) (ACS 2011).

MDEQ's (2012e) target for total excess cancer risks is 1×10^{-5}. This falls at the midpoint of USEPA's (1990, 1991) target risk range of 1×10^{-6} to 1×10^{-4}.

To calculate potential cancer risks, the estimated daily intakes averaged over a lifetime of exposure were multiplied by CSFs (Section 6.4.1) to yield incremental probabilities of cancer risk, as expressed in the following equation:

$$Cancer\ Risk(unitless) = Intake\left(\frac{mg}{kg \cdot day}\right) \times CSF\left(\frac{mg}{kg \cdot day}\right)^{-1}$$

$$Cancer\ Risk\ (unitless) = EC\left(\frac{mg}{m^3}\right) \times IUR\left(\frac{mg}{m^3}\right)^{-1}$$

Where:

CSF	=	cancer slope factor
IUR	=	inhalation unit risk

As with hazard indices, the estimated incremental increase in cancer risks for all potentially carcinogenic COPCs and exposure pathways are summed, regardless of the cancer endpoint, to estimate the total, or cumulative, incremental increase in cancer risk for the exposed individual. A method for segregating chemicals based on target organs has not been developed for carcinogens.

Given that the carcinogenic toxicity factors (CSF, IUR) used to estimate risk are often upper 95UCLs of the probability of response, based on experimental animal data, the incremental increase in cancer risks calculated are generally upper-bound estimates (USEPA 1989a).

Cancer risks for Parcels A and B are discussed together below, followed by a discussion of the other properties. Cancer risks for individual properties are provided in Appendix D. A summary of cancer risks for properties with one or more results exceeding MDEQ's target value of $1x10^{-5}$ is provided in Table 6-4.

Cancer risks for residential scenarios are reported for a 30-year exposure duration including combined childhood and adult exposures, because this produces the most conservative (protective) cancer risk results.

6.5.2.2 Parcels A and B

Cancer risks on Parcels A and B are predominated by the soil ingestion pathway. Dermal contact with soil contributes between 7 and 38 percent of total cancer risks, depending on the COPC. Cancer risks for inhalation of dust are between 4 and 6 orders of magnitude lower than for soil ingestion.

Cancer risks on Parcel A are predominated by TEQ. On Parcel B, PCP and petroleum hydrocarbons (particularly aromatics C11–C22) make substantial contributions in addition to TEQ.

Current Trespasser

Parcels A and B are currently vacant, so the only current exposure scenario is the trespasser. The trespasser was assumed to be an adolescent exposed via incidental ingestion of surface soil, dermal contact with surface soil, and inhalation of outdoor dust while visiting the parcels 75 days/year. The cancer risks for Parcel A are $6x10^{-7}$ (CTE) and $2x10^{-5}$ (RME). The cancer risks for Parcel B are $9x10^{-6}$ (CTE) and $2x10^{-4}$ (RME).

Potential Future Construction Worker

During future site redevelopment, a construction worker was assumed to be exposed via incidental ingestion of surface or subsurface soil, dermal contact with surface or subsurface soil, and inhalation of outdoor dust from surface or subsurface soil for four months. For surface soil exposures, the cancer risks for Parcel A are $4x10^{-8}$ (CTE) and $5x10^{-6}$ (RME). The cancer risks for Parcel B are $9x10^{-7}$ (CTE) and $5x10^{-5}$ (RME). For subsurface soil exposures, the cancer risks for Parcel B are $1x10^{-7}$ (CTE) and $5x10^{-6}$ (RME). Subsurface soil data are not available for Parcel A.

Potential Future Commercial Worker

A commercial/industrial worker was assumed to be exposed via incidental ingestion of surface soil, dermal contact with surface soil, and inhalation of dust on work days during the 9 snow-free months of the year. The cancer risks for Parcel A are $6x10^{-7}$ (CTE) and $3x10^{-5}$ (RME). The cancer risks for Parcel B are $2x10^{-5}$ (CTE) and $4x10^{-4}$ (RME).

Hypothetical Future Resident

A hypothetical future resident was assumed to be exposed via incidental ingestion of surface soil, dermal contact with surface soil, and inhalation of dust for the 9 snow-free months of the year. The cancer risks for Parcel A are $6x10^{-6}$ (CTE) and $2x10^{-4}$ (RME). The cancer risks for Parcel B are $9x10^{-5}$ (CTE) and $2x10^{-3}$ (RME).

As part of the hypothetical future residential scenario, the potential ingestion of home-grown root vegetables from a garden in non-amended soil was evaluated. The cancer risks associated with root vegetable ingestion are $1x10^{-6}$ (CTE) and $4x10^{-5}$ (RME) for Parcel A, and $9x10^{-5}$ (CTE) and $3x10^{-3}$ (RME) for Parcel B. The uncertainties surrounding the hazards for the root vegetable pathway are discussed in Section 6.6.

As an additional part of the hypothetical future residential scenario, potential exposure for an infant consuming breast milk from a mother exposed via soil, as described above, was evaluated. The cancer risks associated with breast milk ingestion are $3x10^{-7}$ (CTE) and $4x10^{-6}$ (RME) for Parcel A, and $1x10^{-6}$ (CTE) and $2x10^{-5}$ (RME) for Parcel B. The uncertainties surrounding the hazard estimates for the breast milk pathway are discussed in Section 6.6.

6.5.2.3 Parcels Other than A and B

A variety of land uses surround Parcels A and B. Each property was evaluated for the exposures under its current land use as well as potential future exposures. The exposure scenarios are as described above for Parcels A and B.

As with Parcels A and B, cancer risks are generally predominated by soil ingestion and by TEQ, with the exception of the road right-of-way where only PCP was analyzed.

Current Scenarios

The Spigot property is vacant, so the trespasser scenario was evaluated for current land use. The CTE and RME cancer risks are less than or equal to $1x10^{-5}$ for this scenario.

The current scenario evaluated for the agricultural properties (Cassell, Parmenter, and Skroch) was the infrequent worker exposed to surface soil via ingestion, dermal contact, and inhalation of dust for 90 days/year during fence repair and similar activities. The infrequent worker was also evaluated for the cemetery, the school grounds, and the rodeo grounds. All of the cancer risks are at or below $1x10^{-5}$ for this scenario.

A standard worker scenario was evaluated for eight properties[8] that are currently used commercially. The cancer risks for the Peirano Parcel B property are $1x10^{-6}$ (CTE) and $2x10^{-5}$ (RME). All of the cancer risks for the other properties are at or below $1x10^{-5}$ for this scenario.

The Chaney[9], Peirano Tract B, and Renfroe properties are currently used residentially. The cancer risks for the resident at the Peirano Tract B property are $2x10^{-6}$ (CTE) and $3x10^{-5}$ (RME). The cancer risks for consumption of home-grown root vegetables at the Peirano Tract B property are $3x10^{-6}$ (CTE) and $3x10^{-5}$ (RME). All of the other cancer risks are less than $1x10^{-5}$ for the resident and for consumption of home-grown produce. In addition, all of the cancer risks for the breastfeeding infant are less than $1x10^{-5}$.

Potential Future Scenarios

In addition to the current scenarios discussed above, all properties were evaluated for a trespasser, a construction worker, a standard worker, and a resident. The CTE cancer risks for each of these scenarios are at or below $1x10^{-5}$. The RME cancer risk for the resident at the Peirano Parcel B property is $4x10^{-5}$, for the resident at the road right-of-way is $2x10^{-5}$, and for the residents at the Cassell and Peirano Tract A properties is $3x10^{-5}$. The RME cancer risks for consumption of home-grown root vegetables at the Cassell property, Peirano Tract B and Tract A, and the road right-of-way are each $3x10^{-5}$. The RME cancer risk for consumption of root vegetables on Peirano Parcel B is $4x10^{-5}$. Except for the scenarios and properties discussed above, the RME cancer risks for all of the remaining scenarios and remaining properties are at or less than $1x10^{-5}$.

6.5.2.4 Summary of Cancer Risk Results

The following is a summary of the results of the cancer risk evaluation (Table 6-4) for current and future scenarios.

[8] 3WT, Milton, Peirano Parcel B, Peirano Tract A, Robak, Smith, Stevenson, and Vintage.
[9] Now the Ricciardi property.

Parcels A and B

RME cancer risks exceed the MDEQ target of $1x10^{-5}$ for most of the scenarios evaluated, except the future construction worker and the hypothetical future breastfeeding infant on Parcel A and the future construction worker exposed to subsurface soil on Parcel B.

CTE cancer risks are below the target for most of the scenarios evaluated except the hypothetical future resident, the future worker, and the hypothetical future consumption of home-grown root vegetables on Parcel B.

Parcels Other than A and B

The CTE cancer risks for all scenarios at all properties are below the MDEQ target of $1x10^{-5}$. The RME cancer risks are less than $1x10^{-5}$ for most of the properties and scenarios evaluated except the current resident on Peirano Tract B; the current worker on Peirano Parcel B; the potential future resident on the Cassell, Peirano Parcel B, and Peirano Tract A properties and the road right-of-way; and the potential future consumption of home-grown root vegetables on the Cassell property, each of the Peirano properties, and the road right-of-way. It should be noted that contamination on the Cassell and Peirano properties is expected to be confined to the irrigation ditch on the west sides of the properties. The Cassell property is a narrow strip of land that consists almost entirely of the irrigation ditch. The road right-of-way is currently paved (Bunkhouse Road).

6.5.3 Groundwater Evaluation

6.5.3.1 Method

As required by MDEQ, risks related to COPCs in groundwater were qualitatively evaluated by comparing the EPCs with the DEQ-7 groundwater standards established for the state of Montana (MDEQ 2012f). MDEQ has determined that the DEQ-7 standards are the cleanup levels for groundwater. If a DEQ-7 standard was not available for a chemical, methods discussed Section 5.2.2 were used to determine the groundwater SSCL.

DEQ-7 values are based on the most restrictive concentration of the following: a 10^{-5} excess lifetime cancer risk for carcinogens in drinking water, a hazard index of 1 for noncarcinogens in drinking water, or the federal MCL. Although groundwater within the impacted plume area is not currently used as a source of drinking water, it could be so used in the future. In addition, all groundwater within the state of Montana, with the exception of Class IV groundwater, must meet all state groundwater quality standards (DEQ-7) regardless of whether it is currently used as drinking water. The wells in which COPCs have been identified are used only for monitoring groundwater conditions within the Facility.

Appendix D shows a comparison of two EPCs to the groundwater standards. For each property, the first EPC (Table D3.7) is the maximum detected concentration from the latest round of sampling from all wells, and the second EPC (Table D3.8) is the maximum concentration detected during the last five years of groundwater data (2008–2012) collected from all wells. Groundwater data from the Stevenson property were not included because they were older than 2008. The maximum concentration of 0.57 ng/L TEQ from the most recent year of sampling (2006) was below the screening level of 2 pg/L.

6.5.3.2 Parcels A and B

For Parcel A, TEQ and PCP were detected above their respective DEQ-7 values. For these COPCs, both of the EPCs (recent and 5-year maximum concentrations) exceed the cleanup levels.

For Parcel B, both EPCs for all four of the groundwater COPCs (TEQ, PCP, BaPE, and 2-methylnaphthalene) exceed their respective groundwater cleanup levels for at least one of the EPCs.

6.5.3.3 Parcels Other than A and B

Groundwater data for TEQ and PCP are available for comparison to the groundwater cleanup levels at the following parcels:

- Chaney[10]
- Renfroe
- Robak
- Peirano Tract B
- Parmenter

Both the 1-year and the 5-year maximum concentrations of TEQ on the Chaney, Renfroe, and Parmenter properties are greater than the groundwater DEQ-7 value, whereas both the 1-year and 5-year maximum concentrations of PCP are below the DEQ-7 value. The 1-year and 5-year maximum concentrations of PCP on the Robak property are below the DEQ-7 value, while the 1-year and 5-year maximum TEQ concentrations exceed the DEQ-7 value. The 1-year and 5-year maximum concentrations of PCP on the Peirano Tract B property are below the DEQ-7 value. The 1-year maximum value of TEQ (a nondetected result) is above the DEQ-7 value, whereas the 5-year maximum value (a detected result from 2009 that is less than the 2012 detection limit) is below the DEQ-7 value.

[10] Now the Ricciardi property.

6.5.4 Background Exposures

This section considers two different approaches to evaluating background exposures. First, in Section 6.5.4.1, soil concentrations of TEQ at the facility are compared with background soil concentrations determined by MDEQ (2011c).

Second, in Sections 6.5.4.2 and 6.5.4.3, intakes of dioxins and furans and carcinogenic PAHs estimated for the Facility are compared with background intakes documented in the literature. Common sources of exposure to dioxins and furans (Section 6.5.4.2) and carcinogenic PAHs (Section 6.5.4.3) are discussed, followed by a discussion of intakes estimated for the general population and a comparison of these estimated intakes with the site-related intakes estimated for this HHRA. Because dioxins and furans and carcinogenic PAHs are widely distributed in the environment, exposures to these substances are common, primarily via the diet. Therefore, it is important to view the exposures associated with the Facility through the perspective of typical dietary exposures experienced by most of the population. For the purposes of this discussion, the term "background levels" refers to intakes of COPCs that individuals within the general population would experience while living in areas not known to be impacted by a point source of these contaminants.

Such a comparison was not performed for PCP because dietary exposure data for this COPC are only available from the 1980s and 1990s. It is expected that these data would not be representative of current background exposures because dietary levels are likely to have decreased since then due to current restrictions on PCP use.

6.5.4.1 Dioxin and Furan Soil Concentrations

MDEQ (2011c) collected surface soil (0–2 inches bgs) samples from rural and urban areas throughout the state to determine background soil concentrations of TEQs. A total of 123 samples were collected. The background concentration for the state as a whole, determined based on an upper tolerance level, was 3.7 ng/kg.

The following EPCs are at or below the state-wide background concentrations: rodeo (0.62 ng/kg for CTE and RME), school (1.1 ng/kg for CTE, 1.7 ng/kg for RME), and the Stevenson property (1.8 ng/kg for CTE[11]).

6.5.4.2 Dioxin and Furan Intakes

The ubiquity of dioxins and furans in environmental media and biota contributes to the widespread presence of dioxins and furans in fish, shellfish, dairy, beef, and other food products (IOM 2003). More than 90 percent of an average person's total daily exposure to

[11] The RME EPC of 7.5 ng/kg on the Stevenson property is above the state-wide background.

dioxins and furans comes from foods, particularly those foods that are higher in animal fats such as dairy, fish, and meat products.

Based on recent estimates, the average (central tendency) adult background intake of TEQ[12] dioxins and furans in the U.S. is 0.61 pg/kg-day for combined exposures via soil ingestion and dermal contact, inhalation of dioxins and furans in air, water ingestion, and food intake (USEPA 2003a). Of this estimate, ingestion of foods accounts for approximately 95 percent (0.58 pg/kg-day) of total exposures for all media combined (e.g., water, soil, air, and food). Ingestion of fish and shellfish (20 percent of the total), beef (21 percent of the total), and milk and dairy (23 percent of the total) contributed most to the total daily intake of dioxins and furans via food.

The following groups have higher background exposures than the general population: indigenous populations in North America, subsistence and sport fishermen, breastfed infants, and cigarette smokers (IOM 2003; USEPA 2003a). People with exposures near the high end of the range may have intakes 2–3 times higher than the mean (USEPA 2003a).

Total TEQ intakes were calculated for a nursing mother to support estimation of TEQ concentrations in breast milk (Appendix E) and include the mother's intake during both childhood and adult exposures. These maternal intakes for incidental ingestion and dermal contact were used as the point of comparison with the average dietary background intake of 0.58 pg/kg-day for adults (USEPA 2003a).

Maternal intakes at most of the properties evaluated fall below typical dietary intakes. The estimated RME maternal intakes for residential exposure through direct contact with soil at Parcels A and B, the Cassell property, and all of the Peirano properties exceed typical dietary intakes under background conditions. Estimated RME site-related intakes at these properties range from 0.60 pg/kg-day (Cassell) to 10 pg/kg-day (Parcel B). The estimated CTE site-related intake of 0.91 pg/kg-day at Parcel B also exceeds typical dietary intakes. All of the estimated CTE and RME intakes at the remaining properties are below typical dietary intakes.

6.5.4.3 Carcinogenic PAH Intakes

In the U.S., primary sources of human exposure to PAHs occur via inhalation of tobacco smoke, wood smoke, and ambient air, as well as dietary intake of foods containing background levels of PAHs (ATSDR 1995). In fact, among nonsmokers, diet contributes more than 70 percent of total PAH exposure (Beckman et al. 1998; Phillips 1999). Therefore, for people who do not smoke or do not work in industries associated with high air concentrations of PAHs, the major route of exposure to PAHs is through dietary sources.

[12] TEQ calculated using the WHO 1998 TEFs (Van den Berg et al. 1998), which yield slightly different TEQ values from those reported in this HHRA, which use the WHO 2005 TEFs (Van den Berg et al. 2006).

PAHs are found in all food groups. Certain cooking methods, such as smoking, grilling, charcoal cooking, and drying techniques (e.g., combustion gas heating) add more PAHs to foods.

Menzie et al. (1992) estimated intakes of carcinogenic PAHs from the diet ranging from 1−5 μg/day. Within this range, most of the PAH exposure was contributed by consumption of unprocessed grains and cooked meats. The average intake from this study was 3 μg/day or, for an 80 kg adult, 0.04 μg/kg-day. Other estimates of dietary intake of cancer-causing PAHs range from 0.02 μg/day (approximately 0.003 μg/kg-day) in a Spanish study (Falco et al. 2003) to 2.8 μg/day (approximately 0.04 μg/kg-day) in a U.S. study (Hattemer-Frey and Travis 1991). For exposures to background levels of carcinogenic PAHs from all media, Menzie et al. (1992) estimated intakes of 1–15 μg/day (approximately 0.01–0.21 μg/kg-day) for adult, nonsmoking males in the U.S. For smokers, additional intakes of 2–15 μg/day (approximately 0.03–0.21 μg/kg-day) have been estimated for exposure via smoking one or more packs of unfiltered cigarettes per day (Menzie et al. 1992).

Calculated intakes for the adult resident (as a nursing mother) are provided in Appendix E. The mother's intake includes cumulative childhood and adult exposures. BaPE data were available only for the parcels consisting of the former sawmill property (Parcels A and B). Estimated maternal BaPE intakes range up to 0.007 μg/kg-day (RME estimate for Parcel B), which is below the typical dietary background intake of 0.04 μg/kg-day, as estimated by Menzie et al. (1992). This indicates that intakes of BaPE from direct contact with soils on Parcels A and B are less than typical dietary intakes.

6.6 UNCERTAINTY ANALYSIS

This section evaluates uncertainties associated with the results of the HHRA. Section 6.6.1 highlights the major sources of uncertainty associated with each phase of the HHRA process: CSM, data screening and selection of COPCs, exposure assessment, toxicity assessment and risk characterization. Section 6.6.2 compares the results for the CTE and the RME cases.

6.6.1 Qualitative Uncertainty Evaluation

Because it is based on hypothetical exposure scenarios and a series of assumptions about environmental conditions and human behaviors, quantitative HHRA is inherently uncertain and while the derivation of site-specific exposure factors (in place of default assumptions) may decrease uncertainty, significant uncertainty persists in even the most site-specific risk assessments. Using standard default parameter values per MDEQ and EPA guidance can result in combining upper bound estimates of exposure and toxicity and likely results in baseline human health risk estimates that are greater than actually realized within modeled populations. The end result of an HHRA is not a prediction of actual human health risks that might occur at

a facility, but is intentionally biased so that the risk assessment process supports risk management decisions that are protective of human health and the environment.

USEPA (1989a) guidance stresses the importance of providing a complete evaluation of potential uncertainties so that informed and protective risk management decisions can be made. Uncertainty analysis provides a context for better understanding the conclusions of an HHRA by identifying the generic and site-specific uncertainties that have the greatest potential to influence the conclusions of the HHRA. Therefore, sources of uncertainty in each step of the HHRA are identified and qualitatively evaluated, especially for exposure scenarios that suggest the potential for unacceptable risk, so that risk decision-making is well-informed.

Table 6-5 presents a summary of the significant sources of uncertainty inherent in each of the four risk assessment steps. The table and associated text provide a qualitative evaluation of the potential direction (over- or under-estimation) and magnitude (low, moderate, high) on the overall results and conclusions of the HHRA.

Two scenarios evaluated in the HHRA are discussed in multiple sections of the qualitative uncertainty analysis. Uncertainties related to the home-grown produce consumption pathway are discussed in Sections 6.6.1.1, 6.6.1.3, and 6.6.1.4. Uncertainties related to the construction worker are discussed in Sections 6.6.1.3 (EPCs and exposure parameters) and 6.6.1.5.

6.6.1.1 Conceptual Site Model

For this HHRA, most parcels within the Facility were evaluated as potential residential properties because there are no current deed restrictions or zoning impediments that would prevent future residential land use. Risks were evaluated for potential future residential receptors for all parcels, except the cemetery, school, and rodeo grounds (Section 2.2.6).

Evaluation of risk results for consumption of home-grown produce should be tempered with the understanding that future home-owners may not garden, may not garden using non-amended soil, may not grow root vegetables, or may not locate gardens in areas that have been impacted by the Facility. Exposure through the ingestion of home-grown root vegetables grown in contaminated soil was assumed to potentially occur at all current or potential future residential parcels within the Facility.

There are a number of reasons why vegetable gardening, as evaluated in this HHRA, may not occur on these properties. First, not all households participate in vegetable gardening. According to USEPA (2011), only 23 percent of households in the U.S. participate in this activity. In addition, as stated in Section 3.2.1.2, the soils at the Facility, particularly Parcels A and B, are sandy, gravelly, and contain cobble, and, therefore, are not conducive to growing home-grown produce without amendment. Amending the soil would dilute the concentrations of COPCs, thereby decreasing exposures and risks. Finally, the EPCs for many of the parcels are based on a limited number of samples located in a small area of the parcel that is expected to

contain the highest concentrations of Facility-related chemicals (e.g., the ditch for parcels north of Parcel B). A garden located in a different area of the parcel would likely have lower soil concentrations so that estimated risks due to ingestion of garden produce would be lower than estimated here.

COPC concentrations in groundwater were compared to DEQ-7 standards for groundwater, which are based on the protection of human health when groundwater is used as tap water. Although none of the wells containing concentrations above MDEQ standards is used for drinking, the groundwater could be used for drinking in the future, and all groundwater in Montana, with the exception of Class IV groundwater, must meet all state groundwater quality standards. Therefore, under current conditions, the exposure pathway for ingestion of groundwater is incomplete.

6.6.1.2 Data Evaluation and Selection of COPCs

There are several categories of uncertainty associated with the data evaluation. These include the selection of COPCs, the age of some of the data, data treatment requirements, and un-sampled properties.

Selection of COPCs

To provide a comprehensive list of COPCs and to streamline the screening approach, the data for soil (both surface and subsurface) were screened as one unit. By identifying any detected constituent using the Facility-wide maximum concentration, regardless of the parcel and depth of sample collection, the maximum number of COPCs was identified. Each of the COPCs was evaluated in the risk calculations for each parcel, even though, at some parcels, the maximum concentrations of some COPCs were below the screening criteria. Groundwater COPCs were also selected based on maximum detected concentrations Facility-wide. Each of the COPCs was evaluated in each well, even though in some wells the maximum concentrations of some COPCs were below the screening criteria. This approach is conservative (protective).

No screening levels were available for acenaphthylene, benzo(g,h,i)perylene, and phenanthrene, so they were not included in risk calculations. These three chemicals are noncarcinogenic PAHs and will tend to be co-located with other PAHs. A remedial approach that achieves protective concentrations of the carcinogenic PAHs will likely to be protective of the noncarcinogenic PAHs as well, so this data gap is not considered significant.

No screening levels were available for C10-C22 aromatics, but screening levels were available for C11-C22 aromatics, which were evaluated quantitatively in the risk assessment. Because these two fractions are similar in nature, the evaluation conducted for C11-C22 aromatics is relevant to C10-C22 aromatics and a remedial approach that achieves protective concentrations of C11-C22 aromatics will likely be protective of C10-C22 aromatics as well. This data gap is not considered significant.

Age of Data Included in the Screening and Baseline Evaluations

The data from older petroleum analytical methods (total extractable hydrocarbons, total purgeable hydrocarbons, EPH equivalent, and EPH screen) were not screened and were not included in risk calculations. However, the exclusion of these data from the risk assessment is considered to be a negligible source of uncertainty because more recent analyses report these constituents in their respective individual petroleum fractions, such as C11–C22 aromatics, which were included in the risk calculations. With the exception of these analytes, screening levels were available for all of the constituents detected at the Facility.

As discussed in Appendix A, there are higher levels of uncertainty regarding the accuracy of data collected prior to 2007. Detection limits may have been overestimated for some soil and groundwater samples and PCP results may have been underestimated for some soil samples. Most of the data collected during this time frame represent the source areas on Parcels A and B, where concentrations of the risk drivers BaPE, PCP, and TEQ tend to be high. The uncertainty imparted by the older data for PCP and TEQ is not likely to significantly affect decisions regarding cleanup for the site. The data set for carcinogenic PAHs is limited in scope and contains many nondetected results with high detection limits, imparting a higher level of uncertainty than for PCP and TEQ. To the extent that carcinogenic PAHs are collocated with PCP and TEQ, this source of uncertainty will not significantly affect decisions regarding cleanup. This issue can be investigated in the feasibility study.

Groundwater concentrations are likely to change over time due to dilution, migration, and natural attenuation processes. To evaluate the most current conditions associated with the Facility, the groundwater EPC for each parcel was identified as the maximum detected concentration during the most recent round of sampling and, as an alternative, the maximum detected concentration within the most recent 5 years of data. For properties with multiple monitoring wells, this is the most conservative approach possible. For the Bachman property, no data from 2008 or later were available. The maximum concentration of TEQ in the last round of sampling (0.57 pg/L) was below the DEQ-7 standard (2 pg/L).

Data Treatment Requirements

In response to MDEQ direction regarding sample duplicates, the maximum of the parent or duplicate sample was used in the calculation of the EPC. This is a conservative method of handling duplicate sample results. However, it is consistent with EPA's Ecological Risk Assessment Frequently Asked Questions, http://www.epa.gov/reg3hwmd/risk/eco/faqs/analytical.htm, regarding how to handle duplicate samples with different results. EPA has indicated that "[t]he greater or more conservative result should be used. If you have duplicate samples with one sample yielding a 'detect' but the second sample yielding a 'non-detect' and the detected value is lower than the non-detect, the detected value will be used in the screening ERA." This is consistent with

MDEQ's requirement. Another method is to average the two results, because both results are considered equally representative of the concentration at that location. Based on a review of the parent/duplicate sample data, the effect on the EPC of using only the maximum of duplicate results is minimal in that the parent/duplicate data did not differ significantly.

The calculation of BaPE included only those carcinogenic PAHs that were detected at least once in the environmental medium of concern. For soils, this included BaP, benzo(a)anthracene, chrysene, and indeno(1,2,3-cd)pyrene. For groundwater, this included BaP, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. While this approach has the potential to underestimate BaPE concentrations, it is not expected to be a large source of uncertainty. If the other carcinogenic PAHs had been included, they would have been assigned half the detection limit and they would have had a small impact on the calculated BaPE concentration. Another reason that BaPE values might be underestimated for some samples is a lack of data for some of the carcinogenic PAHs. This issue is discussed in more detail in Appendix A.

Several soil samples had elevated detection limits (i.e., detection limits greater than the maximum detected value) for indeno(1,2,3-cd)pyrene. Despite the likelihood that these results caused overestimates of BaPE concentrations, they were retained in the data sets because they represented a substantial portion of the indeno(1,2,3-cd)pyrene data.

Each of the carcinogenic dioxin and furan congeners was detected at least once at the Facility, so all of the congeners were included in the calculation of TEQ. In addition to the default method of assigning half the detection limit to nondetected congeners, two other methods of handling nondetected congeners were considered. Nondetected congeners were assigned either the full detection limit or zero. For most samples, the resulting TEQs were similar across all three methods. This indicates that the choice to use one-half the detection limit for nondetected congeners, as required by MDEQ for this BRA, had a small impact on TEQ hazards and risks relative to other methods of calculating TEQs.

6.6.1.3 Exposure Assessment

Key sources of uncertainty in the exposure assessment include factors affecting the calculation of EPCs, choices of values for certain exposure parameters, and several issues surrounding the garden produce pathway.

Exposure Point Concentrations

The datasets used to calculate EPCs for this HHRA tended to be biased toward areas where contamination was expected or known to be present. Because of this, the EPCs calculated may not be representative of the entire exposure areas on these parcels. More representative sampling of these properties would likely have resulted in lower EPCs than those used in the HHRA. The effect on the overall uncertainty of the risk characterization is high.

For each of the following data sets on Parcels A and B, the EPC for the RME case was based on the maximum value because the sample size was less than 10:

- Parcel A: C5–C8 aliphatics, C9–C18 aliphatics, C11–C22 aromatics, BaPE
- Parcel B: 1-methylnaphthalene.

Most of the data sets for properties other than Parcels A and B contained fewer than 10 samples, with the following exceptions:

- PCP and TEQ data for Spigot, Parmenter, and Skroch
- TEQ data for Peirano Parcel B.

The data limitations for properties with small data sets resulted in very conservative EPCs that likely overestimate risks.

The soil EPCs for the construction worker were calculated separately for surface and subsurface soils. This supports decision-making specific to soil depth but does not realistically represent exposures to construction workers. For example, the EPCs for BaPE, PCP, and TEQ in surface soil on Parcel B (0.61, 3,400, and 0.0038 mg/kg, respectively) are higher than the EPCs for subsurface soil (0.31, 120, and 0.0016 mg/kg, respectively). A construction worker involved in excavation would be exposed to a mixture of surface and subsurface soils with overall EPCs between those listed above.

Exposure Parameters

The RME soil ingestion rate of 330 mg/day for the construction worker was required by MDEQ (2012e), based on USEPA (2002a) guidance. This value was based on a study by Stanek et al. (1997) and represented the reported 95th percentile ingestion rate from a study of ten adult volunteers. This 95th percentile was inflated by one study subject for whom the results were highly uncertain, and the study authors stated that they believe the 95th percentile is flawed. The default value of 330 mg/day replaced a previous default value of 480 mg/day recommended by USEPA (1997b). In comparison, the MassDEP recommends 100 mg/day for a construction worker scenario or other scenarios involving enhanced ingestion rates. The use of 330 mg/day tends toward a moderate (roughly three times) overestimate of risks associated with ingestion of soil for the construction worker.

Garden Produce

Evaluation of the garden produce pathway conservatively focused on root vegetables, which tend to have higher concentrations of dioxins, furans, and PCP than do surface vegetables because of soil adhered to the roots rather than actual uptake.

The root vegetable ingestion rate for the RME case was based on a 95th percentile rate from data provided in USEPA (2011), which are from a 2-day dietary recall survey by USDA. These types of surveys tend to overestimate consumption for two reasons. First, people who did not consume home-grown vegetables during the 2-day period are labeled 'non-consumers' and were excluded from the consumption rate calculation. It is possible that some of these people were actually consumers who simply did not consume home-grown produce during the recall period; inclusion of these consumers could have resulted in a lower yearly consumption rate for the population studied. Second, the individuals who consumed root vegetables during the 2-day recall period may not have repeated that behavior during every two day period so that their long-term rates may have been overestimated. When evaluating chronic exposures, such as those in this HHRA, the use of short-term can overestimate long term risks. This overestimation introduces a high level of uncertainty for the ingestion of home-grown produce pathway.

6.6.1.4 Modeling

In this HHRA, concentrations in dust, root vegetables, and breast milk were modeled from concentrations measured in soil. Modeling, in general, tends to overestimate risks as default model inputs and equations are intentionally conservative. Actual concentrations in these media are expected to be lower than those calculated for reasons outlined below.

Dust

Dust concentrations were calculated based on a generic PEF applied to surface soil concentrations at the Facility. This model assumes an infinite source of contamination with 50 percent vegetative cover (i.e., 50 percent of the site is bare so dust more readily becomes airborne from wind dispersion). It does not consider conditions when the soil is moist and unlikely to be present in airborne dust concentrations. As this pathway does not contribute significantly to overall risks at the Facility, the impact of this source of uncertainty is considered low.

Root Vegetables

The organic carbon partition coefficient (Koc) is used for estimating produce concentrations. The range of reported Koc values for PCP is wide. For this HHRA, a mid-range value of 16,000 was used (converted to a Kd of 160 by applying a factor of 0.01 for fraction organic carbon in soil) (USEPA 2005a). Koc values for PCP have been reported in the range of 592 (USEPA 1996), 1,250–25,000 (USEPA 2012d), and 32,900 (ATSDR 2001). According to ATSDR (2001), the Koc values for PCP are difficult to predict because its adsorption to soil does not increase linearly with increasing concentration and the ionization state may change with soil pH. For these reasons, the uptake of PCP into root vegetables is considered to have a high uncertainty but the direction of uncertainty, on a site-specific basis, is not known.

While the root vegetable model predicted concentrations of the COPCs in root vegetables, actual sampling of garden produce at the Missoula White Pine Sash site (MDEQ 2001) did not detect dioxins or furans, and detected PCP in only 1 of 14 samples at a "very low concentration." For the Missoula White Pine Sash site, MDEQ (2001) concluded that significant produce uptake was not occurring. EPCs for root vegetables, and thus hazards and risks for consumption of root vegetables, are likely overestimated.

Breast Milk

There is a significant amount of uncertainty in the calculation of COPC concentrations in the lipid fraction of breast milk. Very few studies are available that have reliable data on environmental exposures and associated concentrations in breast milk. The breast milk concentrations were based on a model provided by MDEQ (2001). The model incorporates intake from a variety of sources to estimate a total maternal dose rate and then applies a breast milk biotransfer factor to estimate concentrations in breast milk from the total intake. This multi-level modeling approach involves significant uncertainties at each step of the calculation (maternal exposure to maternal intake to breast milk transfer to infant exposure) and likely overestimates the potential exposure to infants.

Total maternal intake was underestimated because of the inability to include inhalation exposures due to differences in calculation methods. Risks associated with inhalation are at least an order of magnitude lower than risks associated with soil ingestion and dermal contact, however, which indicates that exposures via inhalation are minimal and would have had little impact on total maternal intake. Overall, the COPC concentrations in breast milk are likely overestimated.

To calculate a maternal body burden, it was assumed that a breast feeding mother had been a resident on the parcel for 30 years (18 years for the CTE case), spanning from early childhood to adulthood prior to initiating breastfeeding of an infant. In reality, it is unlikely that a mother would grow up and raise children at the same property. Many of the aforementioned uncertainties (e.g., assuming residential exposures at commercial properties, exposures to maximum detected concentrations at some parcels) compound the uncertainty for this pathway.

6.6.1.5 Toxicity Assessment

Issues contributing to uncertainty in the toxicity assessment include the toxicity parameter values, failure to use subchronic RfDs for evaluating the construction worker, the toxic equivalency approach for TEQ, and the assumption of a linear dose-response for TCDD.

Toxicity Parameter Values

Most of the toxicity values for noncancer endpoints were taken from EPA's IRIS database, which is peer-reviewed and considered the most reliable source for toxicity data. The following toxicity values were obtained from other sources:

- MassDEP: noncancer toxicity values for some of the petroleum hydrocarbon fractions discussed below
- CalEPA: noncancer and cancer toxicity values for TCDD (discussed further below); cancer toxicity values for ethylbenzene; and IUR values for naphthalene, BaP, and PCP
- EPA PPRTV documents: noncancer toxicity values for some of the petroleum hydrocarbon fractions discussed below
- ATSDR: RfD for 1-methylnaphthalene.

These sources of toxicity data are not as thoroughly peer reviewed as is IRIS. The associated estimates of noncancer hazards and cancer risks are less reliable.

Because IRIS does not provide a CSF for TCDD, the CSF developed by CalEPA was used for this HHRA, as requested by MDEQ. CalEPA toxicity values undergo a peer review process, but do not receive the same level of scrutiny as IRIS toxicity values. The CalEPA (1986) CSF is based on the incidence of liver tumors in male mice observed in a mouse bioassay conducted by the National Toxicology Program (NTP 1982). Subsequently, the California Office of Environmental Health and Hazard Assessment (OEHHA) (CalEPA 2007) used a CSF of 26,000 $(mg/kg\text{-}day)^{-1}$ in deriving its 2007 drinking water criteria. The OEHHA value is based on the results of a more recent NTP (2006) study. Considering the range of CSF values available for TCDD, and the controversy over whether it should even be evaluated using a linear dose-response model (Appendix H), there is substantial uncertainty associated with cancer risk estimates for TEQ. However, based on information provided in EPA's 2010 guidance *Recommended Toxicity Equivalence Factors (TEFs) for Human Health Risk Assessments of 2,3,7,8-Tetrachlorodibenzo-p-dioxin and Dioxin-Like Compounds* (USEPA 2010c), this TEF approach will continue in the future and may be expanded to include more compounds such as polybrominated dioxins, polybrominated dibenzofurans, polychlorinated naphthalenes, and polybrominated naphthalenes as research continues with regard to the evaluation of new toxicity data for dioxin-like compounds and the mechanistic actions triggering toxicity effects.

Most of the noncancer toxicity values were based on laboratory animal studies, with the exception of the RfD for TCDD, which was based on epidemiological (human) data. Uncertainty factors were applied to account for each of the following potential sources of uncertainty, as applicable to the individual chemical:

- Differences in toxicological potency among species (interspecies)
- Differences in toxicological susceptibility within the population (intraspecies)
- Extrapolation from data obtain in a short-term study to chronic exposures
- Extrapolation from a LOAEL value to a NOAEL value

- Deficiencies in the toxicological database.

The uncertainty factors for most of the RfDs in this HHRA ranged from 1,000 to 10,000, with the exceptions of PCP (uncertainty factor of 300) and TEQ (30). EPA expressed low confidence in most of the RfDs, with the exceptions of dioxins and furans (high confidence) and PCP (medium).

Differing values for the noncancer effects of TEQ have been developed by other agencies worldwide. The ATSDR, WHO, the Joint United Nations Food and Agriculture Organization, the European Commission Scientific Committee on Foods, the Japanese Ministry of Health and Welfare, and the Health Council of the Netherlands and JECFA all derived dose-based quantitative health guidelines ranging from 1 to 4 pg/kg-day based on a number of different, noncancer, toxicological endpoints for TCDD (DeRosa et al. 1999; Pohl et al. 2002; JECFA 2002; WHO-IPCS 1998). The lower end of that range is roughly 50 percent higher than EPA's RfD and the upper end of that range is higher by nearly a factor of 6. Therefore, it is possible that the use of EPA's RfD to evaluate noncancer hazards of TEQ may have overestimated those hazards by as much as a factor of 6.

The lack of an oral RfD for BaP rendered it impossible to calculate noncancer hazards for this COPC, which resulted in under-estimation of hazard indices. Cancer effects are expected to be more sensitive than noncancer effects for BaP, which reduces the level of concern for this data gap.

For carcinogenic COPCs, toxicological criteria are developed using studies in which either tumor formation was an outcome or precursors to tumorigenicity were observed. Historically, EPA's default position has been to assume that all carcinogenic compounds have no threshold dose (i.e., there is some degree of cancer risk regardless of the level of exposure), so EPA has used CSFs and IURs to evaluate the carcinogenic risks of these compounds. Thus, EPA's standard default risk assessment procedures reflect the conservative assumption that there is no threshold dose for carcinogenic effects; that is, there is no entirely "safe" dose, and exposure to any amount of the chemical will contribute to an individual's overall risk of developing cancer during a lifetime. For dioxins and furans, in particular, there are data to the contrary, as discussed in Appendix H.

Most of the toxicity data available are from oral exposures in a laboratory setting. For the dermal contact pathway, it was assumed that dermal absorption results in a similar toxic response as oral absorption although this is not always the case. Extrapolating from oral toxicity data to the dermal pathway may over- or underestimate potential risks.

Lack of Subchronic RfDs

Because the exposure duration of one year for the construction worker is within USEPA's (1989a) definition of a subchronic exposure, this receptor would typically be evaluated using

subchronic RfDs. MDEQ requires the use of chronic RfDs for subchronic scenarios, however, so chronic RfDs were used. Many chronic RfDs are derived from subchronic toxicity data using an adjustment to be protective of chronic exposures. Such an adjustment is not applicable when evaluating subchronic exposures. For this reason, the noncancer hazards for the construction worker exposed to naphthalene, ethylbenzene, and all of the petroleum hydrocarbon ranges are overestimated.

Noncancer hazards might also be overestimated for the construction worker exposed to dioxins and furans. ATSDR's (1998) minimal risk levels (MRLs) for TCDD for intermediate and chronic exposures are $2x10^{-8}$ and $1x10^{-9}$ mg/kg-day, respectively. ATSDR defines intermediate exposures as those lasting 15 to 364 days. The exposure duration of 124 days during a one-year period for the construction worker is within ATSDR's definition of intermediate. The intermediate MRL for TCDD is 20 times higher than the chronic MRL. If the noncancer hazards for TEQ were divided by a factor of 20, none of the results would exceed the target value.

Toxicity Equivalency Factors

The TEQ approach was first developed in 1977 for screening risks from dioxins and furans in combustion sources and incinerator emissions (Eadon et al. 1986; Erickson 1997). It was intended for use as an "interim" screening tool to evaluate the toxicity of mixtures of dioxins and furans because many congeners lacked specific toxicity data. When the approach was initially applied in 1986, EPA's Science Advisory Board supported its use as an interim approach, but noted that it might "lack scientific validity" and recommended that it be regularly revisited (USEPA 1989b). In 1989, EPA stated that the TEQ approach remains "interim" in character and should be "replaced as soon as practicable with a bioassay method" (USEPA 1989b).

There are substantial uncertainties associated with the use of the TEQ approach. These are due largely to several simplifying assumptions used in developing the TEFs, including:

- The assumption that the dose response curves for different congeners and endpoints are parallel.
- The assumption that the effects of multiple dioxin and furan congeners are additive.
- The assumption that humans are as sensitive as laboratory animals to the effects of dioxins and furans.
- The assumption that noncancer endpoints and *in vitro* studies can be used to predict the carcinogenic potential of the individual dioxin and furan congeners.

Multiple studies have indicated that the assumptions underlying the TEQ approach are not well-supported in the scientific literature (Van den Berg et al. 2006; Roberts et al. 1990; Ema et al. 1994; Poland et al. 1994; Ramadoss and Perdew 2004; NAS 2006; Haws et al. 2006; Wiebel et al. 1996; Xu et al. 2000; Zeiger et al. 2001; Connor and Aylward 2006; Vamvakas et al. 1996;

Silkworth et al. 2005; Carlson et al. 2009; Harper et al. 1995; Safe 1990; Starr et al. 1997; Toyoshiba et al. 2004; Walker et al. 2005; USEPA 2010a; SAB 2011).

In addition, the use of TEFs in evaluating potential risks due to exposures to abiotic media, such as soil and sediment, is not recommended by the authors of the current TEFs unless the "aspect of reduced bioavailability is considered" (Van den Berg et al. 2006, p. 237). This is because the use of the TEF approach to characterize exposure concentrations implies that all compounds have the same bioavailability as TCDD. However, there is little empirical information available about the relative bioavailability of the individual dioxin and furan congeners when they are bound to abiotic media. The relative bioavailability of dioxins and furans was not considered in this risk assessment, at the direction of MDEQ.

Despite these limitations, EPA generally requires that the TEFs and the TEQ scheme be used to evaluate the risks due to mixtures of dioxins and furans, regardless of the medium of exposure. The National Academy of Science (2006), in its review of the TEF methodology, stated: "Even with the inherent uncertainties, the committee concludes that the toxicity equivalency factor methodology provides a reasonable, scientifically justifiable, and widely accepted method to estimate the relative potency of DLCs [dioxin-like compounds]." Further, based on information provided in EPA's 2010 guidance *Recommended Toxicity Equivalence Factors (TEFs) for Human Health Risk Assessments of 2,3,7,8-Tetrachlorodibenzo-p-dioxin and Dioxin-Like Compounds* (USEPA 2010c), this TEF approach will continue in the future and may be expanded to include more compounds such as polybrominated dioxins, polybrominated dibenzofurans, polychlorinated naphthalenes, and polybrominated naphthalenes as research continues with regard to the evaluation of new toxicity data for dioxin-like compounds and the mechanistic actions triggering toxicity effects.

Linear Dose Response for Dioxin Carcinogenicity

For TEQ, the CSF and IUR were derived by CalEPA assuming a linear, no threshold dose response model. As described in Appendix H, there have been a number of studies which have concluded that dioxins and furans may act via a threshold mechanism. A threshold dose-response relationship is one in which some level of exposure exists at which there is no increased risk of cancer within the exposed population, analogous to noncancer effects. More recent data indicate that a threshold level approach should be considered when evaluating the carcinogenicity of dioxins and furans. The non-threshold approach likely overestimates cancer risks to TEQ.

The total RME intake of TEQ from soil at Parcel B by the resident child/adult is 3.7×10^{-9} mg/kg-day (Appendix D, Table D7.2). This is the only intake that exceeds the tolerable daily intake of 2.3×10^{-9} mg/kg-day (Appendix H). The next highest intake is 1.7×10^{-9} mg/kg-day at Parcel A. If a threshold approach was used for evaluating dioxins and furans, only Parcel B would elicit concern for cancer health effects.

6.6.2 Comparison of CTE and RME Results

The selection of values for toxicity and exposure parameters requires professional judgment about the strengths and limitations of information available in the technical literature and about how the literature values apply to a specific site. For many of the parameters used in the HHRA, alternative values were available. A comparison of the CTE and RME cases is one method of examining the sensitivity of hazard and risk results to alternative parameter values.

Differences between the CTE and the RME cases reflect differences in the values for some, but not all, of the exposure parameters and differences in the calculated EPCs. The primary exposure parameters that were changed between the CTE and RME cases were exposure frequency and EPC. The same toxicity values were used for the CTE and RME cases. In cases where the RME result exceeded the target value (1 for noncancer hazards or 1×10^{-5} for cancer risks) while the CTE result did not, there is uncertainty regarding the likelihood of health effects at that property.

For data sets with only one sample, the CTE and RME EPCs were the same. For the following data sets, however, the difference between the CTE and RME EPCs was greater than a factor of 10:

- TEQ on Parcels A and B and Spigot
- PCP and C9–C18 aliphatics on Parcel B.

In particular, the ratio of the RME EPC to the CTE EPC for PCP on Parcel B was 94. A large difference between the CTE and RME EPCs is typically due to a wide spread in the data, which increases the UCL. The uncertainties associated with the EPCs for these properties are potentially a significant factor in the HHRA.

When both the CTE and RME results for a given scenario at a given property exceed the MDEQ target levels (1 for hazard indices, $1\text{x}10^{-5}$ for cancer risks), the evidence for potential health impacts is stronger. Scenarios for which both results exceed target levels include the following (Table 6-4):

- Cancer risk for the hypothetical future resident and the worker at Parcel B
- Noncancer hazard for the hypothetical future resident at Parcel B.

7 ECOLOGICAL RISK ASSESSMENT

CSMs for Parcels A and B (Figure 3-1) and parcels other than A and B (Figure 3-2) include ecological receptors. The CSMs show that the following pathways of exposure of ecological receptors are to be addressed qualitatively:

- Parcels A and B:
  - Inhalation of dust
  - Direct contact with soil, including incidental ingestion and dermal contact.
- Parcels other than A and B
  - Direct contact with soil and water in the ditch, including incidental ingestion and dermal contact
  - Inhalation of dust
  - Direct contact with soil, including incidental ingestion and dermal contact.

The discussion in this section qualitatively addresses the potential exposure pathways to ecological receptors illustrated in Figures 3-1 and 3-2 using a problem formulation format, as described by EPA guidance for performance of ERAs (USEPA 1997a). This problem formulation systematically considers:

- Ecosystems potentially at risk
- Ecological receptors
- COPECs
- COPEC fate and transport
- Potential ecological effects associated with COPECs
- Assessment endpoints.

Consistent with current EPA guidance[13] on performance of ERAs, the purpose of problem formulation is to determine whether a quantitative ERA is needed and addresses MDEQ's request for a closer evaluation of ecological exposures at the S&W Sawmill Facility. A quantitative ERA is considered necessary if its performance and results are expected to enable risk managers to make more informed decisions.

[13] http://www.epa.gov/oppefed1/ecorisk_ders/toera_problem.htm

7.1 ECOSYSTEMS POTENTIALLY AT RISK

The extent, types, and quality of habitats on the facility determine the types of ecological receptors likely to be present at the Facility. The overall size of the area is also important, because if the area of contamination is limited, this tends to mitigate exposure potential of the wide-ranging species or those with large foraging ranges, and they are therefore not likely to be chronically exposed to COPECs in soil, based on frequency and duration of exposure. Together, parcels A and B are approximately 35 acres in size. All parcels evaluated in the BRA together are approximately 200 acres, but the approximately 70 acres making up the residential and commercial properties are not considered suitable habitat for most ecological receptors, in part because people are assumed to actively discourage wildlife use of their yards.

Although the ditch may support aquatic invertebrate life and plants when it is wetted, fish and other aquatic or water-dependent wildlife such as piscivorous birds are not expected to occupy the ditch for extended periods or to use it for spawning sites or breeding because the ditch is wetted only intermittently. Amphibians may use an intermittently wetted area for breeding. Terrestrial wildlife, including those tolerant of intermittently wetted conditions, are therefore of primary concern to this evaluation. The results of the review of the MNHP website that was requested by MDEQ are lists of terrestrial species, including amphibians (Table 7-1), reptiles (Table 7-2), birds (Table 7-3), small mammals (Tables 7-4), and larger mammals (Table 7-5) that could occur at the Facility, depending on habitat availability. In the discussion of each of the major terrestrial areas of the Facility below, the habitat types and quality are described, and the likely uses by specific types of wildlife are discussed.

A description of wetlands and ditches in the general vicinity of the Facility, including the small intermittently-wetted area along the north side of Bunkhouse Road, is provided in the discussion of parcels other than A and B. The discussion of wetlands has been updated with more detail about the area of intermittently wetted soils that is on the Facility.

Selection of receptors combines information on habitat type and quality with information on the types of wildlife that could be present to focus the evaluation of potential ecological exposures on those species most likely to encounter COPECs in soils of the Facility.

7.1.1 Parcel A

Most of Parcel A is vegetated; grasses and forbs range in height up to about 18 to 24 inches tall. There are two or three dozen cottonwood and pine trees scattered throughout the parcel. Downed wood and woody debris are present in some areas of the parcel, including in the area next to the ditch. Parcel A could be used by a variety of wildlife and could attract wildlife when the ditch is wetted. Terrestrial species might be attracted to the area when the ditch is dry. Downed wood is good habitat for a variety of invertebrates, adult amphibians, reptiles, and small mammals.

Birds such as owls (Strigiformes), hawks and eagles (Accipitridae), and larger mammals such as coyotes (*Canis latrans*), bobcats (*Lynx rufus*), and deer (*Odocoileus* spp.) that may be present in the vicinity of the facility could visit or pass through Parcel A, but the areas needed for foraging and breeding or nesting by each of these larger vertebrates are expected to be substantively larger than the available habitat on Parcel A, or of the combined Parcel A and B. For example, raccoon (*Procyon lotor*) foraging areas have been reported to be as small as 25 acres in suburban neighborhoods, but 50 to several hundred acres is a more typical range, particularly in lightly developed and natural areas (USEPA 1993c). Mule deer (*O. hemionus*) forage over ranges of a few to several kilometers; while large raptors like the bald eagle (*Haliaeetus leucocephalus*) have home ranges in the thousands of acres (Buehler 2000).

For some passerines (Table 7-3) and small mammals (e.g., mice and voles; Table 7-4), which have home ranges that may be on the order of an acre or less, this small area of approximately 5 acres could likely support resident individuals or breeding pairs. Snakes could also be present on Parcel A. Several of the small mammal species that could be present in the vicinity of the Facility (Table 7-4) are primarily herbivorous and, with the exception of pocket gophers (*Thomomys talpoides*), focus on the above-ground vegetation, including leaves, seeds and fruits of the plants. These small mammals, and the invertivorous, ground-dwelling passerines (e.g., American robin), potentially have the highest potential exposure to contaminated soils among the birds and mammals that could be present on Parcel A. Since all snakes are carnivorous, including those with the potential to occur at the Facility (Table 7-2), snakes present on Parcel A could be exposed to COPECs in soils through direct contact, and through ingestion of prey for any COPECs that are bioaccumulative.

7.1.2 Parcel B

Parcel B is sparsely vegetated, and the fenced area is largely denuded, exposing sandy and gravelly soils. Some areas of Parcel B are covered by remnant pavement and concrete. There are a few trees towards the western edge of Parcel B, near the fire pond. Elsewhere on Parcel B, small areas of sparse grasses and forbs occur, including some invasive species (e.g., spotted knapweed, *Centaurea stoebe*). The few buildings present in the parcel probably serve as cover for disturbance-adapted species such as crows, pigeons and mice. Buildings could be used as summer day roosting sites by the big brown bat (*Eptesicus fuscus*); these bats prefer caves for hibernation.

The former fire pond contains water only intermittently, following precipitation. Precipitation in Darby is highest in May and June and during the winter months. Precipitation is lowest in July and August. Rain deposits readily evaporate, the pond is fenced, and there is a steep drop to the water. The fire pond is therefore not expected to serve as an attractant to wildlife as a drinking water resource or to otherwise serve as suitable aquatic habitat for other receptors of concern. Amphibian species that may occur on the Facility (Table 7-1) breed in late spring to mid-summer, with metamorphosis extending into late summer for some species. Among the

species that could occur in the vicinity of the Facility, the Pacific tree frog (*Pseudacris regilla*) and possibly the western toad (*Anaxyrus boreus*) are the only amphibians that could use the fire pond as a breeding habitat. However, both of these are unlikely there because the water is surrounded by a plastic liner, and does not have a natural littoral-to-upland ecotone to provide cover and food for these animals during the transition between the terrestrial and aquatic environments. Although the fire pond could potentially be used for breeding for these two species, it does not present attractive habitat for amphibians.

Habitat for birds, mammals, amphibians, and reptiles on Parcel B is therefore considered to be fairly limited. The lack or scarcity of vegetation in the fenced area make it unlikely that most wildlife will use this part of Parcel B for foraging or any other purpose, except possibly as a corridor to areas with more cover, nesting sites, forage or other resources. The limited area of Parcel B that has some coverage by forbs and grasses might be used by small mammals (Table 7-4). Crows or other corvids, pigeons, and mice could eat grass seeds and other grain from the limited area of vegetation on Parcel B, potentially resulting in exposure to COPECs in soils. Snakes could be present on Parcel B and exposed via ingestion of prey that have been exposed to soil contaminants. Bats that might roost in the buildings for part of the year could forage on aerial insects, but would probably be more attracted to the moister and more productive riparian habitat of the Bitterroot River, which is less than half a mile to the east of Parcel B. Birds other than those roosting in the abandoned buildings would find little to no ground cover and no trees for roosting or nesting on most of Parcel B.

7.1.3 Parcels Other than A and B

Parcels other than A and B have mixed uses (residential, commercial, agricultural, and recreational). Several of the parcels are used by people for residences and commercial venues. It is likely that use of residential and commercial properties by reptiles, deer, coyotes, small mammals and other wildlife would be discouraged, since in a residential/commercial setting these species are usually viewed as pests and targeted for control. Physical features (e.g., buildings, pavement, fencing), active discouragement of wildlife uses, and frequent activity by people likely limit the use of residential/commercial areas by most ecological receptors.

In non-residential parts of the facility other than Parcels A and B, pasture land provides a large area of disturbed meadow habitat. Receptors in these areas likely to be extensively in contact with soils are the same as those described for Parcel A: snakes, small mammals and passerines that forage extensively on the ground. In non-residential areas of parcels other than A and B, the areas of soils known to be affected by COPECs originating at the S&W Sawmill are relatively small and confined primarily to the irrigation ditch. The only habitat element of interest in the non-residential pasture areas is the irrigation ditches and the ephemerally inundated area at the southern end of the irrigation return ditch, along the north side of Bunkhouse Road.

7.1.3.1 Irrigation Ditches

There is a network of irrigation ditches in the area of the Facility, and some of these ditches are on parcels other than A and B. Irrigation ditches are man-made features that generally contain water only sporadically during the irrigation season (April to August or September). When irrigation is occurring, the ditches can be wet intermittently throughout the year; water levels and duration of flooding vary from year to year, in conjunction with local irrigation practices, and it is assumed that the ditches may be flooded for a month or more. Most of the ditches are upgradient of the former wood treatment area, with the exception of the irrigation return ditch on the Cassell property. The irrigation ditch on the Cassell property is at a topographical low in the field, and it collects water that floods across the field from other ditches until infiltration occurs. When irrigation occurs, up to a foot of water can collect in the return ditch, which directs water to the main ditch (Cosgriff 2013). Because of this hydrology, the translocation of COPCs from Parcel B soils appears to have been limited to the ditch itself, as evidenced by the 2012 sampling results from transects across the ditch. No Facility-related constituents were detected in a surface water sample collected from ditch.

The intermittent irrigation ditch that runs along the Cassell and Skroch properties is seasonally wet, so that the materials in it can be considered at times to be soils, and at other times sediment. The available data indicate the presence of PCP, dioxins and furans in the soil/sediment of the ditch. Given the intermittent nature of water in the ditch, exposure pathways resulting from the inundation of this area will not be present for extended periods each year. Fish are not expected to occupy this wetted area. During warmer months of the year when surface water is present, insects may use this environment for breeding. Early life stages of aquatic invertebrates may therefore be present in the ditch at times.

Terrestrial ecological receptors may contact the soils/sediments in the irrigation ditch, but the area of the ditch is small in proportion to the overall potential habitat. Receptors that may be present for a life cycle and would depend on the ditch as a primary habitat are sediment-dwelling invertebrates during periods of irrigation, and soil-dwelling invertebrates during dry periods in the ditch and along the edges. Snakes, small mammals and some passerines could live in fairly close association with the ditch, although not enough that they would be considered "aquatic" species. The irrigation ditch could be good quality habitat for certain smaller vertebrates (e.g., rodents, amphibians) to the extent that the ditch provides attractive features such as moist soils, woody debris, and hiding places. Amphibians may use ephemeral wetlands and streams such as the irrigation ditch for breeding, and move into dryer upland areas following emergence from their aquatic life stages.

7.1.3.2 Wetlands

Parcel B and immediate surrounding areas were surveyed for the presence of wetlands that might be impacted by COPCs from historical operations. The survey was conducted utilizing

the criteria from the U.S. Army Corps of Engineers *Manual on Wetlands Delineation* (USACE 1987). There are several areas that are periodically wet, but they do not have hydric soils or hydrophytic plants. The irrigation ditches on the S&W property and Cassell property do not contain hydric soils or hydrophytic plants; therefore, these areas are not considered wetlands. A small remaining area of the lined fire pond does contain some hydrophytic plants (e.g. cattails [*Typha* spp.], etc.). The ground water moves away from this area to the northeast.

One area near the Facility that apparently has wetland hydrology and hydrophytic plants is located northeast of Parcel B, along Highway 93, as shown on Figure 5 of the remedial investigation report. Data from the remedial investigation indicate that this wetland is not being impacted by Facility-related constituents. Another area that is wetted intermittently during the year (e.g., when flood irrigation occurs) is along the ditch, just north of Bunkhouse Road. This area, which appears from aerial photographs to range in size from 450 up to 1,900 m^2, has not undergone a thorough evaluation and may or may not qualify as a wetland according to USACE (1987). However, during a site visit in June 2012, the area was flooded, and sedges (*Carex* spp.) and rushes (*Juncus* spp.) were present, which suggest wetland conditions.

7.1.4 Species of Concern/Threatened or Endangered Species

Requests were made to the MNHP in 1998, 2002, 2006, 2012, and 2013 for information on records of state species of concern within the vicinity of the Facility. In 2006, the MNHP report indicated that three Montana species of concern may be found in the general area of the Facility. Westslope cutthroat trout (*Oncorhynchus clarkii lewisi*) and bull trout (*Salvelinus confluentus*) were reported in the Bitterroot River east of the Facility. Westslope cutthroat trout were also reported in the farther reaches of Bunkhouse Creek that flows toward Parcel B across the Parmenter Property. Lynx (*Lynx canadensis*) inhabit the mountainous areas west of the Facility and on the east side of the Bitterroot Valley.

The MNHP provided updates to the prior species of concern reports in 2012 and 2013. The August 2012 report update was consistent with the previous reports in that the westslope cutthroat trout and bull trout are reported in the Bitterroot River and the westslope cutthroat trout is reported in Bunkhouse Creek (upgradient of potential site-related impacts). However, the lynx was no longer reported in the vicinity of the Facility. Additional species of concern, including seven species of birds, four species of mammals, and one vascular plant (Table 7-6) were noted within the 3-mile search radius in the 2012 report, but none of these reported sightings were within the boundaries of the Facility. The October 2013 report update was consistent with the 2012 report, except that one mammalian species (western spotted skunk [*Spilogale gracilis*]) was no longer included among those located within the 3-mile search radius.

The Facility does not contain the habitat to attract most of the species of concern, although there is a small chance that the Pacific treefrog and western toad could use the fire pond, and these

amphibians would likely use the ephemerally wetted area north of Bunkhouse Road. The updated 2012 and 2013 MNHP reports are included in Appendix I. A summary table of the findings for all of the species of concern listed within the 3-mile search radius and the potential for each to be within the Facility boundary is included as Table 7-6.

7.1.5 Ecological Receptors for the S&W Sawmill Facility

Aquatic habitats on the Facility are spatially limited and ephemeral. Aquatic species such as fish and their predators are not likely to be present for extended periods, or to use the wetted areas on the Facility for spawning, breeding, or rearing of young. Therefore, no aquatic obligate species are considered to be potentially at risk at the Facility, and aquatic species are not considered receptors. Amphibians may be on the Facility, and could use the ephemeral aquatic habitats for breeding. Although a wide range of reptiles, birds and mammals may be found near the Facility and may occur there, those with large home ranges will not be closely associated with soils for extended periods, and their exposures to COPECs at the Facility will therefore be limited and sporadic, if such exposures occur.

The following are the types of terrestrial wildlife that have both a limited home range and a close association with soils:

- Soil invertebrate communities. Although soils are dry and sandy on much of the Facility, which will limit productivity of the soil invertebrate community, moist soils near the ditch and in those areas that are better vegetated, such as pastures, will support soil invertebrates. Adult insects and spiders may be present in soils, but soil infauna (e.g., larval insects, earthworms) are the most susceptible to COPEC exposures.
- Amphibians. Amphibians may use areas of the Facility, with adults generally occupying drier areas and larval forms using intermittently wet areas. The Facility and surrounding habitat are not the preferred habitats for many of the amphibians with ranges that include Ravalli County (Table 7-1). Because they potentially use the ephemerally wetted area north of Bunkhouse Road, amphibians are considered receptors for the Facility.
- Reptiles. Snake species that may occur in the vicinity include the rubber boa (*Charina bottae*), common garter snake [*Thamnophis sirtalis*], terrestrial garter snake [*Thamnophis elegans*], eastern racer [*Coluber constrictor*], gopher snake [*Pituophis catenifer*], and prairie rattlesnake [*Crotalus viridis*). These species favor dry conditions, moist areas with downed wood, and prefer grassy open areas (Table 7-2). Snakes are considered receptors for the Facility, with no one species being broadly representative.
- Birds. Although many bird species could occur in the vicinity of the Facility (Table 7-3), only those passerines that forage extensively on the ground bringing them into close association with soils could potentially be exposed to COPECs in soil, and this is less likely on Parcel B due to the poor habitat and low cover. The types of birds that are

considered receptors are corvids (Corvidae), doves (Columbidae), sparrows (Emberizidae) and certain thrushes like the American robin.

- Mammals. Large mammals (Table 7-5) like the lynx, coyote, mule deer, and raccoon may visit the Site, but the limited habitat quality and limited size of the Facility prevent extensive contact by these species with contaminated soils. The brown bat may use the abandoned buildings on Parcel B as a roosting place in summer, but would likely forage closer to the Bitterroot River than in the area of the Facility. Small mammals, like those listed in Table 7-4, are closely associated with soils, have small home ranges, and occupy habitats like those on the Facility. Therefore, small mammals are considered receptors for the Facility.

Among these receptor groups, most of the birds and small mammals are granivores, subsisting primarily on plant materials. The gopher differs from other small mammals by using below-ground plant parts, and shrews also differ because they consume invertebrates. Those selected representative receptors occupying higher trophic levels and therefore exposed to bioaccumulative COPECs in their foods as well as in direct contact with soils are the shrew, the American robin, and several species of snakes.

7.2 CHEMICALS OF POTENTIAL ECOLOGICAL CONCERN

Soil is the exposure medium of interest to ecological receptors. Most of the time, the majority of receptors will only be exposed to surface soils. Although contamination of groundwater at the Facility has been documented, ecological receptors are not directly exposed to contaminated groundwater; that is, the groundwater pathway is incomplete for ecological receptors. For bioaccumulative chemicals such as dioxins and furans, biological tissue can be an exposure medium as well, but there are no tissue data available for the site. While some dioxin and furan congeners are known to be somewhat bioaccumulative in animals, the extent of any actual bioaccumulation of dioxins and furans in ecological receptors that may be attributable to the Facility is uncertain. This evaluation, therefore, considers the results of analyses of surface soils at the Facility to identify COPECs.

The scope and analytes in the chemistry database for soils are described in Section 4.2.1. S&W Sawmill Facility soils have been analyzed for herbicides, pesticides, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), PAHs and petroleum compounds, phenols, and dioxins and furans, as well as soil physical variables (e.g., grain size) (Tables 4-1 through 4-3). The majority of soil samples in both the historical (Table 4-1) and risk assessment data sets (Tables 4-2 and 4-3) have been collected within Parcels A and B at the surface, within the upper two-foot interval. The data for these surface soils are discussed briefly below.

This discussion supports a qualitative decision about which chemicals could be of potential concern to ecological receptors, and that will therefore be considered in subsequent parts of the

ecological problem formulation. The surface soil data, and considerations relevant to ecological risk assessment, can be summarized as follows:

- Herbicides and pesticides were never detected in soils. These analytes have only been analyzed in 8 surface soil samples, but this class of chemicals is not associated with wood treatment activities or other operations that occurred on the S&W Sawmill Facility. Pesticides and herbicides are not considered COPECs and are not discussed further.
- On parcels A and B, VOCs were detected in one surface soil sample collected in 2010. VOCs detected in this sample included xylenes, toluene, and ethylbenzene. Volatile organic compounds have not been detected in any other surface soil samples on Parcels A and B. VOCs are often not detected in surface soils because they volatilize and/or are degraded in the surface soil environment. Because they are infrequently detected, and not bioaccumulative or persistent, they are unlikely to occur in surface soils. Therefore, VOCs are not considered COPECs and are not discussed further.
- The SVOCs in the S&W Sawmill data base are broken into groups. The SVOCs associated with wood treating operations (the PAHs and phenols) have been evaluated in many samples at the site and are addressed separately below. The other SVOCs were analyzed in 26 samples prior to 2002, and in 8 surface soil samples from 2002 to the present. One SVOC compound, 1-methylnaphthalene, was detected in surface soils in two locations on Parcel B, once in 1998 and once in 2001. In both samples, the concentration was below reporting limits and was estimated (J-qualified). Those SVOCs that are not either PAHs or phenols are not considered COPECs because they have not been frequently detected, and because they are not bioaccumulative.
- Phenols have been detected in surface soils and in soil leachate. PCP and 2,4,6-trichlorophenol have been detected in surface soils from many locations of Parcel B, although 2,3,6-trichlorophenol is much less common. PCP has also been detected in surface soils in a few locations on Parcel A or in the ditch area, and on parcels other than A and B. 2,4,6-Trichlorophenol has not been detected in soils of parcels other than A and B. The highest concentrations of PCP are on Parcel B, and reach 510 mg/kg, with concentrations in 6 other location also measured in the parts per million. Because 2,4,6-trichlorophenol is not common on any part of the Facility, and because PCP is commonly detected and present at high levels in several habitats, PCP is considered a COPEC.
- PAH compounds. Toxicological information to support evaluation of risk to ecological receptors from PAH compounds is available in the form of EPA's Ecological Soil Screening Levels (EcoSSLs) (USEPA 2007b) for mammals and soil invertebrates, but not for birds. The available information is expressed in terms of low molecular weight polycyclic aromatic hydrocarbon (LPAH) and high molecular weight polycyclic aromatic hydrocarbon (HPAH) concentrations in soils. Data for soils at the Facility that

support relevant comparisons is available for 7 locations sampled during 2001 or before (historical data), and for 6 locations in 2010. The historical data appears to be affected by elevated detection limits, resulting in uncertainty. The more recent data indicate that concentrations of HPAH (calculated with non-detects set to half the detection limit) range from 1.56 to 7.92 mg/kg and concentrations of LPAH range from 0.67 to 3.1 mg/kg. Available EcoSSLs (USEPA 2007b) for HPAH are 1.1 mg/kg for carnivorous mammals, 39 for herbivorous mammals, and 18 mg/kg for invertebrates. Available EcoSSLs for LPAH range from 29 mg/kg for invertebrates, to 100 mg/kg for carnivorous mammals, and 350 mg/kg for herbivorous mammals. Therefore, LPAH are not considered a COPEC. HPAH are also not considered a COPEC because the concentrations reported above are only for Parcel B, and carnivorous mammals (shrew) would not occur there, as they prefer moist wooded areas, more like the habitat on Parcel A. On the basis of the general distribution of S&W Sawmill-related chemicals in soils, Parcel A would not be expected to have HPAH concentrations comparable to those on Parcel B.

- Dioxins and furans have commonly been detected in surface soils of the Facility on Parcels A and B, and in soils of parcels other than A and B. Dioxins and furans are toxic to vertebrates and are bioaccumulative. Given the high frequency of detection and potential toxicity, dioxins and furans are considered COPEC s for the S&W Sawmill Facility.

In summary, PCP and dioxins and furans are the COPECs for the S&W Sawmill Facility.

7.3 FATE AND TRANSPORT

Section 3.1 provides an overview of the fate and transport of chemicals associated with the Facility in the Facility environment, and a complete fate and transport evaluation is underway to evaluate and describe the soil leaching and groundwater transport pathways. The fate and transport processes relevant to ecological risk evaluation include those properties that affect mobility in the soil environment, such as the chemical solubility, tendency to bind various components of the soil matrix, biological uptake, bioaccumulation and biomagnification. These processes are briefly addressed for the COPECs in this section.

In most natural environments where PCP occurs, it can exist as a neutral species that may bind to organic material in soils or, more commonly, as an organic anion which can mobilize into soil porewater. Solubility of anionic PCP in soils is influenced by pH of the soil, and its mobility is limited in acidic soil conditions (USEPA 2007c). PCP in solution will be bioavailable to plants and soil-dwelling invertebrates. Bioaccumulation potential for PCP is limited, but it can accumulate in some mammalian tissues (WWF 2005), and has been reported in tissues of fish as a consequence of exposures through water (not through food), but does not tend to biomagnify in food chains.

Behavior of the 2,3,7,8-substituted dioxins and furans in the environment is characterized by extremely low vapor pressures, high octanol-water and organic carbon partitioning coefficients (Kow and Koc, respectively), and extremely low water solubilities. These factors indicate a strong affinity for soils, particularly those with high organic matter content. As a result, transport of dioxins and furans is tied to mobility of fine-grained soils by wind or erosion. Some dioxins and furans, present near the soil surface and not bound to solids, may be subject to photodegradation (USEPA 1994), but this is only relevant for a small fraction of the dioxins and furans. In general, dioxins and furans are highly stable in all environmental media, with persistence measured in decades. Dioxins and furans are taken up by vertebrates following ingestion exposure, but uptake efficiencies and rates are limited for the larger (higher chlorinated) compounds in fish (Opperhuizen and Sijm 1990). Whether this is also the case for mammals and birds is uncertain, but Fries (1999) exposed cows to dioxins and furans associated with PCP in treated wood and reported decreasing bioaccumulation potential with increasing chlorination of dioxin and furan congeners. Biomagnification of dioxins and furans is not consistently demonstrated for the tetrachlorinated compounds, and is not observed for the other congeners.

Plant uptake of dioxins and furans is also limited, because large molecules are not readily transported within plant xylem due to partitioning with the lipid membranes of plant tissues, and generally are not translocated to fruits (Wild and Jones 1992). Wild and Jones (1992) provide the following general comments about plant uptake of organochlorine compounds: "these compounds are generally not taken up into the aboveground portion of crop plants," and "there is some evidence of slight enrichment of some compounds in some root crops, but the transfers are very inefficient, and consequently the BCFs [bioconcentration factors] are very low." They also note that enrichments are generally confined to the root skin or peels because of diffusion into lipid membranes from soils, and that organochlorines in soils do not typically affect concentrations in the fruits, leaves, and stems that may be eaten by livestock or wildlife (Wild and Jones 1992).

7.4 OVERVIEW OF POTENTIAL ECOLOGICAL EFFECTS

COPECs for the S&W Sawmill Facility are PCP and dioxins and furans. This section briefly describes the sorts of toxic effects to which invertebrates, birds and mammals may be susceptible if exposed to these COPECs.

Toxicity and risks to amphibians and reptiles cannot be addressed with available toxicity data. Although amphibians and reptiles are considered receptors for this facility, Integral has found a paucity of information on the toxicity of the COPECs to these receptors in recent literature searches.

Sparling et al. (2000), Fort and McLaughlin (2003), and Broomhall (2005) have noted the lack of toxicity data for amphibians useful for risk assessment. These authors conducted ecotoxicological literature reviews spanning 1972 to 2002. Of the approximately 900 studies found that address amphibians, almost half of which involved uncontrolled field studies, Fort and McLaughlin (2003) found that 192 studies specifically documented toxicological effects, and of those, only 3 provided a detailed link between exposure to xenobiotics and adverse effects. The authors determined that none of these studies had been used in a formal regulatory ERA. Moreover, many of the available studies tend to focus on pesticides and insecticides or nutrients (e.g., nitrogen), none of which are COPECs for the Facility. Too little amphibian toxicological data exist for use in an ERA.

The lack of toxicity data for reptiles useful for risk assessment is confirmed by Weir et al. (2010) and Sparling et al. (2000). These authors performed general literature reviews for ecotoxicological literature from 1978 to 1998 on vertebrates, and found that, of over 12,000 titles, only 163 papers address reptiles. The subject of most of these was turtles. About one-quarter of the studies address metals, a quarter address pesticides, 20 percent address polychlorinated biphenyls (PCBs), and the rest address "other" chemicals and the effects of plastic and other debris. The book *Ecotoxicology of Amphibians and Reptiles* (Sparling et al. 2000) includes chapters on metals (Linder and Grillitsch 2000) and organic chemicals other than pesticides (Portelli and Bishop 2000). For both categories of chemicals, these investigators found that the majority of information is from uncontrolled studies using field-collected organisms in which exposure to several xenobiotics could have occurred or are documented to have occurred. These types of data are not usable for ERA purposes.

In their review, Portelli and Bishop (2000) found no reports of reptiles dying as a result of dioxin or furan exposure, despite fairly elevated concentrations in their tissues. Bishop et al. (1991) reported developmental abnormalities (e.g., abnormal eyes, claws, and bills) and behavioral abnormalities in turtles exposed to dioxins, furans, PCBs, and organochlorine pesticides, but dose-response relationships have not been reported. This and other studies cited by Portelli and Bishop (2000) may suggest correlations between concentrations of polychlorinated dibenzo-*p*-dioxins, and polychlorinated dibenzofurans and abnormalities in developing embryos, but these data are confounded by the presence of pesticides and other chemicals in the environment and tissues of organisms studied. Because of the lack of information on the toxicity of COPECs to reptiles and amphibians, toxicity to these taxa cannot be quantitatively evaluated and is not discussed further.

The discussion below is focused on toxicity of COPECs in invertebrate, avian and mammalian taxa.

7.4.1 PCP

Pentachlorophenol (PCP) exists in soil as either a nonionic species or as an organic anion; in the pH range relevant to most environmental scenarios, the majority exists as the organic anion (USEPA 2005d). Soil pH modifies the solubility, sorption, transport and bioavailability of PCP. PCP is expected to have slight to no mobility in more acidic soils (USEPA 2005d). The half-life of PCP in soil may range from weeks to months. Fate processes for PCP in soil are primarily biodegradation and photolysis (USEPA 2005d).

PCP is rapidly absorbed, rapidly excreted, and has little tendency to persist in living organisms.

PCP causes acute toxicity by uncoupling oxidative phosphorylation. It affects energy metabolism by increasing oxygen consumption and altering the activities of several glycolytic and citric acid cycle enzymes and by increasing the consumption rate of stored lipid (USEPA 2000). PCP is fetotoxic and teratogenic during early gestation, however, evidence of its mutagenic effects is incomplete (Eisler 1989).

Invertebrates

PCP may be toxic to soil biota at soil concentrations as low as 30 mg/kg (Efroymson et al. 1997), but its toxicity in soils depends on its bioavailability, which is affected by specific soil conditions, such as the soil pH. USEPA (2007c) provides an EcoSSL of 31 mg/kg. This is the geometric mean of maximum acceptable toxicant concentrations for three soil invertebrate species, two of which are infaunal worms. The maximum acceptable toxicant concentrations in this group range up to 81 mg/kg, with the highest derived for a springtail, which lives in plant litter at the soil surface.

Birds

Toxicological endpoints in birds exposed to PCP in diet include reduced growth and survival in test species including mallard ducks and chickens (USEPA 2005d). EcoSSLs for terrestrial granivorous birds is 5.9 mg/kg in soil for the dove and 2.1 mg/kg for an invertivore (USEPA 2007c).

Mammals

Data are scarce on the toxicokinetics of PCP in mammals, but studies with livestock and small laboratory animals show that the chemical is not completely metabolized in mammals and is primarily excreted in urine (ATSDR 2001). However, there is great variability between mammalian species in their ability to depurate PCP, as well as in their overall sensitivity. Effect endpoints in mammals exposed to PCP in dietary experiments have included histopathologic changes, reproductive impairment, and retarded growth (Eisler 1989). Like those for birds, EcoSSLs for terrestrial herbivores is 16 mg/kg in soil for the vole, and 2.8 mg/kg for the invertivorous shrew (USEPA 2007c).

RME values calculated for PCP within Parcel B are elevated relative to many of the toxicity values described above, while most RME values outside of Parcel B do not exceed these values (Appendix E).

7.4.2 Dioxins and Furans

From the perspective of an assessment of ecological risks, adverse effects of dioxins and furans on reproductive success, growth, and survival are relevant to evaluating the potential for population-level effects in any receptor. A range of reproductive and developmental effects such as reduced fertility, early-stage embryotoxicity, early life-stage mortality, developmental effects, and reduced growth of offspring have been evaluated for exposure of animals to dioxins and furans and are relevant, because these effects can conceivably affect the growth or viability of a population.

Invertebrates

Reinecke and Nash (Reinecke and Nash 1984) showed that dioxin has a moderate to high potential to bioaccumulate in earthworms (bioaccumulation factors ranged from 0.17 to 9.4 depending on soil conditions). Aquatic invertebrates have been found to be insensitive to dioxin toxicity. The insensitivity of invertebrates to dioxin-like toxicity is consistent with the recent finding that aquatic invertebrates lack the Ah-R, which mediates the toxic effects of dioxin in vertebrates (USEPA 2003a). Although invertebrates do possess an Ah-R homologue, it does not bind dioxins and furans (Butler et al. 2001; Hahn et al. 1992). It is expected that terrestrial invertebrates will likewise be insensitive to dioxin toxicity. In a study on survival of two species of earthworms at 5 ppm 2,3,7,8-TCDD in soils, there was no effect, but both species died at 10 ppm (Eisler 1986).

Birds

Evaluation of the toxic effects of dioxins and furans has been conducted in multiple North American bird species, including herons, egrets, terns, cormorants, a bluebird species, chickens, pheasants, and ducks. Toxicity of dioxins and furans in birds is mediated through Ah receptor, and may also occur through other biochemical pathways. Endpoints evaluated in birds have included reproductive success (using a variety of endpoints), thyroid toxicity, cardiovascular toxicity, immune toxicity, and effects on growth and survival. Exposure levels at which adverse effects are observed span a large range across avian taxa, from low nanograms per kilogram to low micrograms per kilogram in tissue. There are clear differences among bird species in susceptibility to dioxin-like toxicity, which have been attributed to biochemical differences in Ah receptors among species (Karchner et al. 2006; Head et al. 2008), and domestic chickens are generally considered to be the most sensitive bird species tested, not only in responses to TCDD exposure, but also in responses to other dioxin like compounds, such as tetrachlorodibenzofuran and PCB126 (TN & Associates 2002).

Mammals

Toxicity of dioxins and furans in mammals is mediated through Ah-R, as it is in birds. Exposure of mammals to dioxins and furans is associated with adverse effects on reproduction and development, and the sensitivity of mammals to TCDD toxicity is highly variable. 2,3,7,8-TCDD toxicity in mammals may be characterized by loss of body weight and death. Atrophy of the thymus is consistently a manifestation of 2,3,7,8-TCDD toxicity in mammals, and suppression of thymus-dependent cellular immunity, particularly in young animals, may contribute to their death. Early life stages, including the fetus and newly born pup/kit, appear to be the most sensitive to dioxin toxicity, and maternal exposure can result in increased frequencies of stillbirths.

Unlike birds, only one form of the Ah receptor has been shown to exist in mammals. Differences in sensitivity to dioxins and furans may therefore be a function of species-specific toxicokinetic and toxicodynamic factors. Acute toxicity studies with 2,3,7,8-TCDD have shown marked differences among species; up to a factor of 8,400 between the single oral LD50 dose for the guinea pig (the most sensitive mammal) and the hamster (Eisler 1986). Mink have been the subject of several dioxin and furan exposure studies, and recent literature clearly indicates that 2,3,7,8-tetrachlorodibenzofuran is much less toxic to mink than would be predicted by the mammalian TEF for this congener (Zwiernik et al. 2009). The majority of mammalian studies addressing toxicity of dioxins and furans have used common laboratory species (e.g., rat and monkey). The limited range of mammalian test species argues for caution in extrapolating many of the results of toxicological studies to other mammalian wildlife species, which may differ substantially in their life history and ecology from tested animals.

7.5 ASSESSMENT ENDPOINTS

An assessment endpoint is "an explicit expression of the environmental value to be protected, operationally defined as an ecological entity and its attributes" (USEPA 2003b). Ecological properties identified in assessment endpoints should be those which are susceptible to the chemical stressors and relevant to management goals. The available literature, and the specific types of information it provides, determine to some extent how the assessment endpoints are defined. For example, although a wildlife population is often the level of ecological organization of significance to management, literature to provide measures of effects generally reports on effects on individuals. Metrics to assess attributes of individuals are more generally available in the literature used to support ERA than metric to address populations (i.e., individual survival, growth, and reproduction, such as those discussed in Section 7.4 in evaluation of the toxicological effects of COPECs). As a result, assessment endpoints should link the attributes addressed (i.e., individual-level) to attributes relevant to risk management (i.e., population- or community-level).

Assessment endpoints focus on population viability as indicated by survival, growth, and reproduction of individuals, for the following receptor groups:

- Stable or increasing abundance of terrestrial invertebrates in those invertebrate communities that may be exposed to COPECs from the Facility
- Stable or increasing populations of amphibians and reptiles that may be exposed to COPECs from the Facility
- Stable or increasing populations of herbivorous and omnivorous birds that may be exposed to COPECs from the Facility
- Stable or increasing populations of herbivorous and omnivorous mammals that may be exposed to COPECs from the Facility.

For threatened and endangered species, individual-level effects can be considered an appropriate focus; however, as no threatened or endangered species were identified within the vicinity of the Facility, individual-level effects are not considered a focus of assessment endpoints for this risk assessment.

7.6 CONCLUSION

Although the Facility includes habitats for a variety of wildlife, potential exposures to PCP, dioxins and furans in soils are limited by biological or ecological factors and by the size of the site and poor quality habitat on the most contaminated area (Parcel B). This evaluation of potential ecological risks is qualitative; that is, neither exposure nor risk is addressed quantitatively. A qualitative review of information is informative, but the magnitude of any potential risk to each receptor group is not presented, and there are some uncertainties associated with this approach. The significance of exposures to wind-borne dust (Figures 3-1 and 3-2) cannot be evaluated, because the dust inhalation studies needed to evaluate risks to birds and mammals are generally not available. For species potentially susceptible to risks from Facility contaminants, it is most likely that direct contact with soils and/or ingestion of contaminated prey results in the highest doses, and that dust inhalation plays a relatively small role. Ingestion of dioxins and furans in tissues of species exposed to soil contaminants may be an important pathway for upper trophic level receptors such as the snakes, shrew or robin. The majority of birds and mammals that could occupy habitats on the Facility are granivores or herbivores, and would therefore derive the majority of their exposures through direct contact with soil, including incidental ingestion. No species of special concern are expected to occur on the Facility, and therefore species of concern will not come into contact extensively with COPECs in soils within the Facility.

Without quantitative exposure and risk modeling, the relative importance of soil and foods as exposure media to each receptor in each part of the Facility is not known. Although there are

some uncertainties related to potential ecological risks at the S&W Sawmill Facility, the species most likely to be exposed at levels of potential concern are those that are in close contact with soils within limited areas. Because Parcel B, and particularly the fenced area, provide little to no habitat, ecological receptors are not expected to be exposed to the most contaminated soils on the Facility. Thus, available data support the conclusion that adverse effects to populations and communities are unlikely. Because the human health risk evaluation addresses sensitive receptors, long term exposures and sensitive health endpoints, cleanup levels protective of human health will likely be protective of any ecological receptors that could use the Facility. Given the lack of complete exposure pathways in the most contaminated areas of the Facility and the conservative cleanup levels for human health that will address contaminated areas, conducting a more detailed ERA is not warranted because it will not better inform risk management than the HHRA presented above.

8 SITE-SPECIFIC CLEANUP LEVELS

8.1 SOIL

SSCLs based on direct contact with soil were calculated using methods consistent with the HHRA to support decision-making concerning potential remediation during the feasibility study. These SSCLs were derived consistent with USEPA (1991) guidance for derivation of soil preliminary remediation goals, and are based on exposures only to the environmental medium that will be addressed by the remedial action (soil). SSCLs were not calculated for the soil leaching pathway in this BRA because the leaching pathway is being evaluated in a separate effort and will be addressed, if necessary, once that effort is complete. SSCLs were not calculated based on protection of ecological receptors because a quantitative ERA was not performed (Section 7). SSCLs were not calculated for groundwater for compounds with DEQ-7 water quality standards because the DEQ-7 water quality standards are considered the cleanup levels for the Facility (MDEQ 2012b). An EPA tapwater RSL was used for a groundwater SSCL for 2-methylnaphthalene, a compound without a DEQ-7 standard. SSCLs were not calculated based on consumption of garden produce or breast milk because these media will not be addressed directly by the remedial action.

The SSCLs were calculated for the resident (child for noncancer hazards, child+adult for cancer risks), the commercial worker, the construction worker, and the recreator/trespasser scenarios based on incidental ingestion of soil, dermal contact with soil, and inhalation of dust.

When calculating noncancer-based SSCLs, the target hazard quotient of 1.0 for each target organ may be apportioned among multiple chemicals affecting that target organ in multiple ways as long as the total for each target organ does not exceed 1 (MDEQ 2012e). For the SSCLs shown in this BRA, noncancer hazards were apportioned equally among the COPCs affecting the same target organ. An addendum to the BRA will be prepared as an attachment to the fate and transport modeling report to provide final SSCLs that include site-specific apportionment considering the impacts of the leaching pathway.

Similarly, SSCLs for carcinogens were calculated by apportioning the total cancer risk of $1x10^{-5}$ (MDEQ 2012e) equally among the carcinogens. The addendum to the BRA will provide final SSCLs that include site-specific apportionment considering the impacts of the leaching pathway.

SSCLs for residential exposures to soil were calculated based on noncancer hazards to a child and cancer risks to an adult (including childhood exposure).

Noncancer hazards are higher when calculated for children than for adults, so it was more protective to focus on children when calculating SSCLs. Likewise, cancer risks are higher when

calculated for adults rather than focusing entirely on children, so it was more protective to focus on the child+adult exposure when calculating SSCLs based on cancer risk.

The apportionment of noncancer hazards and cancer risks for soil COPCs is shown in Tables G-5 and G-6. The soil SSCLs were calculated using a simple algebraic rearrangement of the noncancer hazard and cancer risk equations. The calculations are shown in Appendix D (bottoms of Tables D7.1, D7.2, D7.4, D7.6, and D7.7) and summarized in Table 8-1.

Exposure assumptions for non-ditch properties and the standard worker scenario (as opposed to the infrequent worker) were used for developing SSCLs. These scenarios produced the most protective SSCLs.

8.2 GROUNDWATER

The SSCLs for groundwater are defined by MDEQ as the DEQ-7 values, summarized in Table-8-2. An EPA tapwater RSL was used for a groundwater SSCL for 2-methylnaphthalene, a compound without a DEQ-7 standard.

8.3 SOIL VAPOR

For potential exposures to soil vapor as indoor air or ambient air in a trench/excavation scenario, SSCLs for soil vapor were calculated using EPA RAGS Part F guidance. The SSCLs were calculated for the resident (child for noncancer hazards, child+adult for cancer risks), the commercial/industrial worker, and the construction worker scenarios based on inhalation of air impacted by soil vapor. This is considered a conservative approach because exposures to soil vapor, particularly indoor air, at the concentrations detected in the subsurface are highly unlikely given the effect of dilution as the soil vapor migrates into ambient air and the evidence of natural attenuation (via biodegradation) of petroleum hydrocarbons in the subsurface.

As stated above, a hazard index of 1 was apportioned equally among the COPCs affecting the same target organ, and a cancer risk of $1x10^{-5}$ was apportioned equally among the carcinogenic COPCs when calculating the SSCLs provided in this BRA.

The formulas for calculating SSCLs for carcinogenic and noncarcinogenic endpoints were based on the risk calculations provided by EPA in the RAGS Part F guidance (USEPA 2009a).

$$SSCL_{CR} = \frac{Target\ Risk * ATC}{URF * EF * ED * ET}$$

$$SSCL_{HQ} = \frac{Target\ HQ * ATN * RfC * CF}{EF * ED * ET}$$

Where:

ATC	=	averaging time for carcinogens (hours)
ATN	=	averaging time for noncarcinogens (hours)
URF	=	unit risk factor $(mg/m^3)^{-1}$
RfC	=	reference concentration (mg/m^3)
CF	=	conversion factors (0.001 mg/µg)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
ET	=	exposure time (hours/day)
Target HQ	=	chemical-specific value shown in Table G-7 (unitless)
Target Risk	=	$3x10^{-6}$ (unitless) (Table G-7)

The calculation of SSCLs is shown in Appendix D and SSCLs are summarized in Table 8-3.

For the combined adult and child resident, an ET for the CTE case of 17 hours/day was calculated based on a weighted average of the CTE exposure parameters for the resident; 19 hours/day for child (for 6 years) and 16 hours/day for an adult (for 12 years). For the RME case, the exposure time was 24 hours/day per MDEQ (2012) guidance.

9 SUMMARY AND CONCLUSIONS

The BRA uses soil data collected between January 1, 1998 and December 31, 2012, and groundwater data collected between January 1, 2008 and December 31, 2012, for the BRA (see Section 4). The BRA presents an HHRA, a problem formulation for ERA, and SSCLs in support of the RI/FS process. Soil leaching and groundwater fate and transport will be evaluated separately.

The ERA problem formulation concluded that a quantitative evaluation was not necessary because it would not better inform risk management.

9.1 HHRA APPROACH

The HHRA identified BaPE, ethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, PCP, TEQ, and petroleum hydrocarbon ranges C5–C8 aliphatics, C9–C12 aliphatics, C9-C10 aromatics, C9–C18 aliphatics and C11–C 22 aromatics as COPCs for soil; BaPE, PCP, TEQ, and 2-methylnaphthalene as COPCs for groundwater; and benzene, ethylbenzene, m,p- and o-xylenes, naphthalene and petroleum hydrocarbon ranges C5–C8 aliphatics, C9–C12 aliphatics, and C9–C10 aromatics as COPCs for soil vapor. Soil and groundwater data were evaluated for individual properties. Risks associated with exposure to soil vapors were not evaluated, but SSCLs were developed for indoor air and trench air, as discussed in Section 9.4.

The following receptors were evaluated in the HHRA under the current use scenario for soil exposures:

- Resident children and adults on every property currently used for residential purposes
- Commercial/industrial workers on every property currently used for commercial/industrial purposes and, with a limited exposure frequency, on pasturelands, cemetery, rodeo, and school grounds
- Trespassers on all properties
- Recreational visitors at the rodeo and school grounds.

The following receptors were evaluated under the potential future use scenario for soil exposures:

- Resident children and adults on every property except the cemetery, rodeo, and school grounds
- Commercial/industrial workers on every property

- Construction workers on every property
- Trespassers on every property.

Groundwater was evaluated by comparing concentrations in monitoring wells to MDEQ (2012f) groundwater standards or, in the absence of MDEQ standards, EPA screening levels adjusted as necessary to be consistent with MDEQ standards.

The soil exposure assessment for all receptors included incidental ingestion, dermal contact, and inhalation of dust. The exposure assessment for residents also included ingestion of home-grown root vegetables and consumption of breast milk by an infant. Exposure assumptions were consistent with MDEQ requirements and EPA guidance.

EPCs for soil were derived by statistical evaluations of soil sampling data. EPCs for dust, home-grown root vegetables, and breast milk were modeled using methods described in the report. It was noted that there were large uncertainties surrounding the modeling of root vegetable and breast milk concentrations. Groundwater EPCs were identified for each property with groundwater data based on the maximum detected concentration in any well on the property during the most recent round of sampling, and the maximum detected concentration in any well on the property during the most recent five years of sampling.

Toxicity values were obtained from the IRIS database, EPA provisional peer-reviewed toxicity values, CalEPA, MassDEP, and ATSDR. Noncancer indices were compared with MDEQ's (2012e) target hazard index of 1. Total cancer risks were compared with MDEQ's target cancer risk of 1×10^{-5}.

9.2 HHRA RESULTS

9.2.1 Soil

The noncancer hazard results and cancer risk results are summarized in Table 6-4.

Parcels A and B

RME hazard indices exceed the MDEQ target of 1 for most of the scenarios evaluated, except the current trespasser and the future commercial/industrial worker on Parcel A. CTE hazard indices are below the target for most of the scenarios evaluated except the hypothetical future child resident on Parcel B.

RME cancer risks exceed the MDEQ target of $1\text{x}10^{-5}$ for most of the scenarios evaluated, except the future construction worker and the hypothetical future breastfeeding infant on Parcel A and the future construction worker exposed to subsurface soil on Parcel B. CTE cancer risks are below the target for most of the scenarios evaluated, except the hypothetical future resident, the

future worker, and the hypothetical future consumption of home-grown root vegetables on Parcel B.

Parcels other than A and B

The CTE hazard indices for all scenarios at all properties are below the MDEQ target of 1. The RME hazard indices are less than 1 for most of the properties and scenarios evaluated except the current resident child on Peirano Tract B; the potential future child resident on the Cassell, Peirano Parcel B, and Peirano Tract A properties; the potential future construction worker on the Cassell property and each of the Peirano properties; the hypothetical future consumption of home-grown root vegetables on each of the Peirano properties.

The CTE cancer risks for all scenarios at all properties are below the MDEQ target of $1x10^{-5}$. The RME cancer risks are less than $1x10^{-5}$ for most of the properties and scenarios evaluated except the current resident on Peirano Tract B; the current worker on Peirano Parcel B; the potential future resident on the Cassell, Peirano Parcel B, and Peirano Tract A properties and the road right-of-way; and the potential future consumption of home-grown root vegetables on the Cassell property, each of the Peirano properties, and the road right-of-way.

It should be noted that contamination on the Cassell and Peirano properties is expected to be limited to the irrigation ditch on the west sides of the properties. The Cassell property is a narrow strip of land that consists almost entirely of the irrigation ditch.

9.2.2 Groundwater

On Parcel B, the maximum groundwater concentrations of all four COPCs (TEQ, PCP, BaPE, and 2-methylnaphthalene), detected both during the last round of sampling and during the most recent five years of sampling, exceed the DEQ-7 groundwater standards. The same is true for TEQ and PCP on Parcel A[14].

Both the 1-year and the 5-year maximum concentrations of TEQ on the Chaney, Renfroe, and Parmenter properties are greater than the groundwater DEQ-7 value, while both the 1-year and 5-year maximum concentrations of PCP are below the DEQ-7 value. The 1-year and 5-year maximum concentrations of PCP on the Robak property are below the DEQ-7 value, while the 1-year and 5-year maximum concentrations of TEQ exceed the DEQ-7 value. The 1-year and 5-year maximum concentrations of PCP on the Peirano Tract B property are below the DEQ-7 value. The 1-year maximum value of TEQ (a nondetected concentration) is above the DEQ-7

[14] During the most recent five years of groundwater sampling, the EPH screen has been exceeded only in monitoring wells located on Parcel B. Therefore, EPH petroleum fractions and PAH data, such as BaPE and 2-methylnaphthalene concentrations, are not available for any property other than Parcel B.

value, while the 5-year maximum value (a detected concentration in 2009 that is below the detection limit in 2012) is below the DEQ-7 value.

Groundwater data are not available for other properties.

9.3 FACILITY-RELATED INTAKES COMPARED TO BACKGROUND DIETARY INTAKES

BaPE and TEQ occur in the food supply due to natural background levels and global distribution of anthropogenic sources of these chemicals. Facility-related maternal intakes of BaPE and TEQ via soil exposures (incidental ingestion and dermal contact) were compared with average dietary background intakes due to sources unrelated to the Facility. Estimated intakes of TEQ at Parcels A or B, the Cassell property, and the Peirano properties under residential use exceed typical background dietary intakes, while intakes of BaPE fall below background dietary intakes. Estimated intakes of TEQ on other properties fall below dietary background levels.

9.4 SITE-SPECIFIC CLEANUP LEVELS (SSCLS)

SSCLs for direct contact with soil were calculated using methods consistent with the HHRA for exposures to soil. SSCLs were not calculated for the soil leaching pathway because the leaching pathway is being evaluated in a separate effort. SSCLs were not calculated based on protection of ecological receptors because a quantitative ERA was not conducted. SSCLs were not calculated for groundwater because the DEQ-7 water quality standards are considered the cleanup levels for the Facility. In the absence of DEQ-7 standards, IP has chosen to use SSCLs based on RSLs. SSCLs for soil vapor were calculated based on EPA guidance. Soil and soil vapor SSCLs were calculated by apportioning a hazard index of 1 equally among the COPCs affecting the same target organ and by apportioning a target risk of $1x10^{-5}$ equally among the carcinogenic COPCs.

The soil and soil vapor SSCLs are summarized in Tables 8-1 and 8-3. Site-specific soil SSCLs will be provided in an addendum to the BRA after the leaching pathway has been evaluated. The groundwater SSCLs are summarized in Table 8-2.

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FIGURES

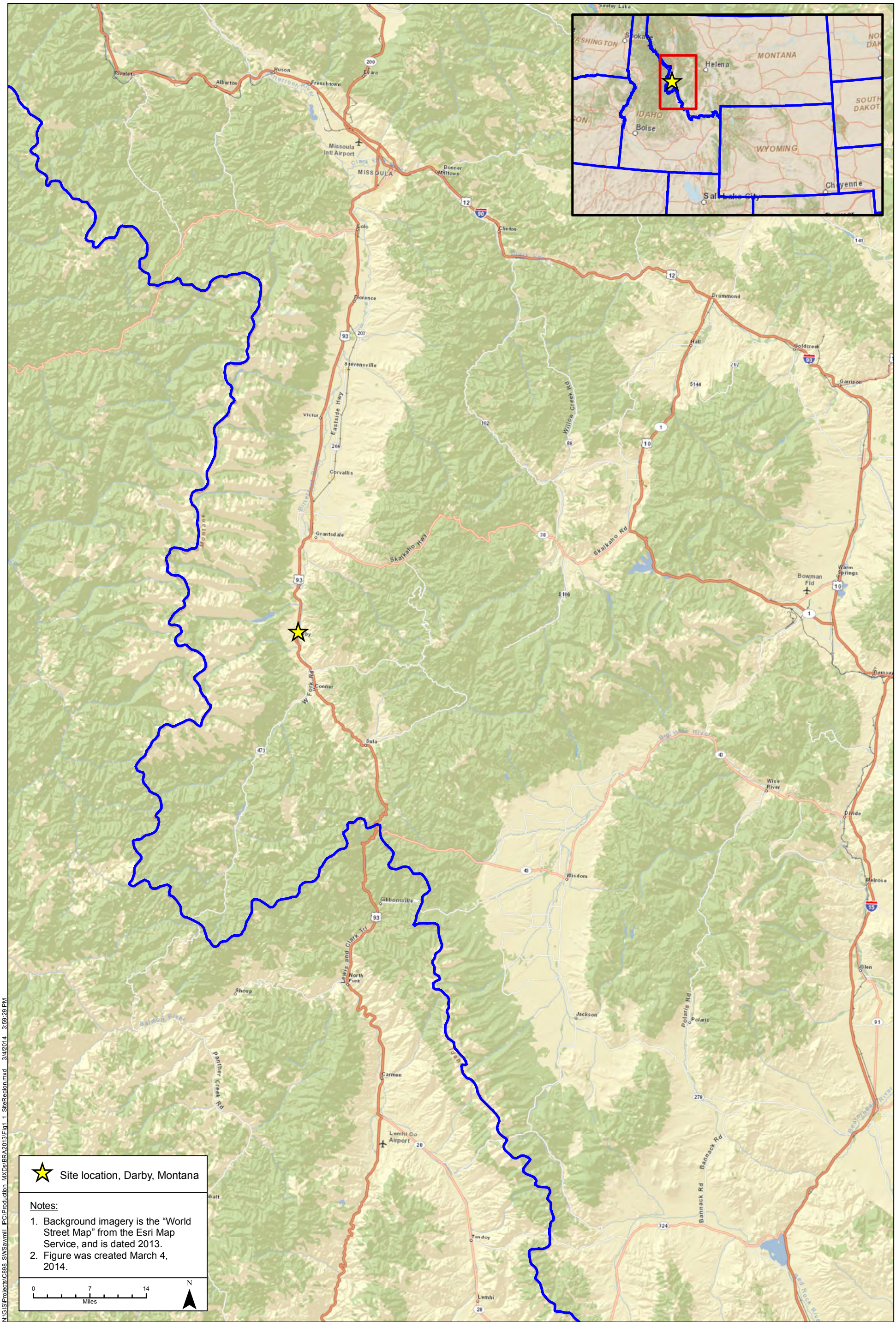

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Figure 1-1.
Site Location
S&W Sawmill Facility, Darby, Montana

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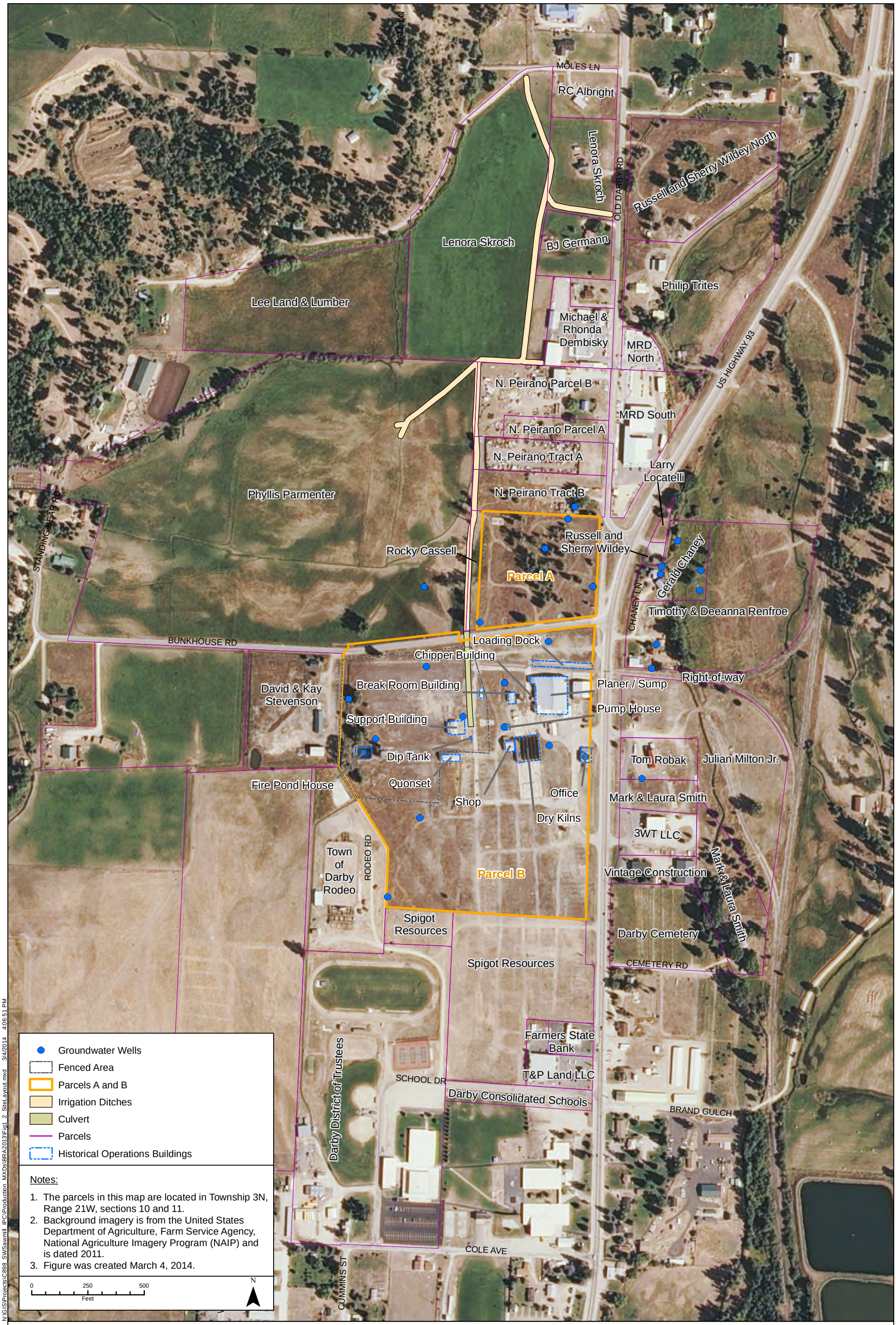

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Figure 1-2
Facility Layout
S&W Sawmill Facility, Darby, Montana

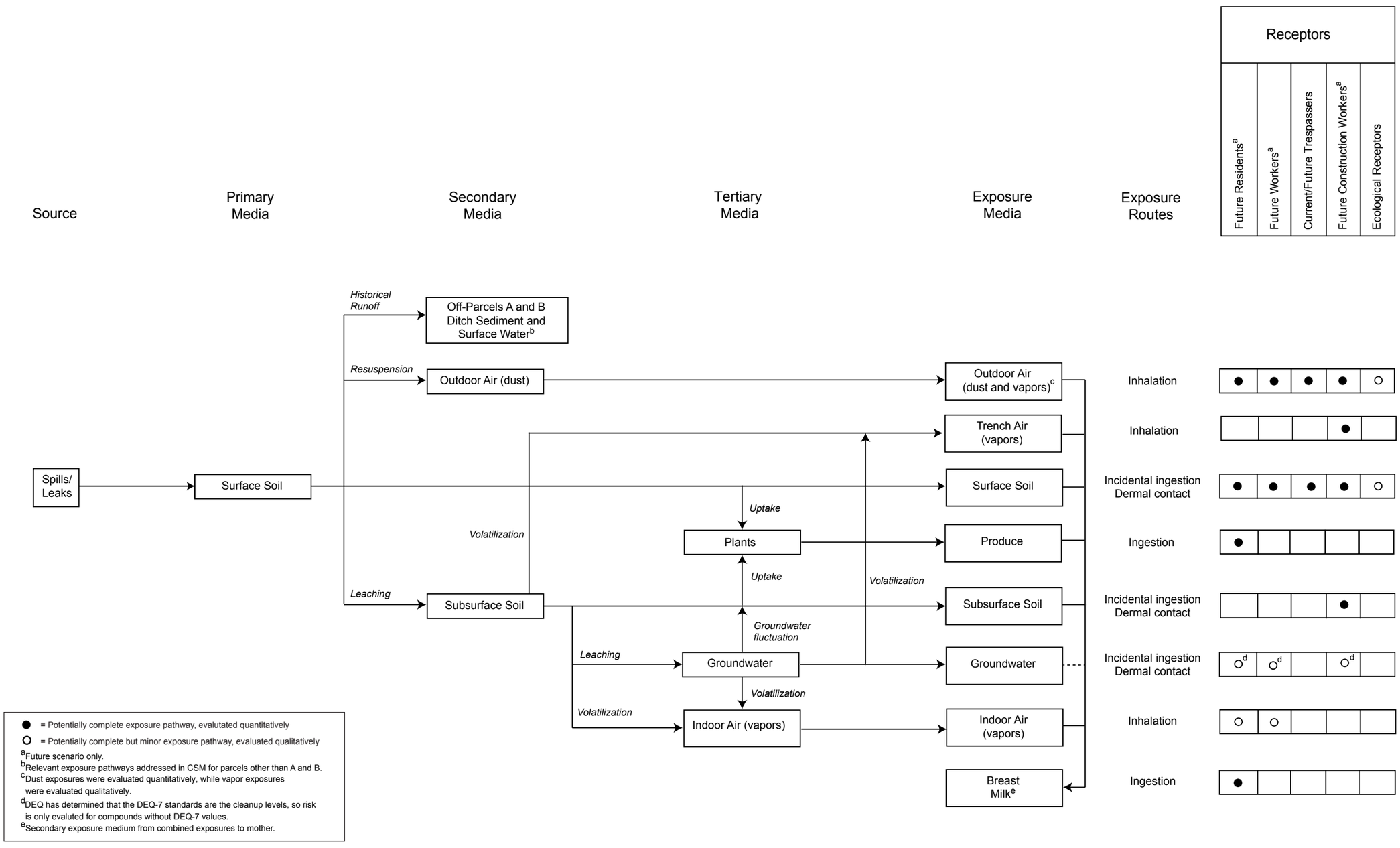

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Figure 3-1
Conceptual Site Model
Parcels A and B
S & W Sawmill Facility, Darby, Montana

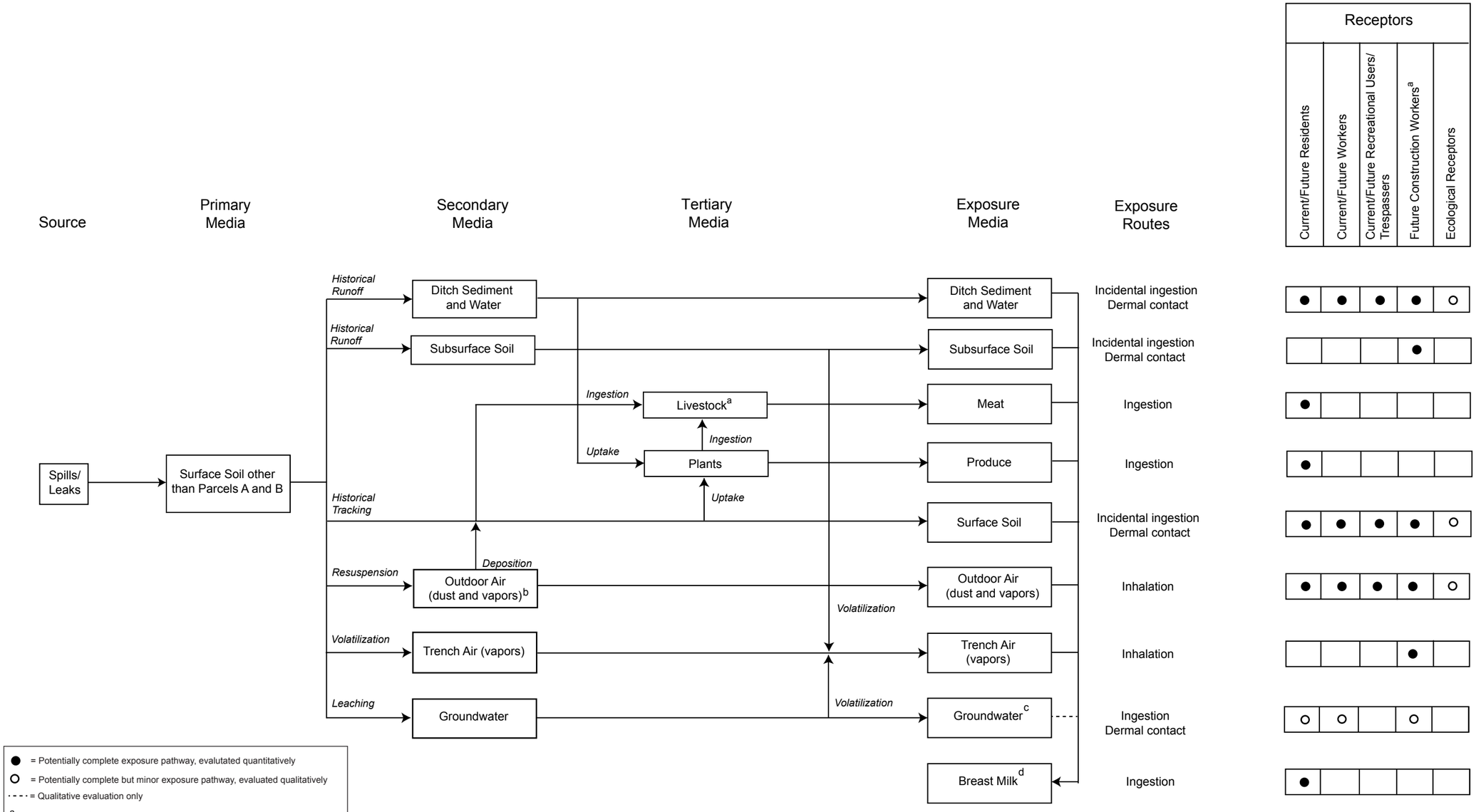

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Figure 3-2
Conceptual Site Model
Parcels Other Than A and B
S & W Sawmill Facility, Darby, Montana

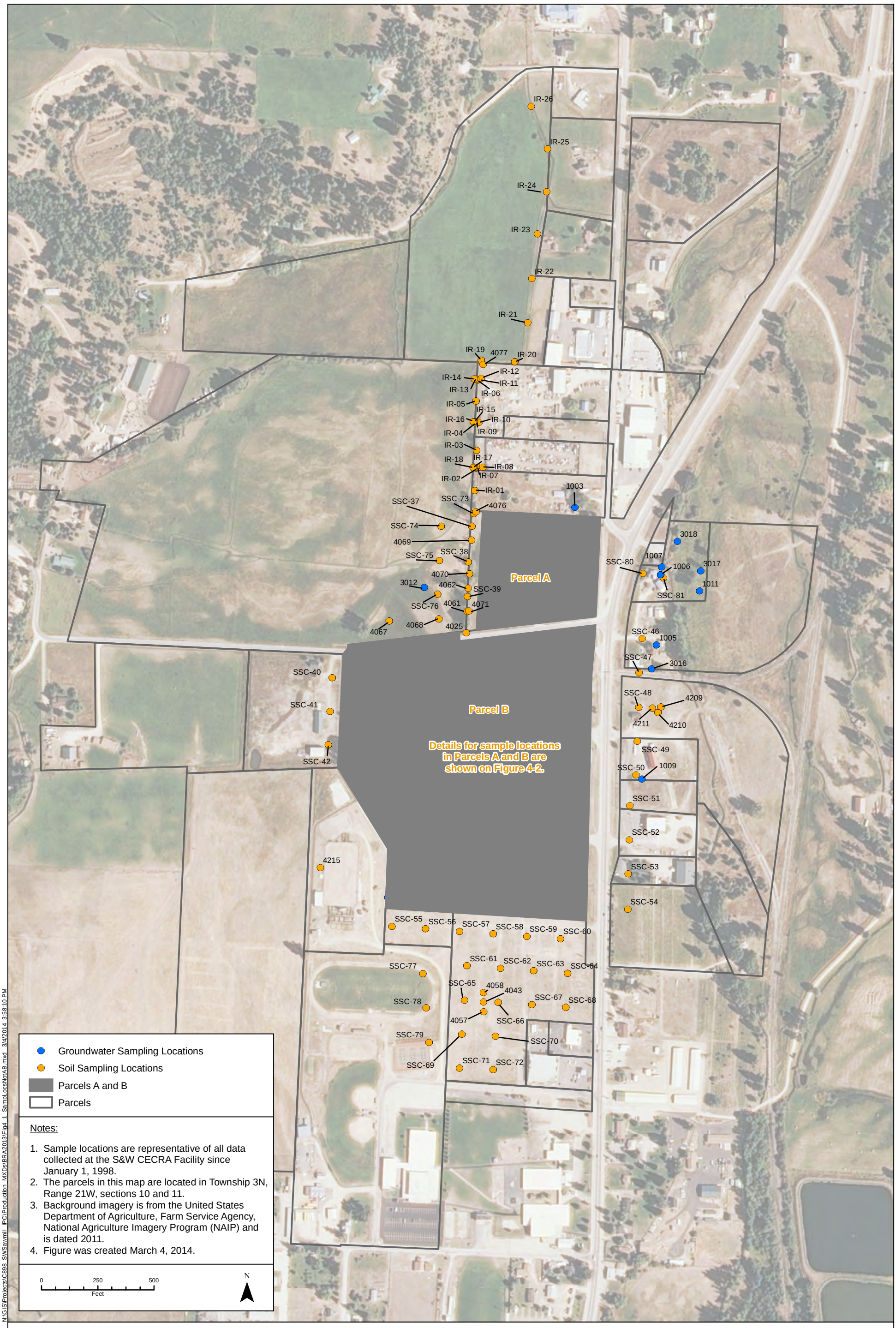

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Figure 4-1
Sample Locations Outside of Parcels A and B
S&W Sawmill Facility, Darby, Montana

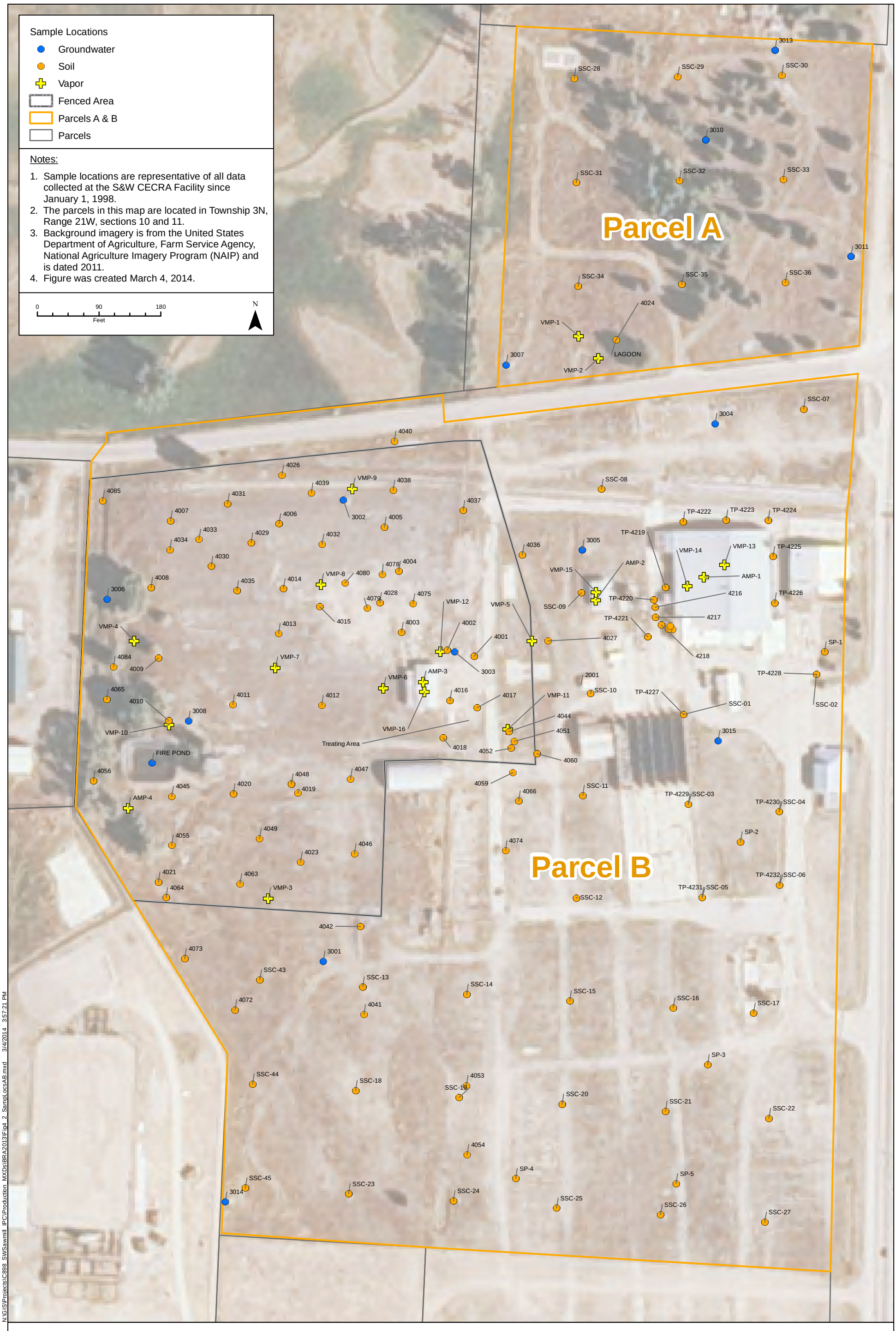

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Figure 4-2
Sample Locations Within Parcels A and B
S&W Sawmill Facility, Darby, Montana

TABLES

Table 3-1. Current and Potential Future Human Receptors

	Residential	Worker	Recreational	Trespasser	Construction Worker
Parcels A and B	F	F: Standard	--	C/F	F
Spigot Resources	F	F: Standard	--	C/F	F
Pasture lands: Cassell Parmenter Skroch	F	C: Infrequent F: Standard	--	C/F	F
Residential properties: Chaney [a] Peirano Tract B Renfroe	C/F	F: Standard	--	C/F	F
Commercial properties: 3WT Milton MRD [b] Peirano Parcel B Peirano Tract A Robak Smith Stevenson Vintage	F	C/F: Standard	--	C/F	F
Road right-of-way	F	F: Standard	--	C/F	F
Town of Darby cemetery	--	C/F: Infrequent	--	C/F	F
Rodeo grounds, school grounds	--	C/F: Infrequent	C/F	C/F	F

Notes:

C = current

F = future

-- = not applicable

[a] The Chaney property was recently purchased by Benjiman and Betty Ricciardi.

[b] No soil data were available for the MRD property. Groundwater data were available and were evaluated.

Table 4-1. Total Soil Sample Counts Collected Within Parcels A and B, 1998–2012

	Within Parcels A & B				
Chemical Class	0–2 ft	2–4 ft	4–6 ft	6–8 ft	8–10 ft
Dioxins/furans	99	20	0	14	5
Herbicides	8	8	0	8	0
PAH	13	9	2	13	0
Pesticides	8	8	0	8	0
Petroleum	18	14	2	11	0
Phenols	131	29	23	29	5
Physical chemistry	12	18	2	10	0
Semivolatiles	29	10	10	18	0
TEQ	99	20	0	14	5
Volatiles	13	9	2	13	0
Total number of unique samples collected	147	29	23	29	5

Notes:
PAH = polycyclic aromatic hydrocarbon
TEQ = toxicity equivalency

Table 4-2. Total Soil Sample Counts Collected Outside of Parcels A and B, 1998-2012

	Outside Parcels A & B				
Chemical Class	0–2 ft	2–4 ft	4–6 ft	6–8 ft	8–10 ft
Dioxins/furans	113	6	1	0	2
Herbicides	0	0	0	0	0
PAH	0	0	0	0	0
Pesticides	0	0	0	0	0
Petroleum	0	0	0	0	0
Phenols	93	4	4	0	3
Physical chemistry	0	0	0	0	0
Semivolatiles	1	0	0	0	0
TEQ	113	6	1	0	2
Volatiles	0	0	0	0	0
Total number unique samples collected	127	7	4	0	3

Notes:
PAH = polycyclic aromatic hydrocarbon
TEQ = toxicity equivalency

Table 4-3. Individual Soil Vapor Sample Counts Collected on Parcels A and B

Chemical Class	Subsurface Soil Vapor [a]	Sub-slab Soil Vapor	Indoor Air	Outdoor Air
PAHs	23	8	6	2
Petroleum	23	8	6	2
Volatiles	23	8	6	2

Notes:
PAH = polycyclic aromatic hydrocarbon

[a] Only subsurface soil vapor samples were used in the risk assessment analyses

Table 4-4 . Yearly Counts for Groundwater Samples Collected at Each of the Sampling Locations Within Parcels A and B

	Well Number – Parcels A and B																
Year	3001.0	3002.0	3003.0	3004.0	3005.1	3005.2	3006.0	3007.0	3008.0	3010.1	3010.2	3011.1	3011.2	3013.1	3013.2	3014.0	3015.0
2008				2				2	2			2	2	2	2		
2009				2				2	2			2	2	2	2		
2010		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
2011	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
2012	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Table 4-5. Description of Yearly Investigations by Parameter Class Within Parcels A and B[a]

Analyte Class	2008	2009	2010	2011	2012
Halogens			X		
Metals			X		
Nutrients			X		
PAH				X	X
Petroleum				X	X
Phenols	X	X	X	X	X
Physical chemistry			X		
TEQ	X	X	X	X	X
Volatiles				X	X

Notes:
PAH = polycyclic aromatic hydrocarbon
TEQ = toxicity equivalency

[a] An "X" in a cell indicates that at least one sample was analyzed for the given analyte class during that year.

Table 4-6. Yearly Counts for Groundwater Samples Collected at Each of the Wells Located Outside of Parcels A and B

	Well Number – Outside Parcels A and B											
Year	1003.0	1005.0	1006.0	1006.0 TS	1007.0	1009.0	1011.0	3012.1	3012.2	3016.0	3017.0	3018.0
2008	2	2	2		2							
2009	2	2	3		2							
2010	2	2	6		2			2	2			
2011	2	2	5	4	2	1	6	2	2	3	3	3
2012	2	2			2		2	2	2	2	2	2

Table 4-7. Description of Yearly Investigations Outside of Parcel A and B by Parameter Class[a]

Analyte Class	2008	2009	2010	2011	2012
Halogens			X		
Metals			X		
Nutrients			X		
PAH				X	X
Petroleum				X	X
Phenols	X	X	X	X	X
Physical chemistry			X		
TEQ	X	X	X	X	X
Volatiles				X	X

Notes:
PAH = polycyclic aromatic hydrocarbon
TEQ = toxicity equivalency

[a] An "X" in a cell indicates that at least one sample was analyzed for the given analyte class during that year.

Table 5-1. Chemicals of Potential Concern

Chemical of Potential Concern	Soil	Groundwater	Soil Vapor	Soil Leaching to Groundwater
Benzo(a)pyrene equivalents (BaPE)	Including benzo(a)anthracene, benzo(a)pyrene, chrysene, and indeno(1,2,3-cd)pyrene	Including benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene		
Pentachlorophenol	X	X		X
TCDD TEQ	X	X		X
Benzene			X	
C5 to C8 Aliphatics	X		X	
C9 to C12 Aliphatics	X		X	
C9 to C10 Aromatics	X		X	X
C9 to C18 Aliphatics	X			
C11 to C22 Aromatics	X			X
Ethylbenzene	X		X	X
1-Methylnaphthalene	X			X
2-Methylnaphthalene	X	X		X
Naphthalene	X		X	X
2,4,6-Trichlorophenol				X
m,p-Xylenes			X	
o-Xylenes			X	

Notes:

TCDD = tetrachlorodibenzo-*p*-dioxin

TEQ = toxicity equivalency

Table 6-1. Exposure Durations for Receptors Evaluated for Mutagens with Age-Related Adjustments

Receptor	Age Category (yr)	Exposure Duration	
		RME	CT
Resident (child plus adult)	0 to < 2	2	2
	2 to < 6	4	4
	6 to < 16	10	10
	16 to < 30	14	2
Recreator/ Trespasser	6 to < 16 [a]	11	6
	16 to < 18	2	0

Notes:

CT = central tendency

MDEQ = Montana Department of Environmental Quality

RME = reasonable maximum exposure

[a] The exposure durations for the 6-16 yr age group are different for the recreator/trespasser and the resident. MDEQ (2012f) guidance specifies that the age range 6 to 18 is 13 years; so the exposure durations for the recreator/trespasser were adjusted to be consistent with this.

Table 6-2. Relative Potency Factors for Carcinogenic PAHs

Carcinogenic PAH	Relative Potency Factor (unitless)
Benzo(a)pyrene	1
Benzo(a)anthracene	0.1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.001
Dibenz(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

Source: USEPA (1993b)

Notes:

PAH = polycyclic aromatic hydrocarbon

USEPA = U.S. Environmental Protection Agency

Table 6-3. Toxicity Equivalency Factors for Dioxins and Furans

Dioxin/Furan Congener	Toxicity Equivalency Factor (unitless)
Chlorinated Dibenzo-p-dioxins	
2,3,7,8-TCDD	1
1,2,3,7,8-PeCDD	1
1,2,3,4,7,8-HxCDD	0.1
1,2,3,6,7,8-HxCDD	0.1
1,2,3,7,8,9-HxCDD	0.1
1,2,3,4,6,7,8-HpCDD	0.01
OCDD	0.0003
Chlorinated Dibenzofurans	
2,3,7,8-TCDF	0.1
1,2,3,7,8-PeCDF	0.03
2,3,4,7,8-PeCDF	0.3
1,2,3,4,7,8-HxCDF	0.1
1,2,3,6,7,8-HxCDF	0.1
1,2,3,7,8,9-HxCDF	0.1
2,3,4,6,7,8-HxCDF	0.1
1,2,3,4,6,7,8-HpCDF	0.01
1,2,3,4,7,8,9-HpCDF	0.01
OCDF	0.0003

Source: van den Berg et al. (2006)

Table 6-4. Hazard and Risk Results [a,b]

Property	Scenario	Hazard Index RME	Hazard Index CTE	Cancer Risk RME	Cancer Risk CTE	Current Scenario
Parcel A	Child resident	**27**	0.4	--	--	
	Child/adult resident	--	--	**2E-04**	6E-06	
	Worker	1	0.06	**3E-05**	6E-07	
	Construction worker	**4**	0.03	5E-06	4E-08	
	Trespasser	1	0.07	**2E-05**	6E-07	X
	Infant	**3**	0.05	4E-06	3E-07	
	Produce[c]	**2**	0.04	**4E-05**	1E-06	
Parcel B	Child resident	**67**	**3**	--	--	
	Child/adult resident	--	--	**2E-03**	**9E-05**	
	Worker	**3**	0.5	**4E-04**	**2E-05**	
	Construction worker	**11**	0.2	**5E-05**	9E-07	
	Construction worker - subsurface	**6**	0.1	5E-06	1E-07	
	Trespasser	**3**	0.5	**2E-04**	9E-06	X
	Infant	**6**	0.3	**2E-05**	1E-06	
	Produce[c]	**10**	0.5	**3E-03**	**9E-05**	
Cassell (ditch)	Child resident	**3**	0.2	--	--	
	Child/adult resident	--	--	**3E-05**	2E-06	
	Infrequent worker	0.4	0.04	1E-05	4E-07	X
	Worker	0.4	0.09	1E-05	7E-07	
	Construction worker	**2**	0.05	2E-06	5E-08	
	Construction worker - subsurface	0.03	0.002	4E-08	3E-09	
	Trespasser	0.1	0.03	2E-06	2E-07	
	Infant	0.3	0.02	4E-07	2E-08	
	Produce[c]	1	0.1	**3E-05**	2E-06	
Peirano Tract B (ditch)	Child resident	**4**	0.2	--	--	X
	Child/adult resident	--	--	**3E-05**	2E-06	X
	Worker	0.5	0.1	1E-05	1E-06	
	Construction worker	**2**	0.06	2E-06	7E-08	
	Trespasser	0.1	0.04	2E-06	3E-07	
	Infant	0.3	0.03	4E-07	3E-08	
	Produce[c]	**2**	0.2	**3E-05**	3E-06	
Peirano Parcel B (ditch)	Child resident	**4**	0.3	--	--	
	Child/adult resident	--	--	**4E-05**	3E-06	
	Worker	0.5	0.1	**2E-05**	1E-06	X
	Construction worker	**2**	0.08	2E-06	9E-08	
	Trespasser	0.2	0.05	3E-06	3E-07	
	Infant	0.4	0.04	5E-07	4E-08	
	Produce[c]	**2**	0.2	**4E-05**	4E-06	
Peirano Tract A (ditch)	Child resident	**4**	0.08	--	--	
	Child/adult resident	--	--	**3E-05**	7E-07	
	Worker	0.5	0.04	1E-05	3E-07	X
	Construction worker	**2**	0.02	2E-06	2E-08	
	Trespasser	0.2	0.01	2E-06	9E-08	
	Infant	0.4	0.009	4E-07	1E-08	
	Produce[c]	**2**	0.06	**3E-05**	9E-07	
Right-of-way	Child resident	0.08	0.02	--	--	
	Child/adult resident	--	--	**2E-05**	5E-06	
	Worker	0.007	0.005	4E-06	9E-07	X
	Construction worker	0.02	0.002	4E-07	5E-08	
	Trespasser	0.004	0.003	1E-06	4E-07	
	Infant	0.007	0.002	2E-07	5E-08	
	Produce[c]	0.07	0.02	**3E-05**	6E-06	

Notes:

All results are unitless.

Bold and shaded results exceed hazard index of 1 or cancer risk of $1x10^{-5}$.

CTE = central tendency estimate
RME = reasonable maximum estimate

[a] Results are shown only for properties with at least one result above MDEQ's target levels of 1 for hazard index or $1x10^{-5}$ for cancer risk.

[b] Results provided pertain to hazards and risks related to direct contact exposures to surface soil and inhalation of dust derived from surface soil (unless otherwise noted).

[c] Hazards related to ingestion of produce are provided for the child resident receptor. Risks related to ingestion of produce are provided for the child/adult resident receptor.

Table 6-5. Qualitative Uncertainty Analysis

Task	Activity	Under-estimates Risks	Under- or Over-estimates Risks	Over-estimates Risks	Comment
Conceptual site model	Future residential use of Parcels A and B, Spigot			H	These properties will most likely be used commercially
	Inclusion of the home-grown root vegetables pathway			M	Vegetables likely cannot be grown without soil amendments
	Groundwater comparison to residential cleanup levels			M	Impacted groundwater is not used for drinking water and surface impacts have not occurred; occupational tap water exposures would be less than the residential exposures assumed for the purposes of the HHRA
Data evaluation and selections of COPCs	Elimination of analytes without screening/toxicity data	L			Toxicity data are available for key COPCs
	Screening across entire Facility			M	Certain parcels may have undetected concentrations of COPCs or concentrations below the screening levels
	Groundwater data for last 5 years of sampling		L		Uncertainty over how well the results of recent sampling predict future concentrations
	Maximum of duplicate used			L	No significant differences between parent and duplicate sample results
	TCDD TEQ calculations using 1/2 DL			L	Other approaches (DL = 1, ND = DL) did not yield significant differences in many samples
	Adjacent parcels not sampled			L	Adjacent parcels not sampled are farthest from source area and likely have lower contamination, if any, than parcels with calculated risks below MDEQ guidelines
	Elimination of cPAHs not detected	L			Eliminated only the PAHs never detected at the Facility
	Use of surrogate chemicals for screening		L		Surrogate data supported elimination of chemicals from COPC list
Exposure assessment	Biased soil sampling approach			H	95UCL from a biased design over-predicts the true average
	Use of maximum values for some EPCs			M	Maximum value from a small data set likely over-estimates the true average
	Produce model		H		Wide range of models available; Kd for PCP highly uncertain
	Dust model		L		Dust contributes negligibly to total risks
	Breast milk model			M	Modeling assumptions introduce additional uncertainty
	Soil ingestion rate for construction worker			M	Alternative values discussed in text
	Surface area of skin exposed to soil			M	Less skin area is likely to be exposed in the spring and fall
	Failure to consider relative bioavailability			M	Chemicals that bind tightly to soil, including the key COPCs in this assessment, are likely to be less bioavailable via soil ingestion than in the toxicity studies used to derive the toxicity values

Table 6-5. Qualitative Uncertainty Analysis

Task	Activity	Under-estimates Risks	Under- or Over-estimates Risks	Over-estimates Risks	Comment
Toxicity assessment	Use of linearized model for dioxins/furans			H	Wide scientific support for a threshold model
	Estimation of dermal toxicity values from oral toxicity data		M		Dermal toxicity data not available for the COPCs
	Oral RfD for petroleum C11-C22 aromatics based on surrogate		L		Not expected to be a driver in decision-making for the Facility
	Missing toxicity data	M			Includes missing RfD for BaP; missing RfCs for 1- and 2-methylnaphthalene, BaP, and PCP; and missing CSFs for ethylbenzene and naphthalene
Risk characterization	Assumption of additive cancer risks		M		Virtually no data available on additivity for the COPCs
	Assumption of additive noncancer hazards			L	Noncancer hazards were added for COPCs with different target organs, but in cases where HI exceeds 1, the HI for TEQ alone also exceeds 1

Notes:

95UCL = upper 95 percent confidence limit on the mean
BaP = benzo(a)pyrene
COPC = chemical of potential concern
cPAH = carcinogenic polycyclic aromatic hydrocarbon
CSF = carcinogenic slope factor
DL = detection limit
EPC = exposure point concentration
H = impacts on risk estimates from this source of uncertainty are expected to be high
HHRA = human health risk assessment
HI = hazard index
Kd = soil/water partitioning coefficient
L = impacts on risk estimates from this source of uncertainty are expected to be low
M = impacts on risk estimates from this source of uncertainty are expected to be medium
MDEQ = Montano Department of Environmental Quality
ND = nondetect
PAH = polycyclic aromatic hydrocarbon
PCP = pentachlorophenol
RfC = reference concentration
RfD = reference dose
TCDD = 2,3,7,8-tetrachlorodibenzo-*p*-dioxin
TEQ = toxicity equivalency of 2,3,7,8-TCDD

Table 7-1. Amphibians with Ranges that Include Ravalli County

Species	Scientific Name	Elevation Range (ft)	Primary Habitat Associations	Food Habits	Home Range	Relative Density of Observations[a]	Relative Recency of Observations
Hylidae (chorus frogs)							
Pacific treefrog	*Pseudacris regilla*	1,500-6,000	During breeding, found regularly in shallow, quiet waters. Otherwise, inhabit adjacent uplands, moving along the ground or in low shrubs at night and taking shelter during the day in dense vegetation, rodent burrows, etc.	ND	ND	Moderate	5 to 10 years
Ascaphidae (tailed frogs)							
Rocky mountain tailed frog	*Ascaphus montanus*	2,500-7,500	Small, swift, cold mountain forested streams. Prefer fast streams, less than 14 ft wide, with substrate of slabby flat-bottomed rocks with little aquatic vegetation.	Larvae feed almost exclusively on diatoms, though also eat pollen. Adults are opportunistic night foragers that prey on invertebrates (primarily terrestrial, but also aquatic).	ND	Low	5 to 10 years
Ranidae (true frogs)							
American bullfrog	*Lithobates catesbeianus*	<4,000	Associated with larger bodies of quiet water, such as ponds, lakes, or backwaters of streams, usually in areas with extensive cattails or reeds.	In ponds, predominantly insects (mostly Coleoptera, Orthoptera, Hemiptera) and crayfish. In streams, mostly crayfish and insects (Coleoptera).	ND	Low	15 to 20 years
Columbia spotted frog	*Rana luteiventris*	2,000-9,500	Regularly found at water's edge in or near forest openings.	Larvae feed on vegetation. Adults feed mainly on ground insects.	ND	Moderate to High	5 to 10 years
Bufonidae (true toads)							
Western toad	*Anaxyrus boreas*	2,000-9,000	Include low elevation beaver ponds, reservoirs, streams, marshes, lake shores, potholes, wet meadows, and marshes, to high elevation ponds, fens, and tarns at or near treeline. Adult and juvenile Western Toads dig burrows in loose soil or use burrows of small mammals, or occupy shallow shelters under logs or rocks.	Larvae filter suspended plant material or feed on bottom detritus. Adults eat spiders, daddy longlegs, and millipedes, with ants and ground beetles as common items.	ND	Moderate	<5 years

Table 7-1. Amphibians with Ranges that Include Ravalli County

Species	Scientific Name	Elevation Range (ft)	Primary Habitat Associations	Food Habits	Home Range	Relative Density of Observations[a]	Relative Recency of Observations
Ambystomatidae (mole salamanders)							
Long-toed salamander	*Ambystoma macrodactylum*	1,500-9,000	Found in a variety of habitats from sagebrush to alpine. Typically breed in ponds or lakes, usually those without fish present. Following breeding, they move to adjacent uplands.	Larvae eat ostracods/cyclops; also red water mites, insect egg masses, algae. Adult: terrestrial arthropods (mostly coleopterans, dipterans); also aquatic insect larvae (mostly trichopterans).	ND	Moderate	5 to 10 years

Source: Montana Field Guides. Accessed at http://fieldguide.mt.gov/displayFamily.aspx?class=Amphibia. Accessed on June 3, 2013.

Notes:

ND = not determined

[a] Relative density is based on how many observations of a given species are recorded for a given sub-county area relative to the overall distribution of observation frequencies throughout the state.

Table 7-2. Reptiles with Ranges that Include Ravalli County

Species	Scientific Name	Elevation Range (ft)	Primary Habitat Associations	Food Habits	Home Range	Relative Density of Observations[a]	Relative Recency of Observations
Boidae (Boas)							
Rubber boa	*Charina bottae*	<2,500 to 7,000	Usually found under logs and rocks in either moist or dry forest habitats	Primarily small mice, but also shrews, salamanders, snakes, and lizards	ND	Medium	5 to 10 years
Colubridae (Colubrid Snakes)							
Common gartersnake	*Thamnophis sirtalis*	<2,500 to 7,000	Found in nearly all habitats, but most commonly at lower elevations around water	Primarily amphibians, but also slugs, birds, and small mammals	ND	Medium	5 to 10 years
Terrestrial gartersnake	*Thamnophis elegans*	<2,500 to 7,500	Found in nearly all habitats, but most commonly at lower elevations around water	Generalist; eats a variety of vertebrates and invertebrates, including leeches, slugs, fish, and amphibians	ND	High	0 to 5 years
Eastern racer	*Coluber constrictor*	<2,500 to 4,500	Associated with relatively open habitats either in shortgrass prairie or forested areas	Primarily small mammals, lizards, orthopterans, and anurans	Approximately 1 snake/ha	Low	15 to 20 years
Gophersnake	*Pituophis catenifer*	<2,500 to 4,500	Associated with dry habitats	Rodents, rabbits, ground-dwelling birds, and to a lesser extent lizards	1.3 snakes/ha	Low	10 to 15 years
Viperidae (Vipers)							
Prairie rattlesnake	*Crotalus viridis*	<2,500 to 5,000	Favor open and arid country, but are also found in ponderosa pine stands and mixed grass-coniferous forests	Mice, ground squirrels, and rabbits	ND	Low	0 to 5 years

Source: Montana Field Guides. Accessed at http://fieldguide.mt.gov/displayClasses.aspx?Kingdom=Animalia. Accessed on October 17, 2012.

Notes:
ha = hectare
ND = not determined

[a] Relative density is based on how many observations of a given species are recorded for a given sub-county area relative to the overall distribution of observation frequencies throughout the state.

Table 7-3. Upland Birds of the Bitterroot National Forest Checklist

	Abundance	Season	Habitat
BIRDS OF PREY			
Turkey Vulture	u	SR	3,5,6
Osprey	c	SR	1,2,4
Bald Eagle	u	PR	1,2,4
Northern Harrier	c	PR	2,3
Sharp-shinned Hawk	o	PR	1,5,6,7
Cooper's Hawk	o	PR	1,5,6
Northern Goshawk	u	PR	6,7,8
Swainson's Hawk	o	SR	3,5,6,9
Red-tailed Hawk	c	PR	1,3,6,7
Ferruginous Hawk	r	M	3
Rough-legged Hawk	c	WR	2,3
Golden Eagle	o	PR	3,5,6,9
American Kestrel	c	PR	1,3,6,7
Merlin	o	PR	2,3,5,6
Peregrine Falcon	o	SR	2,3,5,6
Gyrfalcon	r	M	5,9
Prairie Falcon	o	PR	3,5,6
GAME BIRDS			
Gray Partridge	o	PR	3
Chukar	r	PR	3,5
Ring-necked Pheasant	a	PR	2,3
Spruce Grouse (Franklin's)	u	PR	6-9
Blue Grouse	u	PR	6,7,9
Ruffed Grouse	c	PR	1,4,6
Wild Turkey	r	PR	6,7
DOVES/CUCKOOS			
Rock Dove	c	PR	3,5
Mourning Dove	c	PR	3,6
Black-billed Cuckoo	r	M	1,3,6
OWLS/NIGHTJARS			
Flammulated Owl	u	SR	6,7,8
Western Screech-Owl	u	PR	1,6
Great Horned Owl	c	PR	1-8
Snowy Owl	r	WR	3
Northern Pygmy-Owl	u	PR	1,4,6,7,9
Burrowing Owl	r	SR	3
Great Gray Owl	r	PR	1,6,7,8
Long-eared Owl	o	PR	1,3,4,6
Short-eared Owl	u	PR	2,3
Boreal Owl	u	PR	6,7,9
Northern Saw-whet Owl	u	PR	1,7
Common Nighthawk	c	SR	1,2,3,6
SWIFTS			
Black Swift	o	SR	4,5,6,9
Vaux's Swift	u	SR	6,7
White-throated Swift	u	SR	5,6,7

Table 7-3. Upland Birds of the Bitterroot National Forest Checklist

	Abundance	Season	Habitat
HUMMINGBIRDS/KINGFISHER			
Black-chinned Hummingbird	u	SR	1,3,4
Calliope Hummingbird	c	SR	6-9
Broad-tailed Hummingbird	r	SR	4,6-9
Rufous Hummingbird	c	SR	1,3,4,6
Belted Kingfisher	c	PR	1,2,4
WOODPECKERS			
Lewis' Woodpecker	c	PR	1,6
Red-naped Sapsucker	u	SR	1,4-7
Williamson's Sapsucker	r	SR	6-9
Downy Woodpecker	c	PR	1,4,6,7
Hairy Woodpecker	c	PR	1,6-9
Three-toed Woodpecker	r	PR	6-9
Black-backed Woodpecker	u	PR	6-9
Northern Flicker	c	PR	1,3,4,6-8
Pileated Woodpecker	u	PR	1,7
FLYCATCHERS			
Olive-sided Flycatcher	u	SR	6,9
Western Wood-pewee	c	SR	1,4,6
Willow Flycatcher	c	SR	1,3,4,6
Least Flycatcher	u	SR	4,6
Hammond's Flycatcher	u	SR	7,8,9
Dusky Flycatcher	u	SR	3,6
Cordilleran Flycatcher	u	SR	1,4,8
Say's Phoebe	u	SR	3,5
Western Kingbird	u	SR	3,4,6
Eastern Kingbird	c	SR	1,3,4,6
LARK/SWALLOWS			
Horned Lark	u	PR	3,9
Tree Swallow	c	SR	1-4
Violet-green Swallow	u	SR	1-6
Northern Rough-winged Swallow	u	SR	1-5
Bank Swallow	c	SR	1-5
Cliff Swallow	u	SR	1-5
Barn Swallow	c	SR	1-5
JAYS/CROW/RAVEN			
Gray Jay	u	PR	6-9
Steller's Jay	u	PR	6-9
Blue Jay	r	PR	1,2,3,6
Pinon Jay	r	M	3,6,7
Clark's Nutcracker	c	PR	6-9
Black-billed Magpie	a	PR	1-6
American Crow	o	PR	1,3,6,7
Common Raven	u	PR	3,5-9

Table 7-3. Upland Birds of the Bitterroot National Forest Checklist

	Abundance	Season	Habitat
CHICKADEES/NUTHATCHES/CREEPER			
Black-capped Chickadee	c	PR	1,4,6
Mountain Chickadee	u	PR	6-9
Boreal Chickadee	r	M	6,7,8
Chestnut-backed Chickadee	r	WR	1,4,6,8
Red-breasted Nuthatch	c	PR	6-9
White-breasted Nuthatch	c	PR	1,4,6
Pygmy Nuthatch	u	PR	1,6,7
Brown Creeper	u	PR	1,7,8,9
WRENS/DIPPER/KINGLETS			
Rock Wren	u	SR	5
Canyon Wren	r	PR	5
House Wren	c	SR	1,3,4,6
Winter Wren	u	PR	4,6-9
Marsh Wren	c	PR	2
American Dipper	U	PR	1,4
Golden-crowned Kinglet	u	PR	1,4,6-9
Ruby-crowned Kinglet	c	SR	1,4,6-9
BLUEBIRDS/THRUSHES			
Western Bluebird	r	SR	3,6
Mountain Bluebird	u	SR	3,6,9
Townsend's Solitaire	u	PR	5-9
Veery	o	SR	1,4
Swainson's Thrush	u	SR	1,6,7
Hermit Thrush	u	SR	6,7
American Robin	a	PR	1,3,4,6-8
Varied Thrush	u	SR	1,4,8
CATBIRD/THRASHER/PIPIT			
Gray Catbird	u	SR	1,4
Sage Thrasher	r	M	3
American Pipit	o	SR	3,9
WAXWINGS/SHRIKES/STARLING			
Bohemian Waxwing	u	WR	3,6
Cedar Waxwing	u	PR	1,3,4,6,8
Northern Shrike	u	WR	3,6
Loggerhead Shrike	r	M	3,6
European Starling	a	PR	3,6
VIREOS/WARBLERS			
Solitary Vireo	u	SR	1,4,6,7
Warbling Vireo	c	SR	1,4,6,7,8
Red-eyed Vireo	u	SR	1,4
Tennessee Warbler	r	M	1,4,6
Orange-crowned Warbler	u	SR	3,4,6
Nashville Warbler	o	SR	1,4,6
Yellow Warbler	c	SR	1,4
Yellow-rumped Warbler	c	SR	1,3,4,6-9
Townsend's Warbler	u	SR	7,8,9
American Redstart	o	SR	1,4
Northern Waterthrush	o	SR	4
MacGillivray's Warbler	u	SR	1,4

Table 7-3. Upland Birds of the Bitterroot National Forest Checklist

	Abundance	Season	Habitat
Common Yellowthroat	c	SR	1,2,4
Wilson's Warbler	u	SR	14
Yellow-breasted Chat	r	SR	14
TANAGERS/GROSBEAKS			
Western Tanager	c	SR	1,6-9
Black-headed Grosbeak	u	SR	1,3,4,6
BUNTING/TOWHEE			
Lazuli Bunting	u	SR	1,3,4,6
Rufous-sided Towhee	u	SR	1,4,6
SPARROWS			
American Tree Sparrow	c	WR	1,3,4,6
Chipping Sparrow	c	SR	1,3,4,6,7
Brewer's Sparrow	u	SR	3,9
Vesper Sparrow	c	SR	3
Lark Sparrow	r	SR	3
Savannah Sparrow	c	SR	3
Fox Sparrow	r	SR	1,3,4,6
Song Sparrow	c	PR	1,2,4
Lincoln's Sparrow	u	SR	1,3,4,6
White-throated Sparrow	r	M	1,3,6-9
White-crowned Sparrow	u	SR	1-4,6
Harris' Sparrow	r	WR	3,4,6
Dark-eyed Junco	c	PR	1,3,4,6,7
Lapland Longspur	r	M	3
Snow Bunting	r	WR	3
BLACKBIRDS/ORIOLE			
Bobolink	u	SR	2,3
Red-winged Blackbird	a	PR	1,2,3
Western Meadowlark	c	PR	3
Yellow-headed Blackbird	a	SR	2
Brewer's Blackbird	c	SR	3
Brown-headed Cowbird	c	SR	1,3
Northern Oriole	u	SR	1,3
FINCHES			
Rosy Finch	r	PR	3,9
Pine Grosbeak	u	PR	1,4,6,7,9
Cassin's Finch	u	PR	4,6,7,8,9
House Finch	c	PR	1,3,4,6
Red Crossbill	c	PR	6-9
White-winged Crossbill	r	PR	8
Common Redpoll	u	WR	3,4,6,7,8
Pine Siskin	c	PR	4,6-9
American Goldfinch	u	PR	1,3,4,6

Table 7-3. Upland Birds of the Bitterroot National Forest Checklist

	Abundance	Season	Habitat
Evening Grosbeak	c	PR	1,4,6,7,8
House Sparrow	c	PR	1,3

Source: USGS Bird Checklists of the United States - Bitterroot National Forest; http://www.npwrc.usgs.gov/resource/birds/chekbird/r6/bitterrt.htm. Accessed October 17, 2012. U.S. Geological Survey.

Notes:

Shorebirds, wading birds, ducks, and gulls have been removed from this checklist because habitat for these types of birds is not present in the vicinity of the facility.

Relative abundance:

a - abundant: very numerous
c - common: likely to be seen or heard
u - uncommon: present but not certain to be seen
o - occasional: seen a few times a season
r - rare: seldom seen

Seasonal occurrence:

PR - permanent resident
WR - winter resident
SR - summer resident
M - migrant

Habitat:

1 - Bitterroot River
2 - wetlands/marshes
3 - open grass/shrubs
4 - mountain streams/lakes
5 - cliffs/canyons
6 - forest edges
7 - dry forest
8 - moist forest
9 - high elevation forests/alpine

Table 7-4. Small Mammals with Ranges that Include Ravalli County

Species	Scientific Name	Elevation Range (ft)	Primary Habitat Associations	Food Habits	Home Range	Relative Density of Observations[a]	Relative Recency of Observations
Muridae (mice, rats, lemmings, voles)							
Water vole	*Microtus richardsoni*	3,500-9,500	Alpine and subalpine, mesic meadow, montane grassland; semiaquatic	Gramivore, forbs, willows, seeds	0.2 to 1 per acre	Low	>20 years
Southern red-backed vole	*Myodes gapperi*	2,500-8,500	Dense and open subalpine forests, mesic meadows and montane grassslands; typically does not construct runways	Vegetative portions of plants, nuts, seeds, berries, ferns, fungi, arthropods	ND	Low to moderate	5 to > 20 years
Montane vole	*Microtus montanus*	2,500-7,500	Dry grassland, sagebrush grasslands, mixed conifer forests, will use wet meadows and marshes	Mostly forbs	1 to 3.5 per acre	Low	5 to >20 years
Meadow vole	*Microtus pennsylvanicus*	<2,500 to 7,000	Wet grassland habitat; may inhabit drier grasslands where *M. montanus* not present	Grasses, sedges and herbaceous plants; may feed on insects, occasionally carrion	Mean HR 0.13 acres for females, 0.23 acres for males	Low to moderate	5 to >20 years
Long-tailed vole	*Microtus longicaudus*	2,500-6,500	Riparian valleys to alpine tundra, sagebrush grassland, semi-desert to subalpine coniferous forests	ND, though likely primarily herbivorous as with other voles	ND	Low	>20 years
Deer mouse	*Peromyscus maniculatus*	2,500-6,500	Virtually all habitats except wetlands: riparian, grassland, forests	Omnivorous, dentition is adapted for seed eating; invertebrates important in warm months	ND		15 to > 20 years
Bushy-tailed woodrat	*Neotoma cinerea*	2,500-6,500	Rockslides, rocky slopes, abandoned homesites, other areas with debris for nest-building	Broad diet of foliage, fruits, and seeds	ND	Low to moderate	>20 years
Dipodidae (Jumping Mice)							
Western jumping mouse	*Zapus princeps*	2,500-6,500	Tall grass along streams, mesic forests with sparse understory, mesic meadows and grasslands, shrublands; nests usually 2 ft underground in mounds or banks in well-drained soil	Seeds an important pre-hibernation food	ND	Low	5 to >20 years

Table 7-4. Small Mammals with Ranges that Include Ravalli County

Species	Scientific Name	Elevation Range (ft)	Primary Habitat Associations	Food Habits	Home Range	Relative Density of Observations[a]	Relative Recency of Observations
Leporidae (Rabbits)							
Mountain cottontail	*Sylvilagus nuttallii*	2,500-6,500	Dense shrubby undergrowth, forest edges	Grasses, sagebrush	ND	Moderate	5 to >20 years
White-tailed jackrabbit	*Lepus townsendii*	2,500-6,500	Sage-grasslands, woodlands, lower mountain and valley grasslands	Plants in early reproductive stages of development preferred	ND	Low	>20 years
Sciuridae (Squirrels)							
Columbian ground squirrel	*Urocitellus columbianus*	2,500-6,500	Intermontane valleys, open woodland, clearcuts, other disturbed areas	Grasses, leafy vegetation, bulbs, may increase use of fruits and seeds as season progresses; small amounts of animal matter in diet	ND	Low	5 to >20 years
Geomyidae (Pocket Gophers)							
Northern pocket gopher	*Thomomys talpoides*	2,500-6,500	Uses a wide variety of habitats, from cultivated fields and prairie to alpine meadows	Primarily underground plant parts, occasionally leaves of forbs	ND	Low	>20 years
Soricidae (Shrews)							
Vagrant shrew	*Sorex vagrans*	2,500-,000	Primarily mixed coniferous forests, dry to mesic woodland, lower montane grasslands; often found in moist sites	Insects, annelids, vegetation including plant seeds, and fungi	ND	Low to moderate	5 to > 20 years

Source: Montana Field Guides. Accessed at http://fieldguide.mt.gov/displayClasses.aspx?Kingdom=Animalia. Accessed on October 16, 2012.

Notes:
HR = home range
ND = not determined

[a] Relative density is based on how many observations of a given species are recorded for a given sub-county area relative to the overall distribution of observation frequencies throughout the state.

Table 7-5. Large Mammals with Ranges that Include Ravalli County

Species	Scientific Name	Elevation Range (ft)	Primary Habitat Associations	Food Habits	Home Range	Relative Density of Observations[a]	Relative Recency of Observations
Vespertilionidae (bats)							
Big brown bat	*Eptesicus fuscus*	<2,500 to 7,500	Summer day roosts include attics, barns, bridges, and bat houses; hibernacula include caves and mines	Insects (mostly beetles, but also other insects, including ants, flies, mayflies, stoneflies, moths, and true bugs)	ND	Low	> 20 years
Felidae (cats)							
Bobcat	*Lynx rufus*	<2,500 to 7,000	Prefers rimrock and grassland/shrubland areas	Snowshoe hares, jack rabbits, and medium-sized rodents	Females=58.6 sq km, Males=79.0 sq km	Low	5 years
Cervidae (Deer / Moose / Elk)							
Mule deer	*Odocoileus hemionus*	<2,500 to 6,000	Grasslands interspersed with brushy coulees or breaks; prairies; forest areas	Bitterbush, mountain mahogany, chokecherry, serviceberry, grasses and forbs	ND	Low	5 years
Procyonidae (Racoon)							
Racoon	*Procyon lotor*	<2,500 to 5,000	Forested riparian habitat; river and stream valleys; prairie wetlands	Carrion, mammals, birds, reptiles, insects, amphibians, grains, nuts, and fruits	ND	Low	5 to 10 years
Mephitidae (Skunks)							
Striped skunk	*Mephitis mephitis*	<2,500 to 6,000	Forest edges, open woodland, brushy grassland, riparian vegetation, cultivated lands	Small mammals, reptiles, amphibians, berries, fruit, garbage, carrion, bird eggs, and arthropods	ND	Low	> 20 years
Mustelidae (Weasels)							
Badger	*Taxidea taxus*	<2,500 to 6,500	Open grasslands, shrub/grasslands, and deserts; non-forested habitats with soils suitable for burrowing and support of fossorial prey are favored	Prefers fossorial and semifossorial prey; supplements with other mammals, birds, eggs, reptiles, amphibians, and plants	ND	Low	> 20 years
Long-tailed weasel	*Mustela frenata*	<2,500 to 7,000	Found in almost all land habitats near water; common in intermontane valleys and open forests	Small mammals up to rabbit-sized, but also birds and other animals	ND	Low	> 20 years

Source: Montana Field Guides. Accessed at http://fieldguide.mt.gov/displayClasses.aspx?Kingdom=Animalia. Accessed on October 17, 2012.

Notes:

ND = not determined

[a] Relative density is based on how many observations of a given species are recorded for a given sub-county area relative to the overall distribution of observation frequencies throughout the state.

Table 7-6. Species of Concern in the Vicinity of the Facility[a]

	Nearest Sighting Within 3 Mile Radius	General Habitat	Anticipated to be at the Facility?
Mammals			
Townsend's big-eared bat	<3 miles northwest	Caves in forested habitat	No - Facility habitat not consistent with habitat generally associated with species of concern.
Fisher	<2 miles south	Mixed conifer forests	No - Facility habitat not consistent with habitat generally associated with species of concern.
Wolverine	<2 miles west	Boreal forest and alpine habitats	No - Facility habitat not consistent with habitat generally associated with species of concern.
Western spotted skunk[b]	<2 miles southwest	Riparian shrub	No - Facility habitat not consistent with habitat generally associated with species of concern.
Birds			
Great blue heron	~3 miles southeast	Riparian forest	No - Species not reported within the Facility and habitat not consistent with habitat generally associated with species of concern.
Bald eagle	~I mile west	Riparian forest	No - Species not reported within the Facility and habitat not consistent with habitat generally associated with species of concern.
Pileated woodpecker	~3 miles northwest	Moist conifer forest	No - Species not reported within the Facility and habitat not consistent with habitat generally associated with species of concern.
Clark's nutcracker	<2 miles west	Conifer forest	No - Species not reported within the Facility and habitat not consistent with habitat generally associated with species of concern.
Brown creeper	>2 miles west	Moist conifer forest	No - Species not reported within the Facility and habitat not consistent with habitat generally associated with species of concern.
Pacific wren	>3 miles west	Drier conifer forest	No - Species not reported within the Facility and habitat not consistent with habitat generally associated with species of concern.
Cassin's finch	<3 miles west	Drier conifer forest	No - Species not reported within the Facility and habitat not consistent with habitat generally associated with species of concern.
Fish			
Westslope cutthroat trout	~0.5 mile south	Mountain streams, rivers, lakes	Uncertain - Bitteroot River not included in the Facility; however, reaches of Bunkhouse Creek traverse the Parmenter property, although permanent surface water features that would support upper aquatic species are not included in the Facility boundary.
Bull trout	< 1 mile south	Mountain streams, rivers, lakes	No - Facility does not include Bitteroot River and permanent surface water features to support higher species of aquatic life.
Vascular Plant			
Stalk-Leaved monkeyflower	>2 miles south	Vernally moist soils (valleys to subalpine)	No - Species not found located within Facility boundaries and chemicals of potential ecological concern in ditch areas (dioxins) are of limited toxicity to plants.

Notes:
[a] No species of concern for the following groups reported within the search area: nonvascular plants, amphibians, reptiles, invertebrates.
[b] This species was observed within the 3-mile radius as of the 2012 Species of Concern Report, but was no longer observed within the 3-mile radius as of the 2013 Species of Concern Report.

Table 8-1. Site-Specific Cleanup Levels (mg/kg) for Soil

	Resident				Standard Worker				Construction Worker				Recreator/Trespasser			
	Child HI = 1		Child+Adult CR = 1.7E-6		HI = 1		CR = 1.7E-6		HI = 1		CR = 1.7E-6		HI = 1		CR = 1.7E-6	
COPC	RME	CT	RME	CT	RME	CT	RME	CT	RME	CT	RME	CT	RME	CT	RME	CT
C5-C8 Aliphatics	1.3E+03	4.8E+03	nv	nv	8.1E+03	8.8E+03	nv	nv	4.5E+03	2.9E+04	nv	nv	1.8E+04	2.2E+04	nv	nv
C9-C12 Aliphatics	1.6E+02	7.2E+02	nv	nv	1.4E+03	1.7E+03	nv	nv	6.8E+02	5.1E+03	nv	nv	2.7E+03	3.6E+03	nv	nv
C9-C10 Aromatics	4.8E+02	2.2E+03	nv	nv	4.3E+03	5.0E+03	nv	nv	2.0E+03	1.5E+04	nv	nv	8.0E+03	1.1E+04	nv	nv
Ethylbenzene	2.0E+03	1.5E+04	1.7E+02	1.3E+03	6.2E+04	1.6E+05	1.5E+03	1.3E+04	1.4E+04	2.3E+05	8.6E+03	1.4E+05	5.0E+04	9.9E+04	2.3E+03	1.0E+04
1-Methylnaphthalene	3.3E+03	2.0E+04	4.9E+01	2.7E+02	5.8E+04	8.6E+04	3.1E+02	1.6E+03	1.9E+04	2.1E+05	2.5E+03	2.8E+04	7.1E+04	1.2E+05	7.1E+02	2.6E+03
2-Methylnaphthalene	1.9E+02	1.1E+03	nv	nv	3.3E+03	4.9E+03	nv	nv	1.1E+03	1.2E+04	nv	nv	4.1E+03	6.8E+03	nv	nv
Naphthalene	9.5E+02	5.7E+03	2.4E+05	7.2E+05	1.7E+04	2.4E+04	1.2E+06	4.3E+06	5.6E+03	6.0E+04	4.7E+07	2.3E+08	2.0E+04	3.4E+04	2.4E+07	5.2E+07
BaP equivalents	nv	nv	4.6E-02	2.5E-01	nv	nv	1.2E+00	6.2E+00	nv	nv	1.0E+01	1.1E+02	nv	nv	1.1E+00	3.5E+00
C9-C18 Aliphatics	1.6E+02	7.2E+02	nv	nv	1.4E+03	1.7E+03	nv	nv	6.8E+02	5.1E+03	nv	nv	2.7E+03	3.6E+03	nv	nv
C11-C22 Aromatics	5.8E+02	3.6E+03	nv	nv	1.1E+04	1.8E+04	nv	nv	3.5E+03	4.1E+04	nv	nv	1.3E+04	2.2E+04	nv	nv
Pentachlorophenol	1.1E+02	6.0E+02	2.9E+00	1.4E+01	1.5E+03	1.9E+03	1.5E+01	6.9E+01	5.8E+02	5.2E+03	1.5E+02	1.4E+03	2.2E+03	3.3E+03	4.4E+01	1.5E+02
TEQ (ND=1/2DL)	7.0E-05	4.8E-04	1.4E-05	9.1E-05	1.8E-03	3.6E-03	1.1E-04	7.4E-04	4.7E-04	6.7E-03	6.8E-04	9.8E-03	1.7E-03	3.1E-03	1.9E-04	7.6E-04

Notes:
BaP = benzo(a)pyrene
COPC = chemical of potential concern
CR = cancer risk
CT = central tendency
DL = detection limit
HI = hazard index
ND = nondetect
nv = no value
RME = reasonable maximum exposure
TEQ = 2,3,7,8-TCDD toxicity equivalents

Table 8-2. Site-Specific Cleanup Levels for Groundwater

COPC	MDEQ Cleanup Level[a] (µg/L)
2-Methylnaphthalene	27
BaP equivalents	0.05
Pentachlorophenol	1
TEQ (ND=1/2DL)	2.0E-06

Notes:

BaP = benzo(a)pyrene

COPC = chemical of potential concern

DL = detection limit

MDEQ = Montana Department of Environmental Quality

ND = nondetect

TEQ = 2,3,7,8-TCDD toxicity equivalents

[a] MDEQ cleanup levels were taken from the October 2012 Circular DEQ-7 Montana Numeric Water Quality Standards, where available. For 2-methylnaphthalene, the EPA RSL for tap water (HQ = 1; May 2013) is provided for comparison.

Table 8-3. Site-Specific Cleanup Levels (mg/m^3) for Soil Vapors

	Resident				Standard Worker				Construction Worker			
	Child Target Organ HI = 1		Child+Adult CR = 3.3E-6		Target Organ HI = 1		CR = 3.3E-6		Target Organ HI = 1		CR = 3.3E-6	
COPC	RME	CT	RME	CT	RME	CT	RME	CT	RME	CT	RME	CT
Benzene	0.03	0.04	0.001	0.003	0.2	0.2	0.008	0.03	0.3	3	0.3	4
C5-C8 Aliphatics	0.2	0.3	--	--	1	4	--	--	2	77	--	--
C9-C12 Aliphatics	0.05	0.07	--	--	0.3	0.6	--	--	0.4	11	--	--
C9-C10 Aromatics	0.10	0.13	--	--	0.6	0.6	--	--	0.9	11	--	--
Ethylbenzene	1	1	0.004	0.008	6	6	0.02	0.08	9	110	0.9	11
m,p-Xylenes	0.03	0.04	--	--	0.2	0.6	--	--	0.3	11	--	--
o-Xylenes	0.03	0.04	--	--	0.2	0.6	--	--	0.3	11	--	--
Naphthalene	0.002	0.002	0.0003	0.0006	0.009	0.02	0.002	0.006	0.01	0.3	0.07	0.8

Notes:

-- = not a carcinogen
COPC = chemical of potential concern
CR = cancer risk
CT = central tendency
HQ = hazard quotient
RME = reasonable maximum exposure

EXHIBIT 6-1

EQUATIONS FOR CALCULATING INTAKES

EXHIBIT 6-1—
SAWMILL RISK ASSESSMENT

a.1 Incidental Ingestion of Soil/Sediment – all noncancer calculations and cancer calculations for receptors without age-related adjustments (non-mutagens)[1]

$$LADD_{\text{ing}} \text{ or } ADD_{ing} = \frac{EPC_{soil} \times IR_{soil} \times EF \times ED \times CF}{BW \times AT}$$

Where:

$LADD_{ing}$	=	lifetime average daily dose from incidental ingestion soil/sediment (mg/kg-day)
ADD_{ing}	=	average daily dose from incidental ingestion of soil/sediment (mg/kg-day)
EPC_{soil}	=	concentration of chemical in soil/sediment (mg/kg)
IR_{soil}	=	soil/sediment ingestion rate (mg/day)
EF	=	exposure frequency for soil/sediment (days/year)
ED	=	exposure duration (years)
CF	=	unit conversion factor (1×10^{-6} kg/mg)
BW	=	body weight (kg)
AT	=	averaging time (days)

[1] Receptors include child residents (noncancer only), commercial/industrial workers, adolescent recreators/trespassers, and construction workers. Chemicals include all COPCs except BaPE.

a.2 Incidental Ingestion of Soil/Sediment – cancer calculations for receptors with age-related adjustments (non-mutagens)[2]

$$LADD_{\text{ing}} = \frac{EPC_{soil} \times IR_{soil,adj} \times EF \times CF}{AT}$$

Where:

$$IR_{soil,adj} = \left[\frac{IR_{soil} \times ED}{BW}\right]_{0-6\,yrs} + \left[\frac{IR_{soil} \times ED}{BW}\right]_{6-30\,yrs}$$

Where:

$IR_{soil,adj}$	=	soil/sediment ingestion rate, adjusted for age (mg-year/kg-day)

[2] Receptors include residents (child plus adult). Chemicals include all COPCs except BaPE.

a.3 Incidental Ingestion of Soil/Sediment – cancer calculations for receptors with age-related adjustments (mutagens)[3]

$$LADD_{\text{ing}} = \frac{EPC_{soil} \times IR_{soil,adj} \times EF \times CF}{AT}$$

Where:

$$IR_{soil,adj} = \left[\frac{IR_{soil} \times ED}{BW} \times ADAF\right]_{0-2\,yrs} + \left[\frac{IR_{soil} \times ED}{BW} \times ADAF\right]_{2-6\,yrs} + \left[\frac{IR_{soil} \times ED}{BW} \times ADAF\right]_{6-16\,yrs} + \left[\frac{IR_{soil} \times ED}{BW} \times ADAF\right]_{16-30\,yrs}$$

Where:

$IR_{soil,adj}$	=	soil/sediment ingestion rate, adjusted for age and early life exposures (mg-year/kg-day)
ADAF	=	age-dependent adjustment factor, as defined in Table 6-1 (unitless)

[3] Receptors include residents (child plus adult) and adolescent recreators/trespassers. Chemicals include BaPE only. Commercial/industrial workers and construction workers are assumed to be adults (over age 18 years), who are assigned an ADAF of 1, so cancer calculations for all workers exposed to BaPE are effectively simplified to the equations shown in a.1 (for non-mutagens) above.

b.1 Dermal Contact with Soil/Sediment – all noncancer calculations and cancer calculations for receptors without age-related adjustments (non-mutagens)[4]

$$LDAD\ or\ DAD = \frac{DA_{event} \times EF \times ED \times EV \times SA}{BW \times AT}$$

Where:

LDAD	=	lifetime dermal absorbed dose (mg/kg-day)
DAD	=	dermally absorbed dose (mg/kg-day)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
EV	=	event frequency (event/day)
SA	=	skin surface area available for contact (cm^2)
BW	=	body weight (kg)
AT	=	averaging time (days)

And:

$$DA_{event} = EPC_{soil} \times CF \times AF \times ABS_d$$

Where:

DA_{event}	=	absorbed dose per event (mg/cm^2-event)
EPC_{soil}	=	concentration of chemical in soil/sediment (mg/kg)
CF	=	unit conversion factor (1×10^{-6} kg/mg)
AF	=	adherence factor (mg/cm^2-event)
ABS_d	=	dermal absorption fraction, chemical-specific (unitless)

Or (combined):

$$LDAD\ or\ DAD = \frac{EPC_{soil} \times CF \times AF \times ABS_d \times EF \times ED \times EV \times SA}{BW \times AT}$$

[4] Receptors include child residents (noncancer only), commercial/industrial workers, adolescent recreators/trespassers, and construction workers. Chemicals include all COPCs except BaPE.

b.2 Dermal Contact with Soil/Sediment – cancer calculations for receptors with age-related adjustments (non-mutagens)[5]

$$LDAD = \frac{EPC_{soil} \times CF \times DFS_{adj} \times ABS_d \times EF \times EV}{AT}$$

Where:

$$DFS_{adj} = \left[\frac{AF \times ED \times SA}{BW}\right]_{0-6\,yrs} + \left[\frac{AF \times ED \times SA}{BW}\right]_{6-30\,yrs}$$

Where:

$DFS_{,adj}$	=	dermal exposure factor, adjusted for age (mg-years/kg-event)

[5] Receptors include residents (child plus adult). Chemicals include all COPCs except BaPE.

b.3 Dermal Contact with Soil/Sediment – cancer calculations for receptors with age-related adjustments (mutagens)[6]

$$LDAD = \frac{EPC_{soil} \times CF \times DFS_{adj} \times ABS_d \times EF \times EV}{AT}$$

Where:

$$DFS_{adj} = \left[\frac{AF \times ED \times SA}{BW} \times ADAF\right]_{0-2\,yrs} + \left[\frac{AF \times ED \times SA}{BW} \times ADAF\right]_{2-6\,yrs} + \left[\frac{AF \times ED \times SA}{BW} \times ADAF\right]_{6-16\,yrs} + \left[\frac{AF \times ED \times SA}{BW} \times ADAF\right]_{16-30\,yrs}$$

Where:

$DFS_{,adj}$	=	dermal exposure factor, adjusted for age and early life exposures (mg-years/kg-event)
ADAF	=	age-dependent adjustment factor, as defined in Table 6-1 (unitless)

[6] Receptors include residents (child plus adult) and adolescent recreators/trespassers. Chemicals include BaPE only. Commercial/industrial workers and construction workers are assumed to be adults (over age 18 years), who are assigned an ADAF of 1, so cancer calculations for all workers exposed to BaPE are effectively simplified to the equations shown in b.1 (for non-mutagens) above.

c.1 Inhalation of Airborne Dust – all noncancer calculations and cancer calculations for receptors without age-related adjustments (non-mutagens)[7]

$$EC = \frac{EPC_{dust} \times ET \times EF \times ED}{AT}$$

Where:

EC	=	exposure concentration (mg/m^3)
EPC_{dust}[8]	=	concentration of chemical in dust (mg/m^3)
ET	=	exposure time (hours/day)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
AT	=	averaging time (hours)

[7] Receptors include child residents (noncancer only), commercial/industrial workers, adolescent recreators/trespassers, and construction workers. Chemicals include all COPCs except BaPE.
[8] EPCdust = EPCsoil/PEF, where PEF = particulate emission factor, default value of 1.36E+09 m^3/kg.

c.2 Inhalation of Airborne Dust – cancer calculations for receptors with age-related adjustments (non-mutagens)[9]

$$EC = \frac{EPC_{dust} \times ET_{adj} \times EF}{AT}$$

Where:

$$ET_{adj} = [ET \times ED]_{0-6\,yrs} + [ET \times ED]_{6-30\,yrs}$$

Where:

$ET_{,adj}$ = exposure time, adjusted for age (hours-years/day)

[9] Receptors include residents (child plus adult). Chemicals include all COPCs except BaPE.

c.3 Inhalation of Airborne Dust – cancer calculations for receptors with age-related adjustments (mutagens)[10]

$$EC = \frac{EPC_{dust} \times ET_{adj} \times EF}{AT}$$

Where:

$$ET_{adj} = [ET \times ED \times ADAF]_{0-2\,yrs} + [ET \times ED \times ADAF]_{2-6\,yrs} + [ET \times ED \times ADAF]_{6-16\,yrs} + [EF \times ED \times ADAF]_{16-30\,yrs}$$

Where:

$ET_{,adj}$	=	exposure time, adjusted for age and early life exposures (hours-years/day)
ADAF	=	age-dependent adjustment factor, as defined in Table 6-1 (unitless)

[10] Receptors include residents (child plus adult) and adolescent recreators/trespassers. Chemicals include BaPE only. Commercial/industrial workers and construction workers are assumed to be adults (over age 18 years), who are assigned an ADAF of 1, so cancer calculations for all workers exposed to BaPE are effectively simplified to the equations shown in c.1 (for non-mutagens) above.

d.1 Ingestion of Homegrown Produce – noncancer calculations for child residents[11]

$$ADD_{prod} = \frac{EPC_{prod} \times IR_{prod} \times EF \times ED \times CF}{AT}$$

Where:

ADD_{prod}	=	average daily dose from ingestion of produce (mg/kg-day)
EPC_{prod}[12]	=	concentration of chemical in produce (mg/kg, wet weight)
IR_{prod}	=	homegrown produce ingestion rate (g/kg-day, as consumed)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
CF	=	unit conversion factor (1×10^{-3} kg/g)
AT	=	averaging time (days)

[11] Chemicals include all COPCs.
[12] EPCprod was estimated from soil concentration as described in Section 6.3.2.2.

d.2 Ingestion of Homegrown Produce – cancer calculations for residents (child plus adult) with age-related adjustments (non-mutagens)[13]

$$LADD_{prod} = \frac{EPC_{prod} \times IR_{prod,adj} \times EF \times CF}{AT}$$

Where:

$LADD_{prod}$ = lifetime average daily dose from ingestion of produce (mg/kg-day)

And:

$$IR_{prod,adj} = \lfloor IR_{prod} \times ED \rfloor_{0-6\,yrs} + \lfloor IR_{prod} \times ED \rfloor_{6-30\,yrs}$$

Where:

$IR_{prod,adj}$ = homegrown produce ingestion rate, adjusted for age (g-year/kg-day)

[13] Chemicals include all COPCs except BaPE.

d.3 Ingestion of Homegrown Produce – cancer calculations for residents (child plus adult) with age-related adjustments (mutagens)[14]

$$LADD_{prod} = \frac{EPC_{prod} \times IR_{prod,adj} \times EF \times CF}{AT}$$

Where:

$$IR_{prod,adj} = \left[IR_{prod} \times ED \times ADAF\right]_{0-2\,yrs} + \left[IR_{prod} \times ED \times ADAF\right]_{2-6\,yrs} + \left[IR_{prod} \times ED \times ADAF\right]_{6-16\,yrs} + \left[IR_{prod} \times ED \times AFAF\right]_{16-30\,yrs}$$

Where:

$IR_{prod,adj}$	=	homegrown produce ingestion rate, adjusted for age and early life exposures (g-year/kg-day)
ADAF	=	age-dependent adjustment factor, as defined in Table 6-1 (unitless)

[14] Chemicals include BaPE only.

e.1 Ingestion of Breast Milk – noncancer calculations and cancer calculations for infant residents (non-mutagens) [15]

$$LADD_{milk} \text{ or } ADD_{milk} = \frac{EPC_{milk} \times IR_{milk} \times EF \times ED \times CF}{BW \times AT}$$

Where:

$LADD_{milk}$	=	lifetime average daily dose from ingestion of breast milk (mg/kg-day)
ADD_{milk}	=	average daily dose from ingestion of breast milk (mg/kg-day)
EPC_{milk}[16]	=	concentration of chemical in breast milk (mg/L lipid)
IR_{milk}	=	breast milk lipid ingestion rate (mL/day)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
CF	=	unit conversion factor (1×10^{-3} L/mL)
BW	=	body weight (kg)
AT	=	averaging time (days)

[15] Chemicals include all COPCs except BaPE.
[16] EPCmilk was estimated from maternal intake as described in Section 6.3.2.2.

e.2 Ingestion of Breast Milk – cancer calculations for infant residents (mutagens) [17]

$$LADD_{milk} \text{ or } ADD_{milk} = \frac{EPC_{milk} \times IR_{milk} \times EF \times ED \times CF}{BW \times AT} \times ADAF$$

Where:

ADAF	=	age-dependent adjustment factor, as defined in Table 6-1 (unitless)

[17] Chemicals include BaPE only.

f.1 Inhalation of Trench Vapors – noncancer and cancer calculations for construction workers[18]

$$EC = \frac{EPC_{vapor} \times ET \times EF \times ED}{AT}$$

Where:

EC	=	exposure concentration (mg/m^3)
EPC_{vapor}[19]	=	concentration of chemical in vapors (mg/m^3)
ET	=	exposure time (hours/day)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
AT	=	averaging time (hours)

[18] Chemicals include all volatile COPCs.
[19] EPCvapor = EPCgw × VF, where VF = volatilization factor, L/m^3.

APPENDIX A

S&W SAWMILL INVESTIGATION DATABASE: 2013 UPDATES

BASELINE RISK ASSESSMENT

S&W Sawmill Facility, Darby, MT

Appendix A. S&W Sawmill Investigation Database: 2013 Updates

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May 9, 2014

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ACRONYMS AND ABBREVIATIONS

ALS	ALS Environmental
BaPE	benzo(a)pyrene equivalent
BRA	baseline risk assessment
COPC	chemical of potential concern
EDD	electronic data deliverable
ELI	Energy Laboratories Inc.
IDB	Integral's customized data management system
Integral	Integral Consulting Inc.
MDEQ	Montana Department of Environmental Quality
MDL	method detection limit
MRL	method reporting limit
Pace	Pace Analytical Services Inc.
PAH	polycyclic aromatic hydrocarbon
PCP	pentachlorophenol
QA	quality assurance
QA/QC	quality assurance and quality control
RPF	relative potency factor
SDL	sample detection limit
SQL	Structured Query Language
TCDD	tetrachlorodibenzo-*p*-dioxin
TEF	toxicity equivalency factor
TEQ	toxicity equivalency

1 INTRODUCTION

Comments from the Montana Department of Environmental Quality (MDEQ) on the draft baseline risk assessment (BRA) submitted October 29, 2012 prompted a thorough review of the database for the S&W Sawmill site investigation. Subsequent review and analysis of the database revealed errors in the data that required correction. This appendix documents the scope of activities conducted to correct the database, and the specific procedures and resources used. The result of these activities is a restructured and corrected database that was used for development of the revised BRA for the S&W Sawmill Site in Darby, Montana, and which will be used for all aspects of the facility investigation in the future.

2 SUMMARY OF DATABASE ISSUES REQUIRING CORRECTION

Integral's evaluation of the database identified three categories of issues, including:

- Inconsistencies in representation of nondetects. Both method reporting limits (MRLs) and sample detection limits (SDLs) were used to represent nondetected results for dioxins and furans. Both MRLs and method detection limits (MDLs) were used to represent nondetected results for other analytes. In many cases, it was unclear whether the MRL, MDL, or SDL was used.
- Uncertainty in reporting units. Some analytical results for soils were listed in the data set in dry weight units, when the results had actually been reported by the lab and loaded to the database in wet weight units.
- Outdated property boundaries. Some of the property boundary and ownership information was outdated.

The first two issues created unacceptable uncertainty with respect to results for analytical chemistry. For these two categories of problems, Integral's evaluation concluded that the related errors were unpredictable and that it was not practical to address them on a sample-by-sample basis. Integral concluded that the most reliable way to correct these errors was to reload the data directly from laboratory-generated electronic data deliverables (EDDs) where possible. Analytical data for soil, soil vapor, and groundwater were addressed.

Evaluation of property boundary information was performed in response to MDEQ comments on the draft BRA submitted in October, 2012. Updated information was obtained from the Montana State Library's Cadastral website (http://svc.mt.gov/msl/mtcadastral/).

3 APPROACH TO UPDATING ANALYTICAL CHEMISTRY DATA

The S&W Sawmill facility database (the database) was reconstructed systematically, starting with preparation of a new data management system using Integral Consulting Inc.'s (Integral) customized data management system (IDB), followed by loading the original analytical results into this system from the electronic records. During the loading process, data validation reports for each EDD were reviewed, and validation updates were applied to the original analytical data. Details on these methods are provided below.

The database reconstruction addressed analytical data for all analytes: dioxins and furans, pentachlorophenol (PCP) and other phenols, polycyclic aromatic hydrocarbons (PAHs), petroleum hydrocarbons, semivolatile organic compounds, volatile organic compounds, pesticides, metals, and conventional analytes (grain size, total organic carbon). EDDs were obtained from ALS Environmental (ALS; formerly known as Columbia Analytical Services), Pace Analytical Services Inc. (Pace), and Energy Laboratories Inc. (ELI).

The laboratories used for the S&W Sawmill investigation do not possess electronic records relating to analyses conducted prior to 2007. Therefore, the database reconstruction only affects data collected from January 1, 2007 to the present:

- Data collected prior to January 1, 2007 were loaded into the IDB as provided in the database used to prepare all reports prior to the present report. Some updates and corrections were performed based on correspondence with Douglass, Inc. Those corrections are not addressed in this appendix.
- Data collected from January 1, 2007 to the present were reloaded from EDDs modified per the associated data validation reports, as discussed below.

Specific methods and quality assurance (QA) checks that were applied to load and update the data are described below.

3.1 DATA GENERATED PRIOR TO 2007

Analytical results from samples collected prior to January 1, 2007, were extracted from the original database provided to Integral by Douglass, Inc. on July 5, 2012. Updates and corrections were applied during Integral's 2012 database QA review and were facilitated by correspondence with Douglass, Inc. All updates and corrections were confirmed as appropriate by Douglass, Inc. before the updates were applied to the IDB database.

3.2 DATA GENERATED FROM 2007 TO THE PRESENT

Reconstructing the database involved steps to inventory and process EDDs and apply validation information, and then upload the data to the IDB system in a two-step process.

3.2.1 Processing Analytical Chemistry Data

To populate the IDB system with the analytical results generated from 2007 to the present, the first step was to create an inventory of all EDDs and the sample identifiers (IDs) for samples addressed in each EDD for this time period (Table A-1). This inventory was prepared on the basis of the data files supplied to Integral by Arrowhead Engineering, Inc. (Arrowhead). Integral verified that the inventory was complete for data for 2007 to the present by comparing sample counts in the EDDs with those in the original database. For those EDDs identified in the inventory, Integral obtained new EDDs from the original laboratories. The laboratories were directed by Integral to include the MDL for each analyte because the lack of MDLs in the original database had resulted in unacceptable uncertainty in the original database. EDDs were supplied to Integral in multiple formats, which affected Integral's approach to the data loading process.

The EDD inventory identified eight EDDs for which only an Adobe PDF formatted file was provided. In all but two of these eight cases, it was possible for the laboratory to reproduce the EDDs in a Microsoft Excel format. Of the remaining two EDDs, one was converted by Integral from the PDF to an Excel spreadsheet and loaded to the database. The other EDD (number K0710318) had not been included in the original database and was not converted or loaded as part of this database reconstruction. This EDD reports results of a soil treatability study wherein samples were collected to represent specific target concentrations. These data are not representative of the site for BRA purposes and, therefore, were not loaded into the IDB system because they have no application in risk assessment.

Upon receipt of an EDD, Integral's chemists compared the updated EDDs with the associated data validation reports, and added three fields to the EDDs that note data validation qualifier values, reporting qualifier values, and a reason code for assigning a reporting qualifier if different from the EDD-provided laboratory flags. Additional detail on this validation step is provided below.

After Integral's chemists completed validation updates, data managers reviewed the data validation reports to ensure sample types were reported consistently. For example, the review ensured that blind duplicates were identified and loaded as duplicate samples, and also identified any duplicate sample assignment and typographic errors. In cases where sample type discrepancies could not be resolved between an EDD and its associated data validation report, field notes, chains-of-custody, and final reports were reviewed to resolve any uncertainties.

3.2.2 Importing Analytical Data into IDB

Once all data validation records had been completely checked and any discrepancies resolved, data from the EDDs were imported into the appropriate tables in IDB staging databases. This step is performed using Structured Query Language (SQL), and results in a code, or "script," which executes various SQL queries that migrate the data set to the appropriate data tables under IDB's constraints and reference values. The staging database is a Microsoft Access database that recreates the structure and business rules of IDB, and allows the data manager to test the completeness and consistency of the data being loaded prior to its import into the IDB system. Once all quality review has been completed in the staging database, the data manager loads the analytical data from the staging database to the final ("production") project database, IDB.

Each SQL script documents the data checking and loading processes. Standard IDB reference (or "lookup") tables were initially used to standardize and restrict values entered into IDB's tables. To complete the process, several values had to be added to various lookup tables. For example, the analyte "Dibenz(a,h)anthracene/Indeno(1,2,3-cd)pyrene" did appear in EDDs, but was not in the analyte table that defines valid values for an analyte, and had to be added to the related lookup table. Reference values included such parameters as analyte name, analytical method code, location type, material type, measurement basis, and laboratory flag. Expansion of the lookup tables was only completed after a thorough review to screen out any duplicate entries in the lookup tables. The list of valid values was then used in subsequent data loads to expedite the data normalization task.

The data loading process revealed that ALS and Pace were generating consistently formatted EDDs in most cases. However, the reproduction of EDDs from ELI included only those analytes for which MDLs were available, instead of the complete analyte list from the original work order. Also, ELI provided MDLs for iron in soil and groundwater in two stand-alone spreadsheets that listed each sample identification code and the associated MDL. As a result of ELI's reporting procedures, a combination of the three data sources[1] was loaded to the staging database where the data were migrated using SQL scripts written to address the inconsistent reporting of the reproduced EDDs.

3.3 DATA VALIDATION

Data validation of the samples collected from 2007 to present was performed by Arrowhead. Data prior to 2007 were not reloaded due to a lack of EDDs. Data validation checklists for these data are shown in the remedial investigation report. Data validation qualifiers for pre-2007 data

[1] The original EDD for those analytes not having MDLs, the reproduced EDD for analytes with MDLs (except iron), and the stand-along iron MDL spreadsheet.

were accepted as presented in the database received from Douglass, Inc., as modified based on correspondence with Douglass, Inc.

For the data from 2007 to present, data validation qualifiers noted in the data validation checklists were entered into the corresponding EDDs by Integral chemists, as described above. Any "K" flagged dioxin results that indicated estimated maximum possible concentrations were "U" qualified by Integral chemists. No other changes to the qualifiers indicated by the data validation reports were made.

To allow for the entry of the data validation qualifiers, three fields were added to each EDD: dv_qualifiers, reason_codes, and rpt_qualifiers. The data validation qualifiers were entered into the dv_qualifiers field, and the reason codes were entered into the reason_codes field. The rpt_qualifier value represents the final qualifier for each result. Once all validation qualifiers and reason codes were entered, the rpt_qualifiers field was populated with the data validation qualifier if present. If no data validation qualifier was present, laboratory "U" or "J" flags were carried over to the rpt_qualifiers field. Once all three fields were populated, a second chemist performed a peer review of 100 percent of the qualifier entry.

In addition to the data validation qualifiers, Integral chemists entered reason codes to indicate the reason the validation qualifier was applied to the results.[2] Once qualifiers and reason codes had been added to the individual EDDs, the EDDs were imported into the database and a comparison of laboratory flags to the validation qualifiers was performed for the entire 2007 and later data set as an additional level of quality control.

3.4 DATABASE FEATURES ADDED

Laboratory quality assurance and quality control (QA/QC) sample results were loaded into IDB from the EDDs for completeness and future reference. All laboratory QA/QC samples prior to January 1, 2007, are assumed to be comprehensive and complete, but could not be confirmed without the associated EDDs.

Once all data sets were loaded to the appropriate staging databases, Integral's custom software, dbmigrator, was used to transfer each data set from the staging database to the production database created for the S&W Sawmill project.

3.5 QUALITY ASSURANCE REVIEW

Integral performed an internal QA review of the data migration task in a multi-tiered process. Initially, Integral chemists updated data validation qualifiers (as described above), reporting

[2] These reason codes were not imported into the database, but are documented in the archived EDDs.

qualifiers and reason codes. Once these values were assigned in each EDD, a different chemist reviewed the work of the first. A spreadsheet was used to track this process and the work performed.

The second step in the QA review was conducted when each data manager reviewed the set of SQL scripts that were produced by the other data manager. Also, basic summary queries were run to make sure that the amount of data brought into the system matched the amount in the data sources (i.e., the EDDs). This step was required because of the inconsistent formats of the EDDs received from the laboratories and was completed to ensure that the logic for transferring the data into appropriate tables and fields was accurate.

Once the SQL scripts and staging databases were reviewed and each data set was loaded to the production database, another QA processing task was performed. Data managers executed various SQL scripts to identify whether any discrepancies existed within the data set as a whole. For example, the original laboratory flags in the laboratory result table were recorded and compared to the undetected and estimated fields in IDB to ensure that all qualifiers were appropriately assigned within the database.

After data managers completed review of the production database, detailed data summaries were exported and compared to the original EDDs by Integral staff to ensure accuracy and completeness. Excel formulas and/or Visual Basic code, or macros, were written and applied in the spreadsheets to target field values that did not match the associated field values in the EDD spreadsheets. Some discrepancies were identified; these discrepancies were due to reporting rules that had been placed upon data validation qualifiers to address MDEQ's data reporting rules. For example "K"-qualified values were designated as nondetects ("U"-qualified values) in the production database, consistent with MDEQ-determined rules for handling nondetects. As a result, in these cases, there were different qualifiers reported in the original EDD and in the production database upon export. A few discrepancies were due to SQL scripting errors. If SQL scripts were the cause of the error, the script and associated metadata were updated and rerun to remove the errors. Any changed values in the database were in turn updated in the production database. QA forms for all reviews are stored in the QA documentation repository on Integral's servers.

3.6 PREPARATION OF ANALYTICAL DATA FOR THE BASELINE RISK ASSESSMENT

Updating the S&W Sawmill database to an IDB format has several advantages for risk assessment. The IDB system allows the scripting of data treatment rules resulting in consistent application of such rules and minimization of human error in risk calculations. MDEQ requires several data treatment steps for data to be used in risk calculations, implementation of which is now automated in the database. Automated functions in the IDB system include:

- Calculation of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD) toxicity equivalency (TEQ) concentrations
- Calculation of benzo(a)pyrene equivalent (BaPE) concentrations for soil and groundwater
- Conversion of analytical results reported for soils in wet weight concentration units to dry weight concentration units.

Data handling rules applied in these three cases are described below. In addition to these functions, the database automatically converts the units of measure reported by the laboratory to a standardized unit, which is defined in a lookup table. Also, data summaries and screening tables are scripted in the database, improving efficiency if modifications to the screening procedures are prescribed.

3.6.1 2,3,7,8-TCDD TEQ Concentrations

TEQ concentrations were calculated by multiplying the analytical results for each of the 17 2,3,7,8-substituted dioxin and furan congeners by the 2005 World Health Organization mammalian toxicity equivalency factors (TEFs; Table A-2), and then summing the adjusted values to obtain the TEQ concentration. For each sample, Integral recorded three different TEQ values: estimating the value of nondetects at zero, estimating the value at one-half the MDL, and estimating the value at the full MDL prior to multiplication by the TEF. At the direction of MDEQ, only the TEQ values calculated using one-half the MDL for nondetected congeners were used for BRA reporting and risk calculation. The other estimates of TEQ concentrations were produced for the purposes of the uncertainty analysis.

3.6.2 BaPE Concentrations

BaPE concentrations were calculated using the congener-specific relative potency factor (RPF), in a manner identical to the method used to calculate TEQ. However, the carcinogenic PAHs included in the BaPE sum were specific to the matrix being addressed (soil or groundwater).[3] RPFs for BaPE calculations for soil are presented in Table A-3, and for groundwater are presented in Table A-4. Table A-5 defines the name for a given BaPE summing specification and the variable name to be used for the sum.

Some of the soil samples required unique decisions for the purposes of calculating BaPE:

- Dibenz(a,h)anthracene was not selected as a chemical of potential concern (COPC) for soil. However, for four samples (SL-0246, SL-0260, SL-0244, and 4024.0111798R), results

[3] Carcinogenic PAHs that were never detected were excluded from the calculation. Soil BaPE included benzo(a)anthracene, benzo(a)pyrene, chrysene, and indeno(1,2,3-cd)pyrene. Groundwater BaPE included all seven of the carcinogenic PAHs except chrysene.

are reported only for a combination analyte, debenz(a,h)anthracene/indeno(1,2,3-cd)pyrene. These results were treated as indeno(1,2,3-cd)pyrene (assigned an RPF of 0.1) for the purposes of BaPE calculation.

- For six samples (4002.0111698R, 4015.0111698R, 4021.0111798R, 4027.1111898R, 4015.1111898R, 4002.1111898R), nondetected results are reported for both indeno(1,2,3-cd)pyrene and for the combination analyte, with a lower detection limit for the combination analyte. For these samples, the combination analyte was chosen as the preferred result and was treated as indeno(1,2,3-cd)pyrene for the purposes of BaPE calculation.
- Three soil samples (SO-0001, SO-0009, SO-0017) have no results reported for either indeno(1,2,3-cd)pyrene or the combination analyte, so the BaPE values for these samples are biased low.

Similarly, some of the groundwater samples required unique decisions for the purposes of BaPE calculation:

- For two samples (3002.0113098R and 3003.0120198R), benzo(b)fluoranthene and benzo(k)fluoranthene are reported both separately and together as a combined analyte. Also, dibenz(a,h)anthracene and indeno(1,2,3-cd)pyrene are reported both separately and together as a combined analyte. In both cases, the separate analytes were preferred so that the appropriate chemical-specific RPFs could be applied.
- For one groundwater sample (3007.0120198R), only the combined benzo(b/k)fluoranthene isomer is reported. This analyte was conservatively treated as the b isomer for the purposes of BaPE calculation. In this same sample, only the combination analyte dibenz(a,h)anthracene/indeno(1,2,3-cd)pyrene is reported. This combination analyte was conservatively treated as indeno(1,2,3-cd)pyrene.

3.6.3 Conversion of Wet Weight to Dry Weight Concentration Units

Certain soil sample results from ELI for PCP were reported in wet weight concentration units. These analytical results were converted to dry weight concentrations for the purposes of the BRA using the following equation:

$$\text{mg COPC/kg dw} = (\text{mg COPC/kg ww} \div \text{percent solids}) \times 100$$

Although the wet weight concentration values for affected samples are still stored in the database, they are stored in a "not reportable" state and cannot be included in any calculations or data summaries without explicitly identifying those samples in the SQL script performing the calculation or summarization.

3.7 DATA REPORTING

For the purposes of the BRA, reporting for soil sample analyses was restricted to samples collected between January 1, 1998, and the most recent samples in the data set, May 23, 2012. Groundwater sample analyses were restricted to samples collected between January 1, 2008, and November 12, 2012. Although all data were loaded to the database, these restrictions were applied in the data summary SQL scripts.

Data summaries and screening tables utilized the following data processing rules to report concentration values:

- All laboratory replicates were averaged using one-half the MDL for nondetected values.
- Field duplicates were reported at the maximum detected concentration, unless all result values were nondetected. In that case, the minimum MDL was used as the reported value.

Significant figures were not reported in the EDDs, so for reporting purposes the following rules were applied: dioxins/furans: 3; fixed gases: 3; everything else: 2.

There were eight rejected analyses identified in the data loading process. In six of these cases, a sample with results that exceeded the linear range of the instrument had been diluted and rerun. For the analytes with results that did not exceed the linear range on the first analysis, the results of the first analysis were preferred for reporting. For the analytes with results that exceeded the linear range on the first analysis, the results of the second analysis were preferred for reporting. The results identified as not preferred were flagged as rejected. The other two cases of rejected results were reported as rejected in the pre-2007 database and in the remedial investigation report without explanation; therefore, they were also treated as rejected values in IDB.

Data summaries include spatial data assignments, which are scripted into the data summary SQL and call on the polygon features loaded into IDB. The spatial assignments consist of parcel numbers and ownership, identification of ditch-related samples and samples within the parcel B fenced area [4], and the assignment of multiple parcel codes for soil composites east of Highway 93. See Section 4 for more detail on the origin and projection of these shapes.

[4] Samples inside and outside the fence were combined when calculating exposure point concentrations for Parcel B.

4 APPROACH TO UPDATING SPATIAL DATA

All spatial data sets are stored in the Well-Known Text format within IDB, which follows the OpenGIS Consortium standard for expressing spatial objects. All data were projected to spatial referencing system identifier 2256, or North American Datum 1983 / Montana (feet).

Sample location coordinates were provided by Douglass, Inc. in the July 5, 2012, data set or were extracted from computer-aided design (CAD) or georeferenced map files if coordinate pairs were not available in the July 5, 2012, data set.

Parcel boundary and ownership information was extracted from Montana State Library's Cadastral website (http://svc.mt.gov/msl/mtcadastral/) and loaded to IDB on June 5, 2013. Darby Lumber Parcels A and B shape files were created by merging the individual ownership parcels from the Montana State Library's Cadastral data set as appropriate. These shapes were then uploaded to the database for data selection and attribute assignment purposes (for example, to assign Darby Lumber Parcel A values to those samples that have coordinate pairs that are located within the selection polygon).

The Parcel B Fence polygon was extracted from the CAD files provided by Arrowhead. The polygon of the fenced area was also used to select samples and assign attribute values to data summaries.[5]

The ditch polygon was created by digitizing the ditch centerline from an aerial photograph and was buffered to an extent where all known ditch samples were included in the polygon's sample selection set. This polygon is intended for sample selection or identifying ditch related samples.

[5] Data inside and outside the fenced area were combined when calculating exposure point concentrations for Parcel B.

5 RESULTS

Integral's custom environmental database (IDB) was developed specifically for use with data-intensive environmental investigations. It accommodates a wide variety of data types, and explicitly represents geographic features, therefore allowing spatial queries to be conducted (e.g., to find all sampling locations within a specified area of concern) and some types of spatial analyses to be carried out. The structure of the database is specifically designed to accommodate the complex structure of environmental sampling data, including multiple levels of subsampling, compositing, and replication.

While the previous version of the S&W Sawmill investigation database and this reconstructed version contain substantially the same data set, differences upon reporting do exist and are expected. TEQ concentrations in soil and groundwater generally decreased because SDLs were used for the reloaded data instead of MRLs for nondetected results. This was one of the main purposes of reloading the data directly from laboratory EDDs. Additionally, "K"-flagged analyses are now treated as nondetects and are, therefore, divided by two for summation purposes.

Post-2007 soil PCP results also changed. Detected concentrations increased because wet weight concentrations were converted to dry weight. Nondetected results decreased because MDLs were reported in the IDB system instead of MRLs as in the original database. Nondetects were also converted from wet weight to dry weight, but this change was overshadowed by the conversion from MRL to MDL.

Some sample location designations changed because of new Cadastral data.

6 UNCERTAINTIES

Because electronic records for data collected prior to 2007 do not exist, the database is not fully reconstructed. Table A-6 shows the numbers of results in each analyte group for samples of each matrix type collected prior to 2007 and after January 1, 2007. Analyte groups are defined in Table A-7. For soil vapor, 100 percent of samples have been reloaded into the database. For soil, generally more than 60 percent of samples in each analyte group have been fully reloaded, with the exception of the SVOCs. For groundwater, the percent of results updated in each major analyte group ranges from 50 to 91, but 100 percent of the groundwater results relevant to the risk assessment were updated, because only groundwater data from 2008 to the present are used in the BRA.

Despite the care taken in reconstructing the database into an IDB system, some unavoidable uncertainties exist due to circumstances beyond Integral's control, including the following:

- It is possible that some of the detection limits reported for data collected prior to 2007 are actually MRLs. If this is the case, the pre-2007 values representing nondetected results are biased high.
- It is likely that some of the ELI data for soil samples collected prior to 2007 are reported in terms of wet weight. If this is the case, both detected and nondetected values are biased low.
- The conclusions of the original data validation reports were accepted as written and no independent data validation was conducted. If there were errors in the original data validation reports, these errors were carried into the revised database.
- After 2004, sampling locations were either surveyed or recorded with a hand-held GPS unit. For samples collected prior to 2004, the source of the location coordinates was either provided in the original database or, extracted from CAD files or georeferenced maps. The accuracy of the provided coordinates prior to 2004 is unknown and, in cases where georeferenced maps were used, an unknown level of shifting is inherent.
- For composited soil samples, distances and direction of each discrete sample from the reported location are approximate.

TABLES

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
B07052065	GW-0265	GW-0265	5/21/2007	Groundwater	ELI
B07052065	GW-0266	GW-0265	5/21/2007	Groundwater	ELI
B07080351	GW-0270	GW-0270	7/31/2007	Groundwater	ELI
B07080351	GW-0271	GW-0271	8/1/2007	Groundwater	ELI
B07080351	GW-0272	GW-0272	8/1/2007	Groundwater	ELI
B07080351	GW-0273	GW-0272	8/1/2007	Groundwater	ELI
B07080351	GW-0275	GW-0275	7/31/2007	Groundwater	ELI
B07080351	GW-0276	GW-0276	7/31/2007	Groundwater	ELI
B07080351	GW-0277	GW-0277	7/31/2007	Groundwater	ELI
B07080351	GW-0278	GW-0278	7/31/2007	Groundwater	ELI
B07080351	GW-0279	GW-0279	7/31/2007	Groundwater	ELI
B07080351	GW-0280	GW-0280	8/1/2007	Groundwater	ELI
B07080351	GW-0281	GW-0281	7/31/2007	Groundwater	ELI
B07080351	GW-0282	GW-0282	8/1/2007	Groundwater	ELI
B07080351	GW-0283	GW-0283	8/1/2007	Groundwater	ELI
B07080351	GW-0284	GW-0284	8/1/2007	Groundwater	ELI
B07080351	GW-0285	GW-0284	8/1/2007	Groundwater	ELI
B07080351	GW-0287	GW-0287	8/1/2007	Groundwater	ELI
B07080351	GW-0288	GW-0288	8/1/2007	Groundwater	ELI
B07080351	GW-0289	GW-0289	8/2/2007	Groundwater	ELI
B07080351	GW-0290	GW-0290	8/2/2007	Groundwater	ELI
B07080351	GW-0291	GW-0290	8/2/2007	Groundwater	ELI
B07101365	GW-0293	GW-0293	10/13/2007	Groundwater	ELI
B07101365	GW-0294	GW-0293	10/13/2007	Groundwater	ELI
B08082889	GW-0350	GW-0350	8/26/2008	Groundwater	ELI
B08082889	GW-0351	GW-0351	8/26/2008	Groundwater	ELI
B08082889	GW-0352	GW-0352	8/26/2008	Groundwater	ELI
B08082889	GW-0353	GW-0352	8/26/2008	Groundwater	ELI
B08082889	GW-0355	GW-0355	8/26/2008	Groundwater	ELI
B08082889	GW-0356	GW-0356	8/27/2008	Groundwater	ELI
B08082889	GW-0357	GW-0357	8/27/2008	Groundwater	ELI
B08082889	GW-0358	GW-0358	8/27/2008	Groundwater	ELI
B08082889	GW-0359	GW-0359	8/27/2008	Groundwater	ELI
B08082889	GW-0360	GW-0359	8/27/2008	Groundwater	ELI
B08082889	GW-0362	GW-0362	8/27/2008	Groundwater	ELI
B08082889	GW-0363	GW-0363	8/26/2008	Groundwater	ELI
B08082889	GW-0364	GW-0364	8/26/2008	Groundwater	ELI
B08110636	GW-0370	GW-0370	11/6/2008	Groundwater	ELI
B08110636	GW-0371	GW-0370	11/6/2008	Groundwater	ELI
B08111244	GW-0373	GW-0373	11/12/2008	Groundwater	ELI
B08111244	GW-0374	GW-0374	11/12/2008	Groundwater	ELI
B08111244	GW-0375	GW-0375	11/12/2008	Groundwater	ELI
B08111244	GW-0376	GW-0376	11/11/2008	Groundwater	ELI
B08111244	GW-0378	GW-0378	11/11/2008	Groundwater	ELI
B08111244	GW-0379	GW-0379	11/11/2008	Groundwater	ELI
B08111244	GW-0380	GW-0379	11/11/2008	Groundwater	ELI
B08111244	GW-0382	GW-0382	11/11/2008	Groundwater	ELI
B08111244	GW-0383	GW-0383	11/11/2008	Groundwater	ELI
B08111244	GW-0384	GW-0384	11/11/2008	Groundwater	ELI
B09052294	GW-0390	GW-0390	5/22/2009	Groundwater	ELI
B09052294	GW-0391	GW-0390	5/22/2009	Groundwater	ELI
B09082690	GW-0395	GW-0395	8/25/2009	Groundwater	ELI
B09082690	GW-0396	GW-0396	8/25/2009	Groundwater	ELI
B09082690	GW-0397	GW-0397	8/25/2009	Groundwater	ELI
B09082690	GW-0398	GW-0397	8/25/2009	Groundwater	ELI
B09082690	GW-0400	GW-0400	8/25/2009	Groundwater	ELI
B09082690	GW-0401	GW-0401	8/26/2009	Groundwater	ELI
B09082690	GW-0402	GW-0402	8/26/2009	Groundwater	ELI
B09082690	GW-0403	GW-0403	8/26/2009	Groundwater	ELI

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
B09082690	GW-0404	GW-0404	8/26/2009	Groundwater	ELI
B09082690	GW-0405	GW-0404	8/26/2009	Groundwater	ELI
B09082690	GW-0407	GW-0407	8/25/2009	Groundwater	ELI
B09082690	GW-0408	GW-0408	8/26/2009	Groundwater	ELI
B09082690	GW-0409	GW-0409	8/26/2009	Groundwater	ELI
B09111684	GW-0415	GW-0415	11/17/2009	Groundwater	ELI
B09111684	GW-0416	GW-0416	11/17/2009	Groundwater	ELI
B09111684	GW-0417	GW-0417	11/17/2009	Groundwater	ELI
B09111684	GW-0418	GW-0417	11/17/2009	Groundwater	ELI
B09111684	GW-0420	GW-0420	11/17/2009	Groundwater	ELI
B09111684	GW-0421	GW-0421	11/17/2009	Groundwater	ELI
B09111684	GW-0422	GW-0422	11/17/2009	Groundwater	ELI
B09111684	GW-0423	GW-0423	11/17/2009	Groundwater	ELI
B09111684	GW-0424	GW-0424	11/17/2009	Groundwater	ELI
B09111684	GW-0425	GW-0424	11/17/2009	Groundwater	ELI
B09111684	GW-0427	GW-0427	11/17/2009	Groundwater	ELI
B09111684	GW-0428	GW-0428	11/16/2009	Groundwater	ELI
B09111684	GW-0429	GW-0429	11/16/2009	Groundwater	ELI
B10030427	GW-0430	GW-0430	3/3/2010	Groundwater	ELI
B10030427	GW-0431	GW-0430	3/3/2010	Groundwater	ELI
B10051036	GW-0433	GW-0433	5/11/2010	Groundwater	ELI
B10051036	GW-0434	GW-0433	5/11/2010	Groundwater	ELI
B10082414	GW-0436	GW-0436	8/24/2010	Groundwater	ELI
B10082414	GW-0437	GW-0437	8/24/2010	Groundwater	ELI
B10082414	GW-0438	GW-0438	8/24/2010	Groundwater	ELI
B10082414	GW-0439	GW-0438	8/24/2010	Groundwater	ELI
B10082414	GW-0441	GW-0441	8/24/2010	Groundwater	ELI
B10082414	GW-0445	GW-0445	8/24/2010	Groundwater	ELI
B10082414	GW-0446	GW-0446	8/23/2010	Groundwater	ELI
B10082414	GW-0447	GW-0447	8/23/2010	Groundwater	ELI
B10082414	GW-0458	GW-0458	8/24/2010	Groundwater	ELI
B10082414	GW-0459	GW-0459	8/24/2010	Groundwater	ELI
B10082414	GW-0462	GW-0462	8/23/2010	Groundwater	ELI
B10082511	GW-0452	GW-0452	8/26/2010	Groundwater	ELI
B10082511	GW-0453	GW-0453	8/26/2010	Groundwater	ELI
B10082511	GW-0460	GW-0460	8/25/2010	Groundwater	ELI
B10082511	GW-0461	GW-0461	8/25/2010	Groundwater	ELI
B10082724	GW-0442	GW-0442	8/27/2010	Groundwater	ELI
B10082724	GW-0443	GW-0443	8/27/2010	Groundwater	ELI
B10082724	GW-0444	GW-0444	8/27/2010	Groundwater	ELI
B10082724	GW-0448	GW-0448	8/27/2010	Groundwater	ELI
B10082724	GW-0449	GW-0449	8/28/2010	Groundwater	ELI
B10082724	GW-0450	GW-0449	8/28/2010	Groundwater	ELI
B10082724	GW-0454	GW-0454	8/27/2010	Groundwater	ELI
B10082724	GW-0455	GW-0454	8/27/2010	Groundwater	ELI
B10082724	GW-0457	GW-0457	8/27/2010	Groundwater	ELI
B10110845	GW-0472	GW-0472	11/7/2010	Groundwater	ELI
B10110845	GW-0473	GW-0473	11/7/2010	Groundwater	ELI
B10110845	GW-0474	GW-0474	11/7/2010	Groundwater	ELI
B10110845	GW-0475	GW-0475	11/5/2010	Groundwater	ELI
B10110845	GW-0476	GW-0476	11/5/2010	Groundwater	ELI
B10110845	GW-0477	GW-0477	11/5/2010	Groundwater	ELI
B10110845	GW-0478	GW-0478	11/7/2010	Groundwater	ELI
B10110845	GW-0479	GW-0479	11/7/2010	Groundwater	ELI
B10110845	GW-0480	GW-0479	11/7/2010	Groundwater	ELI
B10110845	GW-0482	GW-0482	11/6/2010	Groundwater	ELI
B10110845	GW-0483	GW-0483	11/6/2010	Groundwater	ELI
B10110845	GW-0484	GW-0484	11/6/2010	Groundwater	ELI
B10110845	GW-0485	GW-0484	11/6/2010	Groundwater	ELI

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
B10110845	GW-0487	GW-0487	11/6/2010	Groundwater	ELI
B10110845	GW-0488	GW-0488	11/5/2010	Groundwater	ELI
B10110845	GW-0489	GW-0489	11/5/2010	Groundwater	ELI
B10110845	GW-0490	GW-0490	11/5/2010	Groundwater	ELI
B10110845	GW-0491	GW-0491	11/6/2010	Groundwater	ELI
B10110845	GW-0492	GW-0492	11/5/2010	Groundwater	ELI
B10111101	GW-0466	GW-0466	11/8/2010	Groundwater	ELI
B10111101	GW-0467	GW-0467	11/8/2010	Groundwater	ELI
B10111101	GW-0471	GW-0471	11/8/2010	Groundwater	ELI
B10111373	GW-0468	GW-0468	11/11/2010	Groundwater	ELI
B10111373	GW-0469	GW-0468	11/11/2010	Groundwater	ELI
B10121882	GW-0493	GW-0493	12/16/2010	Groundwater	ELI
B10121882	GW-0494	GW-0493	12/16/2010	Groundwater	ELI
B11011364	GW-0496	GW-0496	1/14/2011	Groundwater	ELI
B11011364	GW-0497	GW-0496	1/14/2011	Groundwater	ELI
B11011364	GW-0499	GW-0499	1/14/2011	Groundwater	ELI
B11020824	GW-0500	GW-0500	2/10/2011	Groundwater	ELI
B11020824	GW-0501	GW-0500	2/10/2011	Groundwater	ELI
B11021720	GW-0503	GW-0503	2/22/2011	Groundwater	ELI
B11021720	GW-0504	GW-0503	2/22/2011	Groundwater	ELI
B11031403	GW-0506	GW-0506	3/14/2011	Groundwater	ELI
B11031403	GW-0507	GW-0506	3/14/2011	Groundwater	ELI
B11031403	GW-0509	GW-0509	3/14/2011	Groundwater	ELI
B11041148	GW-0510	GW-0510	4/12/2011	Groundwater	ELI
B11041148	GW-0511	GW-0511	4/12/2011	Groundwater	ELI
B11041148	GW-0512	GW-0511	4/12/2011	Groundwater	ELI
B11041148	GW-0515	GW-0515	4/12/2011	Groundwater	ELI
B11041148	GW-0516	GW-0516	4/12/2011	Groundwater	ELI
B11041148	GW-0517	GW-0517	4/12/2011	Groundwater	ELI
B11041148	GW-0518	GW-0517	4/12/2011	Groundwater	ELI
B11051084	GW-0520	GW-0520	5/10/2011	Groundwater	ELI
B11051084	GW-0521	GW-0520	5/10/2011	Groundwater	ELI
B11081282	GW-0523	GW-0523	8/8/2011	Groundwater	ELI
B11081282	GW-0524	GW-0524	8/8/2011	Groundwater	ELI
B11081282	GW-0525	GW-0525	8/9/2011	Groundwater	ELI
B11081282	GW-0526	GW-0525	8/9/2011	Groundwater	ELI
B11081282	GW-0528	GW-0528	8/8/2011	Groundwater	ELI
B11081282	GW-0529	GW-0529	8/9/2011	Groundwater	ELI
B11081282	GW-0530	GW-0530	8/10/2011	Groundwater	ELI
B11081282	GW-0551	GW-0551	8/10/2011	Groundwater	ELI
B11081282	GW-0552	GW-0552	8/10/2011	Groundwater	ELI
B11081282	GW-0553	GW-0553	8/9/2011	Groundwater	ELI
B11081282	GW-0554	GW-0554	8/9/2011	Groundwater	ELI
B11081282	GW-0555	GW-0555	8/10/2011	Groundwater	ELI
B11081515	GW-0536	GW-0536	8/14/2011	Groundwater	ELI
B11081515	GW-0541	GW-0541	8/14/2011	Groundwater	ELI
B11081515	GW-0542	GW-0542	8/14/2011	Groundwater	ELI
B11081515	GW-0543	GW-0543	8/15/2011	Groundwater	ELI
B11081515	GW-0544	GW-0543	8/15/2011	Groundwater	ELI
B11081515	GW-0546	GW-0546	8/14/2011	Groundwater	ELI
B11081515	GW-0547	GW-0547	8/13/2011	Groundwater	ELI
B11081515	GW-0548	GW-0548	8/13/2011	Groundwater	ELI
B11081515	GW-0549	GW-0549	8/13/2011	Groundwater	ELI
B11081515	GW-0550	GW-0550	8/13/2011	Groundwater	ELI
B11081797	GW-0531	GW-0531	8/16/2011	Groundwater	ELI
B11081797	GW-0532	GW-0532	8/16/2011	Groundwater	ELI
B11081797	GW-0533	GW-0533	8/16/2011	Groundwater	ELI
B11081797	GW-0534	GW-0534	8/15/2011	Groundwater	ELI
B11081797	GW-0535	GW-0535	8/15/2011	Groundwater	ELI

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
B11081797	GW-0537	GW-0537	8/16/2011	Groundwater	ELI
B11081797	GW-0538	GW-0537	8/16/2011	Groundwater	ELI
B11081797	GW-0540	GW-0540	8/16/2011	Groundwater	ELI
B11110475	GW-0557	GW-0557	11/3/2011	Groundwater	ELI
B11110475	GW-0558	GW-0558	11/3/2011	Groundwater	ELI
B11110475	GW-0559	GW-0559	11/2/2011	Groundwater	ELI
B11110475	GW-0560	GW-0559	11/2/2011	Groundwater	ELI
B11110475	GW-0563	GW-0563	11/3/2011	Groundwater	ELI
B11110475	GW-0564	GW-0564	11/1/2011	Groundwater	ELI
B11110475	GW-0565	GW-0565	11/1/2011	Groundwater	ELI
B11110475	GW-0571	GW-0571	11/1/2011	Groundwater	ELI
B11110475	GW-0577	GW-0577	11/2/2011	Groundwater	ELI
B11110475	GW-0578	GW-0578	11/2/2011	Groundwater	ELI
B11110475	GW-0584	GW-0584	10/31/2011	Groundwater	ELI
B11110475	GW-0585	GW-0585	10/31/2011	Groundwater	ELI
B11110475	GW-0588	GW-0588	11/1/2011	Groundwater	ELI
B11110475	GW-0589	GW-0589	11/1/2011	Groundwater	ELI
B11110475	GW-0590	GW-0590	11/3/2011	Groundwater	ELI
B11110475	GW-0591	GW-0591	11/1/2011	Groundwater	ELI
B11110475	GW-0592	GW-0592	11/1/2011	Groundwater	ELI
B11110911	GW-0566	GW-0566	11/7/2011	Groundwater	ELI
B11110911	GW-0567	GW-0567	11/7/2011	Groundwater	ELI
B11110911	GW-0568	GW-0568	11/6/2011	Groundwater	ELI
B11110911	GW-0569	GW-0569	11/6/2011	Groundwater	ELI
B11110911	GW-0570	GW-0570	11/6/2011	Groundwater	ELI
B11110911	GW-0572	GW-0572	11/6/2011	Groundwater	ELI
B11110911	GW-0573	GW-0572	11/6/2011	Groundwater	ELI
B11110911	GW-0576	GW-0576	11/7/2011	Groundwater	ELI
B11110911	GW-0579	GW-0579	11/6/2011	Groundwater	ELI
B11110911	GW-0580	GW-0579	11/6/2011	Groundwater	ELI
B11110911	GW-0583	GW-0583	11/6/2011	Groundwater	ELI
B11110911	GW-0586	GW-0586	11/5/2011	Groundwater	ELI
B11110911	GW-0587	GW-0587	11/5/2011	Groundwater	ELI
B11110911	GW-0589	GW-0589	11/1/2011	Groundwater	ELI
B11110911	GW-0590	GW-0590	11/3/2011	Groundwater	ELI
B12011839	GW-0594	GW-0594	1/25/2012	Groundwater	ELI
B12011839	GW-0595	GW-0594	1/25/2012	Groundwater	ELI
B12081513	GW-0597	GW-0597	8/13/2012	Groundwater	ELI
B12081513	GW-0598	GW-0598	8/13/2012	Groundwater	ELI
B12081513	GW-0599	GW-0599	8/13/2012	Groundwater	ELI
B12081513	GW-0600	GW-0599	8/13/2012	Groundwater	ELI
B12081513	GW-0625	GW-0625	8/13/2012	Groundwater	ELI
B12081513	GW-0627	GW-0627	8/13/2012	Groundwater	ELI
B12081717	GW-0603	GW-0603	8/16/2012	Groundwater	ELI
B12081717	GW-0606	GW-0606	8/16/2012	Groundwater	ELI
B12081717	GW-0607	GW-0607	8/15/2012	Groundwater	ELI
B12081717	GW-0608	GW-0608	8/15/2012	Groundwater	ELI
B12081717	GW-0609	GW-0609	8/15/2012	Groundwater	ELI
B12081717	GW-0616	GW-0616	8/15/2012	Groundwater	ELI
B12081717	GW-0617	GW-0616	8/15/2012	Groundwater	ELI
B12081717	GW-0620	GW-0620	8/15/2012	Groundwater	ELI
B12081717	GW-0621	GW-0621	8/14/2012	Groundwater	ELI
B12081717	GW-0622	GW-0622	8/14/2012	Groundwater	ELI
B12081717	GW-0623	GW-0623	8/14/2012	Groundwater	ELI
B12081717	GW-0624	GW-0624	8/14/2012	Groundwater	ELI
B12081717	GW-0626	GW-0626	8/15/2012	Groundwater	ELI
B12081916	GW-0604	GW-0604	8/18/2012	Groundwater	ELI
B12081916	GW-0605	GW-0605	8/18/2012	Groundwater	ELI
B12081916	GW-0610	GW-0610	8/18/2012	Groundwater	ELI

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
B12081916	GW-0611	GW-0610	8/18/2012	Groundwater	ELI
B12081916	GW-0613	GW-0613	8/18/2012	Groundwater	ELI
B12081916	GW-0614	GW-0614	8/18/2012	Groundwater	ELI
B12081916	GW-0615	GW-0615	8/18/2012	Groundwater	ELI
B12082285	GW-0602	GW-0602	8/21/2012	Groundwater	ELI
B12082285	GW-0628	GW-0628	8/21/2012	Groundwater	ELI
B12082285	GW-0629	GW-0628	8/21/2012	Groundwater	ELI
B12082285	GW-0631	GW-0631	8/21/2012	Groundwater	ELI
B12110858	GW-0633	GW-0633	11/7/2012	Groundwater	ELI
B12110858	GW-0639	GW-0639	11/7/2012	Groundwater	ELI
B12110858	GW-0647	GW-0647	11/6/2012	Groundwater	ELI
B12110858	GW-0657	GW-0657	11/6/2012	Groundwater	ELI
B12110858	GW-0662	GW-0662	11/6/2012	Groundwater	ELI
B12110864	GW-0645	GW-0645	11/6/2012	Groundwater	ELI
B12110864	GW-0646	GW-0646	11/6/2012	Groundwater	ELI
B12110864	GW-0658	GW-0658	11/6/2012	Groundwater	ELI
B12110864	GW-0661	GW-0661	11/6/2012	Groundwater	ELI
B12110866	GW-0655	GW-0655	11/7/2012	Groundwater	ELI
B12110866	GW-0656	GW-0656	11/7/2012	Groundwater	ELI
B12110866	GW-0659	GW-0659	11/7/2012	Groundwater	ELI
B12110866	GW-0660	GW-0660	11/7/2012	Groundwater	ELI
B12110870	GW-0634	GW-0634	11/8/2012	Groundwater	ELI
B12110870	GW-0635	GW-0634	11/8/2012	Groundwater	ELI
B12110870	GW-0637	GW-0637	11/8/2012	Groundwater	ELI
B12110870	GW-0663	GW-0663	11/8/2012	Groundwater	ELI
B12111028	GW-0648	GW-0648	11/10/2012	Groundwater	ELI
B12111028	GW-0668	GW-0668	11/11/2012	Groundwater	ELI
B12111031	GW-0643	GW-0642	11/10/2012	Groundwater	ELI
B12111034	GW-0650	GW-0650	11/10/2012	Groundwater	ELI
B12111034	GW-0651	GW-0650	11/10/2012	Groundwater	ELI
B12111034	GW-0654	GW-0654	11/10/2012	Groundwater	ELI
B12111039	GW-0642	GW-0642	11/10/2012	Groundwater	ELI
B12111039	GW-0664	GW-0664	11/11/2012	Groundwater	ELI
B12111039	GW-0665	GW-0664	11/11/2012	Groundwater	ELI
B12111042	GW-0640	GW-0640	11/12/2012	Groundwater	ELI
B12111042	GW-0641	GW-0641	11/12/2012	Groundwater	ELI
B12111042	GW-0649	GW-0649	11/12/2012	Groundwater	ELI
E0801141	GW-0376	GW-0376	11/11/2008	Groundwater	CAS
E0801141	GW-0377	GW-0377	11/11/2008	Groundwater	CAS
E0801141	GW-0378	GW-0378	11/11/2008	Groundwater	CAS
E0801141	GW-0383	GW-0383	11/11/2008	Groundwater	CAS
E0801141	GW-0384	GW-0384	11/11/2008	Groundwater	CAS
E0801153	GW-0373	GW-0373	11/12/2008	Groundwater	CAS
E0801153	GW-0374	GW-0374	11/12/2008	Groundwater	CAS
E0801153	GW-0375	GW-0375	11/12/2008	Groundwater	CAS
E0801153	GW-0379	GW-0379	11/11/2008	Groundwater	CAS
E0801153	GW-0382	GW-0382	11/11/2008	Groundwater	CAS
E0900350	GW-0390	GW-0390	5/22/2009	Groundwater	CAS
E0900350	GW-0391	GW-0390	5/22/2009	Groundwater	CAS
E0900727	GW-0395	GW-0395	8/25/2009	Groundwater	CAS
E0900727	GW-0396	GW-0396	8/25/2009	Groundwater	CAS
E0900727	GW-0397	GW-0397	8/25/2009	Groundwater	CAS
E0900727	GW-0398	GW-0397	8/25/2009	Groundwater	CAS
E0900727	GW-0400	GW-0400	8/25/2009	Groundwater	CAS
E0900727	GW-0401	GW-0401	8/26/2009	Groundwater	CAS
E0900727	GW-0402	GW-0402	8/26/2009	Groundwater	CAS
E0900727	GW-0403	GW-0403	8/26/2009	Groundwater	CAS
E0900727	GW-0404	GW-0404	8/26/2009	Groundwater	CAS
E0900727	GW-0405	GW-0404	8/26/2009	Groundwater	CAS

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
E0900727	GW-0407	GW-0407	8/25/2009	Groundwater	CAS
E0900727	GW-0408	GW-0408	8/26/2009	Groundwater	CAS
E0900727	GW-0409	GW-0409	8/26/2009	Groundwater	CAS
E0901042	GW-0415	GW-0415	11/17/2009	Groundwater	CAS
E0901042	GW-0416	GW-0416	11/17/2009	Groundwater	CAS
E0901042	GW-0417	GW-0417	11/17/2009	Groundwater	CAS
E0901042	GW-0418	GW-0417	11/17/2009	Groundwater	CAS
E0901042	GW-0420	GW-0420	11/17/2009	Groundwater	CAS
E1000211	GW-0430	GW-0430	3/3/2010	Groundwater	CAS
E1000211	GW-0431	GW-0430	3/3/2010	Groundwater	CAS
E1000517	GW-0433	GW-0433	5/11/2010	Groundwater	CAS
E1000517	GW-0434	GW-0433	5/11/2010	Groundwater	CAS
E1000936	GW-0436	GW-0436	8/24/2010	Groundwater	CAS
E1000936	GW-0437	GW-0437	8/24/2010	Groundwater	CAS
E1000936	GW-0446	GW-0446	8/23/2010	Groundwater	CAS
E1000936	GW-0447	GW-0447	8/23/2010	Groundwater	CAS
E1000936	GW-0462	GW-0462	8/23/2010	Groundwater	CAS
E1000937	GW-0445	GW-0445	8/24/2010	Groundwater	CAS
E1000937	GW-0458	GW-0458	8/24/2010	Groundwater	CAS
E1000937	GW-0459	GW-0459	8/24/2010	Groundwater	CAS
E1000938	GW-0438	GW-0438	8/24/2010	Groundwater	CAS
E1000938	GW-0439	GW-0438	8/24/2010	Groundwater	CAS
E1000938	GW-0441	GW-0441	8/24/2010	Groundwater	CAS
E1000939	GW-0452	GW-0452	8/26/2010	Groundwater	CAS
E1000939	GW-0453	GW-0453	8/26/2010	Groundwater	CAS
E1000939	GW-0460	GW-0460	8/25/2010	Groundwater	CAS
E1000939	GW-0461	GW-0461	8/25/2010	Groundwater	CAS
E1000949	GW-0443	GW-0443	8/27/2010	Groundwater	CAS
E1000949	GW-0454	GW-0454	8/27/2010	Groundwater	CAS
E1000949	GW-0455	GW-0454	8/27/2010	Groundwater	CAS
E1000950	GW-0449	GW-0449	8/28/2010	Groundwater	CAS
E1000950	GW-0450	GW-0449	8/28/2010	Groundwater	CAS
E1000951	GW-0442	GW-0442	8/27/2010	Groundwater	CAS
E1000951	GW-0444	GW-0444	8/27/2010	Groundwater	CAS
E1000951	GW-0448	GW-0448	8/27/2010	Groundwater	CAS
E1000951	GW-0457	GW-0457	8/27/2010	Groundwater	CAS
E1000993	GW-0463	GW-0463	9/10/2010	Groundwater	CAS
E1000993	GW-0464	GW-0463	9/10/2010	Groundwater	CAS
E1001220	GW-0466	GW-0466	11/8/2010	Groundwater	CAS
E1001220	GW-0467	GW-0467	11/8/2010	Groundwater	CAS
E1001220	GW-0471	GW-0471	11/8/2010	Groundwater	CAS
E1001234	GW-0468	GW-0468	11/11/2010	Groundwater	CAS
E1001234	GW-0469	GW-0468	11/11/2010	Groundwater	CAS
E1001333	GW-0493	GW-0493	12/16/2010	Groundwater	CAS
E1001333	GW-0494	GW-0493	12/16/2010	Groundwater	CAS
E1100065	GW-0496	GW-0496	1/14/2011	Groundwater	CAS
E1100065	GW-0497	GW-0496	1/14/2011	Groundwater	CAS
E1100065	GW-0499	GW-0499	1/14/2011	Groundwater	CAS
E1100137	GW-0500	GW-0500	2/10/2011	Groundwater	CAS
E1100137	GW-0501	GW-0500	2/10/2011	Groundwater	CAS
E1100175	GW-0503	GW-0503	2/22/2011	Groundwater	CAS
E1100175	GW-0504	GW-0503	2/22/2011	Groundwater	CAS
E1100267	GW-0506	GW-0506	3/14/2011	Groundwater	CAS
E1100267	GW-0507	GW-0506	3/14/2011	Groundwater	CAS
E1100267	GW-0509	GW-0509	3/14/2011	Groundwater	CAS
E1100385	GW-0511	GW-0511	4/12/2011	Groundwater	CAS
E1100385	GW-0512	GW-0511	4/12/2011	Groundwater	CAS
E1100386	GW-0510	GW-0510	4/12/2011	Groundwater	CAS
E1100386	GW-0515	GW-0515	4/12/2011	Groundwater	CAS

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
E1100386	GW-0516	GW-0516	4/12/2011	Groundwater	CAS
E1100386	GW-0517	GW-0517	4/12/2011	Groundwater	CAS
E1100524	GW-0520	GW-0520	5/10/2011	Groundwater	CAS
E1100524	GW-0521	GW-0520	5/10/2011	Groundwater	CAS
E1100819	GW-0523	GW-0523	8/8/2011	Groundwater	CAS
E1100819	GW-0524	GW-0524	8/8/2011	Groundwater	CAS
E1100819	GW-0528	GW-0528	8/8/2011	Groundwater	CAS
E1100819	GW-0529	GW-0529	8/9/2011	Groundwater	CAS
E1100819	GW-0552	GW-0552	8/10/2011	Groundwater	CAS
E1100820	GW-0525	GW-0525	8/9/2011	Groundwater	CAS
E1100820	GW-0526	GW-0525	8/9/2011	Groundwater	CAS
E1100820	GW-0553	GW-0553	8/9/2011	Groundwater	CAS
E1100820	GW-0554	GW-0554	8/9/2011	Groundwater	CAS
E1100830	GW-0530	GW-0530	8/10/2011	Groundwater	CAS
E1100830	GW-0546	GW-0546	8/14/2011	Groundwater	CAS
E1100830	GW-0549	GW-0549	8/13/2011	Groundwater	CAS
E1100830	GW-0551	GW-0551	8/10/2011	Groundwater	CAS
E1100830	GW-0555	GW-0555	8/10/2011	Groundwater	CAS
E1100831	GW-0541	GW-0541	8/14/2011	Groundwater	CAS
E1100831	GW-0543	GW-0543	8/15/2011	Groundwater	CAS
E1100831	GW-0544	GW-0543	8/15/2011	Groundwater	CAS
E1100832	GW-0536	GW-0536	8/14/2011	Groundwater	CAS
E1100832	GW-0542	GW-0542	8/14/2011	Groundwater	CAS
E1100832	GW-0547	GW-0547	8/13/2011	Groundwater	CAS
E1100832	GW-0548	GW-0548	8/13/2011	Groundwater	CAS
E1100832	GW-0550	GW-0550	8/13/2011	Groundwater	CAS
E1100837	GW-0532	GW-0532	8/16/2011	Groundwater	CAS
E1100837	GW-0537	GW-0537	8/16/2011	Groundwater	CAS
E1100837	GW-0538	GW-0537	8/16/2011	Groundwater	CAS
E1100838	GW-0531	GW-0531	8/16/2011	Groundwater	CAS
E1100838	GW-0533	GW-0533	8/16/2011	Groundwater	CAS
E1100838	GW-0534	GW-0534	8/15/2011	Groundwater	CAS
E1100838	GW-0535	GW-0535	8/15/2011	Groundwater	CAS
E1100838	GW-0540	GW-0540	8/16/2011	Groundwater	CAS
E1101082	GW-0564	GW-0564	11/1/2011	Groundwater	CAS
E1101082	GW-0565	GW-0565	11/1/2011	Groundwater	CAS
E1101082	GW-0589	GW-0589	11/1/2011	Groundwater	CAS
E1101082	GW-0591	GW-0591	11/1/2011	Groundwater	CAS
E1101082	GW-0592	GW-0592	11/1/2011	Groundwater	CAS
E1101084	GW-0559	GW-0559	11/2/2011	Groundwater	CAS
E1101084	GW-0560	GW-0559	11/2/2011	Groundwater	CAS
E1101084	GW-0577	GW-0577	11/2/2011	Groundwater	CAS
E1101084	GW-0578	GW-0578	11/2/2011	Groundwater	CAS
E1101085	GW-0557	GW-0557	11/3/2011	Groundwater	CAS
E1101085	GW-0558	GW-0558	11/3/2011	Groundwater	CAS
E1101085	GW-0563	GW-0563	11/3/2011	Groundwater	CAS
E1101085	GW-0590	GW-0590	11/3/2011	Groundwater	CAS
E1101086	GW-0571	GW-0571	11/1/2011	Groundwater	CAS
E1101086	GW-0584	GW-0584	10/31/2011	Groundwater	CAS
E1101086	GW-0585	GW-0585	10/31/2011	Groundwater	CAS
E1101086	GW-0588	GW-0588	11/1/2011	Groundwater	CAS
E1101095	GW-0569	GW-0569	11/6/2011	Groundwater	CAS
E1101095	GW-0570	GW-0570	11/6/2011	Groundwater	CAS
E1101095	GW-0586	GW-0586	11/5/2011	Groundwater	CAS
E1101095	GW-0587	GW-0587	11/5/2011	Groundwater	CAS
E1101096	GW-0568	GW-0568	11/6/2011	Groundwater	CAS
E1101096	GW-0579	GW-0579	11/6/2011	Groundwater	CAS
E1101096	GW-0580	GW-0579	11/6/2011	Groundwater	CAS
E1101096	GW-0583	GW-0583	11/6/2011	Groundwater	CAS

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
E1101097	GW-0566	GW-0566	11/7/2011	Groundwater	CAS
E1101097	GW-0567	GW-0567	11/7/2011	Groundwater	CAS
E1101097	GW-0576	GW-0576	11/7/2011	Groundwater	CAS
E1101098	GW-0572	GW-0572	11/6/2011	Groundwater	CAS
E1101098	GW-0573	GW-0572	11/6/2011	Groundwater	CAS
E1200081	GW-0594	GW-0594	1/25/2012	Groundwater	CAS
E1200081	GW-0595	GW-0594	1/25/2012	Groundwater	CAS
E1201185	GW-0597	GW-0597	8/13/2012	Groundwater	CAS
E1201185	GW-0598	GW-0598	8/13/2012	Groundwater	CAS
E1201185	GW-0599	GW-0599	8/13/2012	Groundwater	CAS
E1201185	GW-0625	GW-0625	8/13/2012	Groundwater	CAS
E1201185	GW-0627	GW-0627	8/13/2012	Groundwater	CAS
E1201186	GW-0608	GW-0608	8/15/2012	Groundwater	CAS
E1201186	GW-0621	GW-0621	8/14/2012	Groundwater	CAS
E1201186	GW-0622	GW-0622	8/14/2012	Groundwater	CAS
E1201186	GW-0623	GW-0623	8/14/2012	Groundwater	CAS
E1201186	GW-0624	GW-0624	8/14/2012	Groundwater	CAS
E1201186	GW-0626	GW-0626	8/15/2012	Groundwater	CAS
E1201188	GW-0607	GW-0607	8/15/2012	Groundwater	CAS
E1201188	GW-0609	GW-0609	8/15/2012	Groundwater	CAS
E1201188	GW-0616	GW-0616	8/15/2012	Groundwater	CAS
E1201188	GW-0617	GW-0616	8/15/2012	Groundwater	CAS
E1201188	GW-0620	GW-0620	8/15/2012	Groundwater	CAS
E1201200	GW-0604	GW-0604	8/18/2012	Groundwater	CAS
E1201200	GW-0610	GW-0610	8/18/2012	Groundwater	CAS
E1201200	GW-0611	GW-0610	8/18/2012	Groundwater	CAS
E1201200	GW-0613	GW-0613	8/18/2012	Groundwater	CAS
E1201202	GW-0603	GW-0603	8/16/2012	Groundwater	CAS
E1201202	GW-0605	GW-0605	8/18/2012	Groundwater	CAS
E1201202	GW-0606	GW-0606	8/16/2012	Groundwater	CAS
E1201202	GW-0614	GW-0614	8/18/2012	Groundwater	CAS
E1201202	GW-0615	GW-0615	8/18/2012	Groundwater	CAS
E1201222	GW-0602	GW-0602	8/21/2012	Groundwater	CAS
E1201222	GW-0628	GW-0628	8/21/2012	Groundwater	CAS
E1201222	GW-0629	GW-0628	8/21/2012	Groundwater	CAS
E1201222	GW-0631	GW-0631	8/21/2012	Groundwater	CAS
E1201471	GW-0633	GW-0633	11/7/2012	Groundwater	CAS
E1201471	GW-0655	GW-0655	11/7/2012	Groundwater	CAS
E1201471	GW-0656	GW-0656	11/7/2012	Groundwater	CAS
E1201471	GW-0659	GW-0659	11/7/2012	Groundwater	CAS
E1201471	GW-0660	GW-0660	11/7/2012	Groundwater	CAS
E1201472	GW-0634	GW-0634	11/8/2012	Groundwater	CAS
E1201472	GW-0645	GW-0645	11/6/2012	Groundwater	CAS
E1201472	GW-0646	GW-0646	11/6/2012	Groundwater	CAS
E1201472	GW-0661	GW-0661	11/6/2012	Groundwater	CAS
E1201472	GW-0663	GW-0663	11/8/2012	Groundwater	CAS
E1201473	GW-0639	GW-0639	11/7/2012	Groundwater	CAS
E1201473	GW-0647	GW-0647	11/6/2012	Groundwater	CAS
E1201473	GW-0657	GW-0657	11/6/2012	Groundwater	CAS
E1201473	GW-0658	GW-0658	11/6/2012	Groundwater	CAS
E1201473	GW-0662	GW-0662	11/6/2012	Groundwater	CAS
E1201476	GW-0637	GW-0637	11/8/2012	Groundwater	CAS
E1201476	GW-0642	GW-0642	11/10/2012	Groundwater	CAS
E1201476	GW-0648	GW-0648	11/10/2012	Groundwater	CAS
E1201476	GW-0651	GW-0650	11/10/2012	Groundwater	CAS
E1201476	GW-0654	GW-0654	11/10/2012	Groundwater	CAS
E1201477	GW-0664	GW-0664	11/11/2012	Groundwater	CAS
E1201477	GW-0665	GW-0664	11/11/2012	Groundwater	CAS
E1201477	GW-0668	GW-0668	11/11/2012	Groundwater	CAS

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
E1201478	GW-0640	GW-0640	11/12/2012	Groundwater	CAS
E1201478	GW-0641	GW-0641	11/12/2012	Groundwater	CAS
E1201478	GW-0649	GW-0649	11/12/2012	Groundwater	CAS
E1201478	GW-0650	GW-0650	11/10/2012	Groundwater	CAS
E1201479	GW-0643	GW-0642	11/10/2012	Groundwater	CAS
K0704383	GW-0265	GW-0265	5/21/2007	Groundwater	CAS
K0704383	GW-0266	GW-0265	5/21/2007	Groundwater	CAS
K0706810	GW-0270	GW-0270	7/31/2007	Groundwater	CAS
K0706810	GW-0271	GW-0271	8/1/2007	Groundwater	CAS
K0706810	GW-0272	GW-0272	8/1/2007	Groundwater	CAS
K0706810	GW-0273	GW-0272	8/1/2007	Groundwater	CAS
K0706810	GW-0275	GW-0275	7/31/2007	Groundwater	CAS
K0706810	GW-0276	GW-0276	7/31/2007	Groundwater	CAS
K0706810	GW-0277	GW-0277	7/31/2007	Groundwater	CAS
K0706810	GW-0278	GW-0278	7/31/2007	Groundwater	CAS
K0706810	GW-0279	GW-0279	7/31/2007	Groundwater	CAS
K0706810	GW-0280	GW-0280	8/1/2007	Groundwater	CAS
K0706810	GW-0281	GW-0281	7/31/2007	Groundwater	CAS
K0706810	GW-0282	GW-0282	8/1/2007	Groundwater	CAS
K0706810	GW-0283	GW-0283	8/1/2007	Groundwater	CAS
K0706810	GW-0284	GW-0284	8/1/2007	Groundwater	CAS
K0706810	GW-0285	GW-0284	8/1/2007	Groundwater	CAS
K0706810	GW-0287	GW-0287	8/1/2007	Groundwater	CAS
K0706810	GW-0288	GW-0288	8/1/2007	Groundwater	CAS
K0706810	GW-0289	GW-0289	8/2/2007	Groundwater	CAS
K0706810	GW-0290	GW-0290	8/2/2007	Groundwater	CAS
K0709634	GW-0293	GW-0293	10/13/2007	Groundwater	CAS
K0709634	GW-0294	GW-0293	10/13/2007	Groundwater	CAS
K0808271	GW-0350	GW-0350	8/26/2008	Groundwater	CAS
K0808271	GW-0351	GW-0351	8/26/2008	Groundwater	CAS
K0808271	GW-0352	GW-0352	8/26/2008	Groundwater	CAS
K0808271	GW-0353	GW-0352	8/26/2008	Groundwater	CAS
K0808271	GW-0355	GW-0355	8/26/2008	Groundwater	CAS
K0808271	GW-0356	GW-0356	8/27/2008	Groundwater	CAS
K0808271	GW-0357	GW-0357	8/27/2008	Groundwater	CAS
K0808271	GW-0358	GW-0358	8/27/2008	Groundwater	CAS
K0808271	GW-0359	GW-0359	8/27/2008	Groundwater	CAS
K0808271	GW-0360	GW-0359	8/27/2008	Groundwater	CAS
K0808271	GW-0362	GW-0362	8/27/2008	Groundwater	CAS
K0808271	GW-0363	GW-0363	8/26/2008	Groundwater	CAS
K0808271	GW-0364	GW-0364	8/26/2008	Groundwater	CAS
K0810907	GW-0370	GW-0370	11/6/2008	Groundwater	CAS
K0810907	GW-0371	GW-0370	11/6/2008	Groundwater	CAS
K1009170	GW-0436	GW-0436	8/24/2010	Groundwater	CAS
K1009170	GW-0437	GW-0437	8/24/2010	Groundwater	CAS
K1009170	GW-0438	GW-0438	8/24/2010	Groundwater	CAS
K1009170	GW-0439	GW-0438	8/24/2010	Groundwater	CAS
K1009170	GW-0441	GW-0441	8/24/2010	Groundwater	CAS
K1009170	GW-0445	GW-0445	8/24/2010	Groundwater	CAS
K1009170	GW-0446	GW-0446	8/23/2010	Groundwater	CAS
K1009170	GW-0447	GW-0447	8/23/2010	Groundwater	CAS
K1009170	GW-0458	GW-0458	8/24/2010	Groundwater	CAS
K1009170	GW-0459	GW-0459	8/24/2010	Groundwater	CAS
K1009170	GW-0462	GW-0462	8/23/2010	Groundwater	CAS
K1009246	GW-0452	GW-0452	8/26/2010	Groundwater	CAS
K1009246	GW-0453	GW-0453	8/26/2010	Groundwater	CAS
K1009246	GW-0460	GW-0460	8/25/2010	Groundwater	CAS
K1009246	GW-0461	GW-0461	8/25/2010	Groundwater	CAS
K1009309	GW-0442	GW-0442	8/27/2010	Groundwater	CAS

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EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
K1009309	GW-0443	GW-0443	8/27/2010	Groundwater	CAS
K1009309	GW-0444	GW-0444	8/27/2010	Groundwater	CAS
K1009309	GW-0448	GW-0448	8/27/2010	Groundwater	CAS
K1009309	GW-0449	GW-0449	8/28/2010	Groundwater	CAS
K1009309	GW-0450	GW-0449	8/28/2010	Groundwater	CAS
K1009309	GW-0454	GW-0454	8/27/2010	Groundwater	CAS
K1009309	GW-0455	GW-0454	8/27/2010	Groundwater	CAS
K1009309	GW-0457	GW-0457	8/27/2010	Groundwater	CAS
K1012574	GW-0472	GW-0472	11/7/2010	Groundwater	CAS
K1012574	GW-0473	GW-0473	11/7/2010	Groundwater	CAS
K1012574	GW-0474	GW-0474	11/7/2010	Groundwater	CAS
K1012574	GW-0475	GW-0475	11/5/2010	Groundwater	CAS
K1012574	GW-0476	GW-0476	11/5/2010	Groundwater	CAS
K1012574	GW-0477	GW-0477	11/5/2010	Groundwater	CAS
K1012574	GW-0478	GW-0478	11/7/2010	Groundwater	CAS
K1012574	GW-0479	GW-0479	11/7/2010	Groundwater	CAS
K1012574	GW-0480	GW-0479	11/7/2010	Groundwater	CAS
K1012574	GW-0482	GW-0482	11/6/2010	Groundwater	CAS
K1012574	GW-0483	GW-0483	11/6/2010	Groundwater	CAS
K1012574	GW-0484	GW-0484	11/6/2010	Groundwater	CAS
K1012574	GW-0485	GW-0484	11/6/2010	Groundwater	CAS
K1012574	GW-0487	GW-0487	11/6/2010	Groundwater	CAS
K1012574	GW-0488	GW-0488	11/5/2010	Groundwater	CAS
K1012574	GW-0489	GW-0489	11/5/2010	Groundwater	CAS
K1012574	GW-0490	GW-0490	11/5/2010	Groundwater	CAS
K1012574	GW-0491	GW-0491	11/6/2010	Groundwater	CAS
K1012574	GW-0492	GW-0492	11/5/2010	Groundwater	CAS
K1012625	GW-0466	GW-0466	11/8/2010	Groundwater	CAS
K1012625	GW-0467	GW-0467	11/8/2010	Groundwater	CAS
K1012625	GW-0471	GW-0471	11/8/2010	Groundwater	CAS
K1012809	GW-0468	GW-0468	11/11/2010	Groundwater	CAS
K1012809	GW-0469	GW-0468	11/11/2010	Groundwater	CAS
S&WSawmill2012	1001.0122398R	1001.0122398R	12/23/1998	Groundwater	ELI
S&WSawmill2012	1002.0122398R	1002.0122398R	12/23/1998	Groundwater	ELI
S&WSawmill2012	1003.0011399R	1003.0011399R	1/13/1999	Groundwater	COSL
S&WSawmill2012	1003.0011399R	1003.0011399R	1/13/1999	Groundwater	ELI
S&WSawmill2012	1003.0101999R	1003.0101999R	10/19/1999	Groundwater	COSL
S&WSawmill2012	1003.0101999R	1003.0101999R	10/19/1999	Groundwater	ELI
S&WSawmill2012	3001.0050399R	3001.0050399R	5/3/1999	Groundwater	COSL
S&WSawmill2012	3001.0113098R	3001.0113098R	11/30/1998	Groundwater	ELI
S&WSawmill2012	3001.0113098R	3001.0113098R	11/30/1998	Groundwater	TLI
S&WSawmill2012	3002.0050399R	3002.0050399R	5/3/1999	Groundwater	COSL
S&WSawmill2012	3002.0110299R	3002.0110299R	11/2/1999	Groundwater	COSL
S&WSawmill2012	3002.0113098D	3002.0113098R	11/30/1998	Groundwater	ELI
S&WSawmill2012	3002.0113098R	3002.0113098R	11/30/1998	Groundwater	COSL
S&WSawmill2012	3002.0113098R	3002.0113098R	11/30/1998	Groundwater	ELI
S&WSawmill2012	3002.0113098R	3002.0113098R	11/30/1998	Groundwater	TLI
S&WSawmill2012	3003.0050499R	3003.0050499R	5/4/1999	Groundwater	COSL
S&WSawmill2012	3003.0110299R	3003.0110299R	11/2/1999	Groundwater	COSL
S&WSawmill2012	3003.0120198R	3003.0120198R	12/1/1998	Groundwater	COSL
S&WSawmill2012	3003.0120198R	3003.0120198R	12/1/1998	Groundwater	ELI
S&WSawmill2012	3003.0120198R	3003.0120198R	12/1/1998	Groundwater	TLI
S&WSawmill2012	3004.0050499R	3004.0050499R	5/4/1999	Groundwater	COSL
S&WSawmill2012	3004.0120198R	3004.0120198R	12/1/1998	Groundwater	ELI
S&WSawmill2012	3004.0120198R	3004.0120198R	12/1/1998	Groundwater	TLI
S&WSawmill2012	3005.1050499R	3005.1050499R	5/4/1999	Groundwater	COSL
S&WSawmill2012	3005.1110299R	3005.1110299R	11/2/1999	Groundwater	COSL
S&WSawmill2012	3005.1113098R	3005.1113098R	11/30/1998	Groundwater	ELI
S&WSawmill2012	3005.2050499R	3005.2050499R	5/4/1999	Groundwater	COSL

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EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
S&WSawmill2012	3005.2110299R	3005.2110299R	11/2/1999	Groundwater	COSL
S&WSawmill2012	3005.2120198R	3005.2120198R	12/1/1998	Groundwater	ELI
S&WSawmill2012	3005.2120198R	3005.2120198R	12/1/1998	Groundwater	TLI
S&WSawmill2012	3006.0050399R	3006.0050399R	5/3/1999	Groundwater	COSL
S&WSawmill2012	3006.0110299R	3006.0110299R	11/2/1999	Groundwater	COSL
S&WSawmill2012	3006.0120198R	3006.0120198R	12/1/1998	Groundwater	ELI
S&WSawmill2012	3007.0050399D	3007.0050399R	5/3/1999	Groundwater	COSL
S&WSawmill2012	3007.0050399R	3007.0050399R	5/3/1999	Groundwater	COSL
S&WSawmill2012	3007.0061899R	3007.0061899R	6/18/1999	Groundwater	ELI
S&WSawmill2012	3007.0101599R	3007.0101599R	10/15/1999	Groundwater	COSL
S&WSawmill2012	3007.0110299R	3007.0110299R	11/2/1999	Groundwater	COSL
S&WSawmill2012	3007.0110299R	3007.0110299R	11/2/1999	Groundwater	ELI
S&WSawmill2012	3007.0120198R	3007.0120198R	12/1/1998	Groundwater	COSL
S&WSawmill2012	3007.0120198R	3007.0120198R	12/1/1998	Groundwater	ELI
S&WSawmill2012	3007.0120198R	3007.0120198R	12/1/1998	Groundwater	TLI
S&WSawmill2012	3008.0050399R	3008.0050399R	5/3/1999	Groundwater	COSL
S&WSawmill2012	3008.0110299R	3008.0110299R	11/2/1999	Groundwater	COSL
S&WSawmill2012	3008.0120198R	3008.0120198R	12/1/1998	Groundwater	COSL
S&WSawmill2012	3008.0120198R	3008.0120198R	12/1/1998	Groundwater	ELI
S&WSawmill2012	3009.0061899R	3009.0061899R	6/18/1999	Groundwater	ELI
S&WSawmill2012	3009.0101599R	3009.0101599R	10/15/1999	Groundwater	COSL
S&WSawmill2012	3009.0110299R	3009.0110299R	11/2/1999	Groundwater	COSL
S&WSawmill2012	3010.1061899R	3010.1061899R	6/18/1999	Groundwater	ELI
S&WSawmill2012	3010.1101599R	3010.1101599R	10/15/1999	Groundwater	COSL
S&WSawmill2012	3010.1110299R	3010.1110299R	11/2/1999	Groundwater	COSL
S&WSawmill2012	3010.2061899R	3010.2061899R	6/18/1999	Groundwater	ELI
S&WSawmill2012	3010.2101599R	3010.2101599R	10/15/1999	Groundwater	COSL
S&WSawmill2012	3010.2110299D	3010.2110299R	11/2/1999	Groundwater	COSL
S&WSawmill2012	3010.2110299R	3010.2110299R	11/2/1999	Groundwater	COSL
S&WSawmill2012	3010.2110299R	3010.2110299R	11/2/1999	Groundwater	ELI
S&WSawmill2012	3017-GW-001	3017-GW-001	7/7/1998	Groundwater	ELI
S&WSawmill2012	D-102	D-102	6/20/1988	Groundwater	ENSECO
S&WSawmill2012	D-103	D-103	6/20/1988	Groundwater	ENSECO
S&WSawmill2012	D-201	D-201	6/20/1988	Groundwater	ENSECO
S&WSawmill2012	D-301(dup)	D-201	6/20/1988	Groundwater	ENSECO
S&WSawmill2012	GW-0028	GW-0028	11/12/2001	Groundwater	CAS
S&WSawmill2012	GW-0028	GW-0028	11/12/2001	Groundwater	LOSL
S&WSawmill2012	GW-0028	GW-0028	11/12/2001	Groundwater	PAS
S&WSawmill2012	GW-0029	GW-0029	11/13/2001	Groundwater	CAS
S&WSawmill2012	GW-0029	GW-0029	11/13/2001	Groundwater	LOSL
S&WSawmill2012	GW-0030	GW-0030	11/12/2001	Groundwater	CAS
S&WSawmill2012	GW-0030	GW-0030	11/12/2001	Groundwater	LOSL
S&WSawmill2012	GW-0030	GW-0030	11/12/2001	Groundwater	PAS
S&WSawmill2012	GW-0031	GW-0031	11/12/2001	Groundwater	CAS
S&WSawmill2012	GW-0031	GW-0031	11/12/2001	Groundwater	PAS
S&WSawmill2012	GW-0032	GW-0032	11/12/2001	Groundwater	CAS
S&WSawmill2012	GW-0032	GW-0032	11/12/2001	Groundwater	PAS
S&WSawmill2012	GW-0033	GW-0033	11/12/2001	Groundwater	CAS
S&WSawmill2012	GW-0033	GW-0033	11/12/2001	Groundwater	PAS
S&WSawmill2012	GW-0034	GW-0034	11/12/2001	Groundwater	CAS
S&WSawmill2012	GW-0034	GW-0034	11/12/2001	Groundwater	LOSL
S&WSawmill2012	GW-0034	GW-0034	11/12/2001	Groundwater	PAS
S&WSawmill2012	GW-0046	GW-0034	11/12/2001	Groundwater	CAS
S&WSawmill2012	GW-0046	GW-0034	11/12/2001	Groundwater	LOSL
S&WSawmill2012	GW-0035	GW-0035	11/13/2001	Groundwater	CAS
S&WSawmill2012	GW-0035	GW-0035	11/13/2001	Groundwater	LOSL
S&WSawmill2012	GW-0036	GW-0036	11/12/2001	Groundwater	CAS
S&WSawmill2012	GW-0036	GW-0036	11/12/2001	Groundwater	PAS
S&WSawmill2012	GW-0037	GW-0037	11/12/2001	Groundwater	CAS

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EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
S&WSawmill2012	GW-0037	GW-0037	11/12/2001	Groundwater	LOSL
S&WSawmill2012	GW-0037	GW-0037	11/12/2001	Groundwater	PAS
S&WSawmill2012	GW-0038	GW-0038	11/12/2001	Groundwater	CAS
S&WSawmill2012	GW-0038	GW-0038	11/12/2001	Groundwater	LOSL
S&WSawmill2012	GW-0038	GW-0038	11/12/2001	Groundwater	PAS
S&WSawmill2012	GW-0039	GW-0039	11/12/2001	Groundwater	CAS
S&WSawmill2012	GW-0039	GW-0039	11/12/2001	Groundwater	PAS
S&WSawmill2012	GW-0040	GW-0040	11/13/2001	Groundwater	CAS
S&WSawmill2012	GW-0040	GW-0040	11/13/2001	Groundwater	PAS
S&WSawmill2012	GW-0041	GW-0041	11/13/2001	Groundwater	CAS
S&WSawmill2012	GW-0041	GW-0041	11/13/2001	Groundwater	PAS
S&WSawmill2012	GW-0043	GW-0043	11/13/2001	Groundwater	CAS
S&WSawmill2012	GW-0043	GW-0043	11/13/2001	Groundwater	PAS
S&WSawmill2012	GW-0044	GW-0044	11/12/2001	Groundwater	CAS
S&WSawmill2012	GW-0044	GW-0044	11/12/2001	Groundwater	PAS
S&WSawmill2012	GW-0045	GW-0045	11/12/2001	Groundwater	CAS
S&WSawmill2012	GW-0045	GW-0045	11/12/2001	Groundwater	PAS
S&WSawmill2012	GW-0049	GW-0049	11/14/2001	Groundwater	CAS
S&WSawmill2012	GW-0049	GW-0049	11/14/2001	Groundwater	PAS
S&WSawmill2012	GW-0050	GW-0050	2/5/2002	Groundwater	ELI
S&WSawmill2012	GW-0051	GW-0051	2/5/2002	Groundwater	PAS
S&WSawmill2012	GW-0052	GW-0052	2/7/2002	Groundwater	CAS
S&WSawmill2012	GW-0052	GW-0052	2/7/2002	Groundwater	PAS
S&WSawmill2012	GW-0053	GW-0053	2/7/2002	Groundwater	CAS
S&WSawmill2012	GW-0053	GW-0053	2/7/2002	Groundwater	PAS
S&WSawmill2012	GW-0054	GW-0054	2/7/2002	Groundwater	CAS
S&WSawmill2012	GW-0054	GW-0054	2/7/2002	Groundwater	PAS
S&WSawmill2012	GW-0055	GW-0055	2/7/2002	Groundwater	CAS
S&WSawmill2012	GW-0055	GW-0055	2/7/2002	Groundwater	PAS
S&WSawmill2012	GW-0056	GW-0056	2/7/2002	Groundwater	CAS
S&WSawmill2012	GW-0056	GW-0056	2/7/2002	Groundwater	PAS
S&WSawmill2012	GW-0057	GW-0057	2/7/2002	Groundwater	CAS
S&WSawmill2012	GW-0057	GW-0057	2/7/2002	Groundwater	PAS
S&WSawmill2012	GW-0058	GW-0058	2/7/2002	Groundwater	CAS
S&WSawmill2012	GW-0058	GW-0058	2/7/2002	Groundwater	PAS
S&WSawmill2012	GW-0059	GW-0059	4/3/2002	Groundwater	CAS
S&WSawmill2012	GW-0060	GW-0060	7/16/2002	Groundwater	CAS
S&WSawmill2012	GW-0060	GW-0060	7/16/2002	Groundwater	PAS
S&WSawmill2012	GW-0061	GW-0061	7/17/2002	Groundwater	CAS
S&WSawmill2012	GW-0061	GW-0061	7/17/2002	Groundwater	PAS
S&WSawmill2012	GW-0062	GW-0062	7/17/2002	Groundwater	CAS
S&WSawmill2012	GW-0062	GW-0062	7/17/2002	Groundwater	PAS
S&WSawmill2012	GW-0063	GW-0063	7/16/2002	Groundwater	CAS
S&WSawmill2012	GW-0063	GW-0063	7/16/2002	Groundwater	PAS
S&WSawmill2012	GW-0064	GW-0064	7/16/2002	Groundwater	CAS
S&WSawmill2012	GW-0064	GW-0064	7/16/2002	Groundwater	PAS
S&WSawmill2012	GW-0065	GW-0065	7/16/2002	Groundwater	CAS
S&WSawmill2012	GW-0065	GW-0065	7/16/2002	Groundwater	PAS
S&WSawmill2012	GW-0066	GW-0066	7/16/2002	Groundwater	CAS
S&WSawmill2012	GW-0066	GW-0066	7/16/2002	Groundwater	PAS
S&WSawmill2012	GW-0067	GW-0066	7/16/2002	Groundwater	CAS
S&WSawmill2012	GW-0067	GW-0066	7/16/2002	Groundwater	PAS
S&WSawmill2012	GW-0070	GW-0070	3/4/2003	Groundwater	ELI
S&WSawmill2012	GW-0070	GW-0070	3/4/2003	Groundwater	PAS
S&WSawmill2012	GW-0071	GW-0071	3/4/2003	Groundwater	ELI
S&WSawmill2012	GW-0071	GW-0071	3/4/2003	Groundwater	PAS
S&WSawmill2012	GW-0072	GW-0072	3/4/2003	Groundwater	ELI
S&WSawmill2012	GW-0072	GW-0072	3/4/2003	Groundwater	PAS
S&WSawmill2012	GW-0073	GW-0073	3/4/2003	Groundwater	ELI

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
S&WSawmill2012	GW-0073	GW-0073	3/4/2003	Groundwater	PAS
S&WSawmill2012	GW-0074	GW-0074	3/4/2003	Groundwater	ELI
S&WSawmill2012	GW-0074	GW-0074	3/4/2003	Groundwater	PAS
S&WSawmill2012	GW-0075	GW-0075	3/4/2003	Groundwater	ELI
S&WSawmill2012	GW-0075	GW-0075	3/4/2003	Groundwater	PAS
S&WSawmill2012	GW-0076	GW-0076	3/5/2003	Groundwater	CAS
S&WSawmill2012	GW-0076	GW-0076	3/5/2003	Groundwater	PAS
S&WSawmill2012	GW-0077	GW-0077	3/5/2003	Groundwater	CAS
S&WSawmill2012	GW-0077	GW-0077	3/5/2003	Groundwater	PAS
S&WSawmill2012	GW-0078	GW-0078	3/5/2003	Groundwater	CAS
S&WSawmill2012	GW-0078	GW-0078	3/5/2003	Groundwater	PAS
S&WSawmill2012	GW-0079	GW-0079	3/6/2003	Groundwater	CAS
S&WSawmill2012	GW-0079	GW-0079	3/6/2003	Groundwater	PAS
S&WSawmill2012	GW-0080	GW-0080	3/5/2003	Groundwater	CAS
S&WSawmill2012	GW-0080	GW-0080	3/5/2003	Groundwater	PAS
S&WSawmill2012	GW-0081	GW-0081	3/4/2003	Groundwater	CAS
S&WSawmill2012	GW-0081	GW-0081	3/4/2003	Groundwater	PAS
S&WSawmill2012	GW-0082	GW-0082	3/5/2003	Groundwater	CAS
S&WSawmill2012	GW-0082	GW-0082	3/5/2003	Groundwater	PAS
S&WSawmill2012	GW-0083	GW-0083	3/5/2003	Groundwater	CAS
S&WSawmill2012	GW-0083	GW-0083	3/5/2003	Groundwater	PAS
S&WSawmill2012	GW-0084	GW-0084	3/5/2003	Groundwater	CAS
S&WSawmill2012	GW-0084	GW-0084	3/5/2003	Groundwater	PAS
S&WSawmill2012	GW-0085	GW-0085	3/5/2003	Groundwater	CAS
S&WSawmill2012	GW-0085	GW-0085	3/5/2003	Groundwater	PAS
S&WSawmill2012	GW-0086	GW-0086	3/4/2003	Groundwater	CAS
S&WSawmill2012	GW-0086	GW-0086	3/4/2003	Groundwater	PAS
S&WSawmill2012	GW-0087	GW-0086	3/4/2003	Groundwater	ELI
S&WSawmill2012	GW-0088	GW-0086	3/4/2003	Groundwater	CAS
S&WSawmill2012	GW-0088	GW-0086	3/4/2003	Groundwater	PAS
S&WSawmill2012	GW-0091	GW-0091	3/6/2003	Groundwater	CAS
S&WSawmill2012	GW-0091	GW-0091	3/6/2003	Groundwater	PAS
S&WSawmill2012	GW-0092	GW-0091	3/6/2003	Groundwater	CAS
S&WSawmill2012	GW-0095	GW-0095	8/6/2003	Groundwater	ELI
S&WSawmill2012	GW-0095	GW-0095	8/6/2003	Groundwater	PAS
S&WSawmill2012	GW-0096	GW-0096	8/6/2003	Groundwater	ELI
S&WSawmill2012	GW-0096	GW-0096	8/6/2003	Groundwater	PAS
S&WSawmill2012	GW-0098	GW-0098	8/6/2003	Groundwater	ELI
S&WSawmill2012	GW-0098	GW-0098	8/6/2003	Groundwater	PAS
S&WSawmill2012	GW-0099	GW-0098	8/6/2003	Groundwater	ELI
S&WSawmill2012	GW-0101	GW-0101	8/6/2003	Groundwater	ELI
S&WSawmill2012	GW-0101	GW-0101	8/6/2003	Groundwater	PAS
S&WSawmill2012	GW-0102	GW-0102	8/6/2003	Groundwater	ELI
S&WSawmill2012	GW-0102	GW-0102	8/6/2003	Groundwater	PAS
S&WSawmill2012	GW-0103	GW-0103	8/6/2003	Groundwater	ELI
S&WSawmill2012	GW-0103	GW-0103	8/6/2003	Groundwater	PAS
S&WSawmill2012	GW-0104	GW-0104	8/6/2003	Groundwater	CAS
S&WSawmill2012	GW-0105	GW-0105	8/6/2003	Groundwater	CAS
S&WSawmill2012	GW-0106	GW-0106	8/6/2003	Groundwater	CAS
S&WSawmill2012	GW-0107	GW-0107	8/6/2003	Groundwater	CAS
S&WSawmill2012	GW-0108	GW-0108	8/6/2003	Groundwater	CAS
S&WSawmill2012	GW-0109	GW-0109	8/5/2003	Groundwater	CAS
S&WSawmill2012	GW-0110	GW-0110	8/5/2003	Groundwater	CAS
S&WSawmill2012	GW-0111	GW-0111	8/5/2003	Groundwater	CAS
S&WSawmill2012	GW-0112	GW-0112	8/5/2003	Groundwater	CAS
S&WSawmill2012	GW-0113	GW-0113	8/5/2003	Groundwater	CAS
S&WSawmill2012	GW-0114	GW-0114	8/5/2003	Groundwater	CAS
S&WSawmill2012	GW-0115	GW-0114	8/5/2003	Groundwater	CAS
S&WSawmill2012	GW-0117	GW-0117	8/5/2003	Groundwater	CAS

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
S&WSawmill2012	GW-0118	GW-0117	8/5/2003	Groundwater	CAS
S&WSawmill2012	GW-0121	GW-0121	11/10/2003	Groundwater	ELI
S&WSawmill2012	GW-0123	GW-0121	11/10/2003	Groundwater	ELI
S&WSawmill2012	GW-0121-a	GW-0121-a	9/16/2004	Groundwater	ELI
S&WSawmill2012	GW-0121-a	GW-0121-a	9/16/2004	Groundwater	PAS
S&WSawmill2012	GW-0123-a	GW-0121-a	9/16/2004	Groundwater	ELI
S&WSawmill2012	GW-0123-a	GW-0121-a	9/16/2004	Groundwater	PAS
S&WSawmill2012	GW-0124	GW-0124	11/10/2003	Groundwater	ELI
S&WSawmill2012	GW-0124-a	GW-0124-a	9/16/2004	Groundwater	ELI
S&WSawmill2012	GW-0124-a	GW-0124-a	9/16/2004	Groundwater	PAS
S&WSawmill2012	GW-0125	GW-0125	11/11/2003	Groundwater	CAS
S&WSawmill2012	GW-0125-a	GW-0125-a	9/17/2004	Groundwater	CAS
S&WSawmill2012	GW-0126	GW-0126	11/11/2003	Groundwater	CAS
S&WSawmill2012	GW-0126-a	GW-0126-a	9/17/2004	Groundwater	CAS
S&WSawmill2012	GW-0127	GW-0127	11/11/2003	Groundwater	CAS
S&WSawmill2012	GW-0129	GW-0127	11/11/2003	Groundwater	CAS
S&WSawmill2012	GW-0127-a	GW-0127-a	9/16/2004	Groundwater	CAS
S&WSawmill2012	GW-0129-a	GW-0127-a	9/16/2004	Groundwater	CAS
S&WSawmill2012	GW-0130	GW-0130	9/16/2004	Groundwater	ELI
S&WSawmill2012	GW-0130	GW-0130	9/16/2004	Groundwater	PAS
S&WSawmill2012	GW-0131	GW-0131	9/17/2004	Groundwater	ELI
S&WSawmill2012	GW-0131	GW-0131	9/17/2004	Groundwater	PAS
S&WSawmill2012	GW-0132	GW-0132	9/16/2004	Groundwater	ELI
S&WSawmill2012	GW-0132	GW-0132	9/16/2004	Groundwater	PAS
S&WSawmill2012	GW-0133	GW-0133	9/16/2004	Groundwater	ELI
S&WSawmill2012	GW-0133	GW-0133	9/16/2004	Groundwater	PAS
S&WSawmill2012	GW-0134	GW-0134	9/17/2004	Groundwater	CAS
S&WSawmill2012	GW-0135	GW-0135	9/16/2004	Groundwater	CAS
S&WSawmill2012	GW-0136	GW-0136	9/16/2004	Groundwater	CAS
S&WSawmill2012	GW-0137	GW-0137	9/17/2004	Groundwater	CAS
S&WSawmill2012	GW-0140	GW-0140	11/8/2004	Groundwater	ELI
S&WSawmill2012	GW-0140	GW-0140	11/8/2004	Groundwater	PAS
S&WSawmill2012	GW-0141	GW-0141	11/8/2004	Groundwater	ELI
S&WSawmill2012	GW-0141	GW-0141	11/8/2004	Groundwater	PAS
S&WSawmill2012	GW-0142	GW-0142	11/8/2004	Groundwater	ELI
S&WSawmill2012	GW-0142	GW-0142	11/8/2004	Groundwater	PAS
S&WSawmill2012	GW-0144	GW-0144	11/8/2004	Groundwater	ELI
S&WSawmill2012	GW-0144	GW-0144	11/8/2004	Groundwater	PAS
S&WSawmill2012	GW-0145	GW-0145	11/8/2004	Groundwater	ELI
S&WSawmill2012	GW-0145	GW-0145	11/8/2004	Groundwater	PAS
S&WSawmill2012	GW-0146	GW-0145	11/8/2004	Groundwater	ELI
S&WSawmill2012	GW-0146	GW-0145	11/8/2004	Groundwater	PAS
S&WSawmill2012	GW-0148	GW-0148	11/8/2004	Groundwater	ELI
S&WSawmill2012	GW-0148	GW-0148	11/8/2004	Groundwater	PAS
S&WSawmill2012	GW-0149	GW-0149	11/8/2004	Groundwater	CAS
S&WSawmill2012	GW-0149	GW-0149	11/8/2004	Groundwater	PAS
S&WSawmill2012	GW-0150	GW-0150	11/8/2004	Groundwater	CAS
S&WSawmill2012	GW-0150	GW-0150	11/8/2004	Groundwater	PAS
S&WSawmill2012	GW-0151	GW-0151	11/8/2004	Groundwater	CAS
S&WSawmill2012	GW-0151	GW-0151	11/8/2004	Groundwater	PAS
S&WSawmill2012	GW-0152	GW-0152	11/9/2004	Groundwater	CAS
S&WSawmill2012	GW-0152	GW-0152	11/9/2004	Groundwater	PAS
S&WSawmill2012	GW-0153	GW-0153	11/8/2004	Groundwater	CAS
S&WSawmill2012	GW-0153	GW-0153	11/8/2004	Groundwater	PAS
S&WSawmill2012	GW-0154	GW-0154	11/9/2004	Groundwater	CAS
S&WSawmill2012	GW-0154	GW-0154	11/9/2004	Groundwater	PAS
S&WSawmill2012	GW-0155	GW-0155	11/9/2004	Groundwater	CAS
S&WSawmill2012	GW-0155	GW-0155	11/9/2004	Groundwater	PAS
S&WSawmill2012	GW-0156	GW-0155	11/9/2004	Groundwater	CAS

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
S&WSawmill2012	GW-0156	GW-0155	11/9/2004	Groundwater	PAS
S&WSawmill2012	GW-0158	GW-0158	11/9/2004	Groundwater	CAS
S&WSawmill2012	GW-0158	GW-0158	11/9/2004	Groundwater	PAS
S&WSawmill2012	GW-0159	GW-0159	11/9/2004	Groundwater	CAS
S&WSawmill2012	GW-0159	GW-0159	11/9/2004	Groundwater	PAS
S&WSawmill2012	GW-0160	GW-0160	11/9/2004	Groundwater	CAS
S&WSawmill2012	GW-0160	GW-0160	11/9/2004	Groundwater	PAS
S&WSawmill2012	GW-0161	GW-0161	2/21/2005	Groundwater	CAS
S&WSawmill2012	GW-0161	GW-0161	2/21/2005	Groundwater	ELI
S&WSawmill2012	GW-0162	GW-0162	2/21/2005	Groundwater	CAS
S&WSawmill2012	GW-0162	GW-0162	2/21/2005	Groundwater	ELI
S&WSawmill2012	GW-0163	GW-0163	2/21/2005	Groundwater	CAS
S&WSawmill2012	GW-0163	GW-0163	2/21/2005	Groundwater	ELI
S&WSawmill2012	GW-0164	GW-0164	2/21/2005	Groundwater	CAS
S&WSawmill2012	GW-0164	GW-0164	2/21/2005	Groundwater	ELI
S&WSawmill2012	GW-0165	GW-0165	2/21/2005	Groundwater	CAS
S&WSawmill2012	GW-0165	GW-0165	2/21/2005	Groundwater	ELI
S&WSawmill2012	GW-0166	GW-0165	2/21/2005	Groundwater	CAS
S&WSawmill2012	GW-0166	GW-0165	2/21/2005	Groundwater	ELI
S&WSawmill2012	GW-0168	GW-0168	2/21/2005	Groundwater	CAS
S&WSawmill2012	GW-0168	GW-0168	2/21/2005	Groundwater	ELI
S&WSawmill2012	GW-0169	GW-0169	2/22/2005	Groundwater	CAS
S&WSawmill2012	GW-0170	GW-0170	2/22/2005	Groundwater	CAS
S&WSawmill2012	GW-0171	GW-0171	2/22/2005	Groundwater	CAS
S&WSawmill2012	GW-0172	GW-0172	2/22/2005	Groundwater	CAS
S&WSawmill2012	GW-0173	GW-0173	2/22/2005	Groundwater	CAS
S&WSawmill2012	GW-0174	GW-0174	2/22/2005	Groundwater	CAS
S&WSawmill2012	GW-0177	GW-0177	2/22/2005	Groundwater	CAS
S&WSawmill2012	GW-0178	GW-0178	2/22/2005	Groundwater	CAS
S&WSawmill2012	GW-0179	GW-0179	2/22/2005	Groundwater	CAS
S&WSawmill2012	GW-0180	GW-0180	5/23/2005	Groundwater	CAS
S&WSawmill2012	GW-0180	GW-0180	5/23/2005	Groundwater	ELI
S&WSawmill2012	GW-0182	GW-0182	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0182	GW-0182	8/16/2005	Groundwater	ELI
S&WSawmill2012	GW-0183	GW-0183	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0183	GW-0183	8/16/2005	Groundwater	ELI
S&WSawmill2012	GW-0184	GW-0184	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0184	GW-0184	8/16/2005	Groundwater	ELI
S&WSawmill2012	GW-0185	GW-0185	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0185	GW-0185	8/16/2005	Groundwater	ELI
S&WSawmill2012	GW-0186	GW-0186	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0186	GW-0186	8/16/2005	Groundwater	ELI
S&WSawmill2012	GW-0187	GW-0186	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0187	GW-0186	8/16/2005	Groundwater	ELI
S&WSawmill2012	GW-0189	GW-0189	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0189	GW-0189	8/16/2005	Groundwater	ELI
S&WSawmill2012	GW-0190	GW-0190	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0191	GW-0191	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0192	GW-0192	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0193	GW-0193	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0194	GW-0194	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0195	GW-0195	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0196	GW-0196	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0197	GW-0197	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0198	GW-0198	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0199	GW-0199	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0200	GW-0200	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0201	GW-0201	8/16/2005	Groundwater	CAS
S&WSawmill2012	GW-0201	GW-0201	8/16/2005	Groundwater	ELI

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
S&WSawmill2012	GW-0201A	GW-0201A	11/17/2005	Groundwater	CAS
S&WSawmill2012	GW-0201A	GW-0201A	11/17/2005	Groundwater	ELI
S&WSawmill2012	GW-0202	GW-0201A	11/17/2005	Groundwater	CAS
S&WSawmill2012	GW-0202	GW-0201A	11/17/2005	Groundwater	ELI
S&WSawmill2012	GW-0204	GW-0204	11/17/2005	Groundwater	CAS
S&WSawmill2012	GW-0204	GW-0204	11/17/2005	Groundwater	ELI
S&WSawmill2012	GW-0210	GW-0210	3/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0210	GW-0210	3/21/2006	Groundwater	ELI
S&WSawmill2012	GW-0211	GW-0211	3/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0211	GW-0211	3/21/2006	Groundwater	ELI
S&WSawmill2012	GW-0212	GW-0212	3/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0212	GW-0212	3/21/2006	Groundwater	ELI
S&WSawmill2012	GW-0213	GW-0213	3/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0213	GW-0213	3/21/2006	Groundwater	ELI
S&WSawmill2012	GW-0214	GW-0213	3/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0214	GW-0213	3/21/2006	Groundwater	ELI
S&WSawmill2012	GW-0215	GW-0215	3/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0215	GW-0215	3/21/2006	Groundwater	ELI
S&WSawmill2012	GW-0216	GW-0215	3/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0216	GW-0215	3/21/2006	Groundwater	ELI
S&WSawmill2012	GW-0218	GW-0218	3/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0218	GW-0218	3/21/2006	Groundwater	ELI
S&WSawmill2012	GW-0219	GW-0219	3/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0220	GW-0220	3/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0221	GW-0221	3/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0222	GW-0222	3/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0223	GW-0223	3/20/2006	Groundwater	CAS
S&WSawmill2012	GW-0225	GW-0223	3/20/2006	Groundwater	CAS
S&WSawmill2012	GW-0226	GW-0226	3/20/2006	Groundwater	CAS
S&WSawmill2012	GW-0227	GW-0227	3/20/2006	Groundwater	CAS
S&WSawmill2012	GW-0228	GW-0228	3/20/2006	Groundwater	CAS
S&WSawmill2012	GW-0229	GW-0229	3/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0230	GW-0230	5/31/2006	Groundwater	CAS
S&WSawmill2012	GW-0230	GW-0230	5/31/2006	Groundwater	ELI
S&WSawmill2012	GW-0231	GW-0230	5/31/2006	Groundwater	CAS
S&WSawmill2012	GW-0231	GW-0230	5/31/2006	Groundwater	ELI
S&WSawmill2012	GW-0236	GW-0236	8/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0236	GW-0236	8/21/2006	Groundwater	ELI
S&WSawmill2012	GW-0237	GW-0237	8/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0237	GW-0237	8/21/2006	Groundwater	ELI
S&WSawmill2012	GW-0238	GW-0238	8/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0238	GW-0238	8/21/2006	Groundwater	ELI
S&WSawmill2012	GW-0239	GW-0239	8/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0239	GW-0239	8/21/2006	Groundwater	ELI
S&WSawmill2012	GW-0240	GW-0239	8/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0240	GW-0239	8/21/2006	Groundwater	ELI
S&WSawmill2012	GW-0242	GW-0242	8/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0242	GW-0242	8/21/2006	Groundwater	ELI
S&WSawmill2012	GW-0243	GW-0243	8/20/2006	Groundwater	CAS
S&WSawmill2012	GW-0244	GW-0244	8/20/2006	Groundwater	CAS
S&WSawmill2012	GW-0245	GW-0245	8/20/2006	Groundwater	CAS
S&WSawmill2012	GW-0246	GW-0246	8/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0247	GW-0247	8/20/2006	Groundwater	CAS
S&WSawmill2012	GW-0248	GW-0247	8/20/2006	Groundwater	CAS
S&WSawmill2012	GW-0250	GW-0250	8/20/2006	Groundwater	CAS
S&WSawmill2012	GW-0251	GW-0251	8/20/2006	Groundwater	CAS
S&WSawmill2012	GW-0252	GW-0252	8/20/2006	Groundwater	CAS
S&WSawmill2012	GW-0253	GW-0253	8/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0254	GW-0254	8/21/2006	Groundwater	CAS

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
S&WSawmill2012	GW-0255	GW-0255	8/21/2006	Groundwater	CAS
S&WSawmill2012	GW-0260	GW-0260	11/17/2006	Groundwater	CAS
S&WSawmill2012	GW-0260	GW-0260	11/17/2006	Groundwater	ELI
S&WSawmill2012	GW-0261	GW-0260	11/17/2006	Groundwater	CAS
S&WSawmill2012	GW-0261	GW-0260	11/17/2006	Groundwater	ELI
S&WSawmill2012	MW-0001	MW-0001	8/14/2001	Groundwater	CAS
S&WSawmill2012	MW-0001	MW-0001	8/14/2001	Groundwater	PAS
S&WSawmill2012	MW-0003	MW-0003	8/14/2001	Groundwater	CAS
S&WSawmill2012	MW-0003	MW-0003	8/14/2001	Groundwater	PAS
S&WSawmill2012	MW-0005	MW-0005	8/14/2001	Groundwater	CAS
S&WSawmill2012	MW-0005	MW-0005	8/14/2001	Groundwater	PAS
S&WSawmill2012	MW-0007	MW-0007	8/14/2001	Groundwater	CAS
S&WSawmill2012	MW-0007	MW-0007	8/14/2001	Groundwater	PAS
S&WSawmill2012	MW-0010	MW-0010	8/14/2001	Groundwater	CAS
S&WSawmill2012	MW-0010	MW-0010	8/14/2001	Groundwater	PAS
S&WSawmill2012	MW-0012	MW-0012	8/14/2001	Groundwater	CAS
S&WSawmill2012	MW-0012	MW-0012	8/14/2001	Groundwater	PAS
S&WSawmill2012	MW-0014	MW-0014	8/14/2001	Groundwater	CAS
S&WSawmill2012	MW-0014	MW-0014	8/14/2001	Groundwater	PAS
S&WSawmill2012	MW-0015	MW-0015	8/17/2001	Groundwater	CAS
S&WSawmill2012	MW-0015	MW-0015	8/17/2001	Groundwater	GLI
S&WSawmill2012	MW-0015	MW-0015	8/17/2001	Groundwater	LOSL
S&WSawmill2012	MW-0015	MW-0015	8/17/2001	Groundwater	PAS
S&WSawmill2012	MW-0016	MW-0016	8/17/2001	Groundwater	CAS
S&WSawmill2012	MW-0016	MW-0016	8/17/2001	Groundwater	GLI
S&WSawmill2012	MW-0016	MW-0016	8/17/2001	Groundwater	LOSL
S&WSawmill2012	MW-0016	MW-0016	8/17/2001	Groundwater	PAS
S&WSawmill2012	MW-0017	MW-0017	8/17/2001	Groundwater	CAS
S&WSawmill2012	MW-0017	MW-0017	8/17/2001	Groundwater	GLI
S&WSawmill2012	MW-0017	MW-0017	8/17/2001	Groundwater	LOSL
S&WSawmill2012	MW-0017	MW-0017	8/17/2001	Groundwater	PAS
S&WSawmill2012	MW-0018	MW-0018	8/17/2001	Groundwater	CAS
S&WSawmill2012	MW-0018	MW-0018	8/17/2001	Groundwater	GLI
S&WSawmill2012	MW-0018	MW-0018	8/17/2001	Groundwater	LOSL
S&WSawmill2012	MW-0018	MW-0018	8/17/2001	Groundwater	PAS
S&WSawmill2012	MW-0019	MW-0019	8/17/2001	Groundwater	CAS
S&WSawmill2012	MW-0019	MW-0019	8/17/2001	Groundwater	PAS
S&WSawmill2012	MW-0020	MW-0020	8/17/2001	Groundwater	CAS
S&WSawmill2012	MW-0020	MW-0020	8/17/2001	Groundwater	PAS
S&WSawmill2012	MW-0021	MW-0021	8/17/2001	Groundwater	CAS
S&WSawmill2012	MW-0021	MW-0021	8/17/2001	Groundwater	PAS
S&WSawmill2012	MW-0022	MW-0022	8/17/2001	Groundwater	CAS
S&WSawmill2012	MW-0022	MW-0022	8/17/2001	Groundwater	PAS
S&WSawmill2012	MW-0023	MW-0022	8/17/2001	Groundwater	CAS
S&WSawmill2012	MW-0023	MW-0022	8/17/2001	Groundwater	GLI
S&WSawmill2012	MW-0023	MW-0022	8/17/2001	Groundwater	LOSL
S&WSawmill2012	MW-0026	MW-0026	8/17/2001	Groundwater	CAS
S&WSawmill2012	MW-0026	MW-0026	8/17/2001	Groundwater	GLI
S&WSawmill2012	MW-0026	MW-0026	8/17/2001	Groundwater	LOSL
S&WSawmill2012	MW-0027	MW-0027	8/17/2001	Groundwater	CAS
S&WSawmill2012	MW-0027	MW-0027	8/17/2001	Groundwater	GLI
S&WSawmill2012	MW-0028	MW-0028	11/12/2001	Groundwater	GLI
S&WSawmill2012	MW-0029	MW-0029	11/13/2001	Groundwater	GLI
S&WSawmill2012	MW-0034	MW-0034	11/12/2001	Groundwater	GLI
S&WSawmill2012	MW-0046	MW-0034	11/12/2001	Groundwater	GLI
S&WSawmill2012	MW-0035	MW-0035	11/13/2001	Groundwater	GLI
S&WSawmill2012	MW-0037	MW-0037	11/12/2001	Groundwater	GLI
S&WSawmill2012	MW-0038	MW-0038	11/12/2001	Groundwater	GLI
S&WSawmill2012	SW-0002	SW-0002	8/17/2001	Groundwater	LOSL

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
S&WSawmill2012	SW-GW-1	SW-GW-1	2/23/1991	Groundwater	ESE
S&WSawmill2012	SW-GW-2	SW-GW-2	2/23/1991	Groundwater	ESE
S&WSawmill2012	SW-GW-2(Re-ext.)	SW-GW-2	2/23/1991	Groundwater	ESE
S&WSawmill2012	SW-GW-3	SW-GW-3	2/23/1991	Groundwater	ESE
S&WSawmill2012	SW-GW-3(Re-ext.)	SW-GW-3	2/23/1991	Groundwater	ESE
S&WSawmill2012	SW-GW-5(dup)	SW-GW-3	2/23/1991	Groundwater	ESE
S&WSawmill2012	SW-GW-5(dup,Re-ext)	SW-GW-3	2/23/1991	Groundwater	ESE
S&WSawmill2012	SW-GW-4	SW-GW-4	2/23/1991	Groundwater	ESE
S&WSawmill2012	SW-RW-1	SW-RW-1	2/23/1991	Groundwater	ESE
S&WSawmill2012	SW-RW-2	SW-RW-2	2/23/1991	Groundwater	ESE
S&WSawmill2012	SW-WS-01	SW-WS-01	3/15/1994	Groundwater	ELI
S&WSawmill2012	SW-WS-02	SW-WS-02	3/15/1994	Groundwater	ELI
10114834	SP-1A	SP-1A	10/13/2009	Soil	PACE
10114834	SP-1B	SP-1B	10/13/2009	Soil	PACE
10114834	SP-2A	SP-2A	10/13/2009	Soil	PACE
10114834	SP-2B	SP-2B	10/13/2009	Soil	PACE
10114834	SP-3A	SP-3A	10/13/2009	Soil	PACE
10114834	SP-3B	SP-3B	10/13/2009	Soil	PACE
10114834	SP-4A	SP-4A	10/13/2009	Soil	PACE
10114834	SP-4B	SP-4B	10/13/2009	Soil	PACE
10114834	SP-5A	SP-5A	10/13/2009	Soil	PACE
10114834	SP-5B	SP-5B	10/13/2009	Soil	PACE
B07080351	SO-0200	SO-0200	7/30/2007	Soil	ELI
B07080351	SO-0201	SO-0201	7/30/2007	Soil	ELI
B07080351	SO-0202	SO-0201	7/30/2007	Soil	ELI
B07080351	SO-0204	SO-0204	7/30/2007	Soil	ELI
B07101365	SL-0219	SL-0219	10/12/2007	Soil	ELI
B07101365	SL-0220	SL-0219	10/12/2007	Soil	ELI
B07101365	SL-0221	SL-0221	10/12/2007	Soil	ELI
B07101365	SL-0222	SL-0222	10/12/2007	Soil	ELI
B07101365	SL-0223	SL-0223	10/12/2007	Soil	ELI
B07101365	SL-0224	SL-0224	10/12/2007	Soil	ELI
B07101365	SL-0225	SL-0225	10/12/2007	Soil	ELI
B09101163	SP-1A	SP-1A	10/13/2009	Soil	ELI
B09101163	SP-1B	SP-1B	10/13/2009	Soil	ELI
B09101163	SP-2A	SP-2A	10/13/2009	Soil	ELI
B09101163	SP-2B	SP-2B	10/13/2009	Soil	ELI
B09101163	SP-3A	SP-3A	10/13/2009	Soil	ELI
B09101163	SP-3B	SP-3B	10/13/2009	Soil	ELI
B09101163	SP-4A	SP-4A	10/13/2009	Soil	ELI
B09101163	SP-4B	SP-4B	10/13/2009	Soil	ELI
B09101163	SP-5A	SP-5A	10/13/2009	Soil	ELI
B09101163	SP-6A	SP-5A	10/13/2009	Soil	ELI
B09101163	SP-5B	SP-5B	10/13/2009	Soil	ELI
B09101163	SP-6B	SP-5B	10/13/2009	Soil	ELI
B09121406	SL-0232	SL-0232	12/15/2009	Soil	ELI
B09121406	SL-0233	SL-0233	12/15/2009	Soil	ELI
B09121406	SL-0234	SL-0234	12/15/2009	Soil	ELI
B09121406	SL-0235	SL-0235	12/15/2009	Soil	ELI
B09121406	SL-0236	SL-0235	12/15/2009	Soil	ELI
B09121406	SL-0237	SL-0237	12/15/2009	Soil	ELI
B09121406	SL-0238	SL-0238	12/15/2009	Soil	ELI
B10060753	SL-0273	SL-0273	6/6/2010	Soil	ELI
B10060753	SL-0274	SL-0273	6/6/2010	Soil	ELI
B10060753	SL-0275	SL-0275	6/6/2010	Soil	ELI
B10060753	SL-0276	SL-0276	6/6/2010	Soil	ELI
B10060753	SL-0277	SL-0277	6/6/2010	Soil	ELI
B10060753	SL-0278	SL-0278	6/6/2010	Soil	ELI
B10060753	SL-0279	SL-0279	6/6/2010	Soil	ELI

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
B10060753	SL-0280	SL-0280	6/6/2010	Soil	ELI
B10060753	SL-0281	SL-0281	6/6/2010	Soil	ELI
B10060753	SL-0282	SL-0282	6/6/2010	Soil	ELI
B10060753	SL-0283	SL-0283	6/6/2010	Soil	ELI
B10060753	SL-0284	SL-0283	6/6/2010	Soil	ELI
B10060753	SL-0285	SL-0285	6/6/2010	Soil	ELI
B10060753	SL-0286	SL-0286	6/6/2010	Soil	ELI
B10060753	SL-0287	SL-0287	6/6/2010	Soil	ELI
B10060753	SL-0288	SL-0288	6/6/2010	Soil	ELI
B10060753	SL-0289	SL-0289	6/6/2010	Soil	ELI
B10060753	SL-0290	SL-0290	6/6/2010	Soil	ELI
B10060753	SL-0291	SL-0291	6/6/2010	Soil	ELI
B10060753	SL-0292	SL-0292	6/5/2010	Soil	ELI
B10060753	SL-0293	SL-0293	6/5/2010	Soil	ELI
B10060753	SL-0294	SL-0294	6/5/2010	Soil	ELI
B10060753	SL-0295	SL-0295	6/5/2010	Soil	ELI
B10060753	SL-0296	SL-0296	6/5/2010	Soil	ELI
B10060753	SL-0297	SL-0297	6/5/2010	Soil	ELI
B10060753	SL-0298	SL-0297	6/5/2010	Soil	ELI
B10060753	SL-0299	SL-0299	6/5/2010	Soil	ELI
B10060753	SL-0300	SL-0300	6/5/2010	Soil	ELI
B10060753	SL-0301	SL-0301	6/5/2010	Soil	ELI
B10060753	SL-0302	SL-0302	6/5/2010	Soil	ELI
B10060753	SL-0303	SL-0303	6/6/2010	Soil	ELI
B10060753	SL-0304	SL-0304	6/6/2010	Soil	ELI
B10060753	SL-0305	SL-0305	6/6/2010	Soil	ELI
B10060753	SL-0306	SL-0305	6/6/2010	Soil	ELI
B10060753	SL-0307	SL-0307	6/6/2010	Soil	ELI
B10060753	SL-0308	SL-0308	6/6/2010	Soil	ELI
B10060753	SL-0309	SL-0309	6/6/2010	Soil	ELI
B10060753	SL-0310	SL-0310	6/6/2010	Soil	ELI
B10060753	SL-0311	SL-0311	6/6/2010	Soil	ELI
B10060753	SL-0312	SL-0312	6/6/2010	Soil	ELI
B10061206	SL-0239	SL-0239	6/8/2010	Soil	ELI
B10061206	SL-0240	SL-0239	6/8/2010	Soil	ELI
B10061206	SL-0241	SL-0241	6/8/2010	Soil	ELI
B10061206	SL-0242	SL-0242	6/8/2010	Soil	ELI
B10061206	SL-0243	SL-0243	6/8/2010	Soil	ELI
B10061206	SL-0244	SL-0244	6/8/2010	Soil	ELI
B10061206	SL-0245	SL-0245	6/8/2010	Soil	ELI
B10061206	SL-0246	SL-0246	6/8/2010	Soil	ELI
B10061206	SL-0247	SL-0247	6/8/2010	Soil	ELI
B10061206	SL-0248	SL-0247	6/8/2010	Soil	ELI
B10061206	SL-0249	SL-0249	6/8/2010	Soil	ELI
B10061206	SL-0250	SL-0250	6/9/2010	Soil	ELI
B10061206	SL-0251	SL-0251	6/9/2010	Soil	ELI
B10061206	SL-0252	SL-0252	6/9/2010	Soil	ELI
B10061206	SL-0253	SL-0252	6/9/2010	Soil	ELI
B10061206	SL-0254	SL-0254	6/9/2010	Soil	ELI
B10061206	SL-0255	SL-0255	6/9/2010	Soil	ELI
B10061206	SL-0256	SL-0256	6/9/2010	Soil	ELI
B10061206	SL-0257	SL-0257	6/9/2010	Soil	ELI
B10061206	SL-0258	SL-0258	6/9/2010	Soil	ELI
B10061206	SL-0259	SL-0259	6/9/2010	Soil	ELI
B10061206	SL-0260	SL-0260	6/9/2010	Soil	ELI
B10061206	SL-0261	SL-0261	6/9/2010	Soil	ELI
B10061206	SL-0262	SL-0262	6/9/2010	Soil	ELI
B10061206	SL-0263	SL-0263	6/9/2010	Soil	ELI
B10061206	SL-0264	SL-0264	6/9/2010	Soil	ELI

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
B10061206	SL-0265	SL-0265	6/9/2010	Soil	ELI
B10061206	SL-0266	SL-0266	6/7/2010	Soil	ELI
B10061206	SL-0267	SL-0267	6/7/2010	Soil	ELI
B10061206	SL-0268	SL-0267	6/7/2010	Soil	ELI
B10061206	SL-0269	SL-0269	6/8/2010	Soil	ELI
B10061206	SL-0270	SL-0270	6/7/2010	Soil	ELI
B10061206	SL-0271	SL-0271	6/8/2010	Soil	ELI
B10061206	SL-0272	SL-0272	6/7/2010	Soil	ELI
B10111094	SL-0313	SL-0313	11/9/2010	Soil	ELI
B10111094	SL-0314	SL-0314	11/9/2010	Soil	ELI
B10111094	SL-0315	SL-0315	11/9/2010	Soil	ELI
B10111094	SL-0317	SL-0317	11/9/2010	Soil	ELI
B10111094	SL-0318	SL-0317	11/9/2010	Soil	ELI
B10111094	SL-0319	SL-0319	11/9/2010	Soil	ELI
B10111094	SL-0320	SL-0319	11/9/2010	Soil	ELI
B10111094	SL-0321	SL-0321	11/9/2010	Soil	ELI
B10111094	SL-0323	SL-0323	11/9/2010	Soil	ELI
B10111094	SL-0324	SL-0324	11/9/2010	Soil	ELI
B10111094	SL-0325	SL-0325	11/9/2010	Soil	ELI
B11040876	SL-0369	SL-0369	4/10/2011	Soil	ELI
B11040876	SL-0371	SL-0371	4/10/2011	Soil	ELI
B11040876	SL-0373	SL-0373	4/10/2011	Soil	ELI
B11040876	SL-0375	SL-0375	4/10/2011	Soil	ELI
B11040876	SL-0377	SL-0377	4/10/2011	Soil	ELI
B11040876	SL-0379	SL-0379	4/10/2011	Soil	ELI
B11040876	SL-0380	SL-0379	4/10/2011	Soil	ELI
B11040876	SL-0382	SL-0382	4/10/2011	Soil	ELI
B11040876	SL-0384	SL-0384	4/10/2011	Soil	ELI
B11040876	SL-0386	SL-0386	4/10/2011	Soil	ELI
B11040876	SL-0388	SL-0388	4/10/2011	Soil	ELI
B11040876	SL-0390	SL-0390	4/10/2011	Soil	ELI
B11040876	SL-0391	SL-0390	4/10/2011	Soil	ELI
B11040876	SL-0393	SL-0393	4/10/2011	Soil	ELI
B11040876	SL-0395	SL-0395	4/10/2011	Soil	ELI
B11040876	SL-0397	SL-0397	4/10/2011	Soil	ELI
B11040876	SL-0399	SL-0399	4/10/2011	Soil	ELI
B11040876	SL-0401	SL-0401	4/10/2011	Soil	ELI
B11040876	SL-0402	SL-0401	4/10/2011	Soil	ELI
B11040876	SL-0404	SL-0404	4/11/2011	Soil	ELI
B11040876	SL-0405	SL-0404	4/11/2011	Soil	ELI
B11040876	SL-0407	SL-0407	4/11/2011	Soil	ELI
B11040876	SL-0408	SL-0407	4/11/2011	Soil	ELI
B11040876	SL-0413	SL-0413	4/9/2011	Soil	ELI
B11040876	SL-0419	SL-0419	4/10/2011	Soil	ELI
B11041464	SL-0328	SL-0328	4/14/2011	Soil	ELI
B11041464	SL-0329	SL-0329	4/14/2011	Soil	ELI
B11041464	SL-0332	SL-0332	4/14/2011	Soil	ELI
B11041464	SL-0339	SL-0339	4/15/2011	Soil	ELI
B11041464	SL-0341	SL-0341	4/15/2011	Soil	ELI
B11041464	SL-0342	SL-0342	4/15/2011	Soil	ELI
B11041464	SL-0343	SL-0343	4/15/2011	Soil	ELI
B11041464	SL-0345	SL-0345	4/14/2011	Soil	ELI
B11041464	SL-0346	SL-0346	4/14/2011	Soil	ELI
B11041464	SL-0348	SL-0348	4/13/2011	Soil	ELI
B11041464	SL-0349	SL-0349	4/13/2011	Soil	ELI
B11041464	SL-0350	SL-0350	4/13/2011	Soil	ELI
B11041464	SL-0351	SL-0351	4/13/2011	Soil	ELI
B11041464	SL-0352	SL-0352	4/13/2011	Soil	ELI
B11041464	SL-0353	SL-0353	4/13/2011	Soil	ELI

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
B11041464	SL-0354	SL-0354	4/14/2011	Soil	ELI
B11041464	SL-0355	SL-0355	4/14/2011	Soil	ELI
B11041464	SL-0356	SL-0356	4/14/2011	Soil	ELI
B11041464	SL-0357	SL-0357	4/14/2011	Soil	ELI
B11041464	SL-0358	SL-0358	4/14/2011	Soil	ELI
B11041464	SL-0359	SL-0359	4/14/2011	Soil	ELI
B11041464	SL-0360	SL-0360	4/15/2011	Soil	ELI
B11041464	SL-0361	SL-0360	4/15/2011	Soil	ELI
B11041464	SL-0362	SL-0362	4/15/2011	Soil	ELI
B11041464	SL-0363	SL-0363	4/15/2011	Soil	ELI
B11041464	SL-0364	SL-0363	4/15/2011	Soil	ELI
B11041464	SL-0365	SL-0365	4/15/2011	Soil	ELI
B11041464	SL-0366	SL-0366	4/15/2011	Soil	ELI
B11041464	SL-0367	SL-0366	4/15/2011	Soil	ELI
B11041464	SL-0368	SL-0368	4/15/2011	Soil	ELI
B11041464	SL-0370	SL-0370	4/15/2011	Soil	ELI
B11041464	SL-0372	SL-0372	4/15/2011	Soil	ELI
B11041464	SL-0374	SL-0374	4/15/2011	Soil	ELI
B11041464	SL-0376	SL-0376	4/15/2011	Soil	ELI
B11041464	SL-0378	SL-0378	4/15/2011	Soil	ELI
B11041464	SL-0381	SL-0381	4/15/2011	Soil	ELI
B11041464	SL-0383	SL-0383	4/16/2011	Soil	ELI
B11041464	SL-0385	SL-0385	4/16/2011	Soil	ELI
B11041464	SL-0387	SL-0387	4/16/2011	Soil	ELI
B11041464	SL-0389	SL-0389	4/16/2011	Soil	ELI
B11041464	SL-0392	SL-0392	4/16/2011	Soil	ELI
B11041464	SL-0394	SL-0394	4/16/2011	Soil	ELI
B11041464	SL-0396	SL-0396	4/16/2011	Soil	ELI
B11041464	SL-0398	SL-0398	4/16/2011	Soil	ELI
B11041464	SL-0400	SL-0400	4/16/2011	Soil	ELI
B11041464	SL-0403	SL-0403	4/16/2011	Soil	ELI
B11041464	SL-0406	SL-0406	4/16/2011	Soil	ELI
B11041464	SL-0409	SL-0409	4/16/2011	Soil	ELI
B11082317	SL-0429	SL-0429	8/18/2011	Soil	ELI
B11082317	SL-0430	SL-0429	8/18/2011	Soil	ELI
B11082317	SL-0431	SL-0431	8/18/2011	Soil	ELI
B11082317	SL-0432	SL-0432	8/18/2011	Soil	ELI
B11082317	SL-0433	SL-0433	8/18/2011	Soil	ELI
B11082317	SL-0434	SL-0434	8/18/2011	Soil	ELI
B11082317	SL-0435	SL-0435	8/18/2011	Soil	ELI
B11082317	SL-0448	SL-0448	8/17/2011	Soil	ELI
B11082317	SL-0449	SL-0449	8/17/2011	Soil	ELI
B12041217	SL-0473	SL-0473	4/10/2012	Soil	ELI
B12041217	SL-0474	SL-0474	4/10/2012	Soil	ELI
B12041217	SL-0475	SL-0475	4/10/2012	Soil	ELI
B12041217	SL-0476	SL-0476	4/10/2012	Soil	ELI
B12041217	SL-0477	SL-0476	4/10/2012	Soil	ELI
B12041217	SL-0478	SL-0478	4/10/2012	Soil	ELI
B12041217	SL-0479	SL-0479	4/10/2012	Soil	ELI
B12041217	SL-0480	SL-0480	4/10/2012	Soil	ELI
B12041217	SL-0481	SL-0481	4/10/2012	Soil	ELI
B12041217	SL-0482	SL-0482	4/10/2012	Soil	ELI
B12041217	SL-0483	SL-0483	4/10/2012	Soil	ELI
B12041217	SL-0484	SL-0484	4/10/2012	Soil	ELI
B12041217	SL-0485	SL-0485	4/10/2012	Soil	ELI
B12041217	SL-0492	SL-0492	4/10/2012	Soil	ELI
B12041217	SL-0493	SL-0493	4/10/2012	Soil	ELI
B12041217	SL-0494	SL-0494	4/10/2012	Soil	ELI
B12041217	SL-0495	SL-0495	4/10/2012	Soil	ELI

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
B12041217	SL-0496	SL-0495	4/10/2012	Soil	ELI
B12041217	SL-0497	SL-0497	4/10/2012	Soil	ELI
B12041217	SL-0498	SL-0498	4/10/2012	Soil	ELI
B12041217	SL-0499	SL-0499	4/11/2012	Soil	ELI
B12041217	SL-0502	SL-0502	4/11/2012	Soil	ELI
B12041217	SL-0505	SL-0505	4/11/2012	Soil	ELI
B12041217	SL-0508	SL-0508	4/11/2012	Soil	ELI
B12041217	SL-0511	SL-0511	4/11/2012	Soil	ELI
B12041217	SL-0514	SL-0514	4/11/2012	Soil	ELI
B12041230	SL-0450	SL-0450	4/11/2012	Soil	ELI
B12041230	SL-0451	SL-0451	4/9/2012	Soil	ELI
B12041230	SL-0452	SL-0451	4/9/2012	Soil	ELI
B12041230	SL-0453	SL-0453	4/9/2012	Soil	ELI
B12041230	SL-0454	SL-0454	4/9/2012	Soil	ELI
B12041230	SL-0455	SL-0455	4/9/2012	Soil	ELI
B12041230	SL-0456	SL-0455	4/9/2012	Soil	ELI
B12041230	SL-0457	SL-0457	4/9/2012	Soil	ELI
B12041230	SL-0458	SL-0458	4/9/2012	Soil	ELI
B12041230	SL-0459	SL-0459	4/9/2012	Soil	ELI
B12041230	SL-0460	SL-0459	4/9/2012	Soil	ELI
B12041230	SL-0461	SL-0461	4/9/2012	Soil	ELI
B12041230	SL-0462	SL-0462	4/9/2012	Soil	ELI
B12041230	SL-0463	SL-0463	4/9/2012	Soil	ELI
B12041230	SL-0464	SL-0464	4/9/2012	Soil	ELI
B12041230	SL-0465	SL-0465	4/9/2012	Soil	ELI
B12041230	SL-0466	SL-0466	4/10/2012	Soil	ELI
B12041230	SL-0467	SL-0466	4/10/2012	Soil	ELI
B12041230	SL-0468	SL-0468	4/10/2012	Soil	ELI
B12041230	SL-0469	SL-0469	4/10/2012	Soil	ELI
B12041230	SL-0470	SL-0470	4/10/2012	Soil	ELI
B12041230	SL-0471	SL-0471	4/10/2012	Soil	ELI
B12041230	SL-0472	SL-0472	4/10/2012	Soil	ELI
B12041230	SL-0486	SL-0486	4/9/2012	Soil	ELI
B12041230	SL-0487	SL-0487	4/9/2012	Soil	ELI
B12041230	SL-0488	SL-0488	4/9/2012	Soil	ELI
B12041230	SL-0489	SL-0489	4/9/2012	Soil	ELI
B12041230	SL-0490	SL-0490	4/9/2012	Soil	ELI
B12041230	SL-0491	SL-0491	4/9/2012	Soil	ELI
E0901143	SL-0230	SL-0230	12/14/2009	Soil	CAS
E0901143	SL-0231	SL-0230	12/14/2009	Soil	CAS
E0901143	SL-0232	SL-0232	12/15/2009	Soil	CAS
E0901143	SL-0233	SL-0233	12/15/2009	Soil	CAS
E0901143	SL-0234	SL-0234	12/15/2009	Soil	CAS
E0901143	SL-0235	SL-0235	12/15/2009	Soil	CAS
E0901143	SL-0236	SL-0235	12/15/2009	Soil	CAS
E0901143	SL-0237	SL-0237	12/15/2009	Soil	CAS
E0901143	SL-0238	SL-0238	12/15/2009	Soil	CAS
E1000663	SL-0273	SL-0273	6/6/2010	Soil	CAS
E1000663	SL-0274	SL-0273	6/6/2010	Soil	CAS
E1000663	SL-0275	SL-0275	6/6/2010	Soil	CAS
E1000663	SL-0276	SL-0276	6/6/2010	Soil	CAS
E1000663	SL-0277	SL-0277	6/6/2010	Soil	CAS
E1000663	SL-0278	SL-0278	6/6/2010	Soil	CAS
E1000663	SL-0279	SL-0279	6/6/2010	Soil	CAS
E1000663	SL-0280	SL-0280	6/6/2010	Soil	CAS
E1000663	SL-0281	SL-0281	6/6/2010	Soil	CAS
E1000663	SL-0292	SL-0292	6/5/2010	Soil	CAS
E1000663	SL-0293	SL-0293	6/5/2010	Soil	CAS
E1000663	SL-0294	SL-0294	6/5/2010	Soil	CAS

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
E1000663	SL-0295	SL-0295	6/5/2010	Soil	CAS
E1000663	SL-0296	SL-0296	6/5/2010	Soil	CAS
E1000663	SL-0297	SL-0297	6/5/2010	Soil	CAS
E1000663	SL-0298	SL-0297	6/5/2010	Soil	CAS
E1000663	SL-0299	SL-0299	6/5/2010	Soil	CAS
E1000663	SL-0300	SL-0300	6/5/2010	Soil	CAS
E1000663	SL-0301	SL-0301	6/5/2010	Soil	CAS
E1000663	SL-0302	SL-0302	6/5/2010	Soil	CAS
E1000664	SL-0282	SL-0282	6/6/2010	Soil	CAS
E1000664	SL-0283	SL-0283	6/6/2010	Soil	CAS
E1000664	SL-0284	SL-0283	6/6/2010	Soil	CAS
E1000664	SL-0285	SL-0285	6/6/2010	Soil	CAS
E1000664	SL-0286	SL-0286	6/6/2010	Soil	CAS
E1000664	SL-0287	SL-0287	6/6/2010	Soil	CAS
E1000664	SL-0288	SL-0288	6/6/2010	Soil	CAS
E1000664	SL-0289	SL-0289	6/6/2010	Soil	CAS
E1000664	SL-0290	SL-0290	6/6/2010	Soil	CAS
E1000664	SL-0291	SL-0291	6/6/2010	Soil	CAS
E1000664	SL-0303	SL-0303	6/6/2010	Soil	CAS
E1000664	SL-0304	SL-0304	6/6/2010	Soil	CAS
E1000664	SL-0305	SL-0305	6/6/2010	Soil	CAS
E1000664	SL-0306	SL-0305	6/6/2010	Soil	CAS
E1000664	SL-0307	SL-0307	6/6/2010	Soil	CAS
E1000664	SL-0308	SL-0308	6/6/2010	Soil	CAS
E1000664	SL-0309	SL-0309	6/6/2010	Soil	CAS
E1000664	SL-0310	SL-0310	6/6/2010	Soil	CAS
E1000664	SL-0311	SL-0311	6/6/2010	Soil	CAS
E1000664	SL-0312	SL-0312	6/6/2010	Soil	CAS
E1000665	SL-0239	SL-0239	6/8/2010	Soil	CAS
E1000665	SL-0240	SL-0239	6/8/2010	Soil	CAS
E1000665	SL-0241	SL-0241	6/8/2010	Soil	CAS
E1000665	SL-0242	SL-0242	6/8/2010	Soil	CAS
E1000665	SL-0243	SL-0243	6/8/2010	Soil	CAS
E1000665	SL-0244	SL-0244	6/8/2010	Soil	CAS
E1000665	SL-0245	SL-0245	6/8/2010	Soil	CAS
E1000665	SL-0246	SL-0246	6/8/2010	Soil	CAS
E1000665	SL-0247	SL-0247	6/8/2010	Soil	CAS
E1000665	SL-0248	SL-0247	6/8/2010	Soil	CAS
E1000665	SL-0249	SL-0249	6/8/2010	Soil	CAS
E1000665	SL-0250	SL-0250	6/9/2010	Soil	CAS
E1000665	SL-0251	SL-0251	6/9/2010	Soil	CAS
E1000665	SL-0266	SL-0266	6/7/2010	Soil	CAS
E1000665	SL-0267	SL-0267	6/7/2010	Soil	CAS
E1000665	SL-0268	SL-0267	6/7/2010	Soil	CAS
E1000665	SL-0269	SL-0269	6/8/2010	Soil	CAS
E1000665	SL-0270	SL-0270	6/7/2010	Soil	CAS
E1000665	SL-0271	SL-0271	6/8/2010	Soil	CAS
E1000665	SL-0272	SL-0272	6/7/2010	Soil	CAS
E1000666	SL-0252	SL-0252	6/9/2010	Soil	CAS
E1000666	SL-0253	SL-0252	6/9/2010	Soil	CAS
E1000666	SL-0254	SL-0254	6/9/2010	Soil	CAS
E1000666	SL-0255	SL-0255	6/9/2010	Soil	CAS
E1000666	SL-0256	SL-0256	6/9/2010	Soil	CAS
E1000666	SL-0257	SL-0257	6/9/2010	Soil	CAS
E1000666	SL-0258	SL-0258	6/9/2010	Soil	CAS
E1000666	SL-0259	SL-0259	6/9/2010	Soil	CAS
E1000666	SL-0260	SL-0260	6/9/2010	Soil	CAS
E1000666	SL-0261	SL-0261	6/9/2010	Soil	CAS
E1000666	SL-0262	SL-0262	6/9/2010	Soil	CAS

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
E1000666	SL-0263	SL-0263	6/9/2010	Soil	CAS
E1000666	SL-0264	SL-0264	6/9/2010	Soil	CAS
E1000666	SL-0265	SL-0265	6/9/2010	Soil	CAS
E1001221	SL-0313	SL-0313	11/9/2010	Soil	CAS
E1001221	SL-0314	SL-0314	11/9/2010	Soil	CAS
E1001221	SL-0315	SL-0315	11/9/2010	Soil	CAS
E1001221	SL-0317	SL-0317	11/9/2010	Soil	CAS
E1001221	SL-0318	SL-0317	11/9/2010	Soil	CAS
E1001221	SL-0319	SL-0319	11/9/2010	Soil	CAS
E1001221	SL-0320	SL-0319	11/9/2010	Soil	CAS
E1001221	SL-0321	SL-0321	11/9/2010	Soil	CAS
E1001221	SL-0323	SL-0323	11/9/2010	Soil	CAS
E1001221	SL-0324	SL-0324	11/9/2010	Soil	CAS
E1001221	SL-0325	SL-0325	11/9/2010	Soil	CAS
E1100364	SL-0369	SL-0369	4/10/2011	Soil	CAS
E1100364	SL-0371	SL-0371	4/10/2011	Soil	CAS
E1100364	SL-0373	SL-0373	4/10/2011	Soil	CAS
E1100364	SL-0375	SL-0375	4/10/2011	Soil	CAS
E1100364	SL-0377	SL-0377	4/10/2011	Soil	CAS
E1100364	SL-0379	SL-0379	4/10/2011	Soil	CAS
E1100364	SL-0380	SL-0379	4/10/2011	Soil	CAS
E1100364	SL-0382	SL-0382	4/10/2011	Soil	CAS
E1100364	SL-0384	SL-0384	4/10/2011	Soil	CAS
E1100364	SL-0386	SL-0386	4/10/2011	Soil	CAS
E1100364	SL-0388	SL-0388	4/10/2011	Soil	CAS
E1100364	SL-0390	SL-0390	4/10/2011	Soil	CAS
E1100364	SL-0391	SL-0390	4/10/2011	Soil	CAS
E1100364	SL-0393	SL-0393	4/10/2011	Soil	CAS
E1100364	SL-0395	SL-0395	4/10/2011	Soil	CAS
E1100364	SL-0397	SL-0397	4/10/2011	Soil	CAS
E1100364	SL-0399	SL-0399	4/10/2011	Soil	CAS
E1100364	SL-0401	SL-0401	4/10/2011	Soil	CAS
E1100364	SL-0402	SL-0401	4/10/2011	Soil	CAS
E1100364	SL-0404	SL-0404	4/11/2011	Soil	CAS
E1100365	SL-0405	SL-0404	4/11/2011	Soil	CAS
E1100365	SL-0407	SL-0407	4/11/2011	Soil	CAS
E1100365	SL-0408	SL-0407	4/11/2011	Soil	CAS
E1100365	SL-0410	SL-0410	4/9/2011	Soil	CAS
E1100365	SL-0411	SL-0411	4/9/2011	Soil	CAS
E1100365	SL-0412	SL-0412	4/9/2011	Soil	CAS
E1100365	SL-0413	SL-0413	4/9/2011	Soil	CAS
E1100365	SL-0414	SL-0414	4/9/2011	Soil	CAS
E1100365	SL-0415	SL-0415	4/9/2011	Soil	CAS
E1100365	SL-0416	SL-0416	4/9/2011	Soil	CAS
E1100365	SL-0417	SL-0417	4/9/2011	Soil	CAS
E1100365	SL-0418	SL-0418	4/9/2011	Soil	CAS
E1100365	SL-0419	SL-0419	4/10/2011	Soil	CAS
E1100365	SL-0420	SL-0420	4/10/2011	Soil	CAS
E1100399	SL-0328	SL-0328	4/14/2011	Soil	CAS
E1100399	SL-0329	SL-0329	4/14/2011	Soil	CAS
E1100399	SL-0330	SL-0330	4/14/2011	Soil	CAS
E1100399	SL-0331	SL-0331	4/14/2011	Soil	CAS
E1100399	SL-0334	SL-0334	4/14/2011	Soil	CAS
E1100399	SL-0345	SL-0345	4/14/2011	Soil	CAS
E1100399	SL-0346	SL-0346	4/14/2011	Soil	CAS
E1100399	SL-0347	SL-0347	4/14/2011	Soil	CAS
E1100399	SL-0348	SL-0348	4/13/2011	Soil	CAS
E1100399	SL-0349	SL-0349	4/13/2011	Soil	CAS
E1100399	SL-0350	SL-0350	4/13/2011	Soil	CAS

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
E1100399	SL-0351	SL-0351	4/13/2011	Soil	CAS
E1100399	SL-0352	SL-0352	4/13/2011	Soil	CAS
E1100399	SL-0353	SL-0353	4/13/2011	Soil	CAS
E1100399	SL-0354	SL-0354	4/14/2011	Soil	CAS
E1100399	SL-0355	SL-0355	4/14/2011	Soil	CAS
E1100399	SL-0356	SL-0356	4/14/2011	Soil	CAS
E1100399	SL-0357	SL-0357	4/14/2011	Soil	CAS
E1100399	SL-0358	SL-0358	4/14/2011	Soil	CAS
E1100399	SL-0359	SL-0359	4/14/2011	Soil	CAS
E1100400	SL-0327	SL-0327	4/14/2011	Soil	CAS
E1100400	SL-0332	SL-0332	4/14/2011	Soil	CAS
E1100400	SL-0333	SL-0333	4/14/2011	Soil	CAS
E1100400	SL-0342	SL-0342	4/15/2011	Soil	CAS
E1100400	SL-0343	SL-0343	4/15/2011	Soil	CAS
E1100400	SL-0344	SL-0344	4/15/2011	Soil	CAS
E1100400	SL-0365	SL-0365	4/15/2011	Soil	CAS
E1100400	SL-0367	SL-0366	4/15/2011	Soil	CAS
E1100400	SL-0372	SL-0372	4/15/2011	Soil	CAS
E1100401	SL-0335	SL-0335	4/15/2011	Soil	CAS
E1100401	SL-0336	SL-0336	4/15/2011	Soil	CAS
E1100401	SL-0337	SL-0337	4/15/2011	Soil	CAS
E1100401	SL-0338	SL-0338	4/15/2011	Soil	CAS
E1100401	SL-0339	SL-0339	4/15/2011	Soil	CAS
E1100401	SL-0340	SL-0340	4/15/2011	Soil	CAS
E1100401	SL-0341	SL-0341	4/15/2011	Soil	CAS
E1100401	SL-0360	SL-0360	4/15/2011	Soil	CAS
E1100401	SL-0361	SL-0360	4/15/2011	Soil	CAS
E1100401	SL-0362	SL-0362	4/15/2011	Soil	CAS
E1100401	SL-0363	SL-0363	4/15/2011	Soil	CAS
E1100401	SL-0364	SL-0363	4/15/2011	Soil	CAS
E1100401	SL-0366	SL-0366	4/15/2011	Soil	CAS
E1100401	SL-0368	SL-0368	4/15/2011	Soil	CAS
E1100401	SL-0370	SL-0370	4/15/2011	Soil	CAS
E1100401	SL-0374	SL-0374	4/15/2011	Soil	CAS
E1100401	SL-0376	SL-0376	4/15/2011	Soil	CAS
E1100401	SL-0378	SL-0378	4/15/2011	Soil	CAS
E1100401	SL-0381	SL-0381	4/15/2011	Soil	CAS
E1100401	SL-0396	SL-0396	4/16/2011	Soil	CAS
E1100402	SL-0383	SL-0383	4/16/2011	Soil	CAS
E1100402	SL-0385	SL-0385	4/16/2011	Soil	CAS
E1100402	SL-0387	SL-0387	4/16/2011	Soil	CAS
E1100402	SL-0389	SL-0389	4/16/2011	Soil	CAS
E1100402	SL-0392	SL-0392	4/16/2011	Soil	CAS
E1100402	SL-0394	SL-0394	4/16/2011	Soil	CAS
E1100402	SL-0398	SL-0398	4/16/2011	Soil	CAS
E1100402	SL-0400	SL-0400	4/16/2011	Soil	CAS
E1100402	SL-0403	SL-0403	4/16/2011	Soil	CAS
E1100402	SL-0406	SL-0406	4/16/2011	Soil	CAS
E1100402	SL-0409	SL-0409	4/16/2011	Soil	CAS
E1100853	SL-0422	SL-0422	8/17/2011	Soil	CAS
E1100853	SL-0423	SL-0423	8/18/2011	Soil	CAS
E1100853	SL-0424	SL-0424	8/17/2011	Soil	CAS
E1100853	SL-0425	SL-0424	8/17/2011	Soil	CAS
E1100853	SL-0426	SL-0426	8/18/2011	Soil	CAS
E1100853	SL-0427	SL-0427	8/17/2011	Soil	CAS
E1100853	SL-0428	SL-0428	8/18/2011	Soil	CAS
E1100853	SL-0429	SL-0429	8/18/2011	Soil	CAS
E1100853	SL-0430	SL-0429	8/18/2011	Soil	CAS
E1100853	SL-0431	SL-0431	8/18/2011	Soil	CAS

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
E1100853	SL-0432	SL-0432	8/18/2011	Soil	CAS
E1100853	SL-0433	SL-0433	8/18/2011	Soil	CAS
E1100853	SL-0434	SL-0434	8/18/2011	Soil	CAS
E1100853	SL-0435	SL-0435	8/18/2011	Soil	CAS
E1100853	SL-0436	SL-0436	8/18/2011	Soil	CAS
E1100853	SL-0437	SL-0437	8/18/2011	Soil	CAS
E1100853	SL-0438	SL-0438	8/18/2011	Soil	CAS
E1100853	SL-0439	SL-0439	8/18/2011	Soil	CAS
E1100853	SL-0448	SL-0448	8/17/2011	Soil	CAS
E1100853	SL-0449	SL-0449	8/17/2011	Soil	CAS
E1100854	SL-0440	SL-0440	8/18/2011	Soil	CAS
E1100854	SL-0441	SL-0441	8/18/2011	Soil	CAS
E1100854	SL-0442	SL-0442	8/18/2011	Soil	CAS
E1100854	SL-0443	SL-0443	8/18/2011	Soil	CAS
E1100854	SL-0444	SL-0444	8/18/2011	Soil	CAS
E1100854	SL-0445	SL-0445	8/18/2011	Soil	CAS
E1100854	SL-0446	SL-0446	8/18/2011	Soil	CAS
E1100854	SL-0447	SL-0447	8/18/2011	Soil	CAS
E1200347	SL-0455	SL-0455	4/9/2012	Soil	CAS
E1200347	SL-0456	SL-0455	4/9/2012	Soil	CAS
E1200347	SL-0476	SL-0476	4/10/2012	Soil	CAS
E1200347	SL-0477	SL-0476	4/10/2012	Soil	CAS
E1200347	SL-0480	SL-0480	4/10/2012	Soil	CAS
E1200347	SL-0483	SL-0483	4/10/2012	Soil	CAS
E1200347	SL-0486	SL-0486	4/9/2012	Soil	CAS
E1200347	SL-0489	SL-0489	4/9/2012	Soil	CAS
E1200347	SL-0492	SL-0492	4/10/2012	Soil	CAS
E1200347	SL-0493	SL-0493	4/10/2012	Soil	CAS
E1200347	SL-0495	SL-0495	4/10/2012	Soil	CAS
E1200347	SL-0496	SL-0495	4/10/2012	Soil	CAS
E1200347	SL-0499	SL-0499	4/11/2012	Soil	CAS
E1200347	SL-0502	SL-0502	4/11/2012	Soil	CAS
E1200347	SL-0505	SL-0505	4/11/2012	Soil	CAS
E1200347	SL-0508	SL-0508	4/11/2012	Soil	CAS
E1200347	SL-0511	SL-0511	4/11/2012	Soil	CAS
E1200347	SL-0514	SL-0514	4/11/2012	Soil	CAS
E1200348	SL-0451	SL-0451	4/9/2012	Soil	CAS
E1200348	SL-0452	SL-0451	4/9/2012	Soil	CAS
E1200348	SL-0459	SL-0459	4/9/2012	Soil	CAS
E1200348	SL-0460	SL-0459	4/9/2012	Soil	CAS
E1200348	SL-0463	SL-0463	4/9/2012	Soil	CAS
E1200348	SL-0466	SL-0466	4/10/2012	Soil	CAS
E1200348	SL-0467	SL-0466	4/10/2012	Soil	CAS
E1200348	SL-0470	SL-0470	4/10/2012	Soil	CAS
E1200348	SL-0473	SL-0473	4/10/2012	Soil	CAS
E1200506	SL-0481	SL-0481	4/10/2012	Soil	CAS
E1200506	SL-0484	SL-0484	4/10/2012	Soil	CAS
E1200506	SL-0494	SL-0494	4/10/2012	Soil	CAS
E1200506	SL-0497	SL-0497	4/10/2012	Soil	CAS
E1200506	SL-0498	SL-0498	4/10/2012	Soil	CAS
E1200618	SL-0515	SL-0515	5/23/2012	Soil	CAS
E1200618	SL-0516	SL-0516	5/23/2012	Soil	CAS
E1200618	SL-0517	SL-0516	5/23/2012	Soil	CAS
E1200618	SL-0518	SL-0518	5/23/2012	Soil	CAS
E1200618	SL-0519	SL-0519	5/23/2012	Soil	CAS
E1200618	SL-0520	SL-0520	5/23/2012	Soil	CAS
S&WSawmill2012	141201-001	141201-001	8/14/1989	Soil	ELI
S&WSawmill2012	141201-002	141201-002	8/14/1989	Soil	ELI
S&WSawmill2012	141201-003	141201-003	8/14/1989	Soil	ELI

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
S&WSawmill2012	141201-004	141201-004	8/14/1989	Soil	ELI
S&WSawmill2012	4001.0111698R	4001.0111698R	11/16/1998	Soil	ELI
S&WSawmill2012	4001.1111898R	4001.1111898R	11/18/1998	Soil	ELI
S&WSawmill2012	4001.2111898R	4001.2111898R	11/18/1998	Soil	ELI
S&WSawmill2012	4002.0111698R	4002.0111698R	11/16/1998	Soil	ELI
S&WSawmill2012	4002.0111798R	4002.0111798R	11/17/1998	Soil	TLI
S&WSawmill2012	4002.1111898D	4002.1111898R	11/18/1998	Soil	COSL
S&WSawmill2012	4002.1111898D	4002.1111898R	11/18/1998	Soil	ELI
S&WSawmill2012	4002.1111898R	4002.1111898R	11/18/1998	Soil	COSL
S&WSawmill2012	4002.1111898R	4002.1111898R	11/18/1998	Soil	ELI
S&WSawmill2012	4002.1111898R	4002.1111898R	11/18/1998	Soil	TLI
S&WSawmill2012	4003.0111698R	4003.0111698R	11/16/1998	Soil	COSL
S&WSawmill2012	4003.1111898R	4003.1111898R	11/18/1998	Soil	COSL
S&WSawmill2012	4004.0111698R	4004.0111698R	11/16/1998	Soil	ELI
S&WSawmill2012	4004.1111898R	4004.1111898R	11/18/1998	Soil	ELI
S&WSawmill2012	4005.0111698R	4005.0111698R	11/16/1998	Soil	ELI
S&WSawmill2012	4005.1111798R	4005.1111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4006.0111698R	4006.0111698R	11/16/1998	Soil	ELI
S&WSawmill2012	4006.1111798R	4006.1111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4006.2111798R	4006.2111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4006.3111798R	4006.3111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4007.0111698R	4007.0111698R	11/16/1998	Soil	ELI
S&WSawmill2012	4007.0111698R	4007.0111698R	11/16/1998	Soil	TLI
S&WSawmill2012	4007.1111798R	4007.1111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4008.0111698R	4008.0111698R	11/16/1998	Soil	ELI
S&WSawmill2012	4008.1111798R	4008.1111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4009.0111698R	4009.0111698R	11/16/1998	Soil	ELI
S&WSawmill2012	4009.1111798R	4009.1111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4010.0111698R	4010.0111698R	11/16/1998	Soil	ELI
S&WSawmill2012	4010.1111798R	4010.1111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4010.2111798R	4010.2111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4011.1111798R	4011.1111798R	11/17/1998	Soil	COSL
S&WSawmill2012	4012.1111898D	4012.1111898R	11/18/1998	Soil	COSL
S&WSawmill2012	4012.1111898R	4012.1111898R	11/18/1998	Soil	COSL
S&WSawmill2012	4012.1111898R	4012.1111898R	11/18/1998	Soil	ELI
S&WSawmill2012	4013.1111898R	4013.1111898R	11/18/1998	Soil	COSL
S&WSawmill2012	4014.0111698R	4014.0111698R	11/16/1998	Soil	ELI
S&WSawmill2012	4014.1111898R	4014.1111898R	11/18/1998	Soil	COSL
S&WSawmill2012	4015.0111698R	4015.0111698R	11/16/1998	Soil	ELI
S&WSawmill2012	4015.0111698R	4015.0111698R	11/16/1998	Soil	TLI
S&WSawmill2012	4015.1111898R	4015.1111898R	11/18/1998	Soil	ELI
S&WSawmill2012	4015.1111898R	4015.1111898R	11/18/1998	Soil	TLI
S&WSawmill2012	4016.0111798D	4016.0111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4016.0111798R	4016.0111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4016.1111898R	4016.1111898R	11/18/1998	Soil	COSL
S&WSawmill2012	4017.0111798R	4017.0111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4017.1111898R	4017.1111898R	11/18/1998	Soil	ELI
S&WSawmill2012	4018.0111798R	4018.0111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4018.1111898R	4018.1111898R	11/18/1998	Soil	ELI
S&WSawmill2012	4019.1111798R	4019.1111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4020.0111798R	4020.0111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4020.1111798R	4020.1111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4020.2111798R	4020.2111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4021.0111798R	4021.0111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4021.1111798R	4021.1111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4023.0111798R	4023.0111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4024.0111798R	4024.0111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4025.0111798R	4025.0111798R	11/17/1998	Soil	ELI
S&WSawmill2012	4026.1111898R	4026.1111898R	11/18/1998	Soil	COSL

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
S&WSawmill2012	4026.1111898R	4026.1111898R	11/18/1998	Soil	ELI
S&WSawmill2012	4027.1111898R	4027.1111898R	11/18/1998	Soil	ELI
S&WSawmill2012	4027.1111898R	4027.1111898R	11/18/1998	Soil	TLI
S&WSawmill2012	4028.1111998R	4028.1111998R	11/19/1998	Soil	COSL
S&WSawmill2012	4028.2111998R	4028.2111998R	11/19/1998	Soil	COSL
S&WSawmill2012	4029.0050399R	4029.0050399R	5/3/1999	Soil	COSL
S&WSawmill2012	4029.1050399R	4029.1050399R	5/3/1999	Soil	COSL
S&WSawmill2012	4030.0050399R	4030.0050399R	5/3/1999	Soil	COSL
S&WSawmill2012	4030.1050399R	4030.1050399R	5/3/1999	Soil	COSL
S&WSawmill2012	4031.0050399R	4031.0050399R	5/3/1999	Soil	COSL
S&WSawmill2012	4031.1050399R	4031.1050399R	5/3/1999	Soil	COSL
S&WSawmill2012	4032.0050399R	4032.0050399R	5/3/1999	Soil	COSL
S&WSawmill2012	4033.0050399R	4033.0050399R	5/3/1999	Soil	COSL
S&WSawmill2012	4034.0050399R	4034.0050399R	5/3/1999	Soil	COSL
S&WSawmill2012	4035.0050399R	4035.0050399R	5/3/1999	Soil	COSL
S&WSawmill2012	4035.1050399R	4035.1050399R	5/3/1999	Soil	COSL
S&WSawmill2012	4035.2050399R	4035.2050399R	5/3/1999	Soil	COSL
S&WSawmill2012	4036.0061899R	4036.0061899R	6/18/1999	Soil	COSL
S&WSawmill2012	4036.1061899R	4036.1061899R	6/18/1999	Soil	COSL
S&WSawmill2012	4037.0061899R	4037.0061899R	6/18/1999	Soil	COSL
S&WSawmill2012	4037.1061899R	4037.1061899R	6/18/1999	Soil	COSL
S&WSawmill2012	SO-0001	SO-0001	8/15/2001	Soil	CAS
S&WSawmill2012	SO-0001	SO-0001	8/15/2001	Soil	ELI
S&WSawmill2012	SO-0001	SO-0001	8/15/2001	Soil	GLI
S&WSawmill2012	SO-0001	SO-0001	8/15/2001	Soil	PAS
S&WSawmill2012	SO-0002	SO-0002	8/15/2001	Soil	CAS
S&WSawmill2012	SO-0003	SO-0003	8/15/2001	Soil	CAS
S&WSawmill2012	SO-0004	SO-0004	8/15/2001	Soil	CAS
S&WSawmill2012	SO-0005	SO-0005	8/15/2001	Soil	CAS
S&WSawmill2012	SO-0006	SO-0006	8/15/2001	Soil	CAS
S&WSawmill2012	SO-0007	SO-0007	8/15/2001	Soil	CAS
S&WSawmill2012	SO-0007	SO-0007	8/15/2001	Soil	ELI
S&WSawmill2012	SO-0007	SO-0007	8/15/2001	Soil	GLI
S&WSawmill2012	SO-0007	SO-0007	8/15/2001	Soil	PAS
S&WSawmill2012	SO-0008	SO-0008	8/15/2001	Soil	CAS
S&WSawmill2012	SO-0009	SO-0009	8/15/2001	Soil	CAS
S&WSawmill2012	SO-0009	SO-0009	8/15/2001	Soil	ELI
S&WSawmill2012	SO-0009	SO-0009	8/15/2001	Soil	GLI
S&WSawmill2012	SO-0009	SO-0009	8/15/2001	Soil	LOSL
S&WSawmill2012	SO-0009	SO-0009	8/15/2001	Soil	PAS
S&WSawmill2012	SO-0010	SO-0010	8/15/2001	Soil	CAS
S&WSawmill2012	SO-0011	SO-0011	8/15/2001	Soil	CAS
S&WSawmill2012	SO-0012	SO-0012	8/16/2001	Soil	CAS
S&WSawmill2012	SO-0012	SO-0012	8/16/2001	Soil	PAS
S&WSawmill2012	SO-0013	SO-0013	8/16/2001	Soil	CAS
S&WSawmill2012	SO-0013	SO-0013	8/16/2001	Soil	PAS
S&WSawmill2012	SO-0015	SO-0015	8/16/2001	Soil	CAS
S&WSawmill2012	SO-0016	SO-0016	8/17/2001	Soil	LOSL
S&WSawmill2012	SO-0017	SO-0017	8/15/2001	Soil	CAS
S&WSawmill2012	SO-0017	SO-0017	8/15/2001	Soil	ELI
S&WSawmill2012	SO-0017	SO-0017	8/15/2001	Soil	GLI
S&WSawmill2012	SO-0017	SO-0017	8/15/2001	Soil	LOSL
S&WSawmill2012	SO-0017d	SO-0017	8/15/2001	Soil	LOSL
S&WSawmill2012	SO-0018	SO-0018	8/16/2001	Soil	CAS
S&WSawmill2012	SO-0019	SO-0019	8/16/2001	Soil	CAS
S&WSawmill2012	SO-0020	SO-0020	8/16/2001	Soil	CAS
S&WSawmill2012	SO-0021	SO-0021	8/16/2001	Soil	CAS
S&WSawmill2012	SO-0022	SO-0022	8/16/2001	Soil	CAS
S&WSawmill2012	SO-0023	SO-0023	8/16/2001	Soil	CAS

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
S&WSawmill2012	SO-0024	SO-0024	8/16/2001	Soil	CAS
S&WSawmill2012	SO-0025	SO-0025	8/16/2001	Soil	CAS
S&WSawmill2012	SO-0026	SO-0026	8/16/2001	Soil	CAS
S&WSawmill2012	SO-0027	SO-0027	8/16/2001	Soil	CAS
S&WSawmill2012	SO-0028	SO-0028	8/16/2001	Soil	CAS
S&WSawmill2012	SO-0029	SO-0029	8/16/2001	Soil	CAS
S&WSawmill2012	SO-0030	SO-0030	8/16/2001	Soil	CAS
S&WSawmill2012	SO-0031	SO-0031	11/13/2001	Soil	PAS
S&WSawmill2012	SO-0032	SO-0032	11/13/2001	Soil	CAS
S&WSawmill2012	SO-0033	SO-0033	11/13/2001	Soil	CAS
S&WSawmill2012	SO-0034	SO-0034	11/13/2001	Soil	CAS
S&WSawmill2012	SO-0035	SO-0035	11/13/2001	Soil	CAS
S&WSawmill2012	SO-0036	SO-0036	11/13/2001	Soil	CAS
S&WSawmill2012	SO-0037	SO-0037	11/13/2001	Soil	CAS
S&WSawmill2012	SO-0037	SO-0037	11/13/2001	Soil	PAS
S&WSawmill2012	SO-0038	SO-0038	11/13/2001	Soil	CAS
S&WSawmill2012	SO-0039	SO-0039	11/13/2001	Soil	CAS
S&WSawmill2012	SO-0039	SO-0039	11/13/2001	Soil	PAS
S&WSawmill2012	SO-0040	SO-0040	11/13/2001	Soil	PAS
S&WSawmill2012	SO-0041	SO-0041	11/13/2001	Soil	CAS
S&WSawmill2012	SO-0041	SO-0041	11/13/2001	Soil	PAS
S&WSawmill2012	SO-0042	SO-0042	2/6/2002	Soil	CAS
S&WSawmill2012	SO-0043	SO-0043	2/6/2002	Soil	CAS
S&WSawmill2012	SO-0043	SO-0043	2/6/2002	Soil	PAS
S&WSawmill2012	SO-0044	SO-0044	2/7/2002	Soil	CAS
S&WSawmill2012	SO-0044	SO-0044	2/7/2002	Soil	PAS
S&WSawmill2012	SO-0045	SO-0045	2/7/2002	Soil	CAS
S&WSawmill2012	SO-0045	SO-0045	2/7/2002	Soil	PAS
S&WSawmill2012	SO-0046	SO-0046	2/7/2002	Soil	CAS
S&WSawmill2012	SO-0046	SO-0046	2/7/2002	Soil	PAS
S&WSawmill2012	SO-0047	SO-0047	2/7/2002	Soil	CAS
S&WSawmill2012	SO-0047	SO-0047	2/7/2002	Soil	PAS
S&WSawmill2012	SO-0048	SO-0048	2/7/2002	Soil	CAS
S&WSawmill2012	SO-0049	SO-0049	2/7/2002	Soil	CAS
S&WSawmill2012	SO-0051	SO-0051	2/7/2002	Soil	CAS
S&WSawmill2012	SO-0052	SO-0052	2/7/2002	Soil	CAS
S&WSawmill2012	SO-0052	SO-0052	2/7/2002	Soil	PAS
S&WSawmill2012	SO-0053	SO-0053	2/7/2002	Soil	CAS
S&WSawmill2012	SO-0053	SO-0053	2/7/2002	Soil	PAS
S&WSawmill2012	SO-0054	SO-0054	2/7/2002	Soil	CAS
S&WSawmill2012	SO-0054	SO-0054	2/7/2002	Soil	PAS
S&WSawmill2012	SO-0055	SO-0055	2/7/2002	Soil	CAS
S&WSawmill2012	SO-0055	SO-0055	2/7/2002	Soil	PAS
S&WSawmill2012	SO-0056	SO-0056	2/7/2002	Soil	CAS
S&WSawmill2012	SO-0056	SO-0056	2/7/2002	Soil	PAS
S&WSawmill2012	SO-0057	SO-0057	2/7/2002	Soil	CAS
S&WSawmill2012	SO-0058	SO-0058	4/3/2002	Soil	CAS
S&WSawmill2012	SO-0059	SO-0059	4/3/2002	Soil	CAS
S&WSawmill2012	SO-0060	SO-0060	7/16/2002	Soil	CAS
S&WSawmill2012	SO-0061	SO-0061	7/16/2002	Soil	CAS
S&WSawmill2012	SO-0062	SO-0062	7/16/2002	Soil	CAS
S&WSawmill2012	SO-0066	SO-0066	7/17/2002	Soil	CAS
S&WSawmill2012	SO-0067	SO-0067	7/17/2002	Soil	CAS
S&WSawmill2012	SW-SD-1A	SW-SD-1A	4/5/1990	Soil	ESE
S&WSawmill2012	SW-SD-1B	SW-SD-1B	4/5/1990	Soil	ESE
S&WSawmill2012	SW-SD-1C	SW-SD-1C	4/5/1990	Soil	ESE
S&WSawmill2012	SW-SS-3A	SW-SS-3A	4/5/1990	Soil	ESE
S&WSawmill2012	SW-SS-3B	SW-SS-3B	4/5/1990	Soil	ESE
S&WSawmill2012	WSA84-1	WSA84-1	1/12/1984	Soil	Chmp

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
S&WSawmill2012	WSA84-10	WSA84-10	1/12/1984	Soil	Chmp
S&WSawmill2012	WSA84-11	WSA84-11	1/12/1984	Soil	Chmp
S&WSawmill2012	WSA84-12	WSA84-12	1/12/1984	Soil	Chmp
S&WSawmill2012	WSA84-2	WSA84-2	1/12/1984	Soil	Chmp
S&WSawmill2012	WSA84-3	WSA84-3	1/12/1984	Soil	Chmp
S&WSawmill2012	WSA84-4	WSA84-4	1/12/1984	Soil	Chmp
S&WSawmill2012	WSA84-5	WSA84-5	1/12/1984	Soil	Chmp
S&WSawmill2012	WSA84-6	WSA84-6	1/12/1984	Soil	Chmp
S&WSawmill2012	WSA84-7	WSA84-7	1/12/1984	Soil	Chmp
S&WSawmill2012	WSA84-8	WSA84-8	1/12/1984	Soil	Chmp
S&WSawmill2012	WSA84-9	WSA84-9	1/12/1984	Soil	Chmp
S&WSawmill2012	SW-0001	SW-0001	8/16/2001	Surfwater	CAS
B10111373	EFF-001	EFF-001	11/11/2010	TreatedWater	ELI
B10111373	INT-001	INT-001	11/11/2010	TreatedWater	ELI
B10121882	EFF-002	EFF-002	12/16/2010	TreatedWater	ELI
B10121882	INT-002	INT-002	12/16/2010	TreatedWater	ELI
B11011364	EFF-003	EFF-003	1/14/2011	TreatedWater	ELI
B11011364	INT-003	INT-003	1/14/2011	TreatedWater	ELI
B11020824	EFF-004	EFF-004	2/10/2011	TreatedWater	ELI
B11020824	INT-004	INT-004	2/10/2011	TreatedWater	ELI
B11031403	EFF-005	EFF-005	3/14/2011	TreatedWater	ELI
B11031403	INT-005	INT-005	3/14/2011	TreatedWater	ELI
E1001234	EFF-001	EFF-001	11/11/2010	TreatedWater	CAS
E1001234	INT-001	INT-001	11/11/2010	TreatedWater	CAS
E1001333	EFF-002	EFF-002	12/16/2010	TreatedWater	CAS
E1001333	INT-002	INT-002	12/16/2010	TreatedWater	CAS
E1100065	EFF-003	EFF-003	1/14/2011	TreatedWater	CAS
E1100065	INT-003	INT-003	1/14/2011	TreatedWater	CAS
E1100137	EFF-004	EFF-004	2/10/2011	TreatedWater	CAS
E1100137	INT-004	INT-004	2/10/2011	TreatedWater	CAS
E1100267	EFF-005	EFF-005	3/14/2011	TreatedWater	CAS
E1100267	INT-005	INT-005	3/14/2011	TreatedWater	CAS
P1001158	IA-0001	IA-0001	3/26/2010	Vapor	ALS_SV
P1001158	IA-0002	IA-0002	3/26/2010	Vapor	ALS_SV
P1001158	IA-0003	IA-0003	3/26/2010	Vapor	ALS_SV
P1001158	IA-0004	IA-0003	3/26/2010	Vapor	ALS_SV
P1001158	IA-0005	IA-0005	3/26/2010	Vapor	ALS_SV
P1001158	SG-0001	SG-0001	3/25/2010	Vapor	ALS_SV
P1001158	SG-0002	SG-0002	3/25/2010	Vapor	ALS_SV
P1001158	SG-0003	SG-0003	3/26/2010	Vapor	ALS_SV
P1001158	SG-0004	SG-0004	3/26/2010	Vapor	ALS_SV
P1001158	SG-0005	SG-0005	3/27/2010	Vapor	ALS_SV
P1001158	SG-0006	SG-0006	3/26/2010	Vapor	ALS_SV
P1001158	SG-0007	SG-0007	3/26/2010	Vapor	ALS_SV
P1001158	SG-0008	SG-0008	3/26/2010	Vapor	ALS_SV
P1001158	SG-0009	SG-0009	3/26/2010	Vapor	ALS_SV
P1001158	SG-0010	SG-0010	3/26/2010	Vapor	ALS_SV
P1001158	SG-0011	SG-0011	3/26/2010	Vapor	ALS_SV
P1001158	SG-0012	SG-0012	3/27/2010	Vapor	ALS_SV
P1001158	SS-0001	SS-0001	3/26/2010	Vapor	ALS_SV
P1001158	SS-0002	SS-0002	3/26/2010	Vapor	ALS_SV
P1001158	SS-0003	SS-0003	3/26/2010	Vapor	ALS_SV
P1001158	SS-0004	SS-0004	3/26/2010	Vapor	ALS_SV
P1004891	IA-0006	IA-0006	12/16/2010	Vapor	ALS_SV
P1004891	IA-0007	IA-0007	12/16/2010	Vapor	ALS_SV
P1004891	IA-0008	IA-0008	12/16/2010	Vapor	ALS_SV
P1004891	IA-0009	IA-0008	12/16/2010	Vapor	ALS_SV
P1004891	IA-0010	IA-0010	12/16/2010	Vapor	ALS_SV
P1004891	SG-0013	SG-0013	12/15/2010	Vapor	ALS_SV

Table A-1. Complete List of Electronic Data Deliverables That Were Reloaded into the S&W Sawmill Database

EDD Identifier	Sample Number	Sample ID	Sample Date	Sample Matrix	Source Laboratory
P1004891	SG-0014	SG-0014	12/15/2010	Vapor	ALS_SV
P1004891	SG-0015	SG-0015	12/15/2010	Vapor	ALS_SV
P1004891	SG-0016	SG-0016	12/15/2010	Vapor	ALS_SV
P1004891	SG-0017	SG-0017	12/15/2010	Vapor	ALS_SV
P1004891	SG-0018	SG-0018	12/15/2010	Vapor	ALS_SV
P1004891	SG-0019	SG-0019	12/16/2010	Vapor	ALS_SV
P1004891	SG-0020	SG-0020	12/16/2010	Vapor	ALS_SV
P1004891	SG-0022	SG-0022	12/16/2010	Vapor	ALS_SV
P1004891	SG-0023	SG-0023	12/16/2010	Vapor	ALS_SV
P1004891	SG-0024	SG-0024	12/16/2010	Vapor	ALS_SV
P1004891	SS-0005	SS-0005	12/16/2010	Vapor	ALS_SV
P1004891	SS-0006	SS-0006	12/16/2010	Vapor	ALS_SV
P1004891	SS-0007	SS-0007	12/16/2010	Vapor	ALS_SV
P1004891	SS-0008	SS-0008	12/15/2010	Vapor	ALS_SV
B11021720	SO-Chaney	SO-Chaney	2/22/2011	Waste_Soil	ELI
E1100175	SO-Chaney	SO-Chaney	2/22/2011	Waste_Soil	CAS

Notes:
ALS_SV = ALS Environmental (Simi Valley)
CAS = ALS Environmental (formerly Columbia Analytical Services)
Chmp = Unknown Historical Lab
COSL = Unknown Historical Lab
ELI = Energy Laboratories Inc.
ENESCO = Unknown Historical Lab
ESE = Unknown Historical Lab
GLI = Unknown Historical Lab
LOSL = Unknown Historical Lab
PACE = Pace Analytical Services Inc.
PAS = Unknown Historical Lab
TLI = Unknown Historical Lab

Table A-2. 2,3,7,8-TCDD Toxicity Equivalency Factors

Compound	TEF (WHO 2005)
Chlorinated Dibenzo-*p*-Dioxins	
2,3,7,8-tetrachlorodibenzo-p-dioxin	1
1,2,3,7,8-pentachlorodibenzo-p-dioxin	1
1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	0.01
Octachlorodibenzo-p-dioxin	0.0003
Chlorinated Dibenzofurans	
2,3,7,8-tetrachlorodibenzofuran	0.1
1,2,3,7,8-pentachlorodibenzofuran	0.03
2,3,4,7,8-pentachlorodibenzofuran	0.3
1,2,3,4,7,8-hexachlorodibenzofuran	0.1
1,2,3,6,7,8-hexachlorodibenzofuran	0.1
1,2,3,7,8,9-hexachlorodibenzofuran	0.1
2,3,4,6,7,8-hexachlorodibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorodibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorodibenzofuran	0.01
Octachlorodibenzofuran	0.0003

Source:

WHO (2005) corresponds to Van den Berg et al. (2006)

Van den Berg, M., L.S. Birnbaum, M. Denison, M. DeVito, W. Farland, M. Feeley, H. Fiedler, H. Hakansson, A. Hanberg, L. Haws, M. Rose, S. Safe, D. Schrenk, C. Tohyama, A. Tritscher, J. Tuomisto, M. Tysklind, N. Walker, R. E. Peterson. 2006. The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds. *Toxicol. Sci.* 93(2):223-241.

Notes:

TCDD = 2,3,7,8-tetrachlorodibenzo-p-dioxin

TEF = toxicity equivalency factor

Table A-3. Benzo(a)pyrene Relative Potency Factors (Soil)

Analyte Name	Relative Potency Factor
Indeno[1,2,3-cd]pyrene	0.1
Chrysene	0.001
Benzo[a]pyrene	1
Benzo[a]anthracene	0.1
Dibenz(a,h)anthracene/Indeno(1,2,3-cd)pyrene	0.1

Table A-4. Benzo(a)pyrene Relative Potency Factors (Groundwater)

Analyte Name	Relative Potency Factor
Benzo[a]anthracene	0.1
Benzo[a]pyrene	1
Benzo[b]fluoranthene	0.1
Benzo[k]fluoranthene	0.01
Dibenzo[a,h]anthracene	1
Indeno[1,2,3-cd]pyrene	0.1
Benzo(b+k)fluoranthene	0.1
Dibenz(a,h)anthracene/Indeno(1,2,3-cd)pyrene	1

Table A-5. Benzo(a)pyrene Equivalents

Analyte	Units	Method
BaPEgwScrn2013	mg/L	Include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Use half DL for nondetected congeners.
BaPEsoScrn2013	mg/kg	Include benzo(a)anthracene, benzo(a)pyrene, chrysene, and indeno(1,2,3-cd)pyrene. Use half DL for nondetected congeners.

Notes:

DL = detection limit

Table A-6. Counts of Samples for Each Analyte Group in Each Environmental Medium [a]

Media and Chemical Class[b]	Number of Samples 1998 to 2007	Number of Samples 2007 to 2012	Total Number of Samples	Percent of Data Updated[c]
Soil				
Volatiles	13	24	37	65%
PAHs	13	24	37	65%
Herbicides	0	24	24	100%
Semivolatiles	44	24	68	35%
Phenols	125	196	321	61%
Pesticides	0	24	24	100%
Petroleum	11	34	45	76%
Dioxins/furans	26	235	261	90%
Physical/chemical	12	30	42	71%
Groundwater				
Volatiles	16	90	106	85%
PAHs	20	90	110	82%
Gases	17	0	17	0%
Halogens	4	42	46	91%
Phenols	227	226	453	50%
Petroleum	16	90	106	85%
Metals	37	42	79	53%
Dioxins/furans	142	208	350	59%
Herbicides	11	0	11	0%
Semivolatiles	3	0	3	0%
Nutrients	4	42	46	91%
Physical/chemical	4	42	46	91%
Soil Vapor				
Volatiles	0	39	39	100%
PAHs	0	39	39	100%
Gases	0	39	39	100%
Petroleum	0	39	39	100%
Physical/chemical	0	39	39	100%

Notes:

PAH = polycyclic aromatic hydrocarbon

[a] Sample counts in this table reflect the number of individual analytical results with a category used for calculations supporting risk analyses. Actual numbers of analytical records in any category may be different than shown (e.g., these counts do not include duplicates or splits).

[b] Terms in this column are defined in Table A-7.

[c] Values in the "Percent of Data Updated" column for groundwater reflect the entire data set. For applications in the BRA, only data collected from 2008 to the present were used, so 100 percent of groundwater data applicable to the BRA were updated.

Table A-7. Definitions for Analytes in Each Class Shown in Table A-6

Groundwater	
Dioxins/furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran
	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
	1,2,3,4,7,8,9-Heptachlorodibenzofuran
	1,2,3,4,7,8-Hexachlorodibenzofuran
	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
	1,2,3,6,7,8-Hexachlorodibenzofuran
	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
	1,2,3,7,8,9-Hexachlorodibenzofuran
	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
	1,2,3,7,8-Pentachlorodibenzofuran
	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
	2,3,4,6,7,8-Hexachlorodibenzofuran
	2,3,4,7,8-Pentachlorodibenzofuran
	2,3,7,8-Tetrachlorodibenzofuran
	2,3,7,8-Tetrachlorodibenzo-p-dioxin
	Heptachlorodibenzofuran (Total)
	Heptachlorodibenzo-p-dioxin (Total)
	Hexachlorodibenzofuran (Total)
	Hexachlorodibenzo-p-dioxin (Total)
	Octachlorodibenzofuran
	Octachlorodibenzo-p-dioxin
	Pentachlorodibenzofuran (Total)
	Pentachlorodibenzo-p-dioxin (Total)
	Tetrachlorodibenzodioxin (Total)
	Tetrachlorodibenzofuran (Total)
Gases	Ethane
	Ethene
	Methane
Halogens	Chloride ion
Herbicides	2,4-Dichlorophenoxyacetic acid
	2-sec-butyl-4,6-dinitrophenol
	Dalapon
	Dicamba
	Dichlorprop
	Picloram
	Silvex
Metals	Iron
	Iron, ferrous
	Manganese
Nutrients	Nitrate as nitrogen
PAHs	2-Methylnaphthalene
	Acenaphthene
	Acenaphthylene
	Anthracene
	BaPE Groundwater Screening 2013
	Benzo(b+k)fluoranthene
	Benzo[a]anthracene
	Benzo[a]pyrene
	Benzo[b]fluoranthene
	Benzo[g,h,i]perylene

Table A-7. Definitions for Analytes in Each Class Shown in Table A-6

	Benzo[k]fluoranthene
	Chrysene
	Dibenz(a,h)anthracene/Indeno(1,2,3-cd)pyrene
	Dibenzo[a,h]anthracene
	Fluoranthene
	Fluorene
	Indeno[1,2,3-cd]pyrene
	Naphthalene
	Phenanthrene
	Pyrene
Petroleum	C10 to C22 Aromatics
	C11 to C22 Aromatics
	C19 to C36 Aliphatics
	C5 to C8 Aliphatics
	C9 to C10 Aromatics
	C9 to C12 Aliphatics
	C9 to C18 Aliphatics
	EPH Equivalent
	Total Extractable Hydrocarbons
	Total Purgeable Hydrocarbons
	VPH Equivalent
Phenols	2,3,4,5-Tetrachlorophenol
	2,3,5,6-Tetrachlorophenol
	2,4,5-Trichlorophenol
	2,4,6-Trichlorophenol
	2,4-Dichlorophenol
	2-Chlorophenol
	3,4,5-Trichlorophenol
	3,4-Dichlorophenol
	3,5-Dichlorophenol
	3/4-Methylphenol
	4-Chlorophenol
	Pentachlorophenol
Physical/chemical	Alkalinity as $CaCO_3$
	Organic carbon
	Sulfate
	Sulfide
	Total organic carbon
Semivolatiles	1,2,4-Trichlorobenzene
	1,2-Dichlorobenzene
	1,3-Dichlorobenzene
	1,4-Dichlorobenzene
	1-Methylnaphthalene
	2,4-Dimethylphenol
	2,4-Dinitrophenol
	2,4-Dinitrotoluene
	2,6-Dinitrotoluene
	2-Chloronaphthalene
	2-Methylphenol
	2-Nitrophenol
	3,3'-Dichlorobenzidine

Table A-7. Definitions for Analytes in Each Class Shown in Table A-6

	4,6-Dinitro-2-methylphenol
	4-Bromophenyl-phenylether
	4-Chloro-3-methylphenol
	4-Chlorophenyl-phenyl ether
	4-Nitrophenol
	Benzidine
	Benzyl n-butyl phthalate
	bis(2-Chloroethoxy)methane
	Bis(2-chloroethyl)ether
	bis(2-Ethylhexyl)phthalate
	Diethyl phthalate
	Dimethyl phthalate
	Di-n-butyl phthalate
	Di-n-octylphthalate
	Hexachlorobenzene
	Hexachlorobutadiene
	Hexachlorocyclopentadiene
	Hexachloroethane
	Isophorone
	Nitrobenzene
	N-Nitrosodimethylamine
	N-Nitrosodi-n-propylamine
	N-Nitrosodiphenylamine
	Phenol
	Pyridine
Volatiles	1,1,1,2-Tetrachloroethane
	1,1,1-Trichloroethane
	1,1,2,2-Tetrachloroethane
	1,1,2-Trichloroethane
	1,1-Dichloroethane
	1,1-Dichloroethene
	1,1-Dichloropropene
	1,2,3-Trichloropropane
	1,2-Dibromoethane
	1,2-Dichloroethane
	1,2-Dichloropropane
	1,3-Dichloropropane
	2,2-Dichloropropane
	2-Chloroethoxy ethene
	2-Chlorotoluene
	4-Chlorotoluene
	Azobenzene
	Benzene
	Bis(2-chloroisopropyl) ether
	Bromobenzene
	Bromochloromethane
	Bromodichloromethane
	Bromoform
	Bromomethane
	Carbon Tetrachloride
	Chlorobenzene

Table A-7. Definitions for Analytes in Each Class Shown in Table A-6

	Chloroethane
	Chloroform
	Chloromethane
	cis-1,2-Dichloroethene
	cis-1,3-Dichloropropene
	Dibromochloromethane
	Dibromomethane
	Dichlorodifluoromethane
	Ethylbenzene
	m,p-Xylene
	Methyl tert-butyl ether
	Methylene Chloride
	o-Xylene
	Styrene
	Tetrachloroethene
	Toluene
	trans-1,2-Dichloroethene
	trans-1,3-Dichloropropene
	Trichloroethene
	Trichlorofluoromethane
	Vinyl Chloride
	Xylenes
Soil	
Dioxins/furans	1,2,3,4,6,7,8-Heptachlorodibenzofuran
	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin
	1,2,3,4,7,8,9-Heptachlorodibenzofuran
	1,2,3,4,7,8-Hexachlorodibenzofuran
	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin
	1,2,3,6,7,8-Hexachlorodibenzofuran
	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin
	1,2,3,7,8,9-Hexachlorodibenzofuran
	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin
	1,2,3,7,8-Pentachlorodibenzofuran
	1,2,3,7,8-Pentachlorodibenzo-p-dioxin
	2,3,4,6,7,8-Hexachlorodibenzofuran
	2,3,4,7,8-Pentachlorodibenzofuran
	2,3,7,8-Tetrachlorodibenzofuran
	2,3,7,8-Tetrachlorodibenzo-p-dioxin
	Heptachlorodibenzofuran (Total)
	Heptachlorodibenzo-p-dioxin (Total)
	Hexachlorodibenzofuran (Total)
	Hexachlorodibenzo-p-dioxin (Total)
	Octachlorodibenzofuran
	Octachlorodibenzo-p-dioxin
	Pentachlorodibenzofuran (Total)
	Pentachlorodibenzo-p-dioxin (Total)
	Tetrachlorodibenzodioxin (Total)
	Tetrachlorodibenzofuran (Total)
	2,4,5-Trichlorophenoxy-acetic acid

Table A-7. Definitions for Analytes in Each Class Shown in Table A-6

Herbicides	2,4-DB
	2,4-Dichlorophenoxyacetic acid
	2-sec-butyl-4,6-dinitrophenol
	3,5-Dichlorobenzoic Acid
	Acifluorfen
	Bentazon
	Chloramben
	Dalapon
	Dicamba
	Dichlorprop
	Dimethyl tetrachloroterephthalate
	MCPA
	MCPP
	Picloram
	Silvex
	2-Methylnaphthalene
PAHs	2-Nitroaniline
	3-Nitroaniline
	4-Nitroaniline
	Acenaphthene
	Acenaphthylene
	Anthracene
	BaPE Soil Screening 2013
	Benzo(b+k)fluoranthene
	Benzo[a]anthracene
	Benzo[a]pyrene
	Benzo[b]fluoranthene
	Benzo[g,h,i]perylene
	Benzo[k]fluoranthene
	Chrysene
	Dibenz(a,h)anthracene/Indeno(1,2,3-cd)pyrene
	Dibenzo[a,h]anthracene
	Dibenzofuran
	Fluoranthene
	Fluorene
	Indeno[1,2,3-cd]pyrene
	Naphthalene
	Phenanthrene
	Pyrene
	4,4'-DDD
Pesticides	4,4'-DDE
	4,4'-DDT
	Aldrin
	alpha-Benzenehexachloride
	beta-Benzenehexachloride
	Chlordane
	cis-Chlordane
	delta-Benzenehexachloride
	Dieldrin
	Endosulfan I
	Endosulfan II

Table A-7. Definitions for Analytes in Each Class Shown in Table A-6

	Endosulfan sulfate
	Endrin
	Endrin aldehyde
	Endrin ketone
	gamma-Benzenehexachloride
	gamma-Chlordane
	Heptachlor
	Heptachlor epoxide
	Methoxychlor
	Toxaphene
	C10 to C22 Aromatics
Petroleum	C11 to C22 Aromatics
	C19 to C36 Aliphatics
	C5 to C8 Aliphatics
	C9 to C10 Aromatics
	C9 to C12 Aliphatics
	C9 to C18 Aliphatics
	EPH Equivalent
	Total Extractable Hydrocarbons
	Total Petroleum Hydrocarbons
	Total Purgeable Hydrocarbons
	VPH Equivalent
	2,4,5-Trichlorophenol
Phenols	2,4,6-Trichlorophenol
	2,4-Dichlorophenol
	2-Chlorophenol
	3/4-Methylphenol
	4-Chlorophenol
	Pentachlorophenol
	Moisture
Physical/chemical	Organic carbon
	1,2,4-Trichlorobenzene
Semivolatiles	1,2-Dichlorobenzene
	1,3-Dichlorobenzene
	1,4-Dichlorobenzene
	1-Methylnaphthalene
	2,4-Dimethylphenol
	2,4-Dinitrophenol
	2,4-Dinitrotoluene
	2,6-Dinitrotoluene
	2-Chloronaphthalene
	2-Methylphenol
	2-Nitrophenol
	3,3'-Dichlorobenzidine
	4,6-Dinitro-2-methylphenol
	4-Bromophenyl-phenylether
	4-Chloro-3-methylphenol
	4-Chloroaniline
	4-Chlorophenyl-phenyl ether
	4-Nitrophenol
	Benzidine

Table A-7. Definitions for Analytes in Each Class Shown in Table A-6

	Benzoic acid
	Benzyl alcohol
	Benzyl n-butyl phthalate
	bis(2-Chloroethoxy)methane
	Bis(2-chloroethyl)ether
	bis(2-Ethylhexyl)phthalate
	Diethyl phthalate
	Dimethyl phthalate
	Di-n-butyl phthalate
	Di-n-octylphthalate
	Hexachlorobenzene
	Hexachlorobutadiene
	Hexachlorocyclopentadiene
	Hexachloroethane
	Isophorone
	Nitrobenzene
	N-Nitrosodimethylamine
	N-Nitrosodi-n-propylamine
	N-Nitrosodiphenylamine
	Phenol
	Pyridine
	1,1,1,2-Tetrachloroethane
Volatiles	1,1,1-Trichloroethane
	1,1,2,2-Tetrachloroethane
	1,1,2-Trichloroethane
	1,1-Dichloroethane
	1,1-Dichloroethene
	1,1-Dichloropropene
	1,2,3-Trichloropropane
	1,2-Dibromoethane
	1,2-Dichloroethane
	1,2-Dichloroethene isomers (total)
	1,2-Dichloropropane
	1,3-Dichloropropane
	2,2-Dichloropropane
	2-Chloroethoxy ethene
	2-Chlorotoluene
	2-Hexanone
	4-Chlorotoluene
	4-Methyl-2-pentanone
	Acetone
	Azobenzene
	Benzene
	Bis(2-chloroisopropyl) ether
	Bromobenzene
	Bromochloromethane
	Bromodichloromethane
	Bromoform
	Bromomethane
	Carbon disulfide
	Carbon Tetrachloride

Table A-7. Definitions for Analytes in Each Class Shown in Table A-6

	Chlorobenzene
	Chloroethane
	Chloroform
	Chloromethane
	cis-1,2-Dichloroethene
	cis-1,3-Dichloropropene
	Dibromochloromethane
	Dibromomethane
	Dichlorodifluoromethane
	Ethylbenzene
	m,p-Xylene
	Methyl ethyl ketone
	Methyl tert-butyl ether
	Methylene Chloride
	o-Xylene
	Styrene
	Tetrachloroethene
	Toluene
	trans-1,2-Dichloroethene
	trans-1,3-Dichloropropene
	Trichloroethene
	Trichlorofluoromethane
	Vinyl acetate
	Vinyl Chloride
	Xylenes
Soil Vapor	
Gases	Helium
	Oxygen and Argon
PAHs	Naphthalene
Petroleum	C5 to C8 Aliphatics
	C9 to C10 Aromatics
	C9 to C12 Aliphatics
Physical/chemical	Carbon dioxide
Volatiles	Benzene
	Ethylbenzene
	m,p-Xylene
	o-Xylene
	Toluene

Notes:
BaPE = benzo(a)pyrene equivalents
EPH = extractable petroleum hydrocarbon
MCPA = 2-methyl-4-chlorophenoxyacetic acid
MCPP = methylchlorophenoxypropionic acid
PAH = polycyclic aromatic hydrocarbon
VPH = volatile petroleum hydrocarbon

APPENDIX B

SCREENING THE BEEF CONSUMPTION PATHWAY

APPENDIX B:
SCREENING THE BEEF CONSUMPTION PATHWAY

Ingestion of home-grown beef on the Cassell and Skroch properties is potentially a complete pathway if the cattle graze in the areas surrounding and including the ditch, and ingest dioxin- and furan-contaminated soils and plants from the ditch. To address the potential for exposure to people consuming beef grown on these properties, concentrations of individual dioxin and furan congeners that could occur in beef from cattle grazing on the Cassell and Skroch properties were estimated using a model of plant and beef concentrations based on concentrations in soil. The toxicity equivalency (TEQ) concentration in beef was estimated, and compared to concentrations in samples of the beef supply commonly available in grocery stores (USDA 2009). This appendix describes the methods for deriving tissue concentration estimates, presents results, and presents the relevant comparison.

Estimating Cattle Exposure

Cattle grazing on the Cassell property would also be grazing on the Parmenter property because there is no fence separating the two properties. Facility-related impacts are expected to be confined to the irrigation ditch on the Cassell property; the ditch covers approximately 5 percent of the combined land area of the Cassell and Parmenter properties. Because the ditch is expected to be an attractive location for grazing, the cattle on the Cassell and Parmenter combined properties were conservatively assumed to obtain 10 percent of their food from the ditch.

Facility-related impacts are also expected to be confined to the irrigation ditch on the Skroch property. The irrigation ditch covers approximately 5 percent of the Skroch property. Again, because the ditch is expected to be an attractive location for grazing, the cattle on the Skroch property were assumed to obtain 10 percent of their food from the ditch.

Calculation of Dioxin and Furan Concentrations in Plants

Cattle were assumed to be exposed via ingestion of aboveground forage and incidental ingestion of surface soil while grazing. In general, plants are exposed to chemicals in soils primarily through pore water (Kabata-Pendias and Pendias 1992). Chemicals with low water solubility may adsorb to the roots of plants, but uptake into the plant's vascular system and transport to leaves and fruit is limited for low-solubility chemicals. Lipophilic compounds may be taken up by the roots or by foliage and transported in plant xylem, but transport is slowed by partitioning of lipophilic compounds to the lipid-like matter in plant tissue

(Bromilow and Chamberlain 1995), and fruits are not affected. Dioxins and furans are not readily absorbed and translocated by plants because the molecules are large and hydrophobic. Wild and Jones (1992) provide the following general comments about plant uptake of organochlorine compounds: "these compounds are generally not taken up into the aboveground portion of crop plants," and "there is some evidence of slight enrichment of some compounds in some root crops, but the transfers are very inefficient, and consequently the BCFs [bioconcentration factors] are very low." They also note that enrichments are generally confined to the root skin or peels because of diffusion into lipid membranes from soils, and that organochlorines in soils do not typically affect concentrations in the fruits, leaves, and stems that may be eaten by cattle or wildlife (Wild and Jones 1992).

For this analysis, plants were estimated to take up dioxin and furan congeners through roots and into the shoots and leaves using the approach described by USEPA's (2005) Human Health Risk Assessment Protocol (HHRAP) Combustion Guidance. In the context of available information about plant uptake of dioxins and furans, this approach is considered conservative, and was used for consistency with EPA recommendations. An independent analysis of scientific information on uptake and retention of dioxins and furans by plants or cattle that may (or may not) support EPA's approach was not conducted.

Root uptake into the exposed and protected aboveground portions of the plants was considered the primary pathway of plant uptake. The HHRAP guidance recommends the following equation for the uptake from roots into plant tissue.

$$C_{produce} = \mathrm{C}_{soil} \times \mathrm{Br}$$

Where:

$C_{produce}$	=	Concentration in produce (mg/kg tissue)
C_{soil}	=	Concentration in surface soil (mg/kg soil)
Br	=	Plant-soil bioconcentration factor (kg soil/kg tissue)

The HHRAP guidance recommends calculating a Br value using the following equation from Travis and Arms (1998).

$$\log Br = 1.588 - (0.578 \times \log K_{ow})$$

Where:

log Br	=	-2.34 (Br = 0.005)
log K_{ow}	=	6.8 (value obtained from RTI (2005)

Calculation of Dioxin and Furan Concentrations in Beef

The HHRAP guidance provides the following formula for estimating beef tissue concentrations from ingestion of chemicals of potential concern in forage and soil.

$$A_{beef} = (F_i \times Qp_i \times P_i) + (Qs \times C_{soil} \times Bs) \times Ba_{beef} \times MF$$

Where:

A_{beef}	=	Concentration in beef (mg chemical/kg fresh weight tissue)
Fi	=	Fraction of plant grown on contaminated soil (unitless)
QP_i	=	Quantity of plant eaten by cattle per day (kg dry weight plant/day)
P_i ($C_{produce}$)	=	Concentration in plant (mg/kg dry weight)
Qs	=	Quantity of soil eaten by cattle each day (kg/day)
C_{soil}	=	Concentration in soil (mg chemical/kg soil)
Bs	=	Soil bioavailability factor (unitless)
Ba_{beef}	=	Bioconcentration factor (day/kg fresh weight tissue)
MF	=	Metabolism factor (unitless)

The input parameter values and the sources for those values are provided in the table below.

Table B-1. Input Parameter Values and Sources

Parameter	Value	Units	Source
Fraction of plant grown on contaminated soil (Fi)	0.1	unitless	Professional judgment
Quantity of plant eaten by cattle per day (QPi)	8.8	kg/day	USEPA (2005)
Concentration in plant (Pi)	Site-specific	mg/kg	Calculated per equation for C*produce* as shown in Exhibit B-1

Table B-1. Input Parameter Values and Sources

Parameter	Value	Units	Source
Quantity of soil eaten by cattle (Qs)	0.05	kg/day	Value of 0.5 from USEPA (2005) adjusted for 10% of time spent grazing in ditch
Concentration in soil (C_{soil})	Chemical specific	mg/kg	Exposure point concentration (EPC) for each parcel
Soil bioavailability factor (Bs)	1	unitless	USEPA (2005)
Bioconcentration factor (Ba_{beef})	Calculated	day/kg	Calculated per Equation A-2-21 of USEPA (2005) as shown in Exhibit B-1
Metabolism factor (MF)	1	unitless	USEPA (2005)

The soil ingestion rate of 0.5 kg/day recommended by USEPA (2005) was adjusted by 10 percent, to reflect with the portion of food that cattle were estimated to obtain from the ditch.

Concentrations of each dioxin and furan congener in beef were calculated using both reasonable maximum exposure (RME) and central tendency exposure (CTE) EPCs for surface soil at the Skroch property and the Cassell and Parmenter combined properties.

EPCs for each congener were calculated by running the data sets through the ProUCL program. Data for the following samples were included in calculation of EPCs:

- For the Skroch parcel, individual dioxin/furan congeners in surface soil (0-2 feet below ground surface [bgs]) were used. A total of 16 samples were used, all collected in 2012. The sample location IDs are as follows: IR-19 through IR-26 and IR-28 through IR-31. Some of these sample locations had more than one data point due to samples collected at varying depths.

- For the Parmenter/Cassell pasture, individual dioxin/furan congeners in surface soil (0-2 feet bgs) were used. A total of 19 samples were used with collection dates ranging from 2002 to 2012. The sample location IDs are as follows: 4068, 4069, IR-13 though IR-16, IR-18, IR-27, SSC-37 though SSC-39, SSC-73 through SSC-76. Some of these sample locations had two data points due to samples collected at varying depths.

Exhibit B-1 provides the soil EPCs calculated for the congener data as provided by ProUCL. Exhibit B-2 provides the calculation of TEQ concentrations in aboveground produce and beef using the above equations and inputs. The final TEQ concentration reflects the summation of individual congener TEQ concentrations estimated for beef tissue at each pasture area. Exhibit B-3 provides the output from ProUCL for the calculation of the soil EPCs.

Results and Conclusion

TEQ concentrations in beef tissue from steers/heifers in the U.S. domestic meat supply range from 0.15 to 4.86 ng/kg (USDA 2009). The TEQ concentrations modeled for the Cassell and Parmenter combined properties were 0.092 (CTE) and 0.56 (RME) ng/kg. The TEQ concentrations modeled for the Skroch property are 0.067 (CTE) and 0.19 (RME) ng/kg. For both pastures, the CTE case is below the range of TEQ concentrations in the commercial beef supply, and the RME case is at the low end of the range reported for commercially available beef.

The method used to estimate concentrations in beef is conservative for reasons noted in the description of methods. In addition, estimating bioaccumulation from soil and plant tissue on the basis of log Kow for individual congeners likely overestimates beef concentrations for two reasons: likely limits on the bioavailability and uptake of dioxin and furan congeners, and differences in the ultimate location of dioxins and furans that are retained in tissues of cattle. Bioacessibility of dioxin and furan congeners, particularly from soil, appears to decrease with increasing chlorination (Finley et al. 2009). These limits on bioaccessibility from soils may be due to physicochemical properties of the higher chlorinated congeners in soil, such that higher chlorinated congeners are more tightly bound in the soil matrix, or may be the result of limits on the uptake of larger dioxin and furan compounds, which has been hypothesized to explain bioaccumulation of dioxins and furans in fish (Opperhuizen and Sijm 1991). Also, cattle foraging on dioxin- and furan-contaminated silage have been observed to sequester the different congeners in different tissues, and to preferentially excrete the larger congeners (such as octachlorodibenzo-*p*-dioxin [OCDD]) in feces (Richter and McLachlan 2001), which may indicate that these larger congeners were never absorbed from foods. For those congeners that were absorbed by non-lactating cows in the Richter and McLachlan (2001) study, OCDD was preferentially sequestered in the liver, not in muscle or fat, while other congeners were found primarily in fat tissue. Therefore, because the model employed in this analysis uses primarily the log Kow of each congener to estimate concentrations in tissue when, in reality, several chemical and species-specific factors likely also control and limit concentrations in beef, the results are considered conservative.

In addition to the uncertainty in the model itself, a few dioxin congeners were not included in the calculation of the beef tissue TEQs. At both properties, 2,3,7,8-tetrachlorodibenzofuran was not detected in any of the surface soil samples collected from the properties, so no EPC in beef tissue was estimated for this congener. In addition, there were two furans (1,2,3,4,7,8,9-heptachlorodibenzofuran and 1,2,3,7,8,9-hexachlorodibenzofuran) for which log Kow values were not available in the RTI (2005) guidance. These furans were also not included in the estimated TEQ concentrations in beef tissue. The omitted data could have contributed to slightly higher total TEQ concentrations in beef tissue (toxicity equivalency factors for these compounds range from 0.01 to 0.1), but would not likely have caused an exceedance of the marketplace beef tissue concentrations.

Based on this evaluation, the consumption of beef from cattle grazing on the Parmenter and Cassell combined properties and the Skroch property are not expected to increase TEQ exposures above those exposures typically associated with the consumption of commercial beef. Therefore, this exposure route was not evaluated further in the baseline risk assessment.

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EXHIBIT B-1

EPCS SOIL TO BEEF

EXHIBIT B-1 RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Beef Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Parmenter/Cassell Properties	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	9.4E-04 J	4.8E-03 (NP)	1.1E-02	4.8E-03	mg/kg	97.5% UCL - NP	Chebyshev (mean, SD) method
	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	mg/kg	6.0E-03 J	3.0E-02 (NP)	7.1E-02	3.0E-02	mg/kg	97.5% UCL - NP	Chebyshev (mean, SD) method
	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	6.6E-05 J	5.0E-04 (NP)	8.0E-04	5.0E-04	mg/kg	99% UCL - NP	Kaplan-Meier (Chebyshev) method
	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	1.8E-05 J	1.3E-04 (NP)	2.1E-04	1.3E-04	mg/kg	99% UCL - NP	Kaplan-Meier (Chebyshev) method
	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3.8E-05 J	2.6E-04 (NP)	3.6E-04	2.6E-04	mg/kg	99% UCL - NP	Kaplan-Meier (Chebyshev) method
	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	9.4E-06 J	7.2E-05 (NP)	1.2E-04	7.2E-05	mg/kg	99% UCL - NP	Kaplan-Meier (Chebyshev) method
	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	1.9E-04 J	1.4E-03 (NP)	2.0E-03	1.4E-03	mg/kg	99% UCL - NP	Kaplan-Meier (Chebyshev) method
	1,2,3,7,8,9-Hexachlorodibenzofuran	--	--	--	--	--	--	na	No detected samples
	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	8.1E-05 J	5.5E-04 (NP)	7.5E-04	5.5E-04	mg/kg	99% UCL - NP	Kaplan-Meier (Chebyshev) method
	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3.2E-07 J	7.6E-07 (NP)	3.3E-06 J	7.6E-07	mg/kg	95% UCL - NP	Kaplan-Meier (BCA) method
	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	1.1E-05 J	7.6E-05 (NP)	1.1E-04	7.6E-05	mg/kg	99% UCL - NP	Kaplan-Meier (Chebyshev) method
	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	2.0E-05 J	1.5E-04 (NP)	2.4E-04	1.5E-04	mg/kg	99% UCL - NP	Kaplan-Meier (Chebyshev) method
	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	2.8E-07 J	5.8E-07 (NP)	3.1E-06 J	5.8E-07	mg/kg	95% UCL - NP	Kaplan-Meier (t) method
	2,3,7,8-Tetrachlorodibenzofuran	--	--	--	--	--	--	na	No detected samples
	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	5.7E-07 J	1.0E-06 (NP)	4.9E-06	1.0E-06	mg/kg	95% UCL - NP	Kaplan-Meier (t) method
	Octachlorodibenzofuran	mg/kg	6.2E-03 J	3.7E-02 (NP)	9.7E-02	3.7E-02	mg/kg	97.5% UCL - NP	Chebyshev (mean, SD) method
	Octachlorodibenzo-p-dioxin	mg/kg	4.2E-02 J	2.1E-01 (NP)	4.9E-01	2.1E-01	mg/kg	97.5% UCL - NP	Chebyshev (mean, SD) method
Skroch	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	4.7E-04 J	1.3E-03 (NP)	3.0E-03 J	1.3E-03	mg/kg	95% UCL - NP	Chebyshev (mean, SD) method
	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	mg/kg	4.9E-03 J	1.6E-02 (NP)	4.1E-02 J	1.6E-02	mg/kg	95% UCL - NP	Chebyshev (mean, SD) method
	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3.5E-05 J	1.1E-04 (NP)	2.6E-04 J	1.1E-04	mg/kg	95% UCL - NP	Chebyshev (mean, SD) method
	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	9.3E-06 J	3.3E-05 (NP)	5.8E-05 J	3.3E-05	mg/kg	97.5% UCL - NP	Kaplan-Meier (Chebyshev) method
	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	2.9E-05 J	7.8E-05 (NP)	1.7E-04 J	7.8E-05	mg/kg	95% UCL - NP	Chebyshev (mean, SD) method
	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	6.9E-06 J	1.9E-05 (NP)	4.1E-05 J	1.9E-05	mg/kg	95% UCL - NP	Kaplan-Meier (Chebyshev) method
	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	1.2E-04 J	3.3E-04 (NP)	7.4E-04 J	3.3E-04	mg/kg	95% UCL - NP	Chebyshev (mean, SD) method
	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	8.5E-07 J	2.2E-06 (NP)	7.2E-06	2.2E-06	mg/kg	95% UCL - NP	Kaplan-Meier (% Bootstrap) method
	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	6.7E-05 J	1.2E-04 (NP)	3.7E-04 J	1.2E-04	mg/kg	95% UCL - NP	Approximate Gamma UCL
	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	5.8E-07 J	9.9E-07 (NP)	2.8E-06	9.9E-07	mg/kg	95% UCL - NP	Kaplan-Meier (t) method
	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	7.7E-06 J	1.9E-05 (NP)	3.4E-05 J	1.9E-05	mg/kg	95% UCL - NP	Kaplan-Meier (Chebyshev) method
	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	1.2E-05 J	3.4E-05 (NP)	8.0E-05 J	3.4E-05	mg/kg	95% UCL - NP	Kaplan-Meier (Chebyshev) method
	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	8.8E-07 J	9.4E-07 (NP)	1.2E-06 J	9.4E-07	mg/kg	95% UCL - NP	Kaplan-Meier (t) method
	2,3,7,8-Tetrachlorodibenzofuran	--	--	--	--	--	--	na	No detected samples
	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	1.0E-06 J	1.2E-06 (NP)	2.0E-06	1.2E-06	mg/kg	95% UCL - NP	Kaplan-Meier (t) method
	Octachlorodibenzofuran	mg/kg	2.6E-03 J	9.0E-03 (NP)	2.4E-02 J	9.0E-03	mg/kg	95% UCL - NP	Chebyshev (mean, SD) method
	Octachlorodibenzo-p-dioxin	mg/kg	3.8E-02 J	1.3E-01 (NP)	3.4E-01 J	1.3E-01	mg/kg	95% UCL - NP	Chebyshev (mean, SD) method

Notes:

(1) The arithmetic means were calculated by ProUCL based on the distribution characteristics and sample size of the underlying data set. Qualifiers - 'J' = presence of estimated values in calculation of mean.

(2) Distribution codes are as follows: (N) = normal, (T) = transformed or log-normal, (NP) = nonparametric, (O) = other. Where two UCLs were recommended by ProUCL, the greatest value was used.

(3) EPC statistic codes are as follows:

Max = maximum

##% UCL - NP = ##% UCL of nonparameteric data

Mean - NP = mean of nonparametric data

Mean - O = mean of other parametric data

-- = Congener was not detected once in surface soil at property and was not included in soil-to-beef tissue pathway.

na = not applicable (e.g., unable to be calculated because of too few samples or no detected samples)

UCL = upper confidence limit

EXHIBIT B-1 CTE

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Beef Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Parmenter/Cassell Properties	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	9.4E-04 J	4.8E-03 (NP)	1.1E-02	9.4E-04	mg/kg	Mean - O	Data did not follow discernible distribution
	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	mg/kg	6.0E-03 J	3.0E-02 (NP)	7.1E-02	6.0E-03	mg/kg	Mean - O	Data did not follow discernible distribution
	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	6.6E-05 J	5.0E-04 (NP)	8.0E-04	6.6E-05	mg/kg	Mean - NP	Kaplan Meier method
	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	1.8E-05 J	1.3E-04 (NP)	2.1E-04	1.8E-05	mg/kg	Mean - NP	Kaplan Meier method
	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	3.8E-05 J	2.6E-04 (NP)	3.6E-04	3.8E-05	mg/kg	Mean - NP	Kaplan Meier method
	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	9.4E-06 J	7.2E-05 (NP)	1.2E-04	9.4E-06	mg/kg	Mean - NP	Kaplan Meier method
	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	1.9E-04 J	1.4E-03 (NP)	2.0E-03	1.9E-04	mg/kg	Mean - NP	Kaplan Meier method
	1,2,3,7,8,9-Hexachlorodibenzofuran	--	--	--	--	--	--	na	No detected samples
	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	8.1E-05 J	5.5E-04 (NP)	7.5E-04	8.1E-05	mg/kg	Mean - NP	Kaplan Meier method
	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	3.2E-07 J	7.6E-07 (NP)	3.3E-06 J	3.2E-07	mg/kg	Mean - NP	Kaplan Meier method
	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	1.1E-05 J	7.6E-05 (NP)	1.1E-04	1.1E-05	mg/kg	Mean - NP	Kaplan Meier method
	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	2.0E-05 J	1.5E-04 (NP)	2.4E-04	2.0E-05	mg/kg	Mean - NP	Kaplan Meier method
	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	2.8E-07 J	5.8E-07 (NP)	3.1E-06 J	2.8E-07	mg/kg	Mean - NP	Kaplan Meier method
	2,3,7,8-Tetrachlorodibenzofuran	--	--	--	--	--	--	na	No detected samples
	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	5.7E-07 J	1.0E-06 (NP)	4.9E-06	5.7E-07	mg/kg	Mean - NP	Kaplan Meier method
	Octachlorodibenzofuran	mg/kg	6.2E-03 J	3.7E-02 (NP)	9.7E-02	6.2E-03	mg/kg	Mean - O	Data did not follow discernible distribution
	Octachlorodibenzo-p-dioxin	mg/kg	4.2E-02 J	2.1E-01 (NP)	4.9E-01	4.2E-02	mg/kg	Mean - O	Data did not follow discernible distribution
Skroch	1,2,3,4,6,7,8-Heptachlorodibenzofuran	mg/kg	4.7E-04 J	1.3E-03 (NP)	3.0E-03 J	4.7E-04	mg/kg	Mean - O	Data did not follow discernible distribution
	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	mg/kg	4.9E-03 J	1.6E-02 (NP)	4.1E-02 J	4.9E-03	mg/kg	Mean - O	Data did not follow discernible distribution
	1,2,3,4,7,8,9-Heptachlorodibenzofuran	mg/kg	3.5E-05 J	1.1E-04 (NP)	2.6E-04 J	3.5E-05	mg/kg	Mean - O	Data did not follow discernible distribution
	1,2,3,4,7,8-Hexachlorodibenzofuran	mg/kg	9.3E-06 J	3.3E-05 (NP)	5.8E-05 J	9.3E-06	mg/kg	Mean - NP	Kaplan Meier method
	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	2.9E-05 J	7.8E-05 (NP)	1.7E-04 J	2.9E-05	mg/kg	Mean - O	Data did not follow discernible distribution
	1,2,3,6,7,8-Hexachlorodibenzofuran	mg/kg	6.9E-06 J	1.9E-05 (NP)	4.1E-05 J	6.9E-06	mg/kg	Mean - NP	Kaplan Meier method
	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	mg/kg	1.2E-04 J	3.3E-04 (NP)	7.4E-04 J	1.2E-04	mg/kg	Mean - O	Data did not follow discernible distribution
	1,2,3,7,8,9-Hexachlorodibenzofuran	mg/kg	8.5E-07 J	2.2E-06 (NP)	7.2E-06	8.5E-07	mg/kg	Mean - NP	Kaplan Meier method
	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	mg/kg	6.7E-05 J	1.2E-04 (NP)	3.7E-04 J	6.7E-05	mg/kg	Mean - O	Gamma Distribution MLE Mean
	1,2,3,7,8-Pentachlorodibenzofuran	mg/kg	5.8E-07 J	9.9E-07 (NP)	2.8E-06	5.8E-07	mg/kg	Mean - NP	Kaplan Meier method
	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	mg/kg	7.7E-06 J	1.9E-05 (NP)	3.4E-05 J	7.7E-06	mg/kg	Mean - NP	Kaplan Meier method
	2,3,4,6,7,8-Hexachlorodibenzofuran	mg/kg	1.2E-05 J	3.4E-05 (NP)	8.0E-05 J	1.2E-05	mg/kg	Mean - NP	Kaplan Meier method
	2,3,4,7,8-Pentachlorodibenzofuran	mg/kg	8.8E-07 J	9.4E-07 (NP)	1.2E-06 J	8.8E-07	mg/kg	Mean - NP	Kaplan Meier method
	2,3,7,8-Tetrachlorodibenzofuran	--	--	--	--	--	--	na	No detected samples
	2,3,7,8-Tetrachlorodibenzo-p-dioxin	mg/kg	1.0E-06 J	1.2E-06 (NP)	2.0E-06	1.0E-06	mg/kg	Mean - NP	Kaplan Meier method
	Octachlorodibenzofuran	mg/kg	2.6E-03 J	9.0E-03 (NP)	2.4E-02 J	2.6E-03	mg/kg	Mean - O	Data did not follow discernible distribution
	Octachlorodibenzo-p-dioxin	mg/kg	3.8E-02 J	1.3E-01 (NP)	3.4E-01 J	3.8E-02	mg/kg	Mean - O	Data did not follow discernible distribution

Notes:

(1) The arithmetic means were calculated by ProUCL based on the distribution characteristics and sample size of the underlying data set. Qualifiers - 'J' = presence of estimated values in calculation of mean.

(2) Distribution codes are as follows: (N) = normal, (T) = transformed or log-normal, (NP) = nonparametric, (O) = other. Where two UCLs were recommended by ProUCL, the greatest value was used.

(3) EPC statistic codes are as follows:

Max = maximum

##% UCL - NP = ##% UCL of nonparameteric data

Mean - NP = mean of nonparametric data

Mean - O = mean of other parametric data

-- = Congener was not detected once in surface soil at property and was not included in soil-to-beef tissue pathway.

na = not applicable (e.g., unable to be calculated because of too few samples or no detected samples)

UCL = upper confidence limit

EXHIBIT B-2

CALCULATION OF TCDD EQUIVALENTS IN BEEF TISSUE

Exhibit B-2. Calculation of TCDD Equivalents in Beef Tissue

			EPCs (C_{soil}) (mg/kg)				Produce Uptake[a]					Beef Intake Inputs							
			Parmenter/Cassell		Skroch			$C_{produce}$											
	log Kow	TEF	CTE	RME	CTE	RME	Br[b]	Parmenter/Cassell		Skroch		Fi	Qpi	Qs	Bs	Ba_{fat}[d]	fat_{beef}[e]	Ba_{beef}[f]	MF
								CTE	RME	CTE	RME								
2,3,7,8-Tetrachlorodibenzo-p-dioxin	6.8	1	5.7E-07	1.0E-06	1.0E-06	1.2E-06	0.0045	2.6E-09	4.8E-09	4.7E-09	5.6E-09	0.1	8.8	0.05	1	0.14	0.19	0.026	1
Octachlorodibenzo-p-dioxin	8.2	0.0003	4.2E-02	2.1E-01	3.8E-02	1.3E-01	0.00071	3.0E-05	1.5E-04	2.7E-05	9.1E-05	0.1	8.8	0.05	1	0.036	0.19	0.0069	1
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	7.3	0.1	8.1E-05	5.5E-04	6.7E-05	1.2E-04	0.0023	1.9E-07	1.3E-06	1.6E-07	2.7E-07	0.1	8.8	0.05	1	0.094	0.19	0.018	1
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	8.0	0.01	6.0E-03	3.0E-02	4.9E-03	1.6E-02	0.0009	5.6E-06	2.8E-05	4.5E-06	1.5E-05	0.1	8.8	0.05	1	0.046	0.19	0.0088	1
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	7.8	0.1	3.8E-05	2.6E-04	2.9E-05	7.8E-05	0.0012	4.6E-08	3.1E-07	3.5E-08	9.4E-08	0.1	8.8	0.05	1	0.058	0.19	0.011	1
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	6.64	1	1.1E-05	7.6E-05	7.7E-06	1.9E-05	0.0056	6.2E-08	4.2E-07	4.3E-08	1.1E-07	0.1	8.8	0.05	1	0.15	0.19	0.029	1
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	7.3	0.1	1.9E-04	1.4E-03	1.2E-04	3.3E-04	0.0023	4.5E-07	3.2E-06	2.8E-07	7.6E-07	0.1	8.8	0.05	1	0.094	0.19	0.018	1
2,3,7,8-Tetrachlorodibenzofuran	6.1	0.1	--[g]	--	--	--	0.012	--	--	--	--	0.1	8.8	0.05	1	0.19	0.19	0.036	1
2,3,4,7,8-Pentachlorodibenzofuran	6.5	0.3	2.8E-07	5.8E-07	8.8E-07	9.4E-07	0.007	1.9E-09	4.0E-09	6.0E-09	6.4E-09	0.1	8.8	0.05	1	0.16	0.19	0.031	1
1,2,3,7,8-Pentachlorodibenzofuran	6.79	0.03	3.2E-07	7.6E-07	5.8E-07	9.9E-07	0.005	1.5E-09	3.5E-09	2.7E-09	4.6E-09	0.1	8.8	0.05	1	0.14	0.19	0.026	1
Octachlorodibenzofuran	8.0	0.0003	6.2E-03	3.7E-02	2.6E-03	9.0E-03	0.001	5.7E-06	3.4E-05	2.4E-06	8.3E-06	0.1	8.8	0.05	1	0.046	0.19	0.0088	1
1,2,3,6,7,8-Hexachlorodibenzofuran	7.0	0.1	9.4E-06	7.2E-05	6.9E-06	1.9E-05	0.003	3.3E-08	2.5E-07	2.4E-08	6.6E-08	0.1	8.8	0.05	1	0.12	0.19	0.023	1
2,3,4,6,7,8-Hexachlorodibenzofuran	7.0	0.1	2.0E-05	1.5E-04	1.2E-05	3.4E-05	0.003	6.9E-08	5.2E-07	4.1E-08	1.2E-07	0.1	8.8	0.05	1	0.12	0.19	0.023	1
1,2,3,4,6,7,8-Heptachlorodibenzofuran	7.4	0.01	9.4E-04	4.8E-03	4.7E-04	1.3E-03	0.002	1.9E-06	9.8E-06	9.6E-07	2.7E-06	0.1	8.8	0.05	1	0.086	0.19	0.016	1
1,2,3,4,7,8-Hexachlorodibenzofuran	7.0	0.1	1.8E-05	1.3E-04	9.3E-06	3.3E-05	0.003	6.2E-08	4.6E-07	3.2E-08	1.1E-07	0.1	8.8	0.05	1	0.12	0.19	0.023	1

Exhibit B-2. Calculation of TCDD Equivalents in Beef Tissue

	A_{beef} (mg/kg)[c]				A_{beef} (ng/kg)				A_{beef} (TEQ ng/kg)			
	Parmenter/Cassell		Skroch		Parmenter/Cassell		Skroch		Parmenter/Cassell		Skroch	
	CTE	RME	CTE	RME	CTE	RME	CTE	RME	CTE	RME	CTE	RME
2,3,7,8-Tetrachlorodibenzo-p-dioxin	8.0E-10	1.5E-09	1.5E-09	1.7E-09	8.0E-04	1.5E-03	1.5E-03	1.7E-03	8.0E-04	1.5E-03	1.5E-03	1.7E-03
Octachlorodibenzo-p-dioxin	1.5E-05	7.3E-05	1.3E-05	4.5E-05	1.5E+01	7.3E+01	1.3E+01	4.5E+01	4.4E-03	2.2E-02	3.9E-03	1.3E-02
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	7.6E-08	5.1E-07	6.3E-08	1.1E-07	7.6E-02	5.1E-01	6.3E-02	1.1E-01	7.6E-03	5.1E-02	6.3E-03	1.1E-02
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	2.7E-06	1.3E-05	2.2E-06	7.2E-06	2.7E+00	1.3E+01	2.2E+00	7.2E+00	2.7E-02	1.3E-01	2.2E-02	7.2E-02
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	2.1E-08	1.5E-07	1.6E-08	4.4E-08	2.1E-02	1.5E-01	1.6E-02	4.4E-02	2.1E-03	1.5E-02	1.6E-03	4.4E-03
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	1.7E-08	1.2E-07	1.2E-08	3.0E-08	1.7E-02	1.2E-01	1.2E-02	3.0E-02	1.7E-02	1.2E-01	1.2E-02	3.0E-02
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	1.8E-07	1.3E-06	1.1E-07	3.1E-07	1.8E-01	1.3E+00	1.1E-01	3.1E-01	1.8E-02	1.3E-01	1.1E-02	3.1E-02
2,3,7,8-Tetrachlorodibenzofuran	--	--	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-Pentachlorodibenzofuran	4.9E-10	1.0E-09	1.5E-09	1.6E-09	4.9E-04	1.0E-03	1.5E-03	1.6E-03	1.5E-04	3.0E-04	4.6E-04	4.9E-04
1,2,3,7,8-Pentachlorodibenzofuran	4.5E-10	1.1E-09	8.3E-10	1.4E-09	4.5E-04	1.1E-03	8.3E-04	1.4E-03	1.4E-05	3.2E-05	2.5E-05	4.2E-05
Octachlorodibenzofuran	2.8E-06	1.6E-05	1.1E-06	4.0E-06	2.8E+00	1.6E+01	1.1E+00	4.0E+00	8.3E-04	4.9E-03	3.4E-04	1.2E-03
1,2,3,6,7,8-Hexachlorodibenzofuran	1.1E-08	8.7E-08	8.3E-09	2.3E-08	1.1E-02	8.7E-02	8.3E-03	2.3E-02	1.1E-03	8.7E-03	8.3E-04	2.3E-03
2,3,4,6,7,8-Hexachlorodibenzofuran	2.4E-08	1.8E-07	1.4E-08	4.1E-08	2.4E-02	1.8E-01	1.4E-02	4.1E-02	2.4E-03	1.8E-02	1.4E-03	4.1E-03
1,2,3,4,6,7,8-Heptachlorodibenzofuran	8.0E-07	4.1E-06	4.0E-07	1.1E-06	8.0E-01	4.1E+00	4.0E-01	1.1E+00	8.0E-03	4.1E-02	4.0E-03	1.1E-02
1,2,3,4,7,8-Hexachlorodibenzofuran	2.1E-08	1.6E-07	1.1E-08	4.0E-08	2.1E-02	1.6E-01	1.1E-02	4.0E-02	2.1E-03	1.6E-02	1.1E-03	4.0E-03
								Total TEQ	**9.2E-02**	**5.6E-01**	**6.7E-02**	**1.9E-01**

Notes:

[a] Formula: $C_{produce} = C_{soil}$ * Br - Equation 5-20B of Human Health Risk Assessment Protocol Combustion Guidance

[b] Calculated using the formula: logBr = 1.588 -(0.578 * logKow)

[c] Calculated using the formula: A_{beef} = (S(Fi*Qpi*Pi) + (Qs*Cs*Bs)) * Ba_{beef} * MF

[d] Ba_{fat} = 10^ [-0.099 $(\log kow)^2$ +1.07 log kow - 3.56] (Equation A-2-21 of EPA 2005 Combustion Guidance)

[e] fat_{beef} is standard percentage as provided in Equation A-2-21 of USEPA 2005 Combustion Guidance)

[f] Ba_{beef} = [(10 ^ log Ba_{fat}) * fat_{beef}] (Equation A-2-23 in Appendix A-2 of USEPA 2005 Combustion Guidance)

[g] 2,3,7,8-Tetrachlorodibenzofuran was not detected once on either property so congener was not included in TEQ

Beef Intake Inputs

Ba_{beef} = bioconcentration factor (day/kg fresh weight tissue)

Ba_{fat} = biotransfer factor in (mg/kg fat)/(mg/day)

Bs = soil bioavailability factor (unitless)

fat_{beef} = percentage of fat in beef

Fi = fraction of plant grown on contaminated soil (unitless)

MF = metabolism factor (unitless)

Qs = quantity of soil eaten by cattle each day (kg/day)

Qpi = quantity of plant eaten by cattle per day (kg dry weight plant/day)

Br = plant-soil bioconcentration factor for produce (unitless)

CTE = central tendency exposure

EPC = exposure point concentration

RME = reasonable maximum exposure

TCDD = tetrachlorodibenzo-p-dioxin

TEF = toxicity equivalency factor

TEQ = toxicity equivalency

EXHIBIT B-3

PROUCL OUTPUT FOR CASSELL AND PARMENTER PROPERTIES AND SKROCH PROPERTY

Exhibit B-3. Cassell and Parmenter Combined Properties ProUCL Output

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TEQ (1,2,3,4,6,7,8-heptachlorodibenzofuran)

General Statistics

Number of Valid Observations	19	Number of Distinct Observations	19
Raw Statistics		Log-transformed Statistics	
Minimum	2.41E-06	Minimum of Log Data	-12.94
Maximum	0.011	Maximum of Log Data	-4.51
Mean	9.90E-04	Mean of log Data	-9.703
Geometric Mean	6.11E-05	SD of log Data	2.274
Median	3.60E-05		
SD	0.00281		
Std. Error of Mean	6.45E-04		
Coefficient of Variation	2.841		
Skewness	3.179		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.4	Shapiro Wilk Test Statistic	0.927
Shapiro Wilk Critical Value	0.901	Shapiro Wilk Critical Value	0.901
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.00211	95% H-UCL	0.0103
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.00211
95% Adjusted-CLT UCL (Chen-1995)	0.00255	97.5% Chebyshev (MVUE) UCL	0.00278
95% Modified-t UCL (Johnson-1978)	0.00219	99% Chebyshev (MVUE) UCL	0.00409
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.249	Data appear Lognormal at 5% Significance Level	
Theta Star	0.00397		
MLE of Mean	9.90E-04		
MLE of Standard Deviation	0.00198		
nu star	9.472		
Approximate Chi Square Value (.05)	3.615	Nonparametric Statistics	
Adjusted Level of Significance	0.0369	95% CLT UCL	0.00205
Adjusted Chi Square Value	3.304	95% Jackknife UCL	0.00211
		95% Standard Bootstrap UCL	0.00201
Anderson-Darling Test Statistic	2.281	95% Bootstrap-t UCL	0.0237
Anderson-Darling 5% Critical Value	0.863	95% Hall's Bootstrap UCL	0.0153
Kolmogorov-Smirnov Test Statistic	0.304	95% Percentile Bootstrap UCL	0.00215
Kolmogorov-Smirnov 5% Critical Value	0.217	95% BCA Bootstrap UCL	0.00248
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.0038
		97.5% Chebyshev(Mean, Sd) UCL	0.00502
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.00741
95% Approximate Gamma UCL (Use when n >= 40)	0.00259		
95% Adjusted Gamma UCL (Use when n < 40)	0.00284		

Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	0.00741

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

TEQ (1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin)

General Statistics			
Number of Valid Observations	19	Number of Distinct Observations	19
Raw Statistics		Log-transformed Statistics	
Minimum	1.96E-05	Minimum of Log Data	-10.84
Maximum	0.071	Maximum of Log Data	-2.645
Mean	0.00633	Mean of log Data	-7.721
Geometric Mean	4.43E-04	SD of log Data	2.27
Median	2.52E-04		
SD	0.0178		
Std. Error of Mean	0.00407		
Coefficient of Variation	2.803		
Skewness	3.284		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.406	Shapiro Wilk Test Statistic	0.934
Shapiro Wilk Critical Value	0.901	Shapiro Wilk Critical Value	0.901
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.0134	95% H-UCL	0.0735
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0152
95% Adjusted-CLT UCL (Chen-1995)	0.0163	97.5% Chebyshev (MVUE) UCL	0.02
95% Modified-t UCL (Johnson-1978)	0.0139	99% Chebyshev (MVUE) UCL	0.0295
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.258	Data appear Lognormal at 5% Significance Level	
Theta Star	0.0246		
MLE of Mean	0.00633		
MLE of Standard Deviation	0.0125		
nu star	9.802		
Approximate Chi Square Value (.05)	3.819	Nonparametric Statistics	
Adjusted Level of Significance	0.0369	95% CLT UCL	0.013
Adjusted Chi Square Value	3.498	95% Jackknife UCL	0.0134
		95% Standard Bootstrap UCL	0.0129
Anderson-Darling Test Statistic	2.015	95% Bootstrap-t UCL	0.114
Anderson-Darling 5% Critical Value	0.859	95% Hall's Bootstrap UCL	0.0695
Kolmogorov-Smirnov Test Statistic	0.268	95% Percentile Bootstrap UCL	0.0138
Kolmogorov-Smirnov 5% Critical Value	0.217	95% BCA Bootstrap UCL	0.0176
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.0241
		97.5% Chebyshev(Mean, Sd) UCL	0.0318
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.0469
95% Approximate Gamma UCL (Use when n >= 40)	0.0163		
95% Adjusted Gamma UCL (Use when n < 40)	0.0178		
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	0.0469

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

TEQ (1,2,3,4,7,8,9-heptachlorodibenzofuran)

General Statistics			
Number of Valid Data	19	Number of Detected Data	14
Number of Distinct Detected Data	14	Number of Non-Detect Data	5
		Percent Non-Detects	26.32%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	4.02E-07	Minimum Detected	-14.73
Maximum Detected	8.00E-04	Maximum Detected	-7.131
Mean of Detected	9.35E-05	Mean of Detected	-11.73
SD of Detected	2.30E-04	SD of Detected	2.204
Minimum Non-Detect	1.09E-07	Minimum Non-Detect	-16.03
Maximum Non-Detect	4.70E-06	Maximum Non-Detect	-12.27
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	12
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	7
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	63.16%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.471	Shapiro Wilk Test Statistic	0.916
5% Shapiro Wilk Critical Value	0.874	5% Shapiro Wilk Critical Value	0.874
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	6.90E-05	Mean	-12.68
SD	2.00E-04	SD	2.588
95% DL/2 (t) UCL	1.48E-04	95% H-Stat (DL/2) UCL	0.00225
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-12.88
		SD in Log Scale	2.767
		Mean in Original Scale	6.89E-05
		SD in Original Scale	2.00E-04
		95% t UCL	1.48E-04
		95% Percentile Bootstrap UCL	1.52E-04
		95% BCA Bootstrap UCL	1.94E-04
		95% H-UCL	0.00466
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.271	Data appear Lognormal at 5% Significance Level	
Theta Star	3.45E-04		
nu star	7.581		
A-D Test Statistic	1.572	Nonparametric Statistics	
5% A-D Critical Value	0.839	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.839	Mean	6.90E-05
5% K-S Critical Value	0.249	SD	1.94E-04
Data not Gamma Distributed at 5% Significance Level		SE of Mean	4.63E-05

		95% KM (t) UCL	1.49E-04
Assuming Gamma Distribution		95% KM (z) UCL	1.45E-04
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.48E-04
Minimum	4.02E-07	95% KM (bootstrap t) UCL	0.00164
Maximum	8.00E-04	95% KM (BCA) UCL	1.54E-04
Mean	6.91E-05	95% KM (Percentile Bootstrap) UCL	1.51E-04
Median	1.81E-06	95% KM (Chebyshev) UCL	2.71E-04
SD	2.00E-04	97.5% KM (Chebyshev) UCL	3.58E-04
k star	0.255	99% KM (Chebyshev) UCL	5.29E-04
Theta star	2.71E-04		
Nu star	9.698	Potential UCLs to Use	
AppChi2	3.754	99% KM (Chebyshev) UCL	5.29E-04
95% Gamma Approximate UCL (Use when n >= 40)	1.79E-04		
95% Adjusted Gamma UCL (Use when n < 40)	1.95E-04		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

TEQ (1,2,3,4,7,8-hexachlorodibenzofuran)

General Statistics

Number of Valid Data	19	Number of Detected Data	12
Number of Distinct Detected Data	12	Number of Non-Detect Data	7
		Percent Non-Detects	36.84%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	5.12E-07	Minimum Detected	-14.48
Maximum Detected	2.10E-04	Maximum Detected	-8.468
Mean of Detected	2.91E-05	Mean of Detected	-12.31
SD of Detected	6.42E-05	SD of Detected	1.876
Minimum Non-Detect	3.07E-08	Minimum Non-Detect	-17.3
Maximum Non-Detect	3.00E-06	Maximum Non-Detect	-12.72

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	13
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	6
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	68.42%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.515	Shapiro Wilk Test Statistic	0.885
5% Shapiro Wilk Critical Value	0.859	5% Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.85E-05	Mean	-13.74
SD	5.22E-05	SD	2.581
95% DL/2 (t) UCL	3.93E-05	95% H-Stat (DL/2) UCL	7.58E-04

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-13.83
		SD in Log Scale	2.533
		Mean in Original Scale	1.84E-05
		SD in Original Scale	5.22E-05

		95% t UCL	3.92E-05
		95% Percentile Bootstrap UCL	4.01E-05
		95% BCA Bootstrap UCL	5.12E-05
		95% H-UCL	5.52E-04

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.325	Data appear Lognormal at 5% Significance Level	
Theta Star	8.98E-05		
nu star	7.789		
A-D Test Statistic	1.421	Nonparametric Statistics	
5% A-D Critical Value	0.812	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.812	Mean	1.86E-05
5% K-S Critical Value	0.263	SD	5.08E-05
Data not Gamma Distributed at 5% Significance Level		SE of Mean	1.22E-05
		95% KM (t) UCL	3.97E-05
Assuming Gamma Distribution		95% KM (z) UCL	3.86E-05
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	3.93E-05
Minimum	5.12E-07	95% KM (bootstrap t) UCL	3.79E-04
Maximum	2.10E-04	95% KM (BCA) UCL	4.08E-05
Mean	1.88E-05	95% KM (Percentile Bootstrap) UCL	4.04E-05
Median	1.00E-06	95% KM (Chebyshev) UCL	7.16E-05
SD	5.21E-05	97.5% KM (Chebyshev) UCL	9.46E-05
k star	0.322	99% KM (Chebyshev) UCL	1.40E-04
Theta star	5.83E-05		
Nu star	12.24	Potential UCLs to Use	
AppChi2	5.384	99% KM (Chebyshev) UCL	1.40E-04
95% Gamma Approximate UCL (Use when n >= 40)	4.27E-05		
95% Adjusted Gamma UCL (Use when n < 40)	4.60E-05		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

TEQ (1,2,3,4,7,8-hexachlorodibenzo-p-dioxin)

General Statistics

Number of Valid Data	19	Number of Detected Data	16
Number of Distinct Detected Data	16	Number of Non-Detect Data	3
		Percent Non-Detects	15.79%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.37E-07	Minimum Detected	-15.8
Maximum Detected	3.60E-04	Maximum Detected	-7.929
Mean of Detected	4.73E-05	Mean of Detected	-12.25
SD of Detected	1.11E-04	SD of Detected	2.275
Minimum Non-Detect	1.84E-07	Minimum Non-Detect	-15.51
Maximum Non-Detect	5.00E-06	Maximum Non-Detect	-12.21

Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	11
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	8
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	57.89%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	

Shapiro Wilk Test Statistic	0.471	Shapiro Wilk Test Statistic	0.956
5% Shapiro Wilk Critical Value	0.887	5% Shapiro Wilk Critical Value	0.887
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.00E-05	Mean	-12.68
SD	1.03E-04	SD	2.381
95% DL/2 (t) UCL	8.08E-05	95% H-Stat (DL/2) UCL	8.49E-04
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-12.76
		SD in Log Scale	2.435
		Mean in Original Scale	3.99E-05
		SD in Original Scale	1.03E-04
		95% t UCL	8.07E-05
		95% Percentile Bootstrap UCL	7.81E-05
		95% BCA Bootstrap UCL	9.51E-05
		95% H-UCL	9.98E-04
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.286	Data appear Lognormal at 5% Significance Level	
Theta Star	1.65E-04		
nu star	9.147		
A-D Test Statistic	1.296	Nonparametric Statistics	
5% A-D Critical Value	0.838	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.838	Mean	3.99E-05
5% K-S Critical Value	0.233	SD	9.99E-05
Data not Gamma Distributed at 5% Significance Level		SE of Mean	2.37E-05
		95% KM (t) UCL	8.09E-05
Assuming Gamma Distribution		95% KM (z) UCL	7.88E-05
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	8.07E-05
Minimum	1.37E-07	95% KM (bootstrap t) UCL	4.94E-04
Maximum	3.60E-04	95% KM (BCA) UCL	8.59E-05
Mean	4.00E-05	95% KM (Percentile Bootstrap) UCL	7.99E-05
Median	2.22E-06	95% KM (Chebyshev) UCL	1.43E-04
SD	1.03E-04	97.5% KM (Chebyshev) UCL	1.88E-04
k star	0.281	99% KM (Chebyshev) UCL	2.75E-04
Theta star	1.42E-04		
Nu star	10.67	Potential UCLs to Use	
AppChi2	4.368	99% KM (Chebyshev) UCL	2.75E-04
95% Gamma Approximate UCL (Use when n >= 40)	9.77E-05		
95% Adjusted Gamma UCL (Use when n < 40)	1.06E-04		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

TEQ (1,2,3,6,7,8-hexachlorodibenzofuran)

General Statistics

Number of Valid Data	19	Number of Detected Data	14
Number of Distinct Detected Data	14	Number of Non-Detect Data	5
		Percent Non-Detects	26.32%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	4.48E-07	Minimum Detected	-14.62
Maximum Detected	1.20E-04	Maximum Detected	-9.028
Mean of Detected	1.33E-05	Mean of Detected	-13
SD of Detected	3.28E-05	SD of Detected	1.668
Minimum Non-Detect	2.74E-08	Minimum Non-Detect	-17.41
Maximum Non-Detect	3.40E-06	Maximum Non-Detect	-12.59

Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	15
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	4
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	78.95%

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.451	Shapiro Wilk Test Statistic	0.834
5% Shapiro Wilk Critical Value	0.874	5% Shapiro Wilk Critical Value	0.874
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	9.87E-06	Mean	-13.84
SD	2.85E-05	SD	2.229
95% DL/2 (t) UCL	2.12E-05	95% H-Stat (DL/2) UCL	1.35E-04
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-13.83
		SD in Log Scale	2.057
		Mean in Original Scale	9.81E-06
		SD in Original Scale	2.85E-05
		95% t UCL	2.12E-05
		95% Percentile Bootstrap UCL	2.20E-05
		95% BCA Bootstrap UCL	2.87E-05
		95% H-UCL	6.75E-05
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.342	Data do not follow a Discernable Distribution (0.05)	
Theta Star	3.87E-05		
nu star	9.587		
A-D Test Statistic	1.999	Nonparametric Statistics	
5% A-D Critical Value	0.817	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.817	Mean	9.91E-06
5% K-S Critical Value	0.245	SD	2.77E-05
Data not Gamma Distributed at 5% Significance Level		SE of Mean	6.60E-06
		95% KM (t) UCL	2.14E-05
Assuming Gamma Distribution		95% KM (z) UCL	2.08E-05
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.12E-05
Minimum	4.48E-07	95% KM (bootstrap t) UCL	2.05E-04
Maximum	1.20E-04	95% KM (BCA) UCL	2.26E-05
Mean	1.00E-05	95% KM (Percentile Bootstrap) UCL	2.21E-05
Median	1.00E-06	95% KM (Chebyshev) UCL	3.87E-05
SD	2.85E-05	97.5% KM (Chebyshev) UCL	5.11E-05
k star	0.361	99% KM (Chebyshev) UCL	7.56E-05
Theta star	2.78E-05		
Nu star	13.73	Potential UCLs to Use	
AppChi2	6.388	99% KM (Chebyshev) UCL	7.56E-05

95% Gamma Approximate UCL (Use when n >= 40)	2.16E-05
95% Adjusted Gamma UCL (Use when n < 40)	2.31E-05

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

TEQ (1,2,3,6,7,8-hexachlorodibenzo-p-dioxin)

General Statistics

Number of Valid Data	19	Number of Detected Data	16
Number of Distinct Detected Data	16	Number of Non-Detect Data	3
		Percent Non-Detects	15.79%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	7.06E-07	Minimum Detected	-14.16
Maximum Detected	0.002	Maximum Detected	-6.215
Mean of Detected	2.39E-04	Mean of Detected	-10.61
SD of Detected	5.85E-04	SD of Detected	2.089
Minimum Non-Detect	5.57E-08	Minimum Non-Detect	-16.7
Maximum Non-Detect	4.50E-06	Maximum Non-Detect	-12.31

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	5
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	14
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	26.32%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.457	Shapiro Wilk Test Statistic	0.918
5% Shapiro Wilk Critical Value	0.887	5% Shapiro Wilk Critical Value	0.887
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	2.01E-04	Mean	-11.44
SD	5.41E-04	SD	2.864
95% DL/2 (t) UCL	4.17E-04	95% H-Stat (DL/2) UCL	0.0332

Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	7.39E-05	Mean in Log Scale	-11.31
SD	6.41E-04	SD in Log Scale	2.54
95% MLE (t) UCL	3.29E-04	Mean in Original Scale	2.01E-04
95% MLE (Tiku) UCL	3.32E-04	SD in Original Scale	5.41E-04
		95% t UCL	4.17E-04
		95% Percentile Bootstrap UCL	4.19E-04
		95% BCA Bootstrap UCL	5.18E-04
		95% H UCL	0.00706

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.288	Data appear Lognormal at 5% Significance Level
Theta Star	8.28E-04	
nu star	9.226	

A-D Test Statistic	1.849	Nonparametric Statistics
5% A-D Critical Value	0.837	Kaplan-Meier (KM) Method

K-S Test Statistic	0.837	Mean	2.01E-04
5% K-S Critical Value	0.233	SD	5.27E-04
Data not Gamma Distributed at 5% Significance Level		SE of Mean	1.25E-04
		95% KM (t) UCL	4.18E-04
Assuming Gamma Distribution		95% KM (z) UCL	4.07E-04
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	4.16E-04
Minimum	7.06E-07	95% KM (bootstrap t) UCL	0.00345
Maximum	0.002	95% KM (BCA) UCL	4.21E-04
Mean	2.01E-04	95% KM (Percentile Bootstrap) UCL	4.20E-04
Median	7.82E-06	95% KM (Chebyshev) UCL	7.45E-04
SD	5.41E-04	97.5% KM (Chebyshev) UCL	9.81E-04
k star	0.262	99% KM (Chebyshev) UCL	0.00144
Theta star	7.68E-04		
Nu star	9.96	Potential UCLs to Use	
AppChi2	3.917	99% KM (Chebyshev) UCL	0.00144
95% Gamma Approximate UCL (Use when n >= 40)	5.12E-04		
95% Adjusted Gamma UCL (Use when n < 40)	5.58E-04		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

TEQ (1,2,3,7,8,9-hexachlorodibenzofuran)

General Statistics

Number of Valid Data	19	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	19
		Percent Non-Detects	100.00%

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable TEQ (1,2,3,7,8,9-hexachlorodibenzofuran) was not processed!

TEQ (1,2,3,7,8,9-hexachlorodibenzo-p-dioxin)

General Statistics

Number of Valid Data	19	Number of Detected Data	17
Number of Distinct Detected Data	17	Number of Non-Detect Data	2
		Percent Non-Detects	10.53%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	5.81E-07	Minimum Detected	-14.36
Maximum Detected	7.50E-04	Maximum Detected	-7.195
Mean of Detected	9.48E-05	Mean of Detected	-11.23
SD of Detected	2.25E-04	SD of Detected	1.951
Minimum Non-Detect	8.47E-08	Minimum Non-Detect	-16.28
Maximum Non-Detect	4.80E-06	Maximum Non-Detect	-12.25

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	7
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	12
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	36.84%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.457	Shapiro Wilk Test Statistic	0.943
5% Shapiro Wilk Critical Value	0.892	5% Shapiro Wilk Critical Value	0.892
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	8.49E-05	Mean	-11.62
SD	2.14E-04	SD	2.285
95% DL/2 (t) UCL	1.70E-04	95% H-Stat (DL/2) UCL	0.00159
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	3.12E-06	Mean in Log Scale	-11.6
SD	2.81E-04	SD in Log Scale	2.187
95% MLE (t) UCL	1.15E-04	Mean in Original Scale	8.49E-05
95% MLE (Tiku) UCL	1.26E-04	SD in Original Scale	2.14E-04
		95% t UCL	1.70E-04
		95% Percentile Bootstrap UCL	1.65E-04
		95% BCA Bootstrap UCL	2.05E-04
		95% H UCL	0.00106
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.322	Data appear Lognormal at 5% Significance Level	
Theta Star	2.94E-04		
nu star	10.95		
A-D Test Statistic	1.684	Nonparametric Statistics	
5% A-D Critical Value	0.832	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.832	Mean	8.50E-05
5% K-S Critical Value	0.225	SD	2.08E-04
Data not Gamma Distributed at 5% Significance Level		SE of Mean	4.92E-05
		95% KM (t) UCL	1.70E-04
Assuming Gamma Distribution		95% KM (z) UCL	1.66E-04
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.70E-04
Minimum	5.81E-07	95% KM (bootstrap t) UCL	0.00105
Maximum	7.50E-04	95% KM (BCA) UCL	1.85E-04
Mean	8.49E-05	95% KM (Percentile Bootstrap) UCL	1.63E-04
Median	6.72E-06	95% KM (Chebyshev) UCL	3.00E-04
SD	2.14E-04	97.5% KM (Chebyshev) UCL	3.92E-04
k star	0.305	99% KM (Chebyshev) UCL	5.75E-04
Theta star	2.78E-04		
Nu star	11.6	Potential UCLs to Use	
AppChi2	4.965	99% KM (Chebyshev) UCL	5.75E-04
95% Gamma Approximate UCL (Use when n >= 40)	1.98E-04		
95% Adjusted Gamma UCL (Use when n < 40)	2.15E-04		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

TEQ (1,2,3,7,8-pentachlorodibenzofuran)

General Statistics

Number of Valid Data	19	Number of Detected Data	6
Number of Distinct Detected Data	6	Number of Non-Detect Data	13
		Percent Non-Detects	68.42%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.13E-07	Minimum Detected	-16
Maximum Detected	3.31E-06	Maximum Detected	-12.62
Mean of Detected	7.45E-07	Mean of Detected	-15.02
SD of Detected	1.27E-06	SD of Detected	1.317
Minimum Non-Detect	4.09E-08	Minimum Non-Detect	-17.01
Maximum Non-Detect	4.20E-06	Maximum Non-Detect	-12.38

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	19
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 6 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.593	Shapiro Wilk Test Statistic	0.78
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.58E-07	Mean	-15.87
SD	8.86E-07	SD	1.49
95% DL/2 (t) UCL	8.10E-07	95% H-Stat (DL/2) UCL	1.27E-06
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-16.93
		SD in Log Scale	1.559
		Mean in Original Scale	2.49E-07
		SD in Original Scale	7.53E-07
		95% t UCL	5.49E-07
		95% Percentile Bootstrap UCL	5.76E-07
		95% BCA Bootstrap UCL	7.92E-07
		95% H-UCL	5.40E-07

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.447	Data do not follow a Discernable Distribution (0.05)	
Theta Star	1.67E-06		
nu star	5.36		
A-D Test Statistic	0.919	Nonparametric Statistics	
5% A-D Critical Value	0.726	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.726	Mean	3.28E-07
5% K-S Critical Value	0.345	SD	7.32E-07
Data not Gamma Distributed at 5% Significance Level		SE of Mean	1.89E-07
		95% KM (t) UCL	6.56E-07
Assuming Gamma Distribution		95% KM (z) UCL	6.39E-07

Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	6.25E-07
Minimum	1.13E-07	95% KM (bootstrap t) UCL	7.46E-06
Maximum	3.31E-06	95% KM (BCA) UCL	7.29E-07
Mean	9.19E-07	95% KM (Percentile Bootstrap) UCL	6.92E-07
Median	1.00E-06	95% KM (Chebyshev) UCL	1.15E-06
SD	6.80E-07	97.5% KM (Chebyshev) UCL	1.51E-06
k star	1.588	99% KM (Chebyshev) UCL	2.21E-06
Theta star	5.79E-07		
Nu star	60.33	Potential UCLs to Use	
AppChi2	43.46	95% KM (BCA) UCL	7.29E-07
95% Gamma Approximate UCL (Use when n >= 40)	1.28E-06		
95% Adjusted Gamma UCL (Use when n < 40)	1.31E-06		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

TEQ (1,2,3,7,8-pentachlorodibenzo-p-dioxin)

General Statistics

Number of Valid Data	19	Number of Detected Data	14
Number of Distinct Detected Data	14	Number of Non-Detect Data	5
		Percent Non-Detects	26.32%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.45E-07	Minimum Detected	-15.75
Maximum Detected	1.10E-04	Maximum Detected	-9.115
Mean of Detected	1.54E-05	Mean of Detected	-12.87
SD of Detected	3.37E-05	SD of Detected	1.862
Minimum Non-Detect	5.30E-08	Minimum Non-Detect	-16.75
Maximum Non-Detect	4.00E-06	Maximum Non-Detect	-12.43

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	15
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	4
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	78.95%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.503	Shapiro Wilk Test Statistic	0.925
5% Shapiro Wilk Critical Value	0.874	5% Shapiro Wilk Critical Value	0.874
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.15E-05	Mean	-13.7
SD	2.95E-05	SD	2.284
95% DL/2 (t) UCL	2.32E-05	95% H-Stat (DL/2) UCL	1.97E-04
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-13.8
		SD in Log Scale	2.312
		Mean in Original Scale	1.14E-05
		SD in Original Scale	2.95E-05
		95% t UCL	2.31E-05
		95% Percentile Bootstrap UCL	2.31E-05

		95% BCA Bootstrap UCL	2.75E-05
		95% H-UCL	2.02E-04

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.34	Data appear Lognormal at 5% Significance Level	
Theta Star	4.54E-05		
nu star	9.526		
A-D Test Statistic	1.464	Nonparametric Statistics	
5% A-D Critical Value	0.818	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.818	Mean	1.15E-05
5% K-S Critical Value	0.246	SD	2.87E-05
Data not Gamma Distributed at 5% Significance Level		SE of Mean	6.83E-06
		95% KM (t) UCL	2.33E-05
Assuming Gamma Distribution		95% KM (z) UCL	2.27E-05
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.31E-05
Minimum	1.45E-07	95% KM (bootstrap t) UCL	1.44E-04
Maximum	1.10E-04	95% KM (BCA) UCL	2.42E-05
Mean	1.16E-05	95% KM (Percentile Bootstrap) UCL	2.34E-05
Median	1.00E-06	95% KM (Chebyshev) UCL	4.12E-05
SD	2.94E-05	97.5% KM (Chebyshev) UCL	5.41E-05
k star	0.354	99% KM (Chebyshev) UCL	7.94E-05
Theta star	3.29E-05		
Nu star	13.44	Potential UCLs to Use	
AppChi2	6.191	99% KM (Chebyshev) UCL	7.94E-05
95% Gamma Approximate UCL (Use when n >= 40)	2.53E-05		
95% Adjusted Gamma UCL (Use when n < 40)	2.71E-05		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

TEQ (2,3,4,6,7,8-hexachlorodibenzofuran)

General Statistics			
Number of Valid Data	19	Number of Detected Data	15
Number of Distinct Detected Data	15	Number of Non-Detect Data	4
		Percent Non-Detects	21.05%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.05E-07	Minimum Detected	-16.07
Maximum Detected	2.40E-04	Maximum Detected	-8.335
Mean of Detected	2.65E-05	Mean of Detected	-12.69
SD of Detected	6.62E-05	SD of Detected	1.993
Minimum Non-Detect	3.14E-08	Minimum Non-Detect	-17.28
Maximum Non-Detect	3.20E-06	Maximum Non-Detect	-12.65
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	12
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	7
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	63.16%
UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.455	Shapiro Wilk Test Statistic	0.927
5% Shapiro Wilk Critical Value	0.881	5% Shapiro Wilk Critical Value	0.881

Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	2.10E-05	Mean	-13.32
SD	5.93E-05	SD	2.296
95% DL/2 (t) UCL	4.46E-05	95% H-Stat (DL/2) UCL	3.04E-04
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-13.45
		SD in Log Scale	2.37
		Mean in Original Scale	2.09E-05
		SD in Original Scale	5.94E-05
		95% t UCL	4.45E-05
		95% Percentile Bootstrap UCL	4.59E-05
		95% BCA Bootstrap UCL	5.86E-05
		95% H-UCL	3.73E-04
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.299	Data appear Lognormal at 5% Significance Level	
Theta Star	8.84E-05		
nu star	8.972		
A-D Test Statistic	1.779	Nonparametric Statistics	
5% A-D Critical Value	0.832	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.832	Mean	2.09E-05
5% K-S Critical Value	0.239	SD	5.78E-05
Data not Gamma Distributed at 5% Significance Level		SE of Mean	1.37E-05
		95% KM (t) UCL	4.47E-05
Assuming Gamma Distribution		95% KM (z) UCL	4.35E-05
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	4.45E-05
Minimum	1.05E-07	95% KM (bootstrap t) UCL	4.30E-04
Maximum	2.40E-04	95% KM (BCA) UCL	4.60E-05
Mean	2.11E-05	95% KM (Percentile Bootstrap) UCL	4.60E-05
Median	1.22E-06	95% KM (Chebyshev) UCL	8.08E-05
SD	5.93E-05	97.5% KM (Chebyshev) UCL	1.07E-04
k star	0.302	99% KM (Chebyshev) UCL	1.57E-04
Theta star	6.99E-05		
Nu star	11.47	Potential UCLs to Use	
AppChi2	4.881	99% KM (Chebyshev) UCL	1.57E-04
95% Gamma Approximate UCL (Use when n >= 40)	4.96E-05		
95% Adjusted Gamma UCL (Use when n < 40)	5.37E-05		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

TEQ (2,3,4,7,8-pentachlorodibenzofuran)

General Statistics			
Number of Valid Data	19	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	15
		Percent Non-Detects	78.95%
Raw Statistics		Log-transformed Statistics	

Minimum Detected	1.01E-07	Minimum Detected	-16.11
Maximum Detected	3.07E-06	Maximum Detected	-12.69
Mean of Detected	9.48E-07	Mean of Detected	-14.69
SD of Detected	1.42E-06	SD of Detected	1.435
Minimum Non-Detect	4.35E-08	Minimum Non-Detect	-16.95
Maximum Non-Detect	4.10E-06	Maximum Non-Detect	-12.4

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	19
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.693	Shapiro Wilk Test Statistic	0.902
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.03E-07	Mean	-16.07
SD	8.20E-07	SD	1.504
95% DL/2 (t) UCL	7.30E-07	95% H-Stat (DL/2) UCL	1.08E-06
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-18.32
		SD in Log Scale	2.031
		Mean in Original Scale	2.03E-07
		SD in Original Scale	7.01E-07
		95% t UCL	4.82E-07
		95% Percentile Bootstrap UCL	5.20E-07
		95% BCA Bootstrap UCL	6.98E-07
		95% H-UCL	6.81E-07
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.349	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	2.72E-06		
nu star	2.79		
A-D Test Statistic	0.535	Nonparametric Statistics	
5% A-D Critical Value	0.671	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.671	Mean	2.91E-07
5% K-S Critical Value	0.405	SD	6.77E-07
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	1.84E-07
		95% KM (t) UCL	6.10E-07
Assuming Gamma Distribution		95% KM (z) UCL	5.94E-07
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	5.40E-07
Minimum	1.01E-07	95% KM (bootstrap t) UCL	1.85E-06
Maximum	3.07E-06	95% KM (BCA) UCL	3.07E-06
Mean	9.89E-07	95% KM (Percentile Bootstrap) UCL	7.88E-07
Median	1.00E-06	95% KM (Chebyshev) UCL	1.09E-06

SD	5.79E-07	97.5% KM (Chebyshev) UCL	1.44E-06
k star	2.587	99% KM (Chebyshev) UCL	2.13E-06
Theta star	3.82E-07		
Nu star	98.32	Potential UCLs to Use	
AppChi2	76.45	95% KM (t) UCL	6.10E-07
95% Gamma Approximate UCL (Use when n >= 40)	1.27E-06		
95% Adjusted Gamma UCL (Use when n < 40)	N/A		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

TEQ (2,3,7,8-tetrachlorodibenzofuran)

General Statistics

Number of Valid Data	19	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	19
		Percent Non-Detects	100.00%

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable TEQ (2,3,7,8-tetrachlorodibenzofuran) was not processed!

TEQ (2,3,7,8-tetrachlorodibenzo-p-dioxin)

General Statistics

Number of Valid Data	19	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	15
		Percent Non-Detects	78.95%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	2.90E-07	Minimum Detected	-15.05
Maximum Detected	4.95E-06	Maximum Detected	-12.22
Mean of Detected	1.60E-06	Mean of Detected	-14.05
SD of Detected	2.25E-06	SD of Detected	1.322
Minimum Non-Detect	2.21E-08	Minimum Non-Detect	-17.63
Maximum Non-Detect	8.20E-06	Maximum Non-Detect	-11.71

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	19
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only | Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.717	Shapiro Wilk Test Statistic	0.858
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	6.78E-07	Mean	-15.91
SD	1.42E-06	SD	1.797
95% DL/2 (t) UCL	1.24E-06	95% H-Stat (DL/2) UCL	3.23E-06
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-17.6
		SD in Log Scale	1.974
		Mean in Original Scale	3.45E-07
		SD in Original Scale	1.13E-06
		95% t UCL	7.96E-07
		95% Percentile Bootstrap UCL	8.34E-07
		95% BCA Bootstrap UCL	1.16E-06
		95% H-UCL	1.12E-06
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.375	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	4.28E-06		
nu star	2.997		
A-D Test Statistic	0.52	Nonparametric Statistics	
5% A-D Critical Value	0.669	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.669	Mean	5.84E-07
5% K-S Critical Value	0.404	SD	1.07E-06
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	2.91E-07
		95% KM (t) UCL	1.09E-06
Assuming Gamma Distribution		95% KM (z) UCL	1.06E-06
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.02E-06
Minimum	2.90E-07	95% KM (bootstrap t) UCL	2.83E-06
Maximum	4.95E-06	95% KM (BCA) UCL	4.95E-06
Mean	1.13E-06	95% KM (Percentile Bootstrap) UCL	1.46E-06
Median	1.00E-06	95% KM (Chebyshev) UCL	1.85E-06
SD	9.51E-07	97.5% KM (Chebyshev) UCL	2.40E-06
k star	2.649	99% KM (Chebyshev) UCL	3.48E-06
Theta star	4.26E-07		
Nu star	100.7	Potential UCLs to Use	
AppChi2	78.51	95% KM (t) UCL	1.09E-06
95% Gamma Approximate UCL (Use when n >= 40)	1.45E-06		
95% Adjusted Gamma UCL (Use when n < 40)	N/A		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

TEQ (octachlorodibenzofuran)

General Statistics

Number of Valid Observations	19	Number of Distinct Observations	19
Raw Statistics		Log-transformed Statistics	

Minimum	8.32E-06	Minimum of Log Data	-11.7
Maximum	0.097	Maximum of Log Data	-2.333
Mean	0.00656	Mean of log Data	-8.428
Geometric Mean	2.19E-04	SD of log Data	2.449
Median	1.12E-04		
SD	0.0225		
Std. Error of Mean	0.00515		
Coefficient of Variation	3.422		
Skewness	4.053		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.329	Shapiro Wilk Test Statistic	0.924
Shapiro Wilk Critical Value	0.901	Shapiro Wilk Critical Value	0.901
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.0155	95% H-UCL	0.0815
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0109
95% Adjusted-CLT UCL (Chen-1995)	0.0202	97.5% Chebyshev (MVUE) UCL	0.0145
95% Modified-t UCL (Johnson-1978)	0.0163	99% Chebyshev (MVUE) UCL	0.0214
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.215	Data appear Lognormal at 5% Significance Level	
Theta Star	0.0305		
MLE of Mean	0.00656		
MLE of Standard Deviation	0.0141		
nu star	8.183		
Approximate Chi Square Value (.05)	2.842	Nonparametric Statistics	
Adjusted Level of Significance	0.0369	95% CLT UCL	0.015
Adjusted Chi Square Value	2.573	95% Jackknife UCL	0.0155
		95% Standard Bootstrap UCL	0.0144
Anderson-Darling Test Statistic	2.545	95% Bootstrap-t UCL	0.321
Anderson-Darling 5% Critical Value	0.881	95% Hall's Bootstrap UCL	0.188
Kolmogorov-Smirnov Test Statistic	0.316	95% Percentile Bootstrap UCL	0.0166
Kolmogorov-Smirnov 5% Critical Value	0.219	95% BCA Bootstrap UCL	0.0218
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.029
		97.5% Chebyshev(Mean, Sd) UCL	0.0387
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.0578
95% Approximate Gamma UCL (Use when n >= 40)	0.0189		
95% Adjusted Gamma UCL (Use when n < 40)	0.0209		
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	0.0578

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

TEQ (octachlorodibenzo-p-dioxin)

General Statistics

Number of Valid Observations	19	Number of Distinct Observations	19
Raw Statistics		Log-transformed Statistics	
Minimum	1.29E-04	Minimum of Log Data	-8.956
Maximum	0.49	Maximum of Log Data	-0.713

Mean	0.0444	Mean of log Data	-5.822
Geometric Mean	0.00296	SD of log Data	2.291
Median	0.00152		
SD	0.124		
Std. Error of Mean	0.0285		
Coefficient of Variation	2.795		
Skewness	3.216		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.407	Shapiro Wilk Test Statistic	0.935
Shapiro Wilk Critical Value	0.901	Shapiro Wilk Critical Value	0.901
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.0938	95% H-UCL	0.538
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.106
95% Adjusted-CLT UCL (Chen-1995)	0.114	97.5% Chebyshev (MVUE) UCL	0.14
95% Modified-t UCL (Johnson-1978)	0.0973	99% Chebyshev (MVUE) UCL	0.206
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.255	Data appear Lognormal at 5% Significance Level	
Theta Star	0.174		
MLE of Mean	0.0444		
MLE of Standard Deviation	0.088		
nu star	9.672		
Approximate Chi Square Value (.05)	3.738	Nonparametric Statistics	
Adjusted Level of Significance	0.0369	95% CLT UCL	0.0912
Adjusted Chi Square Value	3.421	95% Jackknife UCL	0.0938
		95% Standard Bootstrap UCL	0.09
Anderson-Darling Test Statistic	2.026	95% Bootstrap-t UCL	0.825
Anderson-Darling 5% Critical Value	0.861	95% Hall's Bootstrap UCL	0.591
Kolmogorov-Smirnov Test Statistic	0.269	95% Percentile Bootstrap UCL	0.0958
Kolmogorov-Smirnov 5% Critical Value	0.217	95% BCA Bootstrap UCL	0.11
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.168
		97.5% Chebyshev(Mean, Sd) UCL	0.222
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.328
95% Approximate Gamma UCL (Use when n >= 40)	0.115		
95% Adjusted Gamma UCL (Use when n < 40)	0.126		
Potential UCL to Use		Use 99% Chebyshev (Mean, Sd) UCL	0.328

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Exhibit B-3. Skroch Property ProUCL Output

General UCL Statistics for Data Sets with Non-Detects

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Skroch dioxins (1,2,3,4,6,7,8-heptachlorodibenzofuran)

General Statistics

Number of Valid Observations	12	Number of Distinct Observations	12
Raw Statistics		Log-transformed Statistics	
Minimum	7.18E-05	Minimum of Log Data	-9.542
Maximum	0.003	Maximum of Log Data	-5.809
Mean	4.86E-04	Mean of log Data	-8.474
Geometric Mean	2.09E-04	SD of log Data	1.157
Median	1.44E-04		
SD	8.68E-04		
Std. Error of Mean	2.50E-04		
Coefficient of Variation	1.784		
Skewness	2.691		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.537	Shapiro Wilk Test Statistic	0.811
Shapiro Wilk Critical Value	0.859	Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	9.36E-04	95% H-UCL	0.00125
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	9.68E-04
95% Adjusted-CLT UCL (Chen-1995)	0.00111	97.5% Chebyshev (MVUE) UCL	0.00122
95% Modified-t UCL (Johnson-1978)	9.69E-04	99% Chebyshev (MVUE) UCL	0.00173
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.59	Data do not follow a Discernable Distribution (0.05)	
Theta Star	8.24E-04		
MLE of Mean	4.86E-04		
MLE of Standard Deviation	6.33E-04		
nu star	14.17		
Approximate Chi Square Value (.05)	6.688	Nonparametric Statistics	
Adjusted Level of Significance	0.029	95% CLT UCL	8.98E-04
Adjusted Chi Square Value	5.921	95% Jackknife UCL	9.36E-04
		95% Standard Bootstrap UCL	8.83E-04
Anderson-Darling Test Statistic	1.598	95% Bootstrap-t UCL	0.00473
Anderson-Darling 5% Critical Value	0.768	95% Hall's Bootstrap UCL	0.0031
Kolmogorov-Smirnov Test Statistic	0.314	95% Percentile Bootstrap UCL	9.34E-04
Kolmogorov-Smirnov 5% Critical Value	0.255	95% BCA Bootstrap UCL	0.00114
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.00158
		97.5% Chebyshev(Mean, Sd) UCL	0.00205
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.00298
95% Approximate Gamma UCL (Use when n >= 40)	0.00103		
95% Adjusted Gamma UCL (Use when n < 40)	0.00116		

Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	0.00158

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Skroch dioxins (1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin)

General Statistics			
Number of Valid Observations	12	Number of Distinct Observations	12
Raw Statistics		Log-transformed Statistics	
Minimum	5.62E-04	Minimum of Log Data	-7.484
Maximum	0.0413	Maximum of Log Data	-3.187
Mean	0.00545	Mean of log Data	-6.368
Geometric Mean	0.00172	SD of log Data	1.309
Median	0.00113		
SD	0.0118		
Std. Error of Mean	0.0034		
Coefficient of Variation	2.163		
Skewness	3.039		
Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.474	Shapiro Wilk Test Statistic	0.777
Shapiro Wilk Critical Value	0.859	Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.0116	95% H-UCL	0.0161
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0101
95% Adjusted-CLT UCL (Chen-1995)	0.0142	97.5% Chebyshev (MVUE) UCL	0.0129
95% Modified-t UCL (Johnson-1978)	0.0121	99% Chebyshev (MVUE) UCL	0.0184
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.463	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.0118		
MLE of Mean	0.00545		
MLE of Standard Deviation	0.00801		
nu star	11.11		
Approximate Chi Square Value (.05)	4.644	Nonparametric Statistics	
Adjusted Level of Significance	0.029	95% CLT UCL	0.011
Adjusted Chi Square Value	4.025	95% Jackknife UCL	0.0116
		95% Standard Bootstrap UCL	0.0108
Anderson-Darling Test Statistic	1.894	95% Bootstrap-t UCL	0.106
Anderson-Darling 5% Critical Value	0.782	95% Hall's Bootstrap UCL	0.0483
Kolmogorov-Smirnov Test Statistic	0.378	95% Percentile Bootstrap UCL	0.0113
Kolmogorov-Smirnov 5% Critical Value	0.258	95% BCA Bootstrap UCL	0.0146
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.0203
		97.5% Chebyshev(Mean, Sd) UCL	0.0267
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.0393
95% Approximate Gamma UCL (Use when n >= 40)	0.013		
95% Adjusted Gamma UCL (Use when n < 40)	0.015		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	0.0203

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Skroch dioxins (1,2,3,4,7,8,9-heptachlorodibenzofuran)

General Statistics

Number of Valid Observations	12	Number of Distinct Observations	12

Raw Statistics		Log-transformed Statistics	
Minimum	2.68E-06	Minimum of Log Data	-12.83
Maximum	2.57E-04	Maximum of Log Data	-8.266
Mean	3.78E-05	Mean of log Data	-11.28
Geometric Mean	1.27E-05	SD of log Data	1.336
Median	9.16E-06		
SD	7.47E-05		
Std. Error of Mean	2.16E-05		
Coefficient of Variation	N/A		
Skewness	2.772		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.521	Shapiro Wilk Test Statistic	0.855
Shapiro Wilk Critical Value	0.859	Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	7.65E-05	95% H-UCL	1.30E-04
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	7.78E-05
95% Adjusted-CLT UCL (Chen-1995)	9.17E-05	97.5% Chebyshev (MVUE) UCL	9.96E-05
95% Modified-t UCL (Johnson-1978)	7.94E-05	99% Chebyshev (MVUE) UCL	1.42E-04

Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.483	Data do not follow a Discernable Distribution (0.05)	
Theta Star	7.82E-05		
MLE of Mean	3.78E-05		
MLE of Standard Deviation	5.44E-05		
nu star	11.59		
Approximate Chi Square Value (.05)	4.961	Nonparametric Statistics	
Adjusted Level of Significance	0.029	95% CLT UCL	7.33E-05
Adjusted Chi Square Value	4.318	95% Jackknife UCL	7.65E-05
		95% Standard Bootstrap UCL	7.12E-05
Anderson-Darling Test Statistic	1.511	95% Bootstrap-t UCL	4.75E-04
Anderson-Darling 5% Critical Value	0.78	95% Hall's Bootstrap UCL	2.78E-04
Kolmogorov-Smirnov Test Statistic	0.323	95% Percentile Bootstrap UCL	7.48E-05
Kolmogorov-Smirnov 5% Critical Value	0.258	95% BCA Bootstrap UCL	1.01E-04
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	1.32E-04
		97.5% Chebyshev(Mean, Sd) UCL	1.73E-04
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	2.52E-04
95% Approximate Gamma UCL (Use when n >= 40)	8.83E-05		
95% Adjusted Gamma UCL (Use when n < 40)	1.01E-04		

Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	1.32E-04

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Skroch dioxins (1,2,3,4,7,8-hexachlorodibenzofuran)

General Statistics			
Number of Valid Data	12	Number of Detected Data	11
Number of Distinct Detected Data	11	Number of Non-Detect Data	1
		Percent Non-Detects	8.33%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.62E-06	Minimum Detected	-13.33
Maximum Detected	5.83E-05	Maximum Detected	-9.75
Mean of Detected	1.06E-05	Mean of Detected	-12.26
SD of Detected	1.77E-05	SD of Detected	1.164
Minimum Non-Detect	2.46E-07	Minimum Non-Detect	-15.22
Maximum Non-Detect	2.46E-07	Maximum Non-Detect	-15.22

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.569	Shapiro Wilk Test Statistic	0.82
5% Shapiro Wilk Critical Value	0.85	5% Shapiro Wilk Critical Value	0.85
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	9.76E-06	Mean	-12.57
SD	1.72E-05	SD	1.53
95% DL/2 (t) UCL	1.87E-05	95% H-Stat (DL/2) UCL	6.99E-05
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	8.83E-06	Mean in Log Scale	-12.48
SD	1.75E-05	SD in Log Scale	1.353
95% MLE (t) UCL	1.79E-05	Mean in Original Scale	9.77E-06
95% MLE (Tiku) UCL	1.72E-05	SD in Original Scale	1.72E-05
		95% t UCL	1.87E-05
		95% Percentile Bootstrap UCL	1.86E-05
		95% BCA Bootstrap UCL	2.32E-05
		95% H UCL	4.09E-05
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.599	Data do not follow a Discernable Distribution (0.05)	
Theta Star	1.77E-05		
nu star	13.18		
A-D Test Statistic	1.405	Nonparametric Statistics	
5% A-D Critical Value	0.763	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.763	Mean	9.88E-06
5% K-S Critical Value	0.265	SD	1.64E-05
Data not Gamma Distributed at 5% Significance Level		SE of Mean	4.96E-06
		95% KM (t) UCL	1.88E-05
Assuming Gamma Distribution		95% KM (z) UCL	1.80E-05
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.88E-05
Minimum	1.00E-06	95% KM (bootstrap t) UCL	9.25E-05
Maximum	5.83E-05	95% KM (BCA) UCL	1.88E-05
Mean	9.83E-06	95% KM (Percentile Bootstrap) UCL	1.88E-05
Median	3.19E-06	95% KM (Chebyshev) UCL	3.15E-05
SD	1.71E-05	97.5% KM (Chebyshev) UCL	4.09E-05
k star	0.582	99% KM (Chebyshev) UCL	5.93E-05

Theta star	1.69E-05		
Nu star	13.97	Potential UCLs to Use	
AppChi2	6.549	97.5% KM (Chebyshev) UCL	4.09E-05
95% Gamma Approximate UCL (Use when n >= 40)	2.10E-05		
95% Adjusted Gamma UCL (Use when n < 40)	2.37E-05		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Skroch dioxins (1,2,3,4,7,8-hexachlorodibenzo-p-dioxin)

General Statistics

Number of Valid Observations	12	Number of Distinct Observations	12

Raw Statistics		Log-transformed Statistics	
Minimum	4.22E-06	Minimum of Log Data	-12.38
Maximum	1.72E-04	Maximum of Log Data	-8.668
Mean	3.12E-05	Mean of log Data	-11.19
Geometric Mean	1.39E-05	SD of log Data	1.175
Median	8.60E-06		
SD	5.14E-05		
Std. Error of Mean	1.48E-05		
Coefficient of Variation	N/A		
Skewness	2.4		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.577	Shapiro Wilk Test Statistic	0.844
Shapiro Wilk Critical Value	0.859	Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	5.78E-05	95% H-UCL	8.72E-05
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	6.60E-05
95% Adjusted-CLT UCL (Chen-1995)	6.66E-05	97.5% Chebyshev (MVUE) UCL	8.36E-05
95% Modified-t UCL (Johnson-1978)	5.95E-05	99% Chebyshev (MVUE) UCL	1.18E-04

Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.61	Data do not follow a Discernable Distribution (0.05)	
Theta Star	5.10E-05		
MLE of Mean	3.12E-05		
MLE of Standard Deviation	3.99E-05		
nu star	14.65		
Approximate Chi Square Value (.05)	7.019	Nonparametric Statistics	
Adjusted Level of Significance	0.029	95% CLT UCL	5.56E-05
Adjusted Chi Square Value	6.23	95% Jackknife UCL	5.78E-05
		95% Standard Bootstrap UCL	5.47E-05
Anderson-Darling Test Statistic	1.372	95% Bootstrap-t UCL	2.15E-04
Anderson-Darling 5% Critical Value	0.766	95% Hall's Bootstrap UCL	1.94E-04
Kolmogorov-Smirnov Test Statistic	0.302	95% Percentile Bootstrap UCL	5.66E-05
Kolmogorov-Smirnov 5% Critical Value	0.255	95% BCA Bootstrap UCL	6.53E-05
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	9.58E-05
		97.5% Chebyshev(Mean, Sd) UCL	1.24E-04
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1.79E-04
95% Approximate Gamma UCL (Use when n >= 40)	6.50E-05		

95% Adjusted Gamma UCL (Use when n < 40)	7.33E-05		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	9.58E-05

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Skroch dioxins (1,2,3,6,7,8-hexachlorodibenzofuran)

General Statistics			
Number of Valid Data	12	Number of Detected Data	11
Number of Distinct Detected Data	11	Number of Non-Detect Data	1
		Percent Non-Detects	8.33%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	6.06E-07	Minimum Detected	-14.32
Maximum Detected	4.09E-05	Maximum Detected	-10.1
Mean of Detected	8.14E-06	Mean of Detected	-12.64
SD of Detected	1.31E-05	SD of Detected	1.332
Minimum Non-Detect	2.19E-07	Minimum Non-Detect	-15.33
Maximum Non-Detect	2.19E-07	Maximum Non-Detect	-15.33

UCL Statistics			
Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.617	Shapiro Wilk Test Statistic	0.911
5% Shapiro Wilk Critical Value	0.85	5% Shapiro Wilk Critical Value	0.85
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	7.47E-06	Mean	-12.92
SD	1.27E-05	SD	1.604
95% DL/2 (t) UCL	1.41E-05	95% H-Stat (DL/2) UCL	6.46E-05
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	6.80E-06	Mean in Log Scale	-12.91
SD	1.29E-05	SD in Log Scale	1.574
95% MLE (t) UCL	1.35E-05	Mean in Original Scale	7.48E-06
95% MLE (Tiku) UCL	1.30E-05	SD in Original Scale	1.27E-05
		95% t UCL	1.41E-05
		95% Percentile Bootstrap UCL	1.34E-05
		95% BCA Bootstrap UCL	1.59E-05
		95% H UCL	5.85E-05
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.542	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	1.50E-05		
nu star	11.93		
A-D Test Statistic	0.949	Nonparametric Statistics	
5% A-D Critical Value	0.769	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.769	Mean	7.52E-06
5% K-S Critical Value	0.266	SD	1.22E-05
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	3.68E-06
		95% KM (t) UCL	1.41E-05

Assuming Gamma Distribution		95% KM (z) UCL	1.36E-05
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.41E-05
Minimum	6.06E-07	95% KM (bootstrap t) UCL	4.66E-05
Maximum	4.09E-05	95% KM (BCA) UCL	1.43E-05
Mean	7.55E-06	95% KM (Percentile Bootstrap) UCL	1.39E-05
Median	2.16E-06	95% KM (Chebyshev) UCL	2.36E-05
SD	1.27E-05	97.5% KM (Chebyshev) UCL	3.05E-05
k star	0.542	99% KM (Chebyshev) UCL	4.41E-05
Theta star	1.39E-05		
Nu star	13.01	Potential UCLs to Use	
AppChi2	5.9	95% KM (Chebyshev) UCL	2.36E-05
95% Gamma Approximate UCL (Use when n >= 40)	1.66E-05		
95% Adjusted Gamma UCL (Use when n < 40)	1.89E-05		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Skroch dioxins (1,2,3,6,7,8-hexachlorodibenzo-p-dioxin)

General Statistics

Number of Valid Observations	12	Number of Distinct Observations	12

Raw Statistics		Log-transformed Statistics	
Minimum	1.83E-05	Minimum of Log Data	-10.91
Maximum	7.39E-04	Maximum of Log Data	-7.21
Mean	1.24E-04	Mean of log Data	-9.858
Geometric Mean	5.23E-05	SD of log Data	1.177
Median	3.44E-05		
SD	2.17E-04		
Std. Error of Mean	6.27E-05		
Coefficient of Variation	1.759		
Skewness	2.569		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.545	Shapiro Wilk Test Statistic	0.805
Shapiro Wilk Critical Value	0.859	Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	2.36E-04	95% H-UCL	3.31E-04
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	2.50E-04
95% Adjusted-CLT UCL (Chen-1995)	2.76E-04	97.5% Chebyshev (MVUE) UCL	3.17E-04
95% Modified-t UCL (Johnson-1978)	2.44E-04	99% Chebyshev (MVUE) UCL	4.47E-04

Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.583	Data do not follow a Discernable Distribution (0.05)	
Theta Star	2.12E-04		
MLE of Mean	1.24E-04		
MLE of Standard Deviation	1.62E-04		
nu star	13.99		
Approximate Chi Square Value (.05)	6.568	Nonparametric Statistics	
Adjusted Level of Significance	0.029	95% CLT UCL	2.27E-04
Adjusted Chi Square Value	5.808	95% Jackknife UCL	2.36E-04
		95% Standard Bootstrap UCL	2.22E-04

Anderson-Darling Test Statistic	1.6	95% Bootstrap-t UCL	0.00117
Anderson-Darling 5% Critical Value	0.769	95% Hall's Bootstrap UCL	8.53E-04
Kolmogorov-Smirnov Test Statistic	0.348	95% Percentile Bootstrap UCL	2.40E-04
Kolmogorov-Smirnov 5% Critical Value	0.256	95% BCA Bootstrap UCL	2.91E-04
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	3.97E-04
		97.5% Chebyshev(Mean, Sd) UCL	5.15E-04
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	7.48E-04
95% Approximate Gamma UCL (Use when n >= 40)	2.63E-04		
95% Adjusted Gamma UCL (Use when n < 40)	2.98E-04		

Potential UCL to Use	Use 95% Chebyshev (Mean, Sd) UCL	3.97E-04

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Skroch dioxins (1,2,3,7,8,9-hexachlorodibenzofuran)

General Statistics

Number of Valid Data	12	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	9
		Percent Non-Detects	75.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	3.29E-07	Minimum Detected	-14.93
Maximum Detected	7.23E-06	Maximum Detected	-11.84
Mean of Detected	2.66E-06	Mean of Detected	-13.81
SD of Detected	3.96E-06	SD of Detected	1.715
Minimum Non-Detect	9.90E-08	Minimum Non-Detect	-16.13
Maximum Non-Detect	1.60E-06	Maximum Non-Detect	-13.35

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	11
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	1
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	91.67%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.76	Shapiro Wilk Test Statistic	0.812
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	8.72E-07	Mean	-14.99
SD	2.01E-06	SD	1.235
95% DL/2 (t) UCL	1.92E-06	95% H-Stat (DL/2) UCL	2.31E-06

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method

MLE method failed to converge properly

Mean in Log Scale	-17
SD in Log Scale	2.147
Mean in Original Scale	6.78E-07
SD in Original Scale	2.07E-06
95% t UCL	1.75E-06
95% Percentile Bootstrap UCL	1.85E-06
95% BCA Bootstrap UCL	2.49E-06
95% H-UCL	1.27E-05

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	N/A
Theta Star	N/A
nu star	N/A
A-D Test Statistic	N/A
5% A-D Critical Value	N/A
K-S Test Statistic	N/A
5% K-S Critical Value	N/A

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data

Minimum	N/A
Maximum	N/A
Mean	N/A
Median	N/A
SD	N/A
k star	N/A
Theta star	N/A
Nu star	N/A
AppChi2	N/A
95% Gamma Approximate UCL (Use when n >= 40)	N/A
95% Adjusted Gamma UCL (Use when n < 40)	N/A

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Lognormal at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method

Mean	9.17E-07
SD	1.90E-06
SE of Mean	6.73E-07
95% KM (t) UCL	2.13E-06
95% KM (z) UCL	2.02E-06
95% KM (jackknife) UCL	1.90E-06
95% KM (bootstrap t) UCL	3.08E-05
95% KM (BCA) UCL	7.23E-06
95% KM (Percentile Bootstrap) UCL	7.23E-06
95% KM (Chebyshev) UCL	3.85E-06
97.5% KM (Chebyshev) UCL	5.12E-06
99% KM (Chebyshev) UCL	7.61E-06

Potential UCLs to Use

97.5% KM (Chebyshev) UCL	5.12E-06

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Skroch dioxins (1,2,3,7,8,9-hexachlorodibenzo-p-dioxin)

General Statistics

Number of Valid Observations	12	Number of Distinct Observations	12

Raw Statistics		Log-transformed Statistics	
Minimum	1.15E-05	Minimum of Log Data	-11.37
Maximum	3.66E-04	Maximum of Log Data	-7.913
Mean	7.00E-05	Mean of log Data	-10.34
Geometric Mean	3.23E-05	SD of log Data	1.144
Median	1.97E-05		
SD	1.12E-04		
Std. Error of Mean	3.24E-05		
Coefficient of Variation	N/A		
Skewness	2.268		

Relevant UCL Statistics

Normal Distribution Test

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.58	Shapiro Wilk Test Statistic	0.808
Shapiro Wilk Critical Value	0.859	Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	1.28E-04	95% H-UCL	1.86E-04
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	1.46E-04
95% Adjusted-CLT UCL (Chen-1995)	1.46E-04	97.5% Chebyshev (MVUE) UCL	1.85E-04
95% Modified-t UCL (Johnson-1978)	1.32E-04	99% Chebyshev (MVUE) UCL	2.61E-04
Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.633	Data do not follow a Discernable Distribution (0.05)	
Theta Star	1.11E-04		
MLE of Mean	7.00E-05		
MLE of Standard Deviation	8.80E-05		
nu star	15.19		
Approximate Chi Square Value (.05)	7.394	Nonparametric Statistics	
Adjusted Level of Significance	0.029	95% CLT UCL	1.23E-04
Adjusted Chi Square Value	6.58	95% Jackknife UCL	1.28E-04
		95% Standard Bootstrap UCL	1.21E-04
Anderson-Darling Test Statistic	1.5	95% Bootstrap-t UCL	4.79E-04
Anderson-Darling 5% Critical Value	0.765	95% Hall's Bootstrap UCL	4.39E-04
Kolmogorov-Smirnov Test Statistic	0.295	95% Percentile Bootstrap UCL	1.26E-04
Kolmogorov-Smirnov 5% Critical Value	0.255	95% BCA Bootstrap UCL	1.44E-04
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	2.11E-04
		97.5% Chebyshev(Mean, Sd) UCL	2.72E-04
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	3.92E-04
95% Approximate Gamma UCL (Use when n >= 40)	1.44E-04		
95% Adjusted Gamma UCL (Use when n < 40)	1.62E-04		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	2.11E-04

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Skroch dioxins (1,2,3,7,8-pentachlorodibenzofuran)

General Statistics			
Number of Valid Data	12	Number of Detected Data	6
Number of Distinct Detected Data	6	Number of Non-Detect Data	6
		Percent Non-Detects	50.00%
Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.03E-07	Minimum Detected	-16.09
Maximum Detected	2.83E-06	Maximum Detected	-12.78
Mean of Detected	1.11E-06	Mean of Detected	-14.42
SD of Detected	1.28E-06	SD of Detected	1.357
Minimum Non-Detect	5.80E-08	Minimum Non-Detect	-16.66
Maximum Non-Detect	5.28E-07	Maximum Non-Detect	-14.45
Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	9
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	3
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	75.00%

Warning: There are only 6 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set

the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.738	Shapiro Wilk Test Statistic	0.9
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	5.93E-07	Mean	-15.6
SD	1.02E-06	SD	1.635
95% DL/2 (t) UCL	1.12E-06	95% H-Stat (DL/2) UCL	5.00E-06
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-16.07
		SD in Log Scale	1.971
		Mean in Original Scale	5.66E-07
		SD in Original Scale	1.03E-06
		95% t UCL	1.10E-06
		95% Percentile Bootstrap UCL	1.12E-06
		95% BCA Bootstrap UCL	1.26E-06
		95% H-UCL	1.35E-05
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.529	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	2.10E-06		
nu star	6.349		
A-D Test Statistic	0.536	Nonparametric Statistics	
5% A-D Critical Value	0.719	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.719	Mean	6.10E-07
5% K-S Critical Value	0.343	SD	9.68E-07
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	3.06E-07
		95% KM (t) UCL	1.16E-06
Assuming Gamma Distribution		95% KM (z) UCL	1.11E-06
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.10E-06
Minimum	1.03E-07	95% KM (bootstrap t) UCL	3.70E-06
Maximum	2.83E-06	95% KM (BCA) UCL	1.31E-06
Mean	1.05E-06	95% KM (Percentile Bootstrap) UCL	1.14E-06
Median	1.00E-06	95% KM (Chebyshev) UCL	1.94E-06
SD	8.67E-07	97.5% KM (Chebyshev) UCL	2.52E-06
k star	1.223	99% KM (Chebyshev) UCL	3.66E-06
Theta star	8.62E-07		
Nu star	29.36	Potential UCLs to Use	
AppChi2	17.99	95% KM (t) UCL	1.16E-06
95% Gamma Approximate UCL (Use when n >= 40)	1.72E-06		
95% Adjusted Gamma UCL (Use when n < 40)	1.86E-06		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Skroch dioxins (1,2,3,7,8-pentachlorodibenzo-p-dioxin)

General Statistics

Number of Valid Data	12	Number of Detected Data	11
Number of Distinct Detected Data	11	Number of Non-Detect Data	1
		Percent Non-Detects	8.33%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.07E-06	Minimum Detected	-13.75
Maximum Detected	3.45E-05	Maximum Detected	-10.27
Mean of Detected	8.46E-06	Mean of Detected	-12.4
SD of Detected	1.19E-05	SD of Detected	1.181
Minimum Non-Detect	6.48E-07	Minimum Non-Detect	-14.25
Maximum Non-Detect	6.48E-07	Maximum Non-Detect	-14.25

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.634	Shapiro Wilk Test Statistic	0.886
5% Shapiro Wilk Critical Value	0.85	5% Shapiro Wilk Critical Value	0.85
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	7.78E-06	Mean	-12.61
SD	1.16E-05	SD	1.344
95% DL/2 (t) UCL	1.38E-05	95% H-Stat (DL/2) UCL	3.50E-05

Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	7.19E-06	Mean in Log Scale	-12.64
SD	1.18E-05	SD in Log Scale	1.391
95% MLE (t) UCL	1.33E-05	Mean in Original Scale	7.78E-06
95% MLE (Tiku) UCL	1.29E-05	SD in Original Scale	1.16E-05
		95% t UCL	1.38E-05
		95% Percentile Bootstrap UCL	1.31E-05
		95% BCA Bootstrap UCL	1.48E-05
		95% H UCL	3.99E-05

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.659	Data appear Lognormal at 5% Significance Level
Theta Star	1.28E-05	
nu star	14.49	

		Nonparametric Statistics	
A-D Test Statistic	0.972		
5% A-D Critical Value	0.759	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.759	Mean	7.84E-06
5% K-S Critical Value	0.264	SD	1.11E-05
Data not Gamma Distributed at 5% Significance Level		SE of Mean	3.36E-06
		95% KM (t) UCL	1.39E-05
Assuming Gamma Distribution		95% KM (z) UCL	1.34E-05
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.38E-05
Minimum	1.00E-06	95% KM (bootstrap t) UCL	3.56E-05
Maximum	3.45E-05	95% KM (BCA) UCL	1.43E-05
Mean	7.84E-06	95% KM (Percentile Bootstrap) UCL	1.31E-05
Median	2.53E-06	95% KM (Chebyshev) UCL	2.25E-05
SD	1.16E-05	97.5% KM (Chebyshev) UCL	2.88E-05
k star	0.642	99% KM (Chebyshev) UCL	4.12E-05
Theta star	1.22E-05		

Nu star	15.41	Potential UCLs to Use	
AppChi2	7.55	97.5% KM (Chebyshev) UCL	2.88E-05
95% Gamma Approximate UCL (Use when n >= 40)	1.60E-05		
95% Adjusted Gamma UCL (Use when n < 40)	1.80E-05		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Skroch dioxins (2,3,4,6,7,8-hexachlorodibenzofuran)

General Statistics

Number of Valid Data	12	Number of Detected Data	11
Number of Distinct Detected Data	11	Number of Non-Detect Data	1
		Percent Non-Detects	8.33%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	4.50E-07	Minimum Detected	-14.61
Maximum Detected	7.98E-05	Maximum Detected	-9.436
Mean of Detected	1.38E-05	Mean of Detected	-12.36
SD of Detected	2.48E-05	SD of Detected	1.554
Minimum Non-Detect	2.51E-07	Minimum Non-Detect	-15.2
Maximum Non-Detect	2.51E-07	Maximum Non-Detect	-15.2

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.587	Shapiro Wilk Test Statistic	0.951
5% Shapiro Wilk Critical Value	0.85	5% Shapiro Wilk Critical Value	0.85
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	1.26E-05	Mean	-12.66
SD	2.39E-05	SD	1.798
95% DL/2 (t) UCL	2.50E-05	95% H-Stat (DL/2) UCL	1.87E-04
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	1.13E-05	Mean in Log Scale	-12.68
SD	2.43E-05	SD in Log Scale	1.844
95% MLE (t) UCL	2.39E-05	Mean in Original Scale	1.26E-05
95% MLE (Tiku) UCL	2.30E-05	SD in Original Scale	2.39E-05
		95% t UCL	2.50E-05
		95% Percentile Bootstrap UCL	2.52E-05
		95% BCA Bootstrap UCL	2.91E-05
		95% H UCL	2.23E-04
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.452	Data appear Lognormal at 5% Significance Level	
Theta Star	3.05E-05		
nu star	9.934		
A-D Test Statistic	0.826	Nonparametric Statistics	
5% A-D Critical Value	0.778	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.778	Mean	1.27E-05
5% K-S Critical Value	0.268	SD	2.29E-05

Data not Gamma Distributed at 5% Significance Level		SE of Mean	6.94E-06
		95% KM (t) UCL	2.51E-05
Assuming Gamma Distribution		95% KM (z) UCL	2.41E-05
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	2.50E-05
Minimum	4.50E-07	95% KM (bootstrap t) UCL	1.11E-04
Maximum	7.98E-05	95% KM (BCA) UCL	2.52E-05
Mean	1.27E-05	95% KM (Percentile Bootstrap) UCL	2.52E-05
Median	3.42E-06	95% KM (Chebyshev) UCL	4.29E-05
SD	2.39E-05	97.5% KM (Chebyshev) UCL	5.60E-05
k star	0.447	99% KM (Chebyshev) UCL	8.17E-05
Theta star	2.84E-05		
Nu star	10.73	Potential UCLs to Use	
AppChi2	4.4	99% KM (Chebyshev) UCL	8.17E-05
95% Gamma Approximate UCL (Use when n >= 40)	3.10E-05		
95% Adjusted Gamma UCL (Use when n < 40)	3.59E-05		

Warning: Recommended UCL exceeds the maximum observation
Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Skroch dioxins (2,3,4,7,8-pentachlorodibenzofuran)

General Statistics

Number of Valid Data	12	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	10
		Percent Non-Detects	83.33%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	8.39E-07	Minimum Detected	-13.99
Maximum Detected	1.19E-06	Maximum Detected	-13.64
Mean of Detected	1.01E-06	Mean of Detected	-13.82
SD of Detected	2.48E-07	SD of Detected	0.247
Minimum Non-Detect	1.47E-08	Minimum Non-Detect	-18.04
Maximum Non-Detect	5.61E-07	Maximum Non-Detect	-14.39

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	10
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	2
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	83.33%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	
Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	2.18E-07	Mean	-16.57
SD	3.86E-07	SD	1.562
95% DL/2 (t) UCL	4.18E-07	95% H-Stat (DL/2) UCL	1.43E-06
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		Mean in Original Scale	N/A
		SD in Original Scale	N/A
		95% t UCL	N/A
		95% Percentile Bootstrap UCL	N/A
		95% BCA Bootstrap UCL	N/A
		95% H-UCL	N/A
Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	8.68E-07
5% K-S Critical Value	N/A	SD	9.70E-08
Data not Gamma Distributed at 5% Significance Level		SE of Mean	3.96E-08
		95% KM (t) UCL	9.39E-07
Assuming Gamma Distribution		95% KM (z) UCL	9.33E-07
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.11E-06
Minimum	N/A	95% KM (bootstrap t) UCL	8.68E-07
Maximum	N/A	95% KM (BCA) UCL	N/A
Mean	N/A	95% KM (Percentile Bootstrap) UCL	N/A
Median	N/A	95% KM (Chebyshev) UCL	1.04E-06
SD	N/A	97.5% KM (Chebyshev) UCL	1.12E-06
k star	N/A	99% KM (Chebyshev) UCL	1.26E-06
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	9.39E-07
95% Gamma Approximate UCL (Use when n >= 40)	N/A	95% KM (% Bootstrap) UCL	N/A
95% Adjusted Gamma UCL (Use when n < 40)	N/A		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Skroch dioxins (2,3,7,8-tetrachlorodibenzofuran)

General Statistics			
Number of Valid Data	12	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	12
		Percent Non-Detects	100.00%

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Skroch dioxins (2,3,7,8-tetrachlorodibenzofuran) was not processed!

Skroch dioxins (2,3,7,8-tetrachlorodibenzo-p-dioxin)

General Statistics

Number of Valid Data	12	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	10
		Percent Non-Detects	83.33%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.91E-06	Minimum Detected	-13.17
Maximum Detected	1.98E-06	Maximum Detected	-13.13
Mean of Detected	1.95E-06	Mean of Detected	-13.15
SD of Detected	4.95E-08	SD of Detected	0.0255
Minimum Non-Detect	1.07E-08	Minimum Non-Detect	-18.35
Maximum Non-Detect	1.02E-06	Maximum Non-Detect	-13.8

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	10
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	2
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	83.33%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	3.89E-07	Mean	-16.58
SD	7.40E-07	SD	1.957
95% DL/2 (t) UCL	7.72E-07	95% H-Stat (DL/2) UCL	7.56E-06

Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		Mean in Original Scale	N/A
		SD in Original Scale	N/A

95% t UCL	N/A
95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A
95% H-UCL	N/A

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	N/A	Data do not follow a Discernable Distribution (0.05)	
Theta Star	N/A		
nu star	N/A		
A-D Test Statistic	N/A	Nonparametric Statistics	
5% A-D Critical Value	N/A	Kaplan-Meier (KM) Method	
K-S Test Statistic	N/A	Mean	1.92E-06
5% K-S Critical Value	N/A	SD	1.93E-08
Data not Gamma Distributed at 5% Significance Level		SE of Mean	7.90E-09
		95% KM (t) UCL	1.93E-06
Assuming Gamma Distribution		95% KM (z) UCL	1.93E-06
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL	1.96E-06
Minimum	N/A	95% KM (bootstrap t) UCL	N/A
Maximum	N/A	95% KM (BCA) UCL	N/A
Mean	N/A	95% KM (Percentile Bootstrap) UCL	1.98E-06
Median	N/A	95% KM (Chebyshev) UCL	1.95E-06
SD	N/A	97.5% KM (Chebyshev) UCL	1.97E-06
k star	N/A	99% KM (Chebyshev) UCL	1.99E-06
Theta star	N/A		
Nu star	N/A	Potential UCLs to Use	
AppChi2	N/A	95% KM (t) UCL	1.93E-06
95% Gamma Approximate UCL (Use when n >= 40)	N/A	95% KM (% Bootstrap) UCL	1.98E-06
95% Adjusted Gamma UCL (Use when n < 40)	N/A		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Skroch dioxins (octachlorodibenzofuran)

General Statistics

Number of Valid Observations	12	Number of Distinct Observations	12
Raw Statistics		Log-transformed Statistics	
Minimum	2.53E-04	Minimum of Log Data	-8.282
Maximum	0.0242	Maximum of Log Data	-3.721
Mean	0.00288	Mean of log Data	-7.132
Geometric Mean	7.99E-04	SD of log Data	1.337
Median	5.62E-04		
SD	0.00685		
Std. Error of Mean	0.00198		
Coefficient of Variation	2.38		
Skewness	3.245		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.434	Shapiro Wilk Test Statistic	0.756
Shapiro Wilk Critical Value	0.859	Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.00643	95% H-UCL	0.0082
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.00491
95% Adjusted-CLT UCL (Chen-1995)	0.00811	97.5% Chebyshev (MVUE) UCL	0.00629
95% Modified-t UCL (Johnson-1978)	0.00674	99% Chebyshev (MVUE) UCL	0.00899

Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.428	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.00673		
MLE of Mean	0.00288		
MLE of Standard Deviation	0.0044		
nu star	10.27		
Approximate Chi Square Value (.05)	4.11	Nonparametric Statistics	
Adjusted Level of Significance	0.029	95% CLT UCL	0.00613
Adjusted Chi Square Value	3.535	95% Jackknife UCL	0.00643
		95% Standard Bootstrap UCL	0.00597
Anderson-Darling Test Statistic	2.096	95% Bootstrap-t UCL	0.0812
Anderson-Darling 5% Critical Value	0.786	95% Hall's Bootstrap UCL	0.0337
Kolmogorov-Smirnov Test Statistic	0.385	95% Percentile Bootstrap UCL	0.0065
Kolmogorov-Smirnov 5% Critical Value	0.259	95% BCA Bootstrap UCL	0.00881
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.0115
		97.5% Chebyshev(Mean, Sd) UCL	0.0152
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.0226
95% Approximate Gamma UCL (Use when n >= 40)	0.00719		
95% Adjusted Gamma UCL (Use when n < 40)	0.00836		

Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	0.0115

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Skroch dioxins (octachlorodibenzo-p-dioxin)

General Statistics			
Number of Valid Observations	12	Number of Distinct Observations	12

Raw Statistics		Log-transformed Statistics	
Minimum	0.00413	Minimum of Log Data	-5.489
Maximum	0.339	Maximum of Log Data	-1.082
Mean	0.0422	Mean of log Data	-4.397
Geometric Mean	0.0123	SD of log Data	1.328
Median	0.00846		
SD	0.0964		
Std. Error of Mean	0.0278		
Coefficient of Variation	2.282		
Skewness	3.149		

Relevant UCL Statistics			
Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.452	Shapiro Wilk Test Statistic	0.756
Shapiro Wilk Critical Value	0.859	Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.0922	95% H-UCL	0.123
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0746

95% Adjusted-CLT UCL (Chen-1995)	0.115	97.5% Chebyshev (MVUE) UCL	0.0954
95% Modified-t UCL (Johnson-1978)	0.0964	99% Chebyshev (MVUE) UCL	0.136

Gamma Distribution Test		Data Distribution	
k star (bias corrected)	0.44	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.0959		
MLE of Mean	0.0422		
MLE of Standard Deviation	0.0636		
nu star	10.57		
Approximate Chi Square Value (.05)	4.302	Nonparametric Statistics	
Adjusted Level of Significance	0.029	95% CLT UCL	0.088
Adjusted Chi Square Value	3.711	95% Jackknife UCL	0.0922
		95% Standard Bootstrap UCL	0.0855
Anderson-Darling Test Statistic	2.038	95% Bootstrap-t UCL	1.06
Anderson-Darling 5% Critical Value	0.784	95% Hall's Bootstrap UCL	0.409
Kolmogorov-Smirnov Test Statistic	0.397	95% Percentile Bootstrap UCL	0.0914
Kolmogorov-Smirnov 5% Critical Value	0.258	95% BCA Bootstrap UCL	0.125
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL	0.163
		97.5% Chebyshev(Mean, Sd) UCL	0.216
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	0.319
95% Approximate Gamma UCL (Use when n >= 40)	0.104		
95% Adjusted Gamma UCL (Use when n < 40)	0.12		

Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	0.163

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

APPENDIX C

SCREENING LEVELS

Table C-1. Screening Levels for Soil

Chemical	Recommended Screening Value (mg/kg)	RBCA	RBCA Units	RSL - Residential	RSL - Industrial	RSL Units	RSL/10 for NC Residential	RSL/10 for NC Industrial
Onsite, Direct Contact, Surface Soil[a]								
m+p-Xylenes	5.90E+01	nv		5.90E+02	2.50E+03	mg/kg	5.90E+01	2.50E+02
o-Xylene	7.00E+01	nv		6.90E+02	3.00E+03	mg/kg	6.90E+01	3.00E+02
Toluene	1.00E+01	1.00E+01	mg/kg	5.00E+03	4.50E+04	mg/kg	5.00E+02	4.50E+03
Xylenes, total	7.00E+01	7.00E+01	mg/kg	6.30E+02	2.70E+03	mg/kg	6.30E+01	2.70E+02
Acenaphthene	2.00E+02	2.00E+02	mg/kg	3.40E+03	3.30E+04	mg/kg	3.40E+02	3.30E+03
Acenaphthylene	nv	nv		nv	nv		nv	nv
Anthracene	2.00E+03	2.00E+03	mg/kg	1.70E+04	1.70E+05	mg/kg	1.70E+03	1.70E+04
Benzo(a)anthracene	2.00E-01	2.00E-01	mg/kg	1.50E-01	2.10E+00	mg/kg	nv	nv
Benzo(g,h,i)perylene	nv	nv		nv	nv		nv	nv
Benzo(a)pyrene	2.00E-02	2.00E-02	mg/kg	1.50E-02	2.10E-01	mg/kg	nv	nv
Chrysene	2.00E+01	2.00E+01	mg/kg	1.50E+01	2.10E+02	mg/kg	nv	nv
Fluoranthene	3.00E+02	3.00E+02	mg/kg	2.30E+03	2.20E+04	mg/kg	2.30E+02	2.20E+03
Fluorene	3.00E+02	3.00E+02	mg/kg	2.30E+03	2.20E+04	mg/kg	2.30E+02	2.20E+03
Indeno(1,2,3-c,d)pyrene	2.00E-01	2.00E-01	mg/kg	1.50E-01	2.10E+00	mg/kg	nv	nv
1-Methylnaphthalene	1.60E+01	nv		1.60E+01	5.30E+01	mg/kg	nv	nv
2-Methylnaphthalene	2.30E+01	nv		2.30E+02	2.20E+03	mg/kg	2.30E+01	2.20E+02
Naphthalene	4.00E+00	4.00E+00	mg/kg	3.60E+00	1.80E+01	mg/kg	nv	nv
Phenanthrene	nv	nv		nv	nv		nv	nv
Pyrene	2.00E+02	2.00E+02	mg/kg	1.70E+03	1.70E+04	mg/kg	1.70E+02	1.70E+03
2,4,6-Trichlorophenol	6.10E+00	nv		4.40E+01	1.60E+02	mg/kg	6.10E+00	6.20E+01
Ethylbenzene	6.00E+00	6.00E+00	mg/kg	5.40E+00	2.70E+01	mg/kg	nv	nv
Pentachlorophenol	8.90E-01	nv		8.90E-01	2.70E+00	mg/kg	nv	nv
TCDD TEQs	4.50E-06	nv		4.50E-06	1.80E-05	mg/kg	nv	nv
C9-C18 Aliphatics	2.00E+02	2.00E+02	mg/kg	nv	nv		nv	nv
C19-C36 Aliphatics	2.00E+04	2.00E+04	mg/kg	nv	nv		nv	nv
C11-C22 Aromatics	4.00E+02	4.00E+02	mg/kg	nv	nv		nv	nv
C10-C22 Aromatics	nv	nv		nv	nv		nv	nv
C5-C8 Aliphatics	6.00E+01	6.00E+01	mg/kg	nv	nv		nv	nv
C9-C12 Aliphatics	1.00E+02	1.00E+02	mg/kg	nv	nv		nv	nv
C9-C10 Aromatics	1.00E+02	1.00E+02	mg/kg	nv	nv		nv	nv

Table C-1. Screening Levels for Soil

Chemical	Recommended Screening Value (mg/kg)	RBCA	RBCA Units	RSL - Residential	RSL - Industrial	RSL Units	RSL/10 for NC Residential	RSL/10 for NC Industrial
EPH Equivalent	nv	nv		nv	nv		nv	nv
Total Extractable Hydrocarbons	2.00E+02	2.00E+02	mg/kg	nv	nv		nv	nv
Total Purgeable Hydrocarbons	nv	nv		nv	nv		nv	nv
VPH Equivalent	nv	nv		nv	nv		nv	nv
Onsite, Direct Contact, Subsurface Soil[b]								
m+p-Xylenes	5.90E+01	nv		5.90E+02	2.50E+03	mg/kg	5.90E+01	2.50E+02
o-Xylene	7.00E+01	nv		6.90E+02	3.00E+03	mg/kg	6.90E+01	3.00E+02
Toluene	1.00E+01	1.00E+01	mg/kg	5.00E+03	4.50E+04	mg/kg	5.00E+02	4.50E+03
Acenaphthene	2.00E+02	2.00E+02	mg/kg	3.40E+03	3.30E+04	mg/kg	3.40E+02	3.30E+03
Acenaphthylene	nv	nv		nv	nv		nv	nv
Anthracene	4.00E+03	4.00E+03	mg/kg	1.70E+04	1.70E+05	mg/kg	1.70E+03	1.70E+04
Benzo(a)anthracene	1.00E+01	1.00E+01	mg/kg	1.50E-01	2.10E+00	mg/kg	nv	nv
Benzo(g,h,i)perylene	nv	nv		nv	nv		nv	nv
Chrysene	2.00E+03	2.00E+03	mg/kg	1.50E+01	2.10E+02	mg/kg	nv	nv
Di-n-butylphthalate	6.10E+02	nv		6.10E+03	6.20E+04	mg/kg	6.10E+02	6.20E+03
Fluoranthene	5.00E+02	5.00E+02	mg/kg	2.30E+03	2.20E+04	mg/kg	2.30E+02	2.20E+03
Fluorene	6.00E+02	6.00E+02	mg/kg	2.30E+03	2.20E+04	mg/kg	2.30E+02	2.20E+03
1-Methylnaphthalene	1.60E+01	nv		1.60E+01	5.30E+01	mg/kg	nv	nv
2-Methylnaphthalene	2.30E+01	nv		2.30E+02	2.20E+03	mg/kg	2.30E+01	2.20E+02
Naphthalene	9.00E+00	9.00E+00	mg/kg	3.60E+00	1.80E+01	mg/kg	nv	nv
Phenanthrene	nv	nv		nv	nv		nv	nv
Pyrene	2.00E+03	2.00E+03	mg/kg	1.70E+03	1.70E+04	mg/kg	1.70E+02	1.70E+03
Ethylbenzene	1.00E+01	1.00E+01	mg/kg	5.40E+00	2.70E+01	mg/kg	nv	nv
o-Xylene	6.90E+01	nv		6.90E+02	3.00E+03	mg/kg	6.90E+01	3.00E+02
Pentachlorophenol	8.90E-01	nv		8.90E-01	2.70E+00	mg/kg	nv	nv
TCDD TEQs	4.50E-06	nv		4.50E-06	1.80E-05	mg/kg	nv	nv
C9-C18 Aliphatics	2.00E+03	2.00E+03	mg/kg	nv	nv		nv	nv
C19-C36 Aliphatics	1.00E+05	1.00E+05	mg/kg	nv	nv		nv	nv
C11-C22 Aromatics	4.00E+02	4.00E+02	mg/kg	nv	nv		nv	nv
C10-C22 Aromatics	4.00E+02	4.00E+02	mg/kg	nv	nv		nv	nv
C5-C8 Aliphatics	2.00E+02	2.00E+02	mg/kg	nv	nv		nv	nv
C9-C12 Aliphatics	1.00E+03	1.00E+03	mg/kg	nv	nv		nv	nv

Table C-1. Screening Levels for Soil

Chemical	Recommended Screening Value (mg/kg)	RBCA	RBCA Units	RSL - Residential	RSL - Industrial	RSL Units	RSL/10 for NC Residential	RSL/10 for NC Industrial
C9-C10 Aromatics	1.00E+02	1.00E+02	mg/kg	nv	nv		nv	nv
EPH Equivalent	nv	nv		nv	nv		nv	nv
Total Extractable Hydrocarbons	2.00E+02	2.00E+02	mg/kg	nv	nv		nv	nv
Total Purgeable Hydrocarbons	nv	nv		nv	nv		nv	nv
VPH Equivalent	nv	nv		nv	nv		nv	nv
Offsite, Direct Contact, Surface and Subsurface Soil[c]								
Subsurface								
Pentachlorophenol	8.90E-01	nv		8.90E-01	2.70E+00	mg/kg	nv	nv
2,3,7,8-TCDD TEF (2005 TEQs)	4.50E-06	nv		4.50E-06	1.80E-05	mg/kg	nv	nv
Surface								
Pentachlorophenol	8.90E-01	nv		8.90E-01	2.70E+00	mg/kg	nv	nv
2,3,7,8-TCDD TEF (2005 TEQs)	4.50E-06	nv		4.50E-06	1.80E-05	mg/kg	nv	nv

Notes:

EPA = U.S. Environmental Protection Agency
NC = noncarcinogenic
EPH = extractable petroleum hydrocarbon
nv = no value available
RBCA = 2009 MDEQ risk-based corrective action Tier 1 screening level
RBSL = risk-based screening level
RSL = May 2013 USEPA regional screening level
TCDD = 2,3,7,8-tetrachlorodibenzo-*p*-dioxin
TEF = toxicity equivalency factor
TEQ = toxicity equivalency
VPH = volatile petroleum hydrocarbon

[a] Recommended screening value based on priority of 1) Tier 1 Surface Soil (0-2 ft) RBSL (< 10 ft to groundwater) from RBCA Table 1 (Sept. 2009) and 2) November 2013 EPA Regional Screening Level for residential exposure scenario.

[b] Recommended screening value based on priority of 1) Tier 1 Subsurface Soil (>2 ft) RBSL (< 10 ft to groundwater) from RBCA Table 2 (Sept. 2009) and 2) November 2013 EPA Regional Screening Level for residential exposure scenario.

[c] As RBSLs are not available for offsite chemicals of potential concern, recommended screening value based on November 2013 EPA Regional Screening Level for residential exposure scenario.

Table C-2. Screening Levels for Groundwater

Chemical	Recommended Screening Value µg/L	DEQ-7	DEQ-7 Units	MCL	MCL Units	RBCA	RBCA Units	RSL (tap water)	RSL Units
m+p-Xylenes	1.00E+04	1.00E+04	µg/L	1.00E+04	µg/L	nv		--	
Toluene	1.00E+03	1.00E+03	µg/L	1.00E+03	µg/L	1.00E+03	µg/L	--	
Xylenes	1.00E+04	1.00E+04	µg/L	1.00E+04	µg/L	1.00E+04	µg/L	--	
Acenaphthene	6.70E+02	6.70E+02	µg/L	nv		6.70E+02	µg/L	--	
Acenaphthylene[a]	6.70E+02	6.70E+02	µg/L	nv		nv		--	
Anthracene	2.10E+03	2.10E+03	µg/L	nv		2.10E+03	µg/L	--	
Benzo(a)anthracene	5.00E-01	5.00E-01	µg/L	nv		5.00E-01	µg/L	--	
Benzo(a)pyrene	5.00E-02	5.00E-02	µg/L	2.00E-01	µg/L	5.00E-02	µg/L	--	
Benzo(b)fluoranthene	5.00E-01	5.00E-01	µg/L	nv		5.00E-01	µg/L	--	
Benzo(g,h,i)perylene	nv	nv		nv		nv		nv	
Benzo(k)fluoranthene	5.00E+00	5.00E+00	µg/L	nv		5.00E+00	µg/L	--	
Dibenzo(a,h)anthracene	5.00E-02	5.00E-02	µg/L	nv		5.00E-02	µg/L	--	
Fluoranthene	1.30E+02	1.30E+02	µg/L	nv		1.30E+02	µg/L	--	
Fluorene	1.10E+03	1.10E+03	µg/L	nv		1.10E+03	µg/L	--	
Indeno(1,2,3-c,d)pyrene	5.00E-01	5.00E-01	µg/L	nv		5.00E-01	µg/L	--	
Iron[a]	1.10E+04	nv		nv		nv		1.10E+04	µg/L
2-Methylnaphthalene[a]	2.70E+01	nv		nv		nv		2.70E+01	µg/L
Naphthalene	1.00E+02	1.00E+02	µg/L	nv		1.00E+02	µg/L	--	
Phenanthrene	nv	nv		nv		nv		nv	
Pyrene	8.30E+02	8.30E+02	µg/L	nv		8.30E+02	µg/L	--	
o-Xylene	1.00E+04	1.00E+04	µg/L	1.00E+04	µg/L	nv		--	
Pentachlorophenol	1.00E+00	1.00E+00	µg/L	1.00E+00	µg/L	nv		--	
2,3,7,8-TCDD	2.00E-06	2.00E-06	µg/L	3.00E-05	µg/L	nv		--	
C11-C22 Aromatics	1.00E+03	1.00E+03	µg/L	nv		1.00E+03	µg/L	nv	
C9-C12 Aliphatics	1.00E+03	1.00E+03	µg/L	nv		1.00E+03	µg/L	nv	
C9-C10 Aromatics	1.00E+03	1.00E+03	µg/L	nv		1.00E+03	µg/L	nv	
2,3,4,5-Tetrachlorophenol	nv	nv		nv		nv		nv	
3,4,5-Trichlorophenol	1.80E+03	1.80E+03	µg/L	nv		nv		nv	
Total Extractable Hydrocarbons	1.00E+03	1.00E+03	µg/L	nv		nv		nv	
Total Purgeable Hydrocarbons	nv	nv		nv		nv		nv	

Table C-2. Screening Levels for Groundwater

Chemical	Recommended Screening Value µg/L	DEQ-7	DEQ-7 Units	MCL	MCL Units	RBCA	RBCA Units	RSL (tap water)	RSL Units
Parcels Other than A and B, Groundwater									
Pentachlorophenol	1.00E+00	1.00E+00	µg/L	1.00E+00	µg/L	nv		--	
TCDD TEQs	2.00E-06	2.00E-06	µg/L	3.00E-05	µg/L	nv		--	

Notes:

-- = As MDEQ or MCL values are available for this chemical, the RSL is not provided.
DEQ-7 = 2012 MDEQ DEQ-7 Human Health Water Quality Standard
EPA = U.S. Environmental Protection Agency
MCL = 2012 USEPA maximum contaminant level
nv = no value
RBCA = 2009 DEQ Risk Based Corrective Action risk-based screening level
RSL = November 2013 USEPA Regional Screening Level for tapwater
TCDD = 2,3,7,8-tetrachlorodibenzo-*p*-dioxin
TEQ = TCDD toxicity equivalencies

[a] Value is a noncarcinogenic EPA tapwater RSL. No adjustment of screening level required.

Table C-3. Screening Levels for Soil Leaching to Groundwater (<10 Feet to Groundwater)

Analyte	Soil Screening Level for Leaching to Groundwater	Units	Source
Dioxins and Furans			
TCDD TEQs	1.00E-05	mg/kg	Adjusted SSL[a]
Polycyclic Aromatic Hydrocarbons			
Acenapthene	2.00E+02	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
Acenaphthlyene	nv		
Anthracene	4.00E+03	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
Benzo(a)anthracene	1.00E+01	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
Benzo(a)pyrene	4.00E+00	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
Benzo(ghi)perylene	nv		
Chrysene	2.00E+03	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
Fluoranthene	5.00E+02	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
Fluorene	6.00E+02	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
Indeno(123-cd)pyrene	1.00E+02	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
1-Methylnaphthalene	5.10E-02	mg/kg	10 DAF RSL-Based SSL[b]
2-Methylnapthalene	1.40E+00	mg/kg	10 DAF RSL-Based SSL
Naphthalene	9.00E+00	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
Phenanthrene	nv		
Pyrene	4.00E+03	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
Volatile Organic Hydrocarbons			
Ethylbenzene	1.00E+01	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
Toluene	1.00E+01	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
Xylenes	2.00E+02	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
m,p-xylenes	2.00E+02	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
o-xylene	2.00E+02	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
Semivolatile Organic Hydrocarbons			
Di-n-butylphthalate	5.10E+01	mg/kg	Adjusted SSL
Pentachlorophenol	1.00E-01	mg/kg	10 DAF MCL-Based SSL[c]
2,4,6-Trichlorophenol	1.10E+00	mg/kg	Adjusted SSL

Table C-3. Screening Levels for Soil Leaching to Groundwater (<10 Feet to Groundwater)

Analyte	Soil Screening Level for Leaching to Groundwater	Units	Source
Diesel Range Hydrocarbons			
C5-C8 Aliphatics	2.00E+02	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
C9-C12 Aliphatics	1.00E+04	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
C9-C10 Aromatics	1.00E+02	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
C9-C18 Aliphatics	5.00E+04	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
C19-C36 Aliphatics	Immobile	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
C10-C22 Aromatics	nv		
C11-C22 Aromatics	4.00E+02	mg/kg	RBCA - Tier 1 RBSL for Soil (Leaching 0-10 Feet)
EPH Equivalent	nv		
Total Extractable Hydrocarbons	nv		
Total Purgeable Hydrocarbons	nv		
VPH Equivalent	nv		

Notes:

DAF = dilution attenuation factor
EPA = U.S. Environmental Protection Agency
EPH = extractable petroleum hydrocarbon
MCL = 2012 EPA Maximum Contaminant Level
MDEQ = Montana Department of Environmental Quality
nv - no value
RBCA = 2009 MDEQ risk-based corrective action Tier 1 screening level for soil (leaching 0-10 ft)
RBSL = risk-based screening level
RSL = November 2013 USEPA regional screening level for tap water
SSL = soil screening level
TCDD = 2,3,7,8-tetrachlorodibenzo-*p*-dioxin
TEQ = toxicity equivalency
VPH = volatile petroleum hydrocarbon

[a] Adjusted SSL - Soil Screening Levels based on the following formula per 2012 MDEQ Attachment C - Soil Screening Process:
RBSSL = (DEQ-7 HHS/EPA RSL) * EPA SSL * 10
[b] 10 DAF RSL-based SSL taken from November 2013 EPA RSL table and adjusted by a factor of 10 per 2012 MDEQ Attachment C - Soil Screening Process
[c] 10 DAF MCL-based SSL taken from November 2013 EPA RSL table and adjusted by a factor of 10 per 2012 MDEQ Attachment C - Soil Screening Process

Table C-4. Screening Levels for Soil Vapor

Chemical	MDEQ Aug 2012 Background Study[a]	Carcinogenic Designation[b]	MDEQ Screening Level (Aug 2012) [c]	RSL - Residential	RSL - Industrial
Indoor Air, Direct Contact (via Subsurface Soil Vapor)					
m+p-Xylenes	3.60E+00	n	1.00E+01	1.00E+01	4.40E+01
Benzene	1.30E+00	c	3.10E-01	3.10E-01	1.60E+00
Toluene	1.30E+01	n	5.20E+02	5.20E+02	2.20E+03
o-Xylenes	<0.94	n	1.00E+01	1.00E+01	4.40E+01
Naphthalene	3.90E-01	c	7.20E-02	7.20E-02	3.60E-01
Ethylbenzene	1.10E+00	c	9.70E-01	9.70E-01	4.90E+00
C5-C8 Aliphatics	9.40E+01	n	6.26E+01	na	na
C9-C12 Aliphatics	4.40E+01	n	1.04E+01	na	na
C9-C10 Aromatics	<9.2	n	1.04E+01	na	na

Notes:

All values in µg/m^3.

c = carcinogenic

MDEQ = Montana Department of Environmental Quality

n = noncarcinogenic

na = not available

RSL = November 2013 USEPA regional screening level table (HQ=0.1 for noncarcinogens)

[a] For compounds with values, the 95%UTL-50th statistic was used per MDEQ. For values with a "<" designation, the compounds were not detected with enough frequency in the MDEQ study for adequate statistical interpretation.

[b] MDEQ recommends adjusting noncarcinogenic RSLs by a factor of 0.1 for screening purposes; carcinogenic RSLs are not adjusted.

[c] Generic Screening Levels from MDEQ August 2012 "Typical Indoor Air Concentrations of Volatile Organic Compounds in Non-Smoking Montana Residences Not Impacted by Vapor Intrusion,", Table 3.2.1.

APPENDIX D

COPC SCREENING AND CALCULATIONS FOR INTAKE, RISK, AND CLEANUP LEVELS

TABLE D2.1

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current and Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Surface and Subsurface Soil															
		Volatile Organic Compounds (VOCs)													
	NA	C5 to C8 Aliphatics	4.6	130	mg/kg	4024 (Parcel A)	5 / 35	0.21 - 4	130	NA	60 N	NA	NA	Y	ASL
	NA	C9 to C12 Aliphatics	180	910	mg/kg	4002 (Parcel B)	5 / 35	0.26 - 2	910	NA	100 N	NA	NA	Y	ASL
	NA	C9 to C10 Aromatics	26	370	mg/kg	4002 (Parcel B)	5 / 35	0.048 - 2	370	NA	100 N	NA	NA	Y	ASL
		Ethylbenzene	0.046	230	mg/kg	4045.1 (Parcel B)	3 / 35	0.0063 - 0.5	230	NA	6 C	NA	NA	Y	ASL
		m,p-Xylene	0.1	0.41	mg/kg	4015.1 (Parcel B)	2 / 35	0.011 - 0.5	0.41	NA	59 N	NA	NA	N	BSL
		o-Xylene	0.57	0.57	mg/kg	4015.1 (Parcel B)	1 / 35	0.005 - 0.5	0.57	NA	69 N	NA	NA	N	BSL
		Toluene	0.11	2.4	mg/kg	TP-4223 (Parcel B)	2 / 35	0.012 - 0.5	2.4	NA	10 N	NA	NA	N	BSL
		Xylenes	0.1	0.1	mg/kg	TP-4223 (Parcel B)	1 / 24	--	0.1	NA	70 N	NA	NA	N	BSL
		1-Methylnaphthalene	0.01 J	160	mg/kg	4015.1 (Parcel B)	7 / 11	0.33 - 50	160	NA	16 C	NA	NA	Y	ASL
		2-Methylnaphthalene	0.024 J	260	mg/kg	4015.1 (Parcel B)	8 / 22	0.05 - 0.67	260	NA	23 N	NA	NA	Y	ASL
		Naphthalene	0.49	26 J	mg/kg	4015.1 (Parcel B)	3 / 37	0.01 - 1	26	NA	4 C	NA	NA	Y	ASL
		Semivolatile Organic Compounds (VOCs)													
		Acenaphthene	1.2	24	mg/kg	4002 (Parcel B)	9 / 22	0.016 - 0.67	24	NA	200 N	NA	NA	N	BSL
		Anthracene	0.17 J	81	mg/kg	4015.1 (Parcel B)	6 / 22	0.014 - 0.67	81	NA	2000 N	NA	NA	N	BSL
		Benzo[a]anthracene	0.043 J	0.12 J	mg/kg	4020 (Parcel B)	4 / 22	0.043 - 3.3	0.12	NA	0.2 C	NA	NA	N	BSL
		Benzo[a]pyrene	0.065	1.6	mg/kg	TP-4223 (Parcel B)	5 / 22	0.021 - 3.3	1.6	NA	0.02 C	NA	NA	Y	ASL
	NA	C9 to C18 Aliphatics	12	7900	mg/kg	4015.1 (Parcel B)	10 / 22	1.5 - 10	7900	NA	200 N	NA	NA	Y	ASL
	NA	C19 to C36 Aliphatics	27 J	2000	mg/kg	4015.1 (Parcel B)	20 / 22	10 - 10	2000	NA	20000 N	NA	NA	N	BSL
	NA	C11 to C22 Aromatics	20	1100	mg/kg	TP-4223 (Parcel B)	11 / 11	--	1100	NA	400 N	NA	NA	Y	ASL
		Chrysene	0.061 J	1.2	mg/kg	TP-4223 (Parcel B)	10 / 22	0.038 - 3.3	1.2	NA	20 C	NA	NA	N	BSL
		Di-n-butyl phthalate	0.07 J	0.07 J	mg/kg	4015.1 (Parcel B)	1 / 11	0.016 - 67	0.07	NA	610 N	NA	NA	N	BSL
		Fluoranthene	0.061	37	mg/kg	4015.1 (Parcel B)	7 / 22	0.053 - 0.67	37	NA	300 N	NA	NA	N	BSL
		Fluorene	4.5 J	48 J	mg/kg	4015.1 (Parcel B)	5 / 22	0.015 - 0.67	48	NA	300 N	NA	NA	N	BSL
		Indeno[1,2,3-cd]pyrene	0.15 J	0.15 J	mg/kg	TP-4220 (Parcel B)	1 / 18	0.05 - 67	0.15	NA	0.2 C	NA	NA	N	BSL
		Pentachlorophenol	0.0023	53000	mg/kg	4052.2 (Parcel B)	204 / 321	0.0002 - 2.7	53000	NA	0.89 C	NA	NA	Y	ASL
		Pyrene	0.077	37	mg/kg	4015.1 (Parcel B)	14 / 22	0.053 - 0.33	37	NA	200 N	NA	NA	N	BSL
	NA	TCDD Equivalents	6.24E-08 J	0.0482	mg/kg	4002 (Parcel B)	255 / 260	1.2E-07 - 7.0E-06	0.0482	3.7E-12	4.5E-06 C	NA	NA	Y	ASL
		2,4,6-Trichlorophenol	0.16 J	2.7 J	mg/kg	4016 (Parcel B)	3 / 41	0.33 - 67	2.7	NA	6.1 N	NA	NA	N	BSL
		EPH Equivalent	260	6800	mg/kg	4015.1 (Parcel B)	5 / 7	10 - 10	6800	NA	nv	NA	NA	Y	NSL
		Total Extractable Hydrocarbons	15	2500	mg/kg	TP-4223 (Parcel B)	26 / 34	2.3 - 3.8	2500	NA	200 N	NA	NA	Y	ASL
		Total Purgeable Hydrocarbons	1.8	33	mg/kg	TP-4223 (Parcel B)	4 / 24	0.28 - 0.32	33	NA	nv	NA	NA	Y	NSL
		VPH Equivalent	66	420	mg/kg	4002 (Parcel B)	5 / 7	2 - 2	420	NA	nv	NA	NA	Y	NSL

Notes:

(1) Qualifier codes are defined as: 'J' - estimated value.

(2) Concentration used for screening is the maximum detected value across the Site in both surface and subsurface soils.

(3) NA - Not available. Value for TCDD Equivalents is based on Montana's statewide background concentration of 3.7 ng/kg (MDEQ 2011).

(4) Recommended screening value based on priority of 1) Tier 1 Surface Soil (0-2 ft) RBSL (< 10 feet to groundwater) from RBCA Table 1 (Sept. 2009) and 2) November 2013 EPA Regional Screening Level for residential exposure scenario. Designation of 'N' for noncarcinogenic compounds and 'C' for carcinogenic compounds

(5) ASL - Above Screening Levels; BSL - Below Screening Level; NSL - No Screening Level

ARAR = Applicable or Relevant and Appropriate Requirements

COPC = chemical of potential concern

NA = not available

CAS = Chemical Abstracts Service

MDEQ = Montana Department of Environmental Quality

TBC = To Be Considered standards

TABLE D2.2

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current and Future
Medium:	Groundwater
Exposure Medium:	Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (N/C) (4)	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
		Volatile Organic Compounds (VOCs)													
Groundwater	NA	C9 to C12 Aliphatics	13 J	140	µg/L	3002.0 (Parcel B)	9 / 90	0.12 - 6.2	140	NA	1000 N	NA	NA	N	BSL
	NA	C9 to C10 Aromatics	39	180	µg/L	3002.0 (Parcel B)	8 / 90	0.18 - 6.8	180	NA	1000 N	NA	NA	N	BSL
		m,p-Xylene	0.39 J	0.39	µg/L	3002.0 (Parcel B)	1 / 90	0.033 - 0.25	0.39	NA	10000 N	NA	NA	N	BSL
		o-Xylene	0.41 J	0.76	µg/L	3002.0 (Parcel B)	6 / 90	0.015 - 0.16	0.76	NA	10000 N	NA	NA	N	BSL
		Toluene	0.57	3.9	µg/L	3012.2 (Parmenter)	3 / 90	0.015 - 0.40	3.9	NA	1000 N	NA	NA	N	BSL
		Xylenes	0.41 J	1.1 J	µg/L	3002.0 (Parcel B)	6 / 90	--	1.1	NA	10000 N	NA	NA	N	BSL
		2-Methylnaphthalene	0.51	40	µg/L	3002.0 (Parcel B)	7 / 7	--	40	NA	27 N	NA	NA	Y	ASL
		Naphthalene	0.44	14	µg/L	3002.0 (Parcel B)	10 / 90	0.028 - 0.63	14	NA	100 C	NA	NA	N	BSL
		Semivolatile Organic Compounds (VOCs)													
		Acenaphthene	0.69	5.2	µg/L	3002.0 (Parcel B)	6 / 7	0.15 - 0.15	5.2	NA	670 N	NA	NA	N	BSL
		Acenaphthylene	0.51	2	µg/L	3002.0 (Parcel B)	2 / 7	0.026 - 0.097	2	NA	670 N	NA	NA	N	BSL
		Anthracene	0.37	0.68	µg/L	3003.0 (Parcel B)	3 / 7	0.17 - 0.18	0.68	NA	2100 N	NA	NA	N	BSL
		Benzo[a]anthracene	0.27	0.27	µg/L	3003.0 (Parcel B)	1 / 7	0.11 - 0.15	0.27	NA	0.5 C	NA	NA	N	BSL
		Benzo[a]pyrene	0.49	0.49	µg/L	3003.0 (Parcel B)	1 / 7	0.054 - 0.13	0.49	NA	0.05 C	NA	NA	Y	ASL
		Benzo(b)flouranthene	0.35	0.35	µg/L	3003.0 (Parcel B)	1 / 7	0.033 - 0.12	0.35	NA	0.5 C	NA	NA	N	BSL
		Benzo(k)fluoranthene	0.4	0.4	µg/L	3003.0 (Parcel B)	1 / 7	0.08 - 0.15	0.4	NA	5 C	NA	NA	N	BSL
	NA	C11 to C22 Aromatics	400	950	µg/L	3002.0 (Parcel B)	6 / 7	12 - 12	950	NA	1000 N	NA	NA	N	BSL
		Dibenzo[a,h]anthracene	0.39	0.39	µg/L	3003.0 (Parcel B)	1 / 7	0.067 - 0.13	0.39	NA	0.05 C	NA	NA	Y	ASL
		Fluoranthene	0.76	0.76	µg/L	3003.0 (Parcel B)	1 / 7	0.068 - 0.17	0.76	NA	130 N	NA	NA	N	BSL
		Fluorene	1.9	5.5	µg/L	3002.0 (Parcel B)	6 / 7	0.071 - 0.071	5.5	NA	1100 N	NA	NA	N	BSL
		Indeno[1,2,3-cd]pyrene	0.42	0.42	µg/L	3003.0 (Parcel B)	1 / 7	0.071 - 0.15	0.42	NA	0.5 C	NA	NA	N	BSL
		Pentachlorophenol	0.024 J	320	µg/L	3003.0 (Parcel B)	77 / 207	0.017 - 0.074	320	NA	1 C	NA	NA	Y	ASL
		Pyrene	0.24	0.77	µg/L	3003.0 (Parcel B)	4 / 7	0.12 - 0.16	0.77	NA	830 N	NA	NA	N	BSL
	NA	TCDD Equivalents	4.1E-07 J	8.5E-04 J	µg/L	3003.0 (Parcel B)	153 / 185	2.9E-07 - 9.1E-06	8.5E-04	NA	2.0E-06 C	NA	NA	Y	ASL
		3,4,5-Trichlorophenol	0.84 J	7.3	µg/L	3003.0 (Parcel B)	3 / 42	0.27 - 1.9	7.3	NA	1800 N	NA	NA	N	BSL
		Total Extractable Hydrocarbons	300	3000	µg/L	3003.0 (Parcel B)	11 / 90	15 - 31	3000	NA	1000 N	NA	NA	Y	ASL
		Total Pureable Hydrocarbons	30	540	µg/L	3002.0 (Parcel B)	9 / 90	0.29 - 5	540	NA	nv	NA	NA	Y	NSL
		Inorganics													
		Iron	30	1900	µg/L	3006.0 (Parcel B)	34 / 42	1 - 2	1900	NA	11000 N	NA	NA	N	BSL

Notes:

(1) Qualifier codes are defined as: 'J' - estimated value.

(2) Concentration used for screening is the maximum detected value across the Site for all groundwater regardless of date of sample.

(3) NA - Not available.

(4) Recommended screening value based on priority of 1) 2012 MDEQ Circular DEQ-7 Numeric Water Quality Standards for groundwater; 2) 2009 MDEQ RBCA Tier 1 values for groundwater and 3) November 2013 EPA Regional Screening Level for tap water. Designation of 'N' for noncarcinogenic compounds and 'C' for carcinogenic compounds

(5) ASL - Above Screening Levels; BSL - Below Screening Level; NSL - No Screening Level

ARAR = Applicable or Relevant and Appropriate Requirements

COPC = chemical of potential concern

MDEQ = Montana Department of Environmental Quality

NA = not available

nv - no value

TBC = To Be Considered standards

TABLE D2.3

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current and Future
Medium:	Soil Vapor
Exposure Medium:	Indoor Air/Trench Air

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Residential Screening (Indoor Air Only)			Industrial Screening (Indoor Air and Trench Air)		
											Screening Toxicity Value (N/C) (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)	Screening Toxicity Value (N/C) (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Indoor Air/Trench Air		**Volatile Organic Compounds (VOCs)**														
		Benzene	0.6 J	6.7	ug/m^3	VMP-7 (Parcel B)	12 / 23	0.28 - 11	6.7	1.3	0.31 C	Y	ASL	1.6 C	Y	ASL
	NA	C5 to C8 Aliphatics	41	67000	µg/m3	VMP-8 (Parcel B)	12 / 23	30 - 40	67000	94	63 N	Y	ASL	263 N	Y	ASL
	NA	C9 to C10 Aromatics	20	5000	µg/m3	VMP-8 (Parcel B)	8 / 23	7.4 - 10	5000	<9.2	10 N	Y	ASL	44 N	Y	ASL
	NA	C9 to C12 Aliphatics	45	36700	µg/m3	VMP-7 (Parcel B)	16 / 23	NR	36700	44	10 N	Y	ASL	44 N	Y	ASL
		Ethylbenzene	0.47 J	150	µg/m3	VMP-8 (Parcel B)	12 / 23	0.28 - 2.4	150	1.1	0.97 C	Y	ASL	4.9 C	Y	ASL
		m,p-Xylene	1 J	450	µg/m3	VMP-8 (Parcel B)	14 / 23	NR	450	3.6	10 N	Y	ASL	44 N	Y	ASL
		o-Xylene	0.66 J	500	µg/m3	VMP-8 (Parcel B)	13 / 23	0.31 - 1.5	500	<0.94	10 N	Y	ASL	44 N	Y	ASL
		Naphthalene	1.9	1.9	µg/m3	VMP-4 (Parcel B)	1 / 23	0.58 22	1.9	0.39	0.072 C	Y	ASL	0.36 C	Y	ASL
		Toluene	0.29	78	µg/m3	VMP-8 (Parcel B)	17 / 23	NR	78	13	520 N	N	BSL	2200 N	N	BSL

Notes:

(1) Qualifier codes are defined as: 'J' - estimated value.

(2) Concentration used for screening is the maximum detected value in soil vapor from two rounds of sampling (March 2010 and December 2010).

(3) Indoor air background values taken from August 2012 MDEQ indoor air quality investigation. For compounds with values, the 95%UTL-50th statistic was used per MDEQ. For values with a "<" designation, the compounds were not detected with enough frequency in the MDEQ study for adequate statistical interpretation.

(4) Screening values taken from November 2013 EPA Regional Screening Level table for residential and industrial air, where available. RSLs for noncarcinogenic chemicals ('N') were adjusted by a factor of 0.1. For petroleum hydrocarbon fractions, screening values were selected from the MDEQ APH VI Calculator (Table 1) for residential and industrial screening values.

(5) ASL - Above Screening Levels; BSL - Below Screening Level

EPA = U.S. Environmental Protection Agency

COPC = chemical of potential concern

MDEQ = Montana Department of Environmental Quality

NA = not available

NR = not reported as detection frequency was 100%.

TABLE D2.4

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Future
Medium:	Soil
Exposure Medium:	Groundwater

Exposure Point	CAS Number	Chemical	Minimum Concentration (Qualifier) (1)	Maximum Concentration (Qualifier) (1)	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening (2)	Background Value (3)	Soil to Groundwater Leaching Value (N/C) (4)	Source of Leaching Value (4)	COPC Flag (Y/N)	Rationale for Selection or Deletion (5)
Soil Leaching to Groundwater (<10 feet to groundwater)														
		Volatile Organic Compounds (VOCs)												
	NA	C5 to C8 Aliphatics	4.6	130	mg/kg	4024 (Parcel A)	5 / 35	0.21 - 4	130	NA	200 N	RBSL	N	BSL
	NA	C9 to C12 Aliphatics	180	910	mg/kg	4002 (Parcel B)	5 / 35	0.26 - 2	910	NA	10000 N	RBSL	N	BSL
	NA	C9 to C10 Aromatics	26	370	mg/kg	4002 (Parcel B)	5 / 35	0.048 - 2	370	NA	100 N	RBSL	Y	ASL
		Ethylbenzene	0.046	230	mg/kg	4045.1 (Parcel B)	3 / 35	0.0063 - 0.5	230	NA	10 C	RBSL	Y	ASL
		m,p-Xylene	0.1	0.41	mg/kg	4015.1 (Parcel B)	2 / 35	0.011 - 0.5	0.41	NA	200 N	RBSL	N	BSL
		o-Xylene	0.57	0.57	mg/kg	4015.1 (Parcel B)	1 / 35	0.005 - 0.5	0.57	NA	200 N	RBSL	N	BSL
		Toluene	0.11	2.4	mg/kg	TP-4223 (Parcel B)	2 / 35	0.012 - 0.5	2.4	NA	10 N	RBSL	N	BSL
		Xylenes	0.1	0.1	mg/kg	TP-4223 (Parcel B)	1 / 24	--	0.1	NA	200 N	RBSL	N	BSL
		1-Methylnaphthalene	0.01 J	160	mg/kg	4015.1 (Parcel B)	7 / 11	0.33 - 50	160	NA	0.051 C	10 DAF RSL	Y	ASL
		2-Methylnaphthalene	0.024 J	260	mg/kg	4015.1 (Parcel B)	8 / 22	0.05 - 0.67	260	NA	1.4 N	10 DAF RSL	Y	ASL
		Naphthalene	0.49	26 J	mg/kg	4015.1 (Parcel B)	3 / 37	0.01 - 1	26	NA	9 C	RBSL	Y	ASL
		Semivolatile Organic Compounds (VOCs)												
		Acenaphthene	1.2	24	mg/kg	4002 (Parcel B)	9 / 22	0.016 - 0.67	24	NA	200 N	RBSL	N	BSL
		Anthracene	0.17 J	81	mg/kg	4015.1 (Parcel B)	6 / 22	0.014 - 0.67	81	NA	4000 N	RBSL	N	BSL
		Benzo[a]anthracene	0.043 J	0.12 J	mg/kg	4020 (Parcel B)	4 / 22	0.043 - 3.3	0.12	NA	10 C	RBSL	N	BSL
		Benzo[a]pyrene	0.065	1.6	mg/kg	TP-4223 (Parcel B)	5 / 22	0.021 - 3.3	1.6	NA	4 C	RBSL	N	BSL
	NA	C9 to C18 Aliphatics	12	7900	mg/kg	4015.1 (Parcel B)	10 / 22	1.5 - 10	7900	NA	50000 N	RBSL	N	BSL
	NA	C19 to C36 Aliphatics	27 J	2000	mg/kg	4015.1 (Parcel B)	20 / 22	10 - 10	2000	NA	Immobile	RBSL	N	NA
	NA	C11 to C22 Aromatics	20	1100	mg/kg	TP-4223 (Parcel B)	11 / 11	--	1100	NA	400 N	RBSL	Y	ASL
		Chrysene	0.061 J	1.2	mg/kg	TP-4223 (Parcel B)	10 / 22	0.038 - 3.3	1.2	NA	2000 C	RBSL	N	BSL
		Di-n-butyl phthalate	0.07 J	0.07 J	mg/kg	4015.1 (Parcel B)	1 / 11	0.016 - 67	0.07	NA	51 N	Adj-SSL	N	BSL
		Fluoranthene	0.061	37	mg/kg	4015.1 (Parcel B)	7 / 22	0.053 - 0.67	37	NA	500 N	RBSL	N	BSL
		Fluorene	4.5 J	48 J	mg/kg	4015.1 (Parcel B)	5 / 22	0.015 - 0.67	48	NA	600 N	RBSL	N	BSL
		Indeno[1,2,3-cd]pyrene	0.15 J	0.15 J	mg/kg	TP-4220 (Parcel B)	1 / 18	0.05 - 67	0.15	NA	100 C	RBSL	N	BSL
		Pentachlorophenol	0.0023	53000	mg/kg	4052.2 (Parcel B)	204 / 321	0.0002 - 2.7	53000	NA	0.1 C	10 DAF MCL	Y	ASL
		Pyrene	0.077	37	mg/kg	4015.1 (Parcel B)	14 / 22	0.053 - 0.33	37	NA	4000 N	RBSL	N	BSL
	NA	TCDD Equivalents	6.24E-08 J	0.0482	mg/kg	4002 (Parcel B)	255 / 260	1.2E-07 - 7.0E-06	0.0482	3.7E-12	0.00001 C	Adj-SSL	Y	ASL
		2,4,6-Trichlorophenol	0.16 J	2.7 J	mg/kg	4016 (Parcel B)	3 / 41	0.33 - 67	2.7	NA	1.1 N	Adj-SSL	Y	ASL
		EPH Equivalent	260	6800	mg/kg	4015.1 (Parcel B)	5 / 7	10 - 10	6800	NA	nv	--	Y	NSL
		Total Extractable Hydrocarbons	15	2500	mg/kg	TP-4223 (Parcel B)	26 / 34	2.3 - 3.8	2500	NA	nv	--	Y	NSL
		Total Purgeable Hydrocarbons	1.8	33	mg/kg	TP-4223 (Parcel B)	4 / 24	0.28 - 0.32	33	NA	nv	--	Y	NSL
		VPH Equivalent	66	420	mg/kg	4002 (Parcel B)	5 / 7	2 - 2	420	NA	nv	--	Y	NSL

Notes:

(1) Qualifier codes are defined as: 'J' - estimated value.

(2) Concentration used for screening is the maximum detected value across the Site in both surface and subsurface soils.

(3) NA - Not available. Value for TCDD Equivalents is based on Montana's statewide background concentration of 3.7 ng/kg (MDEQ 2011).

(4) Recommended screening value based 2012 MDEQ flowchart (Part 2 of Attachment C). "RBSL" = RBCA - Tier 1 RBSL for soil (leaching 0-10 feet); "10 DAF MCL" = MCL-Based SSL from November 2013 EPA Regional Screening Level table; "10 DAF SSL" = RSL-Based SSL from May 2013 EPA Regional Screening Level table; "Adj-SSL" = Adjusted SSL using the formula RBSSL = (DEQ-7 HHS/EPA RSL)*EPA RSL*10.

(5) ASL - Above Screening Levels; BSL - Below Screening Level; nsl - No Screening Level

COPC = chemical of potential concern

NA = not available

EPA = U.S. Environmental Protection Agency

nv = no value

MDEQ = Montana Department of Environmental Quality

TABLE D3.1. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Parcel A	C5-C8 Aliphatics	mg/kg	1.3E+02	na	1.3E+02	1.3E+02	mg/kg	Max	Less than 10 sample data points
	C9-C12 Aliphatics	mg/kg	2.0E+00 U	na	2.0E+00 U	2.0E+00	mg/kg	Max DL	No detected samples
	C9-C10 Aromatics	mg/kg	2.0E+00 U	na	2.0E+00 U	2.0E+00	mg/kg	Max DL	No detected samples
	Ethylbenzene	mg/kg	5.0E-02 U	na	5.0E-02 U	5.0E-02	mg/kg	Max DL	No detected samples
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	mg/kg	3.3E-01 U	na	3.3E-01 U	3.3E-01	mg/kg	Max DL	No detected samples
	Naphthalene	mg/kg	1.0E-01 U	na	1.0E-01 U	1.0E-01	mg/kg	Max DL	No detected samples
	BaP equivalents	mg/kg	4.1E-01	na	4.1E-01	4.1E-01	mg/kg	Max	Less than 10 sample data points
	C9-C18 Aliphatics	mg/kg	1.2E+01	na	1.2E+01	1.2E+01	mg/kg	Max	Less than 10 sample data points
	C11-C22 Aromatics	mg/kg	2.6E+02	na	2.6E+02	2.6E+02	mg/kg	Max	Less than 10 sample data points
	Pentachlorophenol	mg/kg	4.7E-02	2.3E-01 (NP)	3.1E-01	2.3E-01	mg/kg	97.5% UCL - NP	Kaplan-Meier (Chebyshev) method
	TEQ (ND=1/2DL)	mg/kg	1.9E-04 J	1.9E-03 (NP)	2.0E-03 J	1.9E-03	mg/kg	99% UCL - NP	Chebyshev (mean, SD) method
Parcel B	C5-C8 Aliphatics	mg/kg	5.6E+00	7.9E+00 (NP)	1.6E+01	7.9E+00	mg/kg	95% UCL - NP	Kaplan-Meier (t) method
	C9-C12 Aliphatics	mg/kg	2.4E+02	na	9.1E+02	9.1E+02	mg/kg	Max	UCL value not recommended by ProUCL
	C9-C10 Aromatics	mg/kg	9.2E+01	3.7E+02 (NP)	3.7E+02	3.7E+02	mg/kg	95% UCL - NP	Kaplan-Meier (BCA) method
	Ethylbenzene	mg/kg	5.6E-02 J	na	4.6E-02	4.6E-02	mg/kg	Max	Only one detected sample data point
	1-Methylnaphthalene	mg/kg	7.1E+00 J	na	3.4E+00 J	3.4E+00	mg/kg	Max	Less than 10 sample data points
	2-Methylnaphthalene	mg/kg	4.8E-01 J	2.0E+00 (NP)	2.5E+00	2.0E+00	mg/kg	95% UCL - NP	Kaplan-Meier (percentile bootstrap) method
	Naphthalene	mg/kg	9.3E-02 J	na	4.9E-01	4.9E-01	mg/kg	Max	Only one detected sample data point
	BaP equivalents	mg/kg	3.0E-01 J	6.1E-01 (NP)	1.6E+00	6.1E-01	mg/kg	95% UCL - NP	Kaplan-Meier (BCA) method
	C9-C18 Aliphatics	mg/kg	6.8E+02 J	1.8E+03 (NP)	6.9E+03	1.8E+03	mg/kg	95% UCL - NP	Kaplan-Meier (t) method
	C11-C22 Aromatics	mg/kg	8.3E+02 J	6.1E+03 (NP)	6.4E+03	6.1E+03	mg/kg	99% UCL - NP	Kaplan-Meier (Chebyshev) method
	Pentachlorophenol	mg/kg	5.7E+02	3.4E+03 (NP)	5.3E+04	3.4E+03	mg/kg	97.5% UCL - NP	Kaplan-Meier (Chebyshev) method
	TEQ (ND=1/2DL)	mg/kg	1.1E-03 J	3.8E-03 (NP)	4.8E-02	3.8E-03	mg/kg	95% UCL - NP	Chebyshev (mean, SD) method

TABLE D3.1. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Spigot	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	3.1E-02	5.1E-02 (NP)	2.8E-01	5.1E-02	mg/kg	95% UCL - NP	Kaplan-Meier (BCA) method
	TEQ (ND=1/2DL)	mg/kg	5.3E-05 J	1.0E-04 (O)	8.3E-04 J	1.0E-04	mg/kg	95% UCL - O	Adjusted gamma method
Cassell	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	9.6E-01	1.6E+00 (NP)	2.3E+00	2.3E+00	mg/kg	Max	Less than 10 sample data points
	TEQ (ND=1/2DL)	mg/kg	6.2E-04 J	na	1.5E-03	1.5E-03	mg/kg	Max	Less than 10 sample data points

TABLE D3.1. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Parmenter	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	3.2E-03 J	4.4E-03 (NP)	6.5E-03	4.4E-03	mg/kg	95% UCL - NP	Kaplan-Meier (percentile bootstrap) method
	TEQ (ND=1/2DL)	mg/kg	1.1E-05 J	1.9E-05 (O)	5.1E-05 J	1.9E-05	mg/kg	95% UCL - O	Approx. gamma method
Skroch	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	2.5E-02 J	1.2E-01 (NP)	1.5E-01	1.2E-01	mg/kg	97.5% UCL - NP	Kaplan-Meier (Chebyshev) method
	TEQ (ND=1/2DL)	mg/kg	9.9E-05 J	3.0E-04 (NP)	7.4E-04 J	3.0E-04	mg/kg	95% UCL - NP	Chebyshev (mean, SD) method

TABLE D3.1. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Chaney	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	2.2E-04 U	na	2.2E-04 U	2.2E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	8.6E-06 J	na	1.0E-05 J	1.0E-05	mg/kg	Max	Less than 10 sample data points
Peirano Tract B	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	8.5E-04 J	na	1.7E-03 J	1.7E-03	mg/kg	Max	Less than 10 sample data points

TABLE D3.1. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Renfroe	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	1.1E-05 J	na	1.7E-05 J	1.7E-05	mg/kg	Max	Less than 10 sample data points
3WT	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	2.0E-05 J	na	2.0E-05 J	2.0E-05	mg/kg	Max	Less than 10 sample data points

TABLE D3.1. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Milton	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	7.6E-03	1.2E-02 (N)	1.5E-02	1.5E-02	mg/kg	Max	Less than 10 sample data points
	TEQ (ND=1/2DL)	mg/kg	1.9E-05 J	na	3.4E-05 J	3.4E-05	mg/kg	Max	Less than 10 sample data points
Peirano Parcel B	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	1.7E-02	3.9E-02 (NP)	6.0E-02	6.0E-02	mg/kg	Max	Less than 10 sample data points
	TEQ (ND=1/2DL)	mg/kg	1.1E-03 J	1.9E-03 (NP)	5.1E-03 J	1.9E-03	mg/kg	95% UCL - NP	Hall's bootstrap method

TABLE D3.1. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Peirano Tract A	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	3.5E-04 U	na	3.5E-04 U	3.5E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	2.8E-04 J	2.8E-03 (NP)	1.8E-03 J	1.8E-03	mg/kg	Max	Less than 10 sample data points
Robak	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	9.6E-03	na	9.6E-03	9.6E-03	mg/kg	Max	Less than 10 sample data points
	TEQ (ND=1/2DL)	mg/kg	2.2E-05 J	na	3.4E-05 J	3.4E-05	mg/kg	Max	Less than 10 sample data points

TABLE D3.1. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Smith	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	1.6E-05 J	na	2.1E-05 J	2.1E-05	mg/kg	Max	Less than 10 sample data points
Stevenson	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	6.8E-04 U	na	6.8E-04 U	6.8E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	1.8E-06 J	6.8E-06 (O)	7.6E-06 J	7.6E-06	mg/kg	Max	Less than 10 sample data points

TABLE D3.1. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Vintage	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	4.0E-06 J	na	4.0E-06 J	4.0E-06	mg/kg	Max	Less than 10 sample data points
Cemetery	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	5.1E-06 J	na	5.1E-06 J	5.1E-06	mg/kg	Max	Less than 10 sample data points

TABLE D3.1. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Right-of-Way	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	3.8E+01	na	3.8E+01	3.8E+01	mg/kg	Max	Less than 10 sample data points
	TEQ (ND=1/2DL)	--	--	--	--	--	--	na	na
Rodeo	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	6.2E-07 J	na	6.2E-07 J	6.2E-07	mg/kg	Max	Less than 10 sample data points

TABLE D3.1. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
School	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	2.1E-04 U	na	2.1E-04 U	2.1E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	1.1E-06 J	na	1.7E-06 J	1.7E-06	mg/kg	Max	Less than 10 sample data points

Notes:

(1) The arithmetic means were calculated by ProUCL based on the distribution characteristics and sample size of the underlying data set. If sample sizes were insufficient for ProUCL to compute statistics, means were manually calculated by averaging the available sample data and, if applicable, factoring in nondetects at half their detection limit.

(2) Distribution codes are as follows: (N) = normal, (NP) = nonparametric, (O) = other. Where two UCLs were recommended by ProUCL, the greatest value was used.

(3) EPC statistic codes are as follows:

Max = maximum
Max DL = maximum detection limit
##% UCL - NP = ##% UCL of nonparameteric data
##% UCL - O = ##% UCL of other parameteric data
Mean - N = mean of normal data
Mean - NP = mean of nonparametric data
Mean - O = mean of other parametric data

Qualifiers: J - estimated; U - undetected
-- = no sample data available
BaP = benzo(a)pyrene
CT = central tendency
na = not applicable (e.g., unable to be calculated because of too few samples or no detected samples)
RME = reasonable maximum exposure
TEQ = 2,3,7,8-TCDD toxicity equivalents with non-detects set at 1/2 the detection limit
UCL = upper confidence limit

TABLE D3.1. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Parcel A	C5-C8 Aliphatics	mg/kg	1.3E+02	na	1.3E+02	1.3E+02	mg/kg	Mean	Only one sample data point
	C9-C12 Aliphatics	mg/kg	2.0E+00 U	na	2.0E+00 U	2.0E+00	mg/kg	Max DL	No detected samples
	C9-C10 Aromatics	mg/kg	2.0E+00 U	na	2.0E+00 U	2.0E+00	mg/kg	Max DL	No detected samples
	Ethylbenzene	mg/kg	5.0E-02 U	na	5.0E-02 U	5.0E-02	mg/kg	Max DL	No detected samples
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	mg/kg	3.3E-01 U	na	3.3E-01 U	3.3E-01	mg/kg	Max DL	No detected samples
	Naphthalene	mg/kg	1.0E-01 U	na	1.0E-01 U	1.0E-01	mg/kg	Max DL	No detected samples
	BaP equivalents	mg/kg	4.1E-01	na	4.1E-01	4.1E-01	mg/kg	Mean	Only one sample data point
	C9-C18 Aliphatics	mg/kg	1.2E+01	na	1.2E+01	1.2E+01	mg/kg	Mean	Only one sample data point
	C11-C22 Aromatics	mg/kg	2.6E+02	na	2.6E+02	2.6E+02	mg/kg	Mean	Only one sample data point
	Pentachlorophenol	mg/kg	4.7E-02	2.3E-01 (NP)	3.1E-01	4.7E-02	mg/kg	Mean - NP	Kaplan-Meier method
	TEQ (ND=1/2DL)	mg/kg	1.9E-04 J	1.9E-03 (NP)	2.0E-03 J	1.9E-04	mg/kg	Mean	Mean of raw statistics; all detected samples
Parcel B	C5-C8 Aliphatics	mg/kg	5.6E+00	7.9E+00 (NP)	1.6E+01	5.6E+00	mg/kg	Mean - NP	Kaplan-Meier method
	C9-C12 Aliphatics	mg/kg	2.4E+02	na	9.1E+02	2.4E+02	mg/kg	Mean - NP	Kaplan-Meier method
	C9-C10 Aromatics	mg/kg	9.2E+01	3.7E+02 (NP)	3.7E+02	9.2E+01	mg/kg	Mean - NP	Kaplan-Meier method
	Ethylbenzene	mg/kg	5.6E-02 J	na	4.6E-02	4.6E-02	mg/kg	Max	Max is less than mean (1/2 DL substitution method)
	1-Methylnaphthalene	mg/kg	7.1E+00 J	na	3.4E+00 J	3.4E+00	mg/kg	Max	Max is less than mean (1/2 DL substitution method)
	2-Methylnaphthalene	mg/kg	4.8E-01 J	2.0E+00 (NP)	2.5E+00	4.8E-01	mg/kg	Mean - NP	Kaplan-Meier method
	Naphthalene	mg/kg	9.3E-02 J	na	4.9E-01	9.3E-02	mg/kg	Mean	1/2 DL substitution method
	BaP equivalents	mg/kg	3.0E-01 J	6.1E-01 (NP)	1.6E+00	3.0E-01	mg/kg	Mean - NP	Kaplan-Meier method
	C9-C18 Aliphatics	mg/kg	6.8E+02 J	1.8E+03 (NP)	6.9E+03	6.8E+02	mg/kg	Mean - NP	Kaplan-Meier method
	C11-C22 Aromatics	mg/kg	8.3E+02 J	6.1E+03 (NP)	6.4E+03	8.3E+02	mg/kg	Mean - NP	Kaplan-Meier method
	Pentachlorophenol	mg/kg	5.7E+02	3.4E+03 (NP)	5.3E+04	5.7E+02	mg/kg	Mean - NP	Kaplan-Meier method
	TEQ (ND=1/2DL)	mg/kg	1.1E-03 J	3.8E-03 (NP)	4.8E-02	1.1E-03	mg/kg	Mean	Mean of raw statistics; all detected samples

TABLE D3.1. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Spigot	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	3.1E-02	5.1E-02 (NP)	2.8E-01	3.1E-02	mg/kg	Mean - NP	Kaplan-Meier method
	TEQ (ND=1/2DL)	mg/kg	5.3E-05 J	1.0E-04 (O)	8.3E-04 J	5.3E-05	mg/kg	Mean - O	Maximum likelihood estimate of mean
Cassell	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	9.6E-01	1.6E+00 (NP)	2.3E+00	9.6E-01	mg/kg	Mean - NP	Kaplan-Meier method
	TEQ (ND=1/2DL)	mg/kg	6.2E-04 J	na	1.5E-03	6.2E-04	mg/kg	Mean	1/2 DL substitution method

TABLE D3.1. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Parmenter	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	3.2E-03 J	4.4E-03 (NP)	6.5E-03	3.2E-03	mg/kg	Mean - NP	Kaplan-Meier method
	TEQ (ND=1/2DL)	mg/kg	1.1E-05 J	1.9E-05 (O)	5.1E-05 J	1.1E-05	mg/kg	Mean - O	Maximum likelihood estimate of mean
Skroch	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	2.5E-02 J	1.2E-01 (NP)	1.5E-01	2.5E-02	mg/kg	Mean - NP	Kaplan-Meier method
	TEQ (ND=1/2DL)	mg/kg	9.9E-05 J	3.0E-04 (NP)	7.4E-04 J	9.9E-05	mg/kg	Mean	Mean of raw statistics; all detected samples

TABLE D3.1. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Chaney	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	2.2E-04 U	na	2.2E-04 U	2.2E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	8.6E-06 J	na	1.0E-05 J	8.6E-06	mg/kg	Mean	Mean of raw statistics; less than 10 sample data points
Peirano Tract B	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	8.5E-04 J	na	1.7E-03 J	8.5E-04	mg/kg	Mean	Mean of raw statistics; less than 10 sample data points

TABLE D3.1. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Renfroe	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	1.1E-05 J	na	1.7E-05 J	1.1E-05	mg/kg	Mean	Mean of raw statistics; less than 10 sample data points
3WT	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	2.0E-05 J	na	2.0E-05 J	2.0E-05	mg/kg	Mean	Only one sample data point

TABLE D3.1. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Milton	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	7.6E-03	1.2E-02 (N)	1.5E-02	7.6E-03	mg/kg	Mean - N	Less than 10 sample data points
	TEQ (ND=1/2DL)	mg/kg	1.9E-05 J	na	3.4E-05 J	1.9E-05	mg/kg	Mean	Mean of raw statistics; less than 10 sample data points
Peirano Parcel B	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	1.7E-02	3.9E-02 (NP)	6.0E-02	1.7E-02	mg/kg	Mean - NP	Kaplan-Meier method
	TEQ (ND=1/2DL)	mg/kg	1.1E-03 J	1.9E-03 (NP)	5.1E-03 J	1.1E-03	mg/kg	Mean	Mean of raw statistics; all detected samples

TABLE D3.1. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Peirano Tract A	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	3.5E-04 U	na	3.5E-04 U	3.5E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	2.8E-04 J	2.8E-03 (NP)	1.8E-03 J	2.8E-04	mg/kg	Mean	Mean of raw statistics; all detected samples
Robak	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	9.6E-03	na	9.6E-03	9.6E-03	mg/kg	Mean	Only one sample data point
	TEQ (ND=1/2DL)	mg/kg	2.2E-05 J	na	3.4E-05 J	2.2E-05	mg/kg	Mean	Mean of raw statistics; less than 10 sample data points

TABLE D3.1. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Smith	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	1.6E-05 J	na	2.1E-05 J	1.6E-05	mg/kg	Mean	Mean of raw statistics; less than 10 sample data points
Stevenson	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	6.8E-04 U	na	6.8E-04 U	6.8E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	1.8E-06 J	6.8E-06 (O)	7.6E-06 J	1.8E-06	mg/kg	Mean - O	Maximum likelihood estimate of mean

TABLE D3.1. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Vintage	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	4.0E-06 J	na	4.0E-06 J	4.0E-06	mg/kg	Mean	Only one sample data point
Cemetery	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	5.1E-06 J	na	5.1E-06 J	5.1E-06	mg/kg	Mean	Only one sample data point

TABLE D3.1. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Right-of-Way	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	3.8E+01	na	3.8E+01	3.8E+01	mg/kg	Mean	Only one sample data point
	TEQ (ND=1/2DL)	--	--	--	--	--	--	na	na
Rodeo	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	6.2E-07 J	na	6.2E-07 J	6.2E-07	mg/kg	Mean	Only one sample data point

TABLE D3.1. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
School	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	2.1E-04 U	na	2.1E-04 U	2.1E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	1.1E-06 J	na	1.7E-06 J	1.1E-06	mg/kg	Mean	Mean of raw statistics; less than 10 sample data points

Notes:

(1) The arithmetic means were calculated by ProUCL based on the distribution characteristics and sample size of the underlying data set. If sample sizes were insufficient for ProUCL to compute statistics, means were manually calculated by averaging the available sample data and, if applicable, factoring in nondetects at half their detection limit.

(2) Distribution codes are as follows: (N) = normal, (NP) = nonparametric, (O) = other. Where two UCLs were recommended by ProUCL, the greatest value was used.

(3) EPC statistic codes are as follows:

Max = maximum
Max DL = maximum detection limit
##% UCL - NP = ##% UCL of nonparameteric data
##% UCL - O = ##% UCL of other parameteric data
Mean - N = mean of normal data
Mean - NP = mean of nonparametric data
Mean - O = mean of other parametric data

Qualifiers: J - estimated; U - undetected
-- = no sample data available
BaP = benzo(a)pyrene
CT = central tendency
na = not applicable (e.g., unable to be calculated because of too few samples or no detected samples)
RME = reasonable maximum exposure
TEQ = 2,3,7,8-TCDD toxicity equivalents with non-detects set at 1/2 the detection limit
UCL = upper confidence limit

TABLE D3.2. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Parcel B	C5-C8 Aliphatics	mg/kg	4.8E+00	9.7E+00 (NP)	9.7E+00	9.7E+00	mg/kg	95% UCL - NP	Kaplan-Meier (percentile bootstrap) method
	C9-C12 Aliphatics	mg/kg	2.4E+02	7.8E+02 (NP)	7.8E+02	7.8E+02	mg/kg	95% UCL - NP	Kaplan-Meier (percentile bootstrap) method
	C9-C10 Aromatics	mg/kg	4.9E+01	8.4E+01 (NP)	3.7E+02	8.4E+01	mg/kg	95% UCL - NP	Kaplan-Meier (t) method
	Ethylbenzene	mg/kg	1.0E+01	1.5E+02 (NP)	2.3E+02	1.5E+02	mg/kg	99% UCL - NP	Kaplan-Meier (Chebyshev) method
	1-Methylnaphthalene	mg/kg	2.5E+01 J	1.3E+02 (NP)	1.6E+02	1.6E+02	mg/kg	Max	Less than 10 sample data points
	2-Methylnaphthalene	mg/kg	2.4E+01 J	7.2E+01 (NP)	2.6E+02	7.2E+01	mg/kg	95% UCL - NP	Kaplan-Meier (t) method
	Naphthalene	mg/kg	2.6E+00 J	1.1E+01 (NP)	2.6E+01	1.1E+01	mg/kg	97.5% UCL - NP	Kaplan-Meier (Chebyshev) method
	BaP equivalents	mg/kg	1.6E-01 J	3.1E-01 (NP)	4.4E-01	3.1E-01	mg/kg	95% UCL - NP	Kaplan-Meier (percentile bootstrap) method
	C9-C18 Aliphatics	mg/kg	1.8E+03 J	3.6E+03 (NP)	7.9E+03	7.9E+03	mg/kg	Max	Less than 10 sample data points
	C11-C22 Aromatics	mg/kg	8.9E+02 J	1.6E+03 (NP)	3.0E+03	3.0E+03	mg/kg	Max	Less than 10 sample data points
	Pentachlorophenol	mg/kg	7.7E+01 J	1.2E+02 (NP)	1.3E+03	1.2E+02	mg/kg	95% UCL - NP	Kaplan-Meier (BCA) method
	TEQ (ND=1/2DL)	mg/kg	2.8E-04 J	1.6E-03 (NP)	3.7E-03 J	1.6E-03	mg/kg	99% UCL - NP	Kaplan-Meier (Chebyshev) method
Cassell	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	1.3E-02	na	2.6E-02	2.6E-02	mg/kg	Max	Less than 10 sample data points
	TEQ (ND=1/2DL)	mg/kg	3.0E-05	na	3.0E-05	3.0E-05	mg/kg	Max	Less than 10 sample data points

TABLE D3.2. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Parmenter	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	2.2E-03 U	na	2.2E-03 U	2.2E-03	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	2.2E-06 J	1.5E-05 (O)	5.8E-06	5.8E-06	mg/kg	Max	Less than 10 sample data points
Milton	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	1.1E-03 U	na	1.1E-03 U	1.1E-03	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	--	--	--	--	--	--	na	na

TABLE D3.2. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
School	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	2.1E-04 U	na	2.1E-04 U	2.1E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	2.9E-07 J	NA	4.4E-07	4.4E-07	mg/kg	Max	Less than 10 sample data points

Notes:

(1) The arithmetic means were calculated by ProUCL based on the distribution characteristics and sample size of the underlying data set. If sample sizes were insufficient for ProUCL to compute statistics, means were manually calculated by averaging the available sample data and, if applicable, factoring in nondetects at half their detection limit.

(2) Distribution codes are as follows: (NP) = nonparametric, (O) = other. Where two UCLs were recommended by ProUCL, the greatest value was used.

(3) EPC statistic codes are as follows:

Max = maximum
Max DL = maximum detection limit
##% UCL - NP = ##% UCL of nonparameteric data
Mean - NP = mean of nonparametric data
Mean - O = mean of other parametric data

Qualifiers: J - estimated; U - undetected
-- = no sample data available
BaP = benzo(a)pyrene
CT = central tendency
na = not applicable (e.g., unable to be calculated because of too few samples or no detected samples)
RME = reasonable maximum exposure
TEQ = 2,3,7,8-TCDD toxicity equivalents with non-detects set at 1/2 the detection limit
UCL = upper confidence limit

TABLE D3.2. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Parcel B	C5-C8 Aliphatics	mg/kg	4.8E+00	9.7E+00 (NP)	9.7E+00	4.8E+00	mg/kg	Mean - NP	Kaplan-Meier method
	C9-C12 Aliphatics	mg/kg	2.4E+02	7.8E+02 (NP)	7.8E+02	2.4E+02	mg/kg	Mean - NP	Kaplan-Meier method
	C9-C10 Aromatics	mg/kg	4.9E+01	8.4E+01 (NP)	3.7E+02	4.9E+01	mg/kg	Mean - NP	Kaplan-Meier method
	Ethylbenzene	mg/kg	1.0E+01	1.5E+02 (NP)	2.3E+02	1.0E+01	mg/kg	Mean - NP	Kaplan-Meier method
	1-Methylnaphthalene	mg/kg	2.5E+01 J	1.3E+02 (NP)	1.6E+02	2.5E+01	mg/kg	Mean - NP	Kaplan-Meier method
	2-Methylnaphthalene	mg/kg	2.4E+01 J	7.2E+01 (NP)	2.6E+02	2.4E+01	mg/kg	Mean - NP	Kaplan-Meier method
	Naphthalene	mg/kg	2.6E+00 J	1.1E+01 (NP)	2.6E+01	2.6E+00	mg/kg	Mean - NP	Kaplan-Meier method
	BaP equivalents	mg/kg	1.6E-01 J	3.1E-01 (NP)	4.4E-01	1.6E-01	mg/kg	Mean - NP	Kaplan-Meier method
	C9-C18 Aliphatics	mg/kg	1.8E+03 J	3.6E+03 (NP)	7.9E+03	1.8E+03	mg/kg	Mean - NP	Kaplan-Meier method
	C11-C22 Aromatics	mg/kg	8.9E+02 J	1.6E+03 (NP)	3.0E+03	8.9E+02	mg/kg	Mean - NP	Kaplan-Meier method
	Pentachlorophenol	mg/kg	7.7E+01 J	1.2E+02 (NP)	1.3E+03	7.7E+01	mg/kg	Mean - NP	Kaplan-Meier method
	TEQ (ND=1/2DL)	mg/kg	2.8E-04 J	1.6E-03 (NP)	3.7E-03 J	2.8E-04	mg/kg	Mean - NP	Kaplan-Meier method
Cassell	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	1.3E-02	na	2.6E-02	1.3E-02	mg/kg	Mean	Mean of raw statistics; less than 10 sample data points
	TEQ (ND=1/2DL)	mg/kg	3.0E-05	na	3.0E-05	3.0E-05	mg/kg	Mean	Only one sample data point

TABLE D3.2. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Parmenter	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	2.2E-03 U	na	2.2E-03 U	2.2E-03	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	2.2E-06 J	1.5E-05 (O)	5.8E-06	2.2E-06	mg/kg	Mean - O	Maximum likelihood estimate of mean
Milton	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	1.1E-03 U	na	1.1E-03 U	1.1E-03	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	--	--	--	--	--	--	na	na

TABLE D3.2. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Subsurface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
School	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	2.1E-04 U	na	2.1E-04 U	2.1E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	2.9E-07 J	NA	4.4E-07	2.9E-07	mg/kg	Mean	Mean of raw statistics; less than 10 sample data points

Notes:

(1) The arithmetic means were calculated by ProUCL based on the distribution characteristics and sample size of the underlying data set. If sample sizes were insufficient for ProUCL to compute statistics, means were manually calculated by averaging the available sample data and, if applicable, factoring in nondetects at half their detection limit.

(2) Distribution codes are as follows: (NP) = nonparametric, (O) = other. Where two UCLs were recommended by ProUCL, the greatest value was used.

(3) EPC statistic codes are as follows:

Max = maximum
Max DL = maximum detection limit
##% UCL - NP = ##% UCL of nonparameteric data
Mean - NP = mean of nonparametric data
Mean - O = mean of other parametric data

Qualifiers: J - estimated; U - undetected
-- = no sample data available
BaP = benzo(a)pyrene
CT = central tendency
na = not applicable (e.g., unable to be calculated because of too few samples or no detected samples)
RME = reasonable maximum exposure
TEQ = 2,3,7,8-TCDD toxicity equivalents with non-detects set at 1/2 the detection limit
UCL = upper confidence limit

TABLE D3.3. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parcel A	C5-C8 Aliphatics	mg/m^3	na	na	na	9.7E-08	mg/m^3	na	Derived using modeling
	C9-C12 Aliphatics	mg/m^3	na	na	na	1.5E-09	mg/m^3	na	Derived using modeling
	C9-C10 Aromatics	mg/m^3	na	na	na	1.5E-09	mg/m^3	na	Derived using modeling
	Ethylbenzene	mg/m^3	na	na	na	3.7E-11	mg/m^3	na	Derived using modeling
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	2.4E-10	mg/m^3	na	Derived using modeling
	Naphthalene	mg/m^3	na	na	na	7.4E-11	mg/m^3	na	Derived using modeling
	BaP equivalents	mg/m^3	na	na	na	3.0E-10	mg/m^3	na	Derived using modeling
	C9-C18 Aliphatics	mg/m^3	na	na	na	8.8E-09	mg/m^3	na	Derived using modeling
	C11-C22 Aromatics	mg/m^3	na	na	na	1.9E-07	mg/m^3	na	Derived using modeling
	Pentachlorophenol	mg/m^3	na	na	na	1.7E-10	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	1.4E-12	mg/m^3	na	Derived using modeling
Parcel B	C5-C8 Aliphatics	mg/m^3	na	na	na	5.8E-09	mg/m^3	na	Derived using modeling
	C9-C12 Aliphatics	mg/m^3	na	na	na	6.7E-07	mg/m^3	na	Derived using modeling
	C9-C10 Aromatics	mg/m^3	na	na	na	2.7E-07	mg/m^3	na	Derived using modeling
	Ethylbenzene	mg/m^3	na	na	na	3.4E-11	mg/m^3	na	Derived using modeling
	1-Methylnaphthalene	mg/m^3	na	na	na	2.5E-09	mg/m^3	na	Derived using modeling
	2-Methylnaphthalene	mg/m^3	na	na	na	1.5E-09	mg/m^3	na	Derived using modeling
	Naphthalene	mg/m^3	na	na	na	3.6E-10	mg/m^3	na	Derived using modeling
	BaP equivalents	mg/m^3	na	na	na	4.5E-10	mg/m^3	na	Derived using modeling
	C9-C18 Aliphatics	mg/m^3	na	na	na	1.3E-06	mg/m^3	na	Derived using modeling
	C11-C22 Aromatics	mg/m^3	na	na	na	4.5E-06	mg/m^3	na	Derived using modeling
	Pentachlorophenol	mg/m^3	na	na	na	2.5E-06	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.8E-12	mg/m^3	na	Derived using modeling

TABLE D3.3. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Spigot	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	3.8E-11	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	7.4E-14	mg/m^3	na	Derived using modeling
Cassell	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	1.7E-09	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	1.1E-12	mg/m^3	na	Derived using modeling

TABLE D3.3. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parmenter	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	3.2E-12	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	1.4E-14	mg/m^3	na	Derived using modeling
Skroch	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	8.8E-11	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.2E-13	mg/m^3	na	Derived using modeling

TABLE D3.3. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Chaney	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	1.6E-13	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	7.3E-15	mg/m^3	na	Derived using modeling
Peirano Tract B	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	1.2E-12	mg/m^3	na	Derived using modeling

TABLE D3.3. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Renfroe	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	1.3E-14	mg/m^3	na	Derived using modeling
3WT	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	1.5E-14	mg/m^3	na	Derived using modeling

TABLE D3.3. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Milton	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	1.1E-11	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.5E-14	mg/m^3	na	Derived using modeling
Peirano Parcel B	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	4.4E-11	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	1.4E-12	mg/m^3	na	Derived using modeling

TABLE D3.3. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Peirano Tract A	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	2.6E-13	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	1.3E-12	mg/m^3	na	Derived using modeling
Robak	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	7.1E-12	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.5E-14	mg/m^3	na	Derived using modeling

TABLE D3.3. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Smith	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	1.5E-14	mg/m^3	na	Derived using modeling
Stevenson	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	5.0E-13	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	5.6E-15	mg/m^3	na	Derived using modeling

TABLE D3.3. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Vintage	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.9E-15	mg/m^3	na	Derived using modeling
Cemetery	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	3.8E-15	mg/m^3	na	Derived using modeling

TABLE D3.3. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Right-of-Way	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	2.8E-08	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	--	mg/m^3	na	na
Rodeo	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	4.6E-16	mg/m^3	na	Derived using modeling

TABLE D3.3. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
School	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	1.5E-13	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	1.2E-15	mg/m^3	na	Derived using modeling

Notes:

Surface soil dust EPCs were derived using modeling, as discussed in Section 6.3.2.2.

-- = no soil sample data available
BaP = benzo(a)pyrene
CT = central tendency
EPC = exposure point concentration
na = not applicable (e.g., unable to be calculated because of too few samples or no detected samples)
RME = reasonable maximum exposure
TEQ = 2,3,7,8-TCDD toxicity equivalents with non-detects set at 1/2 the detection limit
UCL = upper confidence limit

TABLE D3.3. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parcel A	C5-C8 Aliphatics	mg/m^3	na	na	na	9.7E-08	mg/m^3	na	Derived using modeling
	C9-C12 Aliphatics	mg/m^3	na	na	na	1.5E-09	mg/m^3	na	Derived using modeling
	C9-C10 Aromatics	mg/m^3	na	na	na	1.5E-09	mg/m^3	na	Derived using modeling
	Ethylbenzene	mg/m^3	na	na	na	3.7E-11	mg/m^3	na	Derived using modeling
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	2.4E-10	mg/m^3	na	Derived using modeling
	Naphthalene	mg/m^3	na	na	na	7.4E-11	mg/m^3	na	Derived using modeling
	BaP equivalents	mg/m^3	na	na	na	3.0E-10	mg/m^3	na	Derived using modeling
	C9-C18 Aliphatics	mg/m^3	na	na	na	8.8E-09	mg/m^3	na	Derived using modeling
	C11-C22 Aromatics	mg/m^3	na	na	na	1.9E-07	mg/m^3	na	Derived using modeling
	Pentachlorophenol	mg/m^3	na	na	na	3.5E-11	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	1.4E-13	mg/m^3	na	Derived using modeling
Parcel B	C5-C8 Aliphatics	mg/m3	na	na	na	4.1E-09	mg/m^3	na	Derived using modeling
	C9-C12 Aliphatics	mg/m3	na	na	na	1.7E-07	mg/m^3	na	Derived using modeling
	C9-C10 Aromatics	mg/m3	na	na	na	6.8E-08	mg/m^3	na	Derived using modeling
	Ethylbenzene	mg/m3	na	na	na	3.4E-11	mg/m^3	na	Derived using modeling
	1-Methylnaphthalene	mg/m3	na	na	na	2.5E-09	mg/m^3	na	Derived using modeling
	2-Methylnaphthalene	mg/m3	na	na	na	3.6E-10	mg/m^3	na	Derived using modeling
	Naphthalene	mg/m3	na	na	na	6.8E-11	mg/m^3	na	Derived using modeling
	BaP equivalents	mg/m3	na	na	na	2.2E-10	mg/m^3	na	Derived using modeling
	C9-C18 Aliphatics	mg/m3	na	na	na	5.0E-07	mg/m^3	na	Derived using modeling
	C11-C22 Aromatics	mg/m3	na	na	na	6.1E-07	mg/m^3	na	Derived using modeling
	Pentachlorophenol	mg/m3	na	na	na	4.2E-07	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	8.3E-13	mg/m^3	na	Derived using modeling

TABLE D3.3. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Spigot	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	2.3E-11	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	3.9E-14	mg/m^3	na	Derived using modeling
Cassell	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	7.1E-10	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	4.6E-13	mg/m^3	na	Derived using modeling

TABLE D3.3. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parmenter	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	2.4E-12	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	7.8E-15	mg/m^3	na	Derived using modeling
Skroch	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	1.8E-11	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	7.3E-14	mg/m^3	na	Derived using modeling

TABLE D3.3. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Chaney	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	1.6E-13	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	6.3E-15	mg/m^3	na	Derived using modeling
Peirano Tract B	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m3	na	na	na	6.3E-13	mg/m^3	na	Derived using modeling

TABLE D3.3. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Renfroe	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m3	na	na	na	8.3E-15	mg/m^3	na	Derived using modeling
3WT	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m3	na	na	na	1.5E-14	mg/m^3	na	Derived using modeling

TABLE D3.3. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Milton	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	5.6E-12	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	1.4E-14	mg/m^3	na	Derived using modeling
Peirano Parcel B	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	1.2E-11	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	7.7E-13	mg/m^3	na	Derived using modeling

TABLE D3.3. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Peirano Tract A	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	2.6E-13	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	2.1E-13	mg/m^3	na	Derived using modeling
Robak	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	7.1E-12	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	1.7E-14	mg/m^3	na	Derived using modeling

TABLE D3.3. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Smith	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m3	na	na	na	1.2E-14	mg/m^3	na	Derived using modeling
Stevenson	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	5.0E-13	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	1.3E-15	mg/m^3	na	Derived using modeling

TABLE D3.3. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Vintage	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m3	na	na	na	2.9E-15	mg/m^3	na	Derived using modeling
Cemetery	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m3	na	na	na	3.8E-15	mg/m^3	na	Derived using modeling

TABLE D3.3. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Right-of-Way	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	2.8E-08	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	--	mg/m^3	na	na
Rodeo	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m3	na	na	na	4.6E-16	mg/m^3	na	Derived using modeling

TABLE D3.3. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
School	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	1.5E-13	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	7.8E-16	mg/m^3	na	Derived using modeling

Notes:

Surface soil dust EPCs were derived using modeling, as discussed in Section 6.3.2.2.

-- = no soil sample data available
BaP = benzo(a)pyrene
CT = central tendency
EPC = exposure point concentration
na = not applicable (e.g., unable to be calculated because of too few samples or no detected samples)
RME = reasonable maximum exposure
TEQ = 2,3,7,8-TCDD toxicity equivalents with non-detects set at 1/2 the detection limit
UCL = upper confidence limit

TABLE D3.4.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parcel B	C5-C8 Aliphatics	mg/m^3	na	na	na	7.1E-09	mg/m^3	na	Derived using modeling
	C9-C12 Aliphatics	mg/m^3	na	na	na	5.7E-07	mg/m^3	na	Derived using modeling
	C9-C10 Aromatics	mg/m^3	na	na	na	6.2E-08	mg/m^3	na	Derived using modeling
	Ethylbenzene	mg/m^3	na	na	na	1.1E-07	mg/m^3	na	Derived using modeling
	1-Methylnaphthalene	mg/m^3	na	na	na	1.2E-07	mg/m^3	na	Derived using modeling
	2-Methylnaphthalene	mg/m^3	na	na	na	5.3E-08	mg/m^3	na	Derived using modeling
	Naphthalene	mg/m^3	na	na	na	8.4E-09	mg/m^3	na	Derived using modeling
	BaP equivalents	mg/m^3	na	na	na	2.3E-10	mg/m^3	na	Derived using modeling
	C9-C18 Aliphatics	mg/m^3	na	na	na	5.8E-06	mg/m^3	na	Derived using modeling
	C11-C22 Aromatics	mg/m^3	na	na	na	2.2E-06	mg/m^3	na	Derived using modeling
	Pentachlorophenol	mg/m^3	na	na	na	8.5E-08	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	1.1E-12	mg/m^3	na	Derived using modeling
Cassell	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	1.9E-11	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.2E-14	mg/m^3	na	Derived using modeling

TABLE D3.4.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parmenter	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	1.6E-12	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	4.3E-15	mg/m^3	na	Derived using modeling
Milton	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	8.3E-13	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	--	mg/m^3	na	na

TABLE D3.4.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
School	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	1.6E-13	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	3.2E-16	mg/m^3	na	Derived using modeling

Notes:

Subsurface soil dust EPCs were derived using modeling, as discussed in Section 6.3.2.2.

-- = no soil sample data available
BaP = benzo(a)pyrene
CT = central tendency
EPC = exposure point concentration
na = not applicable (e.g., unable to be calculated because of too few samples or no detected samples)
RME = reasonable maximum exposure
TEQ = 2,3,7,8-TCDD toxicity equivalents with non-detects set at 1/2 the detection limit
UCL = upper confidence limit

TABLE D3.4.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parcel B	C5-C8 Aliphatics	mg/m^3	na	na	na	3.6E-09	mg/m^3	na	Derived using modeling
	C9-C12 Aliphatics	mg/m^3	na	na	na	1.8E-07	mg/m^3	na	Derived using modeling
	C9-C10 Aromatics	mg/m^3	na	na	na	3.6E-08	mg/m^3	na	Derived using modeling
	Ethylbenzene	mg/m^3	na	na	na	7.7E-09	mg/m^3	na	Derived using modeling
	1-Methylnaphthalene	mg/m^3	na	na	na	1.9E-08	mg/m^3	na	Derived using modeling
	2-Methylnaphthalene	mg/m^3	na	na	na	1.8E-08	mg/m^3	na	Derived using modeling
	Naphthalene	mg/m^3	na	na	na	1.9E-09	mg/m^3	na	Derived using modeling
	BaP equivalents	mg/m^3	na	na	na	1.1E-10	mg/m^3	na	Derived using modeling
	C9-C18 Aliphatics	mg/m^3	na	na	na	1.3E-06	mg/m^3	na	Derived using modeling
	C11-C22 Aromatics	mg/m^3	na	na	na	6.5E-07	mg/m^3	na	Derived using modeling
	Pentachlorophenol	mg/m^3	na	na	na	5.6E-08	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.1E-13	mg/m^3	na	Derived using modeling
Cassell	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	9.2E-12	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.2E-14	mg/m^3	na	Derived using modeling

TABLE D3.4.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parmenter	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	1.6E-12	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	1.6E-15	mg/m^3	na	Derived using modeling
Milton	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	8.3E-13	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	--	mg/m^3	na	na

TABLE D3.4.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Air

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
School	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	1.6E-13	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.1E-16	mg/m^3	na	Derived using modeling

Notes:

Subsurface soil dust EPCs were derived using modeling, as discussed in Section 6.3.2.2.

-- = no soil sample data available
BaP = benzo(a)pyrene
CT = central tendency
EPC = exposure point concentration
na = not applicable (e.g., unable to be calculated because of too few samples or no detected samples)
RME = reasonable maximum exposure
TEQ = 2,3,7,8-TCDD toxicity equivalents with non-detects set at 1/2 the detection limit
UCL = upper confidence limit

TABLE D3.5. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parcel A	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	BaP equivalents	mg/m^3	na	na	na	7.1E-05	mg/m^3	na	Derived using modeling
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	Pentachlorophenol	mg/m^3	na	na	na	5.1E-04	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.8E-07	mg/m^3	na	Derived using modeling
Parcel B	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	BaP equivalents	mg/m^3	na	na	na	1.1E-04	mg/m^3	na	Derived using modeling
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	Pentachlorophenol	mg/m^3	na	na	na	7.5E+00	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	5.7E-07	mg/m^3	na	Derived using modeling

TABLE D3.5. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Spigot	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	1.1E-04	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	1.5E-08	mg/m^3	na	Derived using modeling
Cassell	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	5.1E-03	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.3E-07	mg/m^3	na	Derived using modeling

TABLE D3.5. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parmenter	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	9.8E-06	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.8E-09	mg/m^3	na	Derived using modeling
Skroch	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	2.7E-04	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	4.5E-08	mg/m^3	na	Derived using modeling

TABLE D3.5. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Chaney	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	5.0E-07	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	1.5E-09	mg/m^3	na	Derived using modeling
Peirano Tract B	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.5E-07	mg/m^3	na	Derived using modeling

TABLE D3.5. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Renfroe	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.6E-09	mg/m^3	na	Derived using modeling
3WT	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	3.1E-09	mg/m^3	na	Derived using modeling

TABLE D3.5. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Milton	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	3.4E-05	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	5.1E-09	mg/m^3	na	Derived using modeling
Peirano Parcel B	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	1.3E-04	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.9E-07	mg/m^3	na	Derived using modeling

TABLE D3.5. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Peirano Tract A	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	7.9E-07	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.7E-07	mg/m^3	na	Derived using modeling
Robak	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	2.1E-05	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	5.1E-09	mg/m^3	na	Derived using modeling

TABLE D3.5. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Smith	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	3.2E-09	mg/m^3	na	Derived using modeling
Stevenson	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	1.5E-06	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	1.1E-09	mg/m^3	na	Derived using modeling

TABLE D3.5. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Vintage	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	6.0E-10	mg/m^3	na	Derived using modeling
Cemetery	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	7.8E-10	mg/m^3	na	Derived using modeling

TABLE D3.5. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Right-of-Way	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	8.5E-02	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	--	mg/m^3	na	na
Rodeo	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	9.5E-11	mg/m^3	na	Derived using modeling

TABLE D3.5. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
School	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m^3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m^3	na	na	na	4.6E-07	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.6E-10	mg/m^3	na	Derived using modeling

Notes:

Plant tissue EPCs were derived using modeling, as discussed in Section 6.3.2.2.

-- = no soil sample data available
BaP = benzo(a)pyrene
CT = central tendency
EPC = exposure point concentration
na = not applicable (e.g., unable to be calculated because of too few samples or no detected samples)
RME = reasonable maximum exposure
TEQ = 2,3,7,8-TCDD toxicity equivalents with non-detects set at 1/2 the detection limit
UCL = upper confidence limit

TABLE D3.5. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parcel A	C5-C8 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	C9-C12 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	C9-C10 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	Ethylbenzene	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	1-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	Naphthalene	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	BaP equivalents	mg/m^3	na	na	na	7.1E-05	mg/m^3	na	Derived using modeling
	C9-C18 Aliphatics	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	C11-C22 Aromatics	mg/m^3	na	na	na	--	mg/m^3	na	Derived using modeling
	Pentachlorophenol	mg/m^3	na	na	na	1.1E-04	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m^3	na	na	na	2.9E-08	mg/m^3	na	Derived using modeling
Parcel B	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	Derived using modeling
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	Derived using modeling
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	Derived using modeling
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	Derived using modeling
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	Derived using modeling
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	Derived using modeling
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	Derived using modeling
	BaP equivalents	mg/m3	na	na	na	5.1E-05	mg/m^3	na	Derived using modeling
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	Derived using modeling
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	Derived using modeling
	Pentachlorophenol	mg/m3	na	na	na	1.3E+00	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	1.7E-07	mg/m^3	na	Derived using modeling

TABLE D3.5. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Spigot	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	7.0E-05	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	8.0E-09	mg/m^3	na	Derived using modeling
Cassell	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	2.1E-03	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	9.4E-08	mg/m^3	na	Derived using modeling

TABLE D3.5. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parmenter	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	7.1E-06	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	1.6E-09	mg/m^3	na	Derived using modeling
Skroch	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	5.6E-05	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	1.5E-08	mg/m^3	na	Derived using modeling

TABLE D3.5. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Chaney	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	5.0E-07	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	1.3E-09	mg/m^3	na	Derived using modeling
Peirano Tract B	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m3	na	na	na	1.3E-07	mg/m^3	na	Derived using modeling

TABLE D3.5. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Renfroe	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m3	na	na	na	1.7E-09	mg/m^3	na	Derived using modeling
3WT	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m3	na	na	na	3.1E-09	mg/m^3	na	Derived using modeling

TABLE D3.5. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Milton	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	1.7E-05	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	2.9E-09	mg/m^3	na	Derived using modeling
Peirano Parcel B	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	3.7E-05	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	1.6E-07	mg/m^3	na	Derived using modeling

TABLE D3.5. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Peirano Tract A	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	7.9E-07	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	4.2E-08	mg/m^3	na	Derived using modeling
Robak	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	2.1E-05	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	3.4E-09	mg/m^3	na	Derived using modeling

TABLE D3.5. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Smith	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m3	na	na	na	2.4E-09	mg/m^3	na	Derived using modeling
Stevenson	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	1.5E-06	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	2.7E-10	mg/m^3	na	Derived using modeling

TABLE D3.5. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Vintage	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m3	na	na	na	6.0E-10	mg/m^3	na	Derived using modeling
Cemetery	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m3	na	na	na	7.8E-10	mg/m^3	na	Derived using modeling

TABLE D3.5. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Right-of-Way	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	8.5E-02	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	--	mg/m^3	na	na
Rodeo	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	--	mg/m^3	na	na
	TEQ (ND=1/2DL)	mg/m3	na	na	na	9.5E-11	mg/m^3	na	Derived using modeling

TABLE D3.5. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Plant Tissue

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
School	C5-C8 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C12 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C10 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Ethylbenzene	mg/m3	na	na	na	--	mg/m^3	na	na
	1-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	2-Methylnaphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	Naphthalene	mg/m3	na	na	na	--	mg/m^3	na	na
	BaP equivalents	mg/m3	na	na	na	--	mg/m^3	na	na
	C9-C18 Aliphatics	mg/m3	na	na	na	--	mg/m^3	na	na
	C11-C22 Aromatics	mg/m3	na	na	na	--	mg/m^3	na	na
	Pentachlorophenol	mg/m3	na	na	na	4.6E-07	mg/m^3	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/m3	na	na	na	1.6E-10	mg/m^3	na	Derived using modeling

Notes:

Plant tissue EPCs were derived using modeling, as discussed in Section 6.3.2.2.

-- = no soil sample data available
BaP = benzo(a)pyrene
CT = central tendency
EPC = exposure point concentration
na = not applicable (e.g., unable to be calculated because of too few samples or no detected samples)
RME = reasonable maximum exposure
TEQ = 2,3,7,8-TCDD toxicity equivalents with non-detects set at 1/2 the detection limit
UCL = upper confidence limit

TABLE D3.6. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parcel A	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	1.8E-04	mg/L	na	Derived using modeling
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	4.3E-05	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	3.4E-07	mg/L	na	Derived using modeling
Parcel B	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	2.7E-04	mg/L	na	Derived using modeling
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	6.3E-01	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	6.8E-07	mg/L	na	Derived using modeling

TABLE D3.6. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Spigot	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	9.5E-06	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	1.8E-08	mg/L	na	Derived using modeling
Cassell	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	6.4E-05	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	4.0E-08	mg/L	na	Derived using modeling

TABLE D3.6. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parmenter	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	1.2E-07	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	5.0E-10	mg/L	na	Derived using modeling
Skroch	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	3.3E-06	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	8.1E-09	mg/L	na	Derived using modeling

TABLE D3.6. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Chaney	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	4.2E-08	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	1.8E-09	mg/L	na	Derived using modeling
Peirano Tract B	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	4.5E-08	mg/L	na	Derived using modeling

TABLE D3.6. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Renfroe	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	3.1E-09	mg/L	na	Derived using modeling
3WT	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	3.7E-09	mg/L	na	Derived using modeling

TABLE D3.6. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Milton	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	2.8E-06	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	6.2E-09	mg/L	na	Derived using modeling
Peirano Parcel B	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	1.7E-06	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	5.2E-08	mg/L	na	Derived using modeling

TABLE D3.6. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Peirano Tract A	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	9.7E-09	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	4.8E-08	mg/L	na	Derived using modeling
Robak	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	1.8E-06	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	6.2E-09	mg/L	na	Derived using modeling

TABLE D3.6. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Smith	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	3.8E-09	mg/L	na	Derived using modeling
Stevenson	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	1.3E-07	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	1.4E-09	mg/L	na	Derived using modeling

TABLE D3.6. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Vintage	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	7.2E-10	mg/L	na	Derived using modeling

TABLE D3.6. RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Right-of-Way	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	7.1E-03	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	--	mg/L	na	na

Notes:

Breast milk EPCs were derived using modeling, as discussed in Section 6.3.2.2 and calculated in Appendix E.

-- = no soil sample data available
BaP = benzo(a)pyrene
CT = central tendency
EPC = exposure point concentration
na = not applicable (e.g., unable to be calculated because of too few samples or no detected samples)
RME = reasonable maximum exposure
TEQ = 2,3,7,8-TCDD toxicity equivalents with non-detects set at 1/2 the detection limit
UCL = upper confidence limit

TABLE D3.6. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parcel A	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	6.9E-05	mg/L	na	Derived using modeling
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	3.7E-06	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	1.0E-08	mg/L	na	Derived using modeling
Parcel B	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	4.9E-05	mg/L	na	Derived using modeling
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	4.5E-02	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	6.1E-08	mg/L	na	Derived using modeling

TABLE D3.6. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Spigot	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	2.5E-06	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	2.8E-09	mg/L	na	Derived using modeling
Cassell	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	1.0E-05	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	4.4E-09	mg/L	na	Derived using modeling

TABLE D3.6. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parmenter	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	3.3E-08	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	7.6E-11	mg/L	na	Derived using modeling
Skroch	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	2.6E-07	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	7.1E-10	mg/L	na	Derived using modeling

TABLE D3.6. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Chaney	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	1.8E-08	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	4.6E-10	mg/L	na	Derived using modeling
Peirano Tract B	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	6.1E-09	mg/L	na	Derived using modeling

TABLE D3.6. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Renfroe	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	6.1E-10	mg/L	na	Derived using modeling
3WT	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	1.1E-09	mg/L	na	Derived using modeling

TABLE D3.6. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Milton	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	6.0E-07	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	1.0E-09	mg/L	na	Derived using modeling
Peirano Parcel B	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	1.7E-07	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	7.5E-09	mg/L	na	Derived using modeling

TABLE D3.6. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Peirano Tract A	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	3.7E-09	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	2.0E-09	mg/L	na	Derived using modeling
Robak	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	7.5E-07	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	1.2E-09	mg/L	na	Derived using modeling

TABLE D3.6. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Smith	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	8.5E-10	mg/L	na	Derived using modeling
Stevenson	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	5.4E-08	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	9.4E-11	mg/L	na	Derived using modeling

TABLE D3.6. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Vintage	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	2.1E-10	mg/L	na	Derived using modeling

TABLE D3.6. CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Right-of-Way	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	3.0E-03	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	--	mg/L	na	na

Notes:

Breast milk EPCs were derived using modeling, as discussed in Section 6.3.2.2 and calculated in Appendix E.

-- = no soil sample data available
BaP = benzo(a)pyrene
CT = central tendency
EPC = exposure point concentration
na = not applicable (e.g., unable to be calculated because of too few samples or no detected samples)
RME = reasonable maximum exposure
TEQ = 2,3,7,8-TCDD toxicity equivalents with non-detects set at 1/2 the detection limit
UCL = upper confidence limit

TABLE D3.7. RME

EXPOSURE POINT CONCENTRATION SUMMARY

ONE YEAR MAXIMUM CONCENTRATION

S&W Sawmill Facility, Darby, MT

Scenario Timeframe: Current
Medium: Groundwater
Exposure Medium: Tap Water

Exposure Point	Chemical of Potential Concern	Units	MDEQ Cleanup Level (1)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
					Value	Units	Statistic	Rationale
Tap Water								
Parcel A	2-Methylnaphthalene	µg/L	27	na	na	µg/L	Maximum	a
	BaP Equivalents	µg/L	0.05	na	na	µg/L	Maximum	a
	Pentachlorophenol	µg/L	1	1.8E+00	1.8E+00	µg/L	Maximum	a
	TCDD Equivalents	µg/L	2.0E-06	2.4E-05	2.4E-05	µg/L	Maximum	a
Parcel B	2-Methylnaphthalene	µg/L	27	1.6E+00	1.6E+00	µg/L	Maximum	a
	BaP Equivalents	µg/L	0.05	1.5E-01 U	1.5E-01	µg/L	Maximum	a
	Pentachlorophenol	µg/L	1	1.0E+02	1.0E+02	µg/L	Maximum	a
	TCDD Equivalents	µg/L	2.0E-06	1.7E-04 J	1.7E-04	µg/L	Maximum	a
Chaney	2-Methylnaphthalene	µg/L	27	na	na	µg/L	Maximum	a
	BaP Equivalents	µg/L	0.05	na	na	µg/L	Maximum	a
	Pentachlorophenol	µg/L	1	1.2E-01	1.2E-01	µg/L	Maximum	a
	TCDD Equivalents	µg/L	2.0E-06	2.7E-05 J	2.7E-05	µg/L	Maximum	a
Parmenter	2-Methylnaphthalene	µg/L	27	na	na	µg/L	Maximum	a
	BaP Equivalents	µg/L	0.05	na	na	µg/L	Maximum	a
	Pentachlorophenol	µg/L	1	2.1E-02 U	1.1E-02	µg/L	Maximum	a, b
	TCDD Equivalents	µg/L	2.0E-06	6.3E-06 J	6.3E-06	µg/L	Maximum	a
Peirano Tract B	2-Methylnaphthalene	µg/L	27	na	na	µg/L	Maximum	a
	BaP Equivalents	µg/L	0.05	na	na	µg/L	Maximum	a
	Pentachlorophenol	µg/L	1	2.1E-02 U	1.1E-02	µg/L	Maximum	a, b
	TCDD Equivalents	µg/L	2.0E-06	6.5E-06 U	6.5E-06	µg/L	Maximum	a, c

TABLE D3.7. RME

EXPOSURE POINT CONCENTRATION SUMMARY

ONE YEAR MAXIMUM CONCENTRATION

S&W Sawmill Facility, Darby, MT

Scenario Timeframe: Current

Medium: Groundwater

Exposure Medium: Tap Water

Exposure Point	Chemical of Potential Concern	Units	MDEQ Cleanup Level (1)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
					Value	Units	Statistic	Rationale
Renfroe	2-Methylnaphthalene	µg/L	27	na	na	µg/L	Maximum	a
	BaP Equivalents	µg/L	0.05	na	na	µg/L	Maximum	a
	Pentachlorophenol	µg/L	1	1.9E-01	1.9E-01	µg/L	Maximum	a
	TCDD Equivalents	µg/L	2.0E-06	2.4E-05	2.4E-05	µg/L	Maximum	a
Robak	2-Methylnaphthalene	µg/L	27	na	na	µg/L	Maximum	a
	BaP Equivalents	µg/L	0.05	na	na	µg/L	Maximum	a
	Pentachlorophenol	µg/L	1	1.7E-02 U	1.7E-02	µg/L	Maximum	a
	TCDD Equivalents	µg/L	2.0E-06	2.8E-06 J	2.8E-06	µg/L	Maximum	a

Notes:

(1) The MDEQ Cleanup Levels were taken from the October 2012 Circular DEQ-7. Montana Numeric Water Quality Standards, where available. For 2-methylnaphthalene, the EPA RSL for tap water (HQ = 1; May 2013) is provided for comparison.

Qualifiers: J - Estimated value; U - Not detected above the method detection limit

EPA = U.S. Environmental Protection Agency

EPC = exposure point concentration

MDEQ = Montana Department of Environmental Quality

MDL = method detection limit

na = not available

RME = reasonable maximum exposure

RSL = regional screening level

a - As stated in Section 6.3.2, the maximum concentration of the most recent sampling event on each property was selected for the EPC.

b - As the most recent concentration was qualified as "U" indicating a value below the MDL, 1/2 the MDL was used as the EPC.

c -The concentrations for all dioxin congeners in the most recent sample at this parcel were below the MDL. As the TCDD Equivalents were calculated using 1/2 the MDL, the reported value in the database was kept as is.

TABLE D3.8. RME

EXPOSURE POINT CONCENTRATION SUMMARY

FIVE YEAR MAXIMUM CONCENTRATION

S&W Sawmill Facility, Darby, MT

Scenario Timeframe: Current
Medium: Groundwater
Exposure Medium: Tap Water

Exposure Point	Chemical of Potential Concern	Units	MDEQ Cleanup Level (1)	Maximum Concentration (Qualifier)		Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Tap Water									
Parcel A	2-Methylnaphthalene	µg/L	27	na		na	µg/L	Maximum	a
	BaP Equivalents	µg/L	0.05	na		na	µg/L	Maximum	a
	Pentachlorophenol	µg/L	1	4.0E+01		4.0E+01	µg/L	Maximum	a
	TCDD Equivalents	µg/L	2.0E-06	1.0E-04	J	1.0E-04	µg/L	Maximum	a
Parcel B	2-Methylnaphthalene	µg/L	27	4.0E+01		4.0E+01	µg/L	Maximum	a
	BaP Equivalents	µg/L	0.05	9.9E-01		9.9E-01	µg/L	Maximum	a
	Pentachlorophenol	µg/L	1	3.2E+02		3.2E+02	µg/L	Maximum	a
	TCDD Equivalents	µg/L	2.0E-06	8.5E-04	J	8.5E-04	µg/L	Maximum	a
Chaney	2-Methylnaphthalene	µg/L	27	na		na	µg/L	Maximum	a
	BaP Equivalents	µg/L	0.05	na		na	µg/L	Maximum	a
	Pentachlorophenol	µg/L	1	4.1E-01		4.1E-01	µg/L	Maximum	a
	TCDD Equivalents	µg/L	2.0E-06	5.2E-05	J	5.2E-05	µg/L	Maximum	a
Parmenter	2-Methylnaphthalene	µg/L	27	na		na	µg/L	Maximum	a
	BaP Equivalents	µg/L	0.05	na		na	µg/L	Maximum	a
	Pentachlorophenol	µg/L	1	3.9E-02	U	1.9E-02	µg/L	Maximum	a, b
	TCDD Equivalents	µg/L	2.0E-06	6.3E-06	J	6.3E-06	µg/L	Maximum	a
Peirano Tract B	2-Methylnaphthalene	µg/L	27	na		na	µg/L	Maximum	a
	BaP Equivalents	µg/L	0.05	na		na	µg/L	Maximum	a
	Pentachlorophenol	µg/L	1	4.6E-02		4.6E-02	µg/L	Maximum	a
	TCDD Equivalents	µg/L	2.0E-06	1.7E-06	J	1.7E-06	µg/L	Maximum	a

TABLE D3.8. RME

EXPOSURE POINT CONCENTRATION SUMMARY

FIVE YEAR MAXIMUM CONCENTRATION

S&W Sawmill Facility, Darby, MT

Scenario Timeframe: Current

Medium: Groundwater

Exposure Medium: Tap Water

Exposure Point	Chemical of Potential Concern	Units	MDEQ Cleanup Level (1)	Maximum Concentration (Qualifier)		Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Renfroe	2-Methylnaphthalene	µg/L	27	na		na	µg/L	Maximum	a
	BaP Equivalents	µg/L	0.05	na		na	µg/L	Maximum	a
	Pentachlorophenol	µg/L	1	5.2E-01		5.2E-01	µg/L	Maximum	a
	TCDD Equivalents	µg/L	2.0E-06	8.6E-05	J	8.6E-05	µg/L	Maximum	a
Robak	2-Methylnaphthalene	µg/L	27	na		na	µg/L	Maximum	a
	BaP Equivalents	µg/L	0.05	na		na	µg/L	Maximum	a
	Pentachlorophenol	µg/L	1	1.7E-02	U	1.7E-02	µg/L	Maximum	a
	TCDD Equivalents	µg/L	2.0E-06	2.8E-06	J	2.8E-06	µg/L	Maximum	a

Notes:

(1) The MDEQ Cleanup Levels were taken from the October 2012 Circular DEQ-7. Montana Numeric Water Quality Standards, where available. For 2-methylnaphthalene, the EPA RSL for tap water (HQ = 1; May 2013) is provided for comparison.

Qualifiers: J - Estimated value; U - Not detected above the method detection limit

EPA = U.S. Environmental Protection Agency

EPC = exposure point concentration

MDEQ = Montana Department of Environmental Quality

MDL = method detection limit

na = not available

RME =- reasonable maximum exposure

RSL = regional screening level

a - As stated in Section 6.3.2, the maximum concentration of the sampling events from the past five years on each property was selected for the EPC.

b - As the five year maximum concentration was qualified as "U" indicating a value below the MDL, 1/2 the MDL was used as the EPC.

TABLE D4.1. RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Resident	Child (0-6 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.a.
				IR_{soil}	Soil ingestion rate	200	mg/day	MDEQ's (2012) frequently asked questions; USEPA (2011, Table 5-1)	Average daily dose (ADD_{ing}; mg/kg-day) =
				EF	Exposure frequency (non-ditch)	270	days/year	MDEQ's (2012) frequently asked questions	$\frac{EPC_{soil} \times IR_{soil} \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure frequency (ditch)	40	days/year	Prof. judgment	
				ED	Exposure duration	6	years	Ages 1-7 are of particular interest for intense soil exposures	
				CF	Conversion factor	1E-06	kg/mg	--	
				BW	Body weight	15	kg	MDEQ's (2012) frequently asked questions	
				AT-n	Averaging time (noncancer endpoint)	2,190	days	Number of days in a 6 yr exposure period	
		Adult (6-30 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.a.
				IR_{soil}	Soil ingestion rate	50	mg/day	MDEQ's (2012) frequently asked questions; USEPA (2011, Table 5-1)	Lifetime average daily dose ($LADD_{ing}$; mg/kg-day) =
				EF	Exposure frequency (non-ditch)	270	days/year	MDEQ's (2012) frequently asked questions	$\frac{EPC_{soil} \times IR_{soil} \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure frequency (ditch)	40	days/year	Prof. judgment	
				ED	Exposure duration	24	years	MDEQ's (2012) frequently asked questions	
				CF	Conversion factor	1E-06	kg/mg	--	
				BW	Body weight	80	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	

TABLE D4.1. RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
	Commercial/ Industrial Worker	Adult	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.a.
				IR_{soil}	Soil ingestion rate	50	mg/day	MDEQ's (2012) frequently asked questions	$LADD_{ing}$ or ADD_{ing} (mg/kg-day) =
				EF	Exposure frequency (standard worker, non-ditch)	187	days/year	MDEQ's (2012) frequently asked questions	$\frac{EPC_{soil} \times IR_{soil} \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure frequency (standard worker, ditch)	94	days/year	MDEQ's (2012) frequently asked questions	
				EF	Exposure frequency (infrequent worker, non-ditch)	90	days/year	Prof. judgment	
				EF	Exposure frequency (infrequent worker, ditch)	90	days/year	Prof. judgment	
				ED	Exposure duration	25	years	MDEQ's (2012) frequently asked questions	
				CF	Conversion factor	1E-06	kg/mg	--	
				BW	Body weight	80	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	9,125	days	Number of days in exposure period	
	Recreator/ Trespasser	Adolescent (6-18 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.a.
				IR_{soil}	Soil ingestion rate	100	mg/day	MDEQ's (2012) frequently asked questions	$LADD_{ing}$ or ADD_{ing} (mg/kg-day) =
				EF	Exposure frequency (non-ditch)	75	days/year	MDEQ's (2012) frequently asked questions	$\frac{EPC_{soil} \times IR_{soil} \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure frequency (ditch)	11	days/year	Prof. judgment	
				ED	Exposure duration	13	years	MDEQ's (2012) frequently asked questions	
				CF	Conversion factor	1E-06	kg/mg	--	
				BW	Body weight	51	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	4,745	days	Number of days in exposure period	

TABLE D4.1. RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
	Construction Worker	Adult	Surface and subsurface soil (evaluated separately)	EPC_{soil}	Chemical concentration in surface soil or subsurface soil	See Tables 3.1 and 3.2	mg/kg	See Tables 3.1 and 3.2	Exhibit 6-1.a.
				IR_{soil}	Soil ingestion rate	330	mg/day	MDEQ's (2012) frequently asked questions	$LADD_{ing}$ or ADD_{ing} (mg/kg-day) =
				EF	Exposure frequency (non-ditch)	124	days/year	MDEQ's (2012) frequently asked questions	$\frac{EPC_{soil} \times IR_{soil} \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure frequency (ditch)	62	days/year	Prof. judgment	
				ED	Exposure duration	1	years	Standard approach	
				CF	Conversion factor	1E-06	kg/mg	--	
				BW	Body weight	80	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	365	days	Number of days in exposure period	

TABLE D4.1. RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Resident	Child (0-6 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.b.
				CF	Conversion factor	1E-06	kg/mg	--	Dermally absorbed dose (DAD; mg/kg-day) =
				AF	Adherence factor	0.0432	mg/cm^2-event	Weighted average by age for face, hands, forearms, lower legs, feet (USEPA 2011, Table 7-4)	$\frac{DA_{event} \times EF \times ED \times EV \times SA}{BW \times AT}$
				ABS_d	Dermal absorption factor	See Table 4.5	--	See Table 4.6	
				EF	Exposure frequency (non-ditch)	270	days/year	MDEQ's (2012) frequently asked questions	where absorbed dose per event (DA_{event}; mg/cm^2-event) =
				EF	Exposure frequency (ditch)	40	days/year	Prof. judgment	$EPC_{soil} \times CF \times AF \times ABS_d$
				ED	Exposure duration	6	years	Ages 1-7 are of particular interest for intense soil exposures	
				EV	Event frequency	1	event/day	--	
				SA	Skin surface area	2,400	cm^2	Weighted average by age for head, hands, forearms, lower legs, feet (USEPA 2011, Table 7-2)	
				BW	Body weight	15	kg	MDEQ's (2012) frequently asked questions	
				AT-n	Averaging time (noncancer endpoint)	2,190	days	Number of days in a 6 yr exposure period	

TABLE D4.1. RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
		Adult (6-30 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.b.
				CF	Conversion factor	1E-06	kg/mg	--	Lifetime dermal absorbed dose (LDAD; mg/kg-day) =
				AF	Adherence factor	0.1088	mg/cm^2-event	Average for face, hands, forearms, and lower legs (USEPA 2011, Table 7-4)	$\frac{DA_{event} \times EF \times ED \times EV \times SA}{BW \times AT}$
				ABS_d	Dermal absorption factor	See Table 4.5	--	See Table 4.6	
				EF	Exposure frequency (non-ditch)	270	days/year	MDEQ's (2012) frequently asked questions	where DA_{event} (mg/cm^2-event) =
				EF	Exposure frequency (ditch)	40	days/year	Prof. judgment	$EPC_{soil} \times CF \times AF \times ABS_d$
				ED	Exposure duration	24	years	MDEQ's (2012) frequently asked questions	
				EV	Event frequency	1	event/day	--	
				SA	Skin surface area	6,000	cm^2	Average for head, hands, forearms, lower legs (USEPA 2011, Table 7-2)	
				BW	Body weight	80	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	

TABLE D4.1. RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
	Commercial/ Industrial Worker	Adult	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.b.
				CF	Conversion factor	1E-06	kg/mg	--	LDAD or DAD (mg/kg-day) =
				AF	Adherence factor	0.0956	mg/cm^2-event	Average for face, hands, forearms (USEPA 2011, Table 7-4, outdoor sports)	$\frac{DA_{event} \times EF \times ED \times EV \times SA}{BW \times AT}$
				ABS_d	Dermal absorption factor	See Table 4.5	--	See Table 4.6	
				EF	Exposure frequency (standard worker, non-ditch)	187	days/year	MDEQ's (2012) frequently asked questions	where DA_{event} (mg/cm^2-event) =
				EF	Exposure frequency (standard worker, ditch)	94	days/year	MDEQ's (2012) frequently asked questions	$EPC_{soil} \times CF \times AF \times ABS_d$
				EF	Exposure frequency (infrequent worker, non-ditch)	90	days/year	Prof. judgment	
				EF	Exposure frequency (infrequent worker, ditch)	90	days/year	Prof. judgment	
				ED	Exposure duration	25	years	MDEQ's (2012) frequently asked questions	
				EV	Event frequency	1	event/day	--	
				SA	Skin surface area	3,500	cm^2	Average for head, hands, forearms (USEPA 2011, Table 7-2)	
				BW	Body weight	80	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	9,125	days	Number of days in exposure period	

TABLE D4.1. RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
	Recreator/ Trespasser	Adolescent (6-18 years)	Surface Soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.b.
				CF	Conversion factor	1E-06	kg/mg	--	LDAD or DAD (mg/kg-day) =
				AF	Adherence factor	0.0393	mg/cm^2-event	Age-weighted average for face, hands, forearms, lower legs, and feet (USEPA 2011, Table 7-4, outdoor sports)	$\frac{DA_{event} \times EF \times ED \times EV \times SA}{BW \times AT}$
				ABS_d	Dermal absorption factor	See Table 4.5	--	See Table 4.6	
				EF	Exposure frequency (non-ditch)	75	days/year	MDEQ's (2012) frequently asked questions	where DA_{event} (mg/cm^2-event) =
				EF	Exposure frequency (ditch)	11	days/year	Prof. judgment	$EPC_{soil} \times CF \times AF \times ABS_d$
				ED	Exposure duration	13	years	MDEQ's (2012) frequently asked questions	
				EV	Event frequency	1	event/day	--	
				SA	Skin surface area	4,400	cm^2	Age-weighted average for head, hands, forearms and lower legs (USEPA 2011, Table 7-2)	
				BW	Body weight	51	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	4,745	days	Number of days in exposure period	

TABLE D4.1. RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
	Construction Worker	Adult	Surface and subsurface soil (evaluated separately)	EPC_{soil}	Chemical concentration in surface soil or subsurface soil	See Tables 3.1 and 3.2	mg/kg	See Tables 3.1 and 3.2	Exhibit 6-1.b.
				CF	Conversion factor	1E-06	kg/mg	--	LDAD or DAD (mg/kg-day) =
				AF	Adherence factor	0.2056	mg/cm^2-event	Average for face, hands, forearms (USEPA 2011, Table 7-4, construction activities)	$\frac{DA_{event} \times EF \times ED \times EV \times SA}{BW \times AT}$
				ABS_d	Dermal absorption factor	See Table 4.5	--	See Table 4.6	
				EF	Exposure frequency (non-ditch)	124	days/year	MDEQ's (2012) frequently asked questions	where DA_{event} (mg/cm^2-event) =
				EF	Exposure frequency (ditch)	62	days/year	Prof. judgment	$EPC_{soil} \times CF \times AF \times ABS_d$
				ED	Exposure duration	1	year	Standard approach	
				EV	Event frequency	1	event/day	--	
				SA	Skin surface area	3,500	cm^2	Average for head, hands, forearms (USEPA 2011, Table 7-2)	
				BW	Body weight	80	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	365	days	Number of days in exposure period	

Notes:

CT = central tendency
MDEQ = Montana Department of Environmental Quality
RME = reasonable maximum exposure
USEPA = U.S. Environmental Protection Agency

Sources:

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TABLE D4.1. CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Resident	Child (0-6 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.a.
				IR_{soil}	Soil ingestion rate	50	mg/day	USEPA (2011, Table 5-1)	Average daily dose (ADD_{ing}; mg/kg-day) =
				EF	Exposure frequency (non-ditch)	150	days/year	Prof. judgment	$\frac{EPC_{soil} \times IR_{soil} \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure frequency (ditch)	20	days/year	Prof. judgment	
				ED	Exposure duration	6	years	Ages 1-7 are of particular interest for intense soil exposures	
				CF	Conversion factor	1E-06	kg/mg	--	
				BW	Body weight	15	kg	MDEQ's (2012) frequently asked questions	
				AT-n	Averaging time (noncancer endpoint)	2,190	days	Number of days in a 6 yr exposure period	
		Adult (6-30 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.a.
				IR_{soil}	Soil ingestion rate	20	mg/day	USEPA (2011, Table 5-1)	Lifetime average daily dose ($LADD_{ing}$; mg/kg-day) =
				EF	Exposure frequency (non-ditch)	150	days/year	Prof. judgment	$\frac{EPC_{soil} \times IR_{soil} \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure frequency (ditch)	20	days/year	Prof. judgment	
				ED	Exposure duration	12	years	Mean time residing in same residence (USEPA 2011, Table 16.5)	
				CF	Conversion factor	1E-06	kg/mg	--	
				BW	Body weight	80	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	

TABLE D4.1. CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
	Commercial/ Industrial Worker	Adult	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.a.
				IR_{soil}	Soil ingestion rate	20	mg/day	USEPA (2011, Table 5-1)	$LADD_{ing}$ or ADD_{ing} (mg/kg-day) =
				EF	Exposure frequency (standard worker, non-ditch)	187	days/year	Prof. judgment	$\frac{EPC_{soil} \times IR_{soil} \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure frequency (standard worker, ditch)	94	days/year	Prof. judgment	
				EF	Exposure frequency (infrequent worker, non-ditch)	45	days/year	Prof. judgment	
				EF	Exposure frequency (infrequent worker, ditch)	45	days/year	Prof. judgment	
				ED	Exposure duration	7.2	years	Median tenure for full-time workers (USEPA 2011)	
				CF	Conversion factor	1E-06	kg/mg	--	
				BW	Body weight	80	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	2,628	days	Number of days in exposure period	
	Recreator/ Trespasser	Adolescent (6-18 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.a.
				IR_{soil}	Soil ingestion rate	50	mg/day	USEPA (2011, Table 5-1)	$LADD_{ing}$ or ADD_{ing} (mg/kg-day) =
				EF	Exposure frequency (non-ditch)	75	days/year	MDEQ's (2012) frequently asked questions	$\frac{EPC_{soil} \times IR_{soil} \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure frequency (ditch)	11	days/year	Prof. judgment	
				ED	Exposure duration	6	years	Prof. judgment	
				CF	Conversion factor	1E-06	kg/mg	--	
				BW	Body weight	51	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	2,190	days	Number of days in exposure period	

TABLE D4.1. CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
	Construction Worker	Adult	Surface and subsurface soil (evaluated separately)	EPC_{soil}	Chemical concentration in surface soil or subsurface soil	See Tables 3.1 and 3.2	mg/kg	See Tables 3.1 and 3.2	Exhibit 6-1.a.
				IR_{soil}	Soil ingestion rate	100	mg/day	MassDEP 2002	$LADD_{ing}$ or ADD_{ing} (mg/kg-day) =
				EF	Exposure frequency (non-ditch)	25	days/year	Prof. judgment	$\frac{EPC_{soil} \times IR_{soil} \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure frequency (ditch)	12.5	days/year	Prof. judgment	
				ED	Exposure duration	1	years	Standard approach	
				CF	Conversion factor	1E-06	kg/mg	--	
				BW	Body weight	80	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	365	days	Number of days in exposure period	

TABLE D4.1. CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Resident	Child (0-6 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.b.
				CF	Conversion factor	1E-06	kg/mg	--	Dermally absorbed dose (DAD; mg/kg-day) =
				AF	Adherence factor	0.0432	mg/cm^2-event	Weighted average by age for face, hands, forearms, lower legs, feet (USEPA 2011, Table 7-4)	$\frac{DA_{event} \times EF \times ED \times EV \times SA}{BW \times AT}$
				ABS_d	Dermal absorption factor	See Table 4.5	--	See Table 4.6	
				EF	Exposure frequency (non-ditch)	150	days/year	Prof. judgment	where absorbed dose per event (DA_{event}; mg/cm^2-event) =
				EF	Exposure frequency (ditch)	20	days/year	Prof. judgment	$EPC_{soil} \times CF \times AF \times ABS_d$
				ED	Exposure duration	6	years	Ages 1-7 are of particular interest for intense soil exposures	
				EV	Event frequency	1	event/day	--	
				SA	Skin surface area	2,400	cm^2	Weighted average by age for head, hands, forearms, lower legs, feet (USEPA 2011, Table 7-2)	
				BW	Body weight	15	kg	MDEQ's (2012) frequently asked questions	
				AT-n	Averaging time (noncancer endpoint)	2,190	days	Number of days in a 6 yr exposure period	

TABLE D4.1. CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
		Adult (6-30 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.b.
				CF	Conversion factor	1E-06	kg/mg	--	Lifetime dermal absorbed dose (LDAD; mg/kg-day) =
				AF	Adherence factor	0.1088	mg/cm^2-event	Average for face, hands, forearms, and lower legs (USEPA 2011, Table 7-4)	$\frac{DA_{event} \times EF \times ED \times EV \times SA}{BW \times AT}$
				ABS_d	Dermal absorption factor	See Table 4.5	--	See Table 4.6	
				EF	Exposure frequency (non-ditch)	150	days/year	Prof. judgment	where DA_{event} (mg/cm^2-event) =
				EF	Exposure frequency (ditch)	20	days/year	Prof. judgment	$EPC_{soil} \times CF \times AF \times ABS_d$
				ED	Exposure duration	12	years	Mean time residing in same residence (USEPA 2011, Table 16.5)	
				EV	Event frequency	1	event/day	--	
				SA	Skin surface area	6,000	cm^2	Average for head, hands, forearms, lower legs (USEPA 2011, Table 7-2)	
				BW	Body weight	80	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	

TABLE D4.1. CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
	Commercial/ Industrial Worker	Adult	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.b.
				CF	Conversion factor	1E-06	kg/mg	--	LDAD or DAD (mg/kg-day) =
				AF	Adherence factor	0.0956	mg/cm^2-event	Average for face, hands, forearms (USEPA 2011, Table 7-4, outdoor sports)	$\frac{DA_{event} \times EF \times ED \times EV \times SA}{BW \times AT}$
				ABS_d	Dermal absorption factor	See Table 4.5	--	See Table 4.6	
				EF	Exposure frequency (standard worker, non-ditch)	187	days/year	Prof. judgment	where DA_{event} (mg/cm^2-event) =
				EF	Exposure frequency (standard worker, ditch)	94	days/year	Prof. judgment	$EPC_{soil} \times CF \times AF \times ABS_d$
				EF	Exposure frequency (infrequent worker, non-ditch)	45	days/year	Prof. judgment	
				EF	Exposure frequency (infrequent worker, ditch)	45	days/year	Prof. judgment	
				ED	Exposure duration	7.2	years	Median tenure for full-time workers (USEPA 2011)	
				EV	Event frequency	1	event/day	--	
				SA	Skin surface area	3,500	cm^2	Average for head, hands, forearms (USEPA 2011, Table 7-2)	
				BW	Body weight	80	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	2,628	days	Number of days in exposure period	

TABLE D4.1. CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
	Recreator/ Trespasser	Adolescent (6-18 years)	Surface Soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.b.
				CF	Conversion factor	1E-06	kg/mg	--	LDAD or DAD (mg/kg-day) =
				AF	Adherence factor	0.0393	mg/cm^2-event	Age-weighted average for face, hands, forearms, lower legs, and feet (USEPA 2011, Table 7-4, outdoor sports)	$\frac{DA_{event} \times EF \times ED \times EV \times SA}{BW \times AT}$
				ABS_d	Dermal absorption factor	See Table 4.5	--	See Table 4.6	
				EF	Exposure frequency (non-ditch)	75	days/year	MDEQ's (2012) frequently asked questions	where DA_{event} (mg/cm^2-event) =
				EF	Exposure frequency (ditch)	11	days/year	Prof. judgment	$EPC_{soil} \times CF \times AF \times ABS_d$
				ED	Exposure duration	6	years	Prof. judgment	
				EV	Event frequency	1	event/day	--	
				SA	Skin surface area	4,400	cm^2	Age-weighted average for head, hands, forearms and lower legs (USEPA 2011, Table 7-2)	
				BW	Body weight	51	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	2,190	days	Number of days in exposure period	

TABLE D4.1. CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
	Construction Worker	Adult	Surface and subsurface soil (evaluated separately)	EPC_{soil}	Chemical concentration in surface soil or subsurface soil	See Tables 3.1 and 3.2	mg/kg	See Tables 3.1 and 3.2	Exhibit 6-1.b.
				CF	Conversion factor	1E-06	kg/mg	--	LDAD or DAD (mg/kg-day) =
				AF	Adherence factor	0.2056	mg/cm^2-event	Average for face, hands, forearms (USEPA 2011, Table 7-4, construction activities)	$\frac{DA_{event} \times EF \times ED \times EV \times SA}{BW \times AT}$
				ABS_d	Dermal absorption factor	See Table 4.5	--	See Table 4.6	
				EF	Exposure frequency (non-ditch)	25	days/year	Prof. judgment	where DA_{event} (mg/cm^2-event) =
				EF	Exposure frequency (ditch)	12.5	days/year	Prof. judgment	$EPC_{soil} \times CF \times AF \times ABS_d$
				ED	Exposure duration	1	year	Standard approach	
				EV	Event frequency	1	event/day	--	
				SA	Skin surface area	3,500	cm^2	Average for head, hands, forearms (USEPA 2011, Table 7-2)	
				BW	Body weight	80	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	365	days	Number of days in exposure period	

Notes:

CT = central tendency
MDEQ = Montana Department of Environmental Quality
RME = reasonable maximum exposure
USEPA = U.S. Environmental Protection Agency

TABLE D4.2. RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Resident	Child (0-6 years)	Airborne dust from surface soil	EPC_{dust}	Chemical concentration in dust associated with surface soil	See Table 3.3	mg/m^3	See Table 3.3	Exhibit 6-1.c.
				ET	Exposure time	24	hours/day	Mean time spent outside (USEPA 2011, Table 16-14)	Exposure concentration (EC; mg/m^3) =
				EF	Exposure frequency (non-ditch)	270	days/year	MDEQ's (2012) frequently asked questions	$\frac{EPC_{dust} \times ET \times EF \times ED}{AT}$
				EF	Exposure frequency (ditch)	40	days/year	Prof. judgment	
				ED	Exposure duration	6	years	Ages 1-7 are of particular interest for intense soil exposures	
				AT-n	Averaging time (noncancer endpoint)	52,560	hours	Number of hours in a 6 yr exposure period	
		Adult (6-30 years)	Airborne dust from surface soil	EPC_{dust}	Chemical concentration in dust associated with surface soil	See Table 3.3	mg/m^3	See Table 3.3	Exhibit 6-1.c.
				ET	Exposure time	24	hours/day	Mean time spent outside (USEPA 2011, Table 16-14)	EC (mg/m^3) =
				EF	Exposure frequency (non-ditch)	270	days/year	MDEQ's (2012) frequently asked questions	$\frac{EPC_{dust} \times ET \times EF \times ED}{AT}$
				EF	Exposure frequency (ditch)	40	days/year	Prof. judgment	
				ED	Exposure duration	24	years	MDEQ's (2012) frequently asked questions	
				AT-c	Averaging time (cancer endpoint)	683,280	hours	Number of hours in 78 yr lifetime	

TABLE D4.2. RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
	Commercial/ Industrial Worker	Adult	Airborne dust from surface soil	EPC_{dust}	Chemical concentration in dust associated with surface soil	See Table 3.3	mg/m^3	See Table 3.3	Exhibit 6-1.c.
				ET	Exposure time	8	hours/day	Prof. judgment	EC (mg/m^3) =
				EF	Exposure frequency (standard worker, non-ditch)	187	days/year	MDEQ's (2012) frequently asked questions	$\frac{EPC_{dust} \times ET \times EF \times ED}{AT}$
				EF	Exposure frequency (standard worker, ditch)	94	days/year	MDEQ's (2012) frequently asked questions	
				EF	Exposure frequency (infrequent worker, non-ditch)	90	days/year	Prof. judgment	
				EF	Exposure frequency (infrequent worker, ditch)	90	days/year	Prof. judgment	
				ED	Exposure duration	25	years	MDEQ's (2012) frequently asked questions	
				AT-c	Averaging time (cancer endpoint)	683,280	hours	Number of hours in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	219,000	hours	Number of hours in exposure period	
	Recreator/ Trespasser	Adolescent (6-18 years)	Airborne dust from surface soil	EPC_{dust}	Chemical concentration in dust associated with surface soil	See Table 3.3	mg/m^3	See Table 3.3	Exhibit 6-1.c.
				ET	Exposure time	2	hours/day	Prof. judgment	EC (mg/m^3) =
				EF	Exposure frequency (non-ditch)	75	days/year	MDEQ's (2012) frequently asked questions	$\frac{EPC_{dust} \times ET \times EF \times ED}{AT}$
				EF	Exposure frequency (ditch)	11	days/year	Prof. judgment	
				ED	Exposure duration	13	years	MDEQ's (2012) frequently asked questions	
				AT-c	Averaging time (cancer endpoint)	683,280	hours	Number of hours in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	113,880	hours	Number of hours in exposure period	

TABLE D4.2. RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
	Construction Worker	Adult	Airborne dust from surface and subsurface soil (evaluated separately)	EPC_{dust}	Chemical concentration in dust associated with surface or subsurface soil	See Tables 3.3 and 3.4	mg/m^3	See Tables 3.3 and 3.4	Exhibit 6-1.c.
				ET	Exposure time	8	hours/day	Prof. judgment	EC (mg/m^3) =
				EF	Exposure frequency (non-ditch)	124	days/year	MDEQ's (2012) frequently asked questions	$\frac{EPC_{dust} \times ET \times EF \times ED}{AT}$
				EF	Exposure frequency (ditch)	62	days/year	Prof. judgment	
				ED	Exposure duration	1	years	Standard approach	
				AT-c	Averaging time (cancer endpoint)	683,280	hours	Number of hours in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	8,760	hours	Number of hours in exposure period	

Notes:

CT = central tendency
MDEQ = Montana Department of Environmental Quality
RME = reasonable maximum exposure
USEPA = U.S. Environmental Protection Agency

TABLE D4.2. CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Inhalation	Resident	Child (0-6 years)	Airborne dust from surface soil	EPC_{dust}	Chemical concentration in dust associated with surface soil	See Table 3.3	mg/m^3	See Table 3.3	Exhibit 6-1.c.
				ET	Exposure time	24	hours/day	Mean time spent outside (USEPA 2011, Table 16-14)	Exposure concentration (EC; mg/m^3) =
				EF	Exposure frequency (non-ditch)	150	days/year	Prof. judgment	$\frac{EPC_{dust} \times ET \times EF \times ED}{AT}$
				EF	Exposure frequency (ditch)	20	days/year	Prof. judgment	
				ED	Exposure duration	6	years	Ages 1-7 are of particular interest for intense soil exposures	
				AT-n	Averaging time (noncancer endpoint)	52,560	hours	Number of hours in a 6 yr exposure period	
		Adult (6-30 years)	Airborne dust from surface soil	EPC_{dust}	Chemical concentration in dust associated with surface soil	See Table 3.3	mg/m^3	See Table 3.3	Exhibit 6-1.c.
				ET	Exposure time	24	hours/day	Mean time spent outside (USEPA 2011, Table 16-14)	EC (mg/m^3) =
				EF	Exposure frequency (non-ditch)	150	days/year	Prof. judgment	$\frac{EPC_{dust} \times ET \times EF \times ED}{AT}$
				EF	Exposure frequency (ditch)	20	days/year	Prof. judgment	
				ED	Exposure duration	12	years	Mean time residing in same residence (USEPA 2011, Table 16.5)	
				AT-c	Averaging time (cancer endpoint)	683,280	hours	Number of hours in 78 yr lifetime	

TABLE D4.2. CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
	Commercial/ Industrial Worker	Adult	Airborne dust from surface soil	EPC_{dust}	Chemical concentration in dust associated with surface soil	See Table 3.3	mg/m^3	See Table 3.3	Exhibit 6-1.c.
				ET	Exposure time	8	hours/day	Prof. judgment	EC (mg/m^3) =
				EF	Exposure frequency (standard worker, non-ditch)	187	days/year	Prof. judgment	$\frac{EPC_{dust} \times ET \times EF \times ED}{AT}$
				EF	Exposure frequency (standard worker, ditch)	94	days/year	Prof. judgment	
				EF	Exposure frequency (infrequent worker, non-ditch)	45	days/year	Prof. judgment	
				EF	Exposure frequency (infrequent worker, ditch)	45	days/year	Prof. judgment	
				ED	Exposure duration	7.2	years	Median tenure for full-time workers (USEPA 2011)	
				AT-c	Averaging time (cancer endpoint)	683,280	hours	Number of hours in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	63,072	hours	Number of hours in exposure period	
	Recreator/ Trespasser	Adolescent (6-18 years)	Airborne dust from surface soil	EPC_{dust}	Chemical concentration in dust associated with surface soil	See Table 3.3	mg/m^3	See Table 3.3	Exhibit 6-1.c.
				ET	Exposure time	2	hours/day	Prof. judgment	EC (mg/m^3) =
				EF	Exposure frequency (non-ditch)	75	days/year	MDEQ's (2012) frequently asked questions	$\frac{EPC_{dust} \times ET \times EF \times ED}{AT}$
				EF	Exposure frequency (ditch)	11	days/year	Prof. judgment	
				ED	Exposure duration	6	years	Prof. judgment	
				AT-c	Averaging time (cancer endpoint)	683,280	hours	Number of hours in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	52,560	hours	Number of hours in exposure period	

TABLE D4.2. CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
	Construction Worker	Adult	Airborne dust from surface and subsurface soil (evaluated separately)	EPC_{dust}	Chemical concentration in dust associated with surface or subsurface soil	See Tables 3.3 and 3.4	mg/m^3	See Tables 3.3 and 3.4	Exhibit 6-1.c.
				ET	Exposure time	8	hours/day	Prof. judgment	EC (mg/m^3) =
				EF	Exposure frequency (non-ditch)	25	days/year	Prof. judgment	$\frac{EPC_{dust} \times ET \times EF \times ED}{AT}$
				EF	Exposure frequency (ditch)	12.5	days/year	Prof. judgment	
				ED	Exposure duration	1	years	Standard approach	
				AT-c	Averaging time (cancer endpoint)	683,280	hours	Number of hours in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	8,760	hours	Number of hours in exposure period	

Notes:

CT = central tendency
MDEQ = Montana Department of Environmental Quality
RME = reasonable maximum exposure
USEPA = U.S. Environmental Protection Agency

TABLE D4.3. RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Plant Tissue

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Resident	Child (0-6 years)	Homegrown produce	EPC_{prod}	Chemical concentration in produce	See Table 3.5	mg/kg	See Table 3.5	Exhibit 6-1.d.
				IR_{prod}	Produce ingestion rate	4.5	g/kg-day	USEPA (2011, Table 13-62) 95th percentile	Average daily dose (ADD_{prod}; mg/kg-day) =
				EF	Exposure frequency	350	days/year	Eating away from home for a two-week vacation	$\frac{EPC_{prod} \times IR_{prod} \times EF \times ED \times CF}{AT}$
				ED	Exposure duration	6	years	Ages 1-7 are of particular interest for intense soil exposures	
				CF	Conversion factor	1E-03	kg/g	--	
				AT-n	Averaging time (noncancer endpoint)	2,190	days	Number of days in a 6 yr exposure period	
		Adult (6-30 years)	Homegrown produce	EPC_{prod}	Chemical concentration in produce	See Table 3.5	mg/kg	See Table 3.5	Exhibit 6-1.d.
				IR_{prod}	Produce ingestion rate	2.1	g/kg-day	USEPA (2011, Table 13-62) 95th percentile	Lifetime average daily dose ($LADD_{prod}$; mg/kg-day)=
				EF	Exposure frequency	350	days/year	Eating away from home for a two-week vacation	$\frac{EPC_{prod} \times IR_{prod} \times EF \times ED \times CF}{AT}$
				ED	Exposure duration	24	years	MDEQ 2012	
				CF	Conversion factor	1E-03	kg/g	--	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	

Notes:

CT = central tendency
MDEQ = Montana Department of Environmental Quality
RME = reasonable maximum exposure
USEPA = U.S. Environmental Protection Agency

TABLE D4.3. CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Plant Tissue

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Resident	Child (0-6 years)	Homegrown produce	EPC_{prod}	Chemical concentration in produce	See Table 3.5	mg/kg	See Table 3.5	Exhibit 6-1.d.
				IR_{prod}	Produce ingestion rate	1.1	g/kg-day	USEPA (2011, Table 13-62) mean	Average daily dose (ADD_{prod}; mg/kg-day) =
				EF	Exposure frequency	350	days/year	Eating away from home for a two-week vacation	$\frac{EPC_{prod} \times IR_{prod} \times EF \times ED \times CF}{AT}$
				ED	Exposure duration	6	years	Ages 1-7 are of particular interest for intense soil exposures	
				CF	Conversion factor	1E-03	kg/g	--	
				AT-n	Averaging time (noncancer endpoint)	2,190	days	Number of days in a 6 yr exposure period	
		Adult (6-30 years)	Homegrown produce	EPC_{prod}	Chemical concentration in produce	See Table 3.5	mg/kg	See Table 3.5	Exhibit 6-1.d.
				IR_{prod}	Produce ingestion rate	0.6	g/kg-day	USEPA (2011, Table 13-62) mean	Lifetime average daily dose ($LADD_{prod}$; mg/kg-day)=
				EF	Exposure frequency	350	days/year	Eating away from home for a two-week vacation	$\frac{EPC_{prod} \times IR_{prod} \times EF \times ED \times CF}{AT}$
				ED	Exposure duration	12	years	Mean time residing in same residence (USEPA 2011, Table 16.5)	
				CF	Conversion factor	1E-03	kg/g	--	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	

Notes:

CT = central tendency
MDEQ = Montana Department of Environmental Quality
RME = reasonable maximum exposure
USEPA = U.S. Environmental Protection Agency

TABLE D4.4. RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Resident	Infant (0-1 year)	Breast Milk	EPC_{milk}	Chemical concentration in breast milk	See Table 3.6	mg/L	See Table 3.6	Exhibit 6-1.e.
				IR_{milk}	Breast milk ingestion rate	41	mL/day	USEPA (2011, Table 15-1, upper percentile)	Lifetime average daily dose ($LADD_{milk}$) or average daily dose (ADD_{milk}; mg/kg-day) =
				EF	Exposure frequency	365	days/year	USEPA 2011; APP 1997	
				ED	Exposure duration	1	year	USEPA 2011; APP 1997	
				CF	Conversion factor	1E-03	L/mL	--	$\frac{CF}{BW \times AT}$
				BW	Body weight	7.8	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	365	days	Number of days in exposure period	

Notes:

CT = central tendency
MDEQ = Montana Department of Environmental Quality
RME = reasonable maximum exposure
USEPA = U.S. Environmental Protection Agency

TABLE D4.4. CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Resident	Infant (0-1 year)	Breast Milk	EPC_{milk}	Chemical concentration in breast milk	See Table 3.6	mg/L	See Table 3.6	Exhibit 6-1.e.
				IR_{milk}	Breast milk ingestion rate	26	mL/day	USEPA (2011, Table 15-1, mean)	Lifetime average daily dose ($LADD_{milk}$) or average daily dose (ADD_{milk}; mg/kg-day) =
				EF	Exposure frequency	365	days/year	USEPA 2011; APP 1997	
				ED	Exposure duration	1	year	USEPA 2011; APP 1997	$\frac{EPC_{milk} \times IR_{milk} \times EF \times ED \times CF}{BW \times AT}$
				CF	Conversion factor	1E-03	L/mL	--	
				BW	Body weight	7.8	kg	USEPA (2011, Table 8-1)	
				AT-c	Averaging time (cancer endpoint)	28,470	days	Number of days in 78 yr lifetime	
				AT-n	Averaging time (noncancer endpoint)	365	days	Number of days in exposure period	

Notes:

CT = central tendency
MDEQ = Montana Department of Environmental Quality
RME = reasonable maximum exposure
USEPA = U.S. Environmental Protection Agency

TABLE D4.5

VALUES USED FOR CHEMICAL-SPECIFIC INTAKE CALCULATIONS

S & W Sawmill Facility, Darby, MT

Chemical of Potential Concern	Dermal Absorption Factor for Soil (ABS_d)				Organic Water Partition Coefficient (log K_{ow})				Root Concentration Factor (RCF)			
	Value	Units	Source(s)	Date(s)	Value	Units	Source(s)	Date(s)	Value	Units	Source(s)	Date(s)
C5-C8 Aliphatics	1	--	MDEQ	2009	na	na	na	na	na	na	na	na
C9-C12 Aliphatics	0.5	--	MDEQ	2009	na	na	na	na	na	na	na	na
C9-C10 Aromatics	0.5	--	MDEQ	2009	na	na	na	na	na	na	na	na
Ethylbenzene	0	--	MDEQ	2009	na	na	na	na	na	na	na	na
1-Methylnaphthalene	0.13	--	USEPA	2004	na	na	na	na	na	na	na	na
2-Methylnaphthalene	0.13	--	USEPA	2004	na	na	na	na	na	na	na	na
Naphthalene	0.13	--	USEPA	2004	na	na	na	na	na	na	na	na
BaP equivalents	0.13	--	USEPA	2004	6	--	USEPA	2012	1258.9	--	log (RCF) = 0.77 * log Kow - 1.52	na
C9-C18 Aliphatics	0.5	--	MDEQ	2009	na	na	na	na	na	na	na	na
C11-C22 Aromatics	0.1	--	MDEQ	2009	nv	na	na	na	nv	na	na	na
Pentachlorophenol	0.25	--	USEPA	2004	5.1	--	USEPA	2012	255.3	--	log (RCF) = 0.77 * log Kow - 1.52	na
TEQ (ND=1/2DL)	0.03	--	USEPA	2004	7.2 (1)	--	USEPA	2012	10568.2	--	log (RCF) = 0.77 * log Kow - 1.52	na

TABLE D4.5

VALUES USED FOR CHEMICAL-SPECIFIC INTAKE CALCULATIONS

S & W Sawmill Facility, Darby, MT

Chemical of Potential Concern	Below-Ground Produce Correction Factor ($VG_{rootveg}$)				Soil/Water Partition Coefficient (Kd_s)				Breast Milk Biotransfer Factor (Bb_{milk})			
	Value	Units	Source(s)	Date(s)	Value	Units	Source(s)	Date(s)	Value	Units	Source(s)	Date(s)
C5-C8 Aliphatics	na	na	na	na	na	na	na	na	na	na	na	na
C9-C12 Aliphatics	na	na	na	na	na	na	na	na	na	na	na	na
C9-C10 Aromatics	na	na	na	na	na	na	na	na	na	na	na	na
Ethylbenzene	na	na	na	na	na	na	na	na	na	na	na	na
1-Methylnaphthalene	na	na	na	na	na	na	na	na	na	na	na	na
2-Methylnaphthalene	na	na	na	na	na	na	na	na	na	na	na	na
Naphthalene	na	na	na	na	na	na	na	na	na	na	na	na
BaP equivalents	0.01	--	USEPA	2005	10200	L/kg	Kd_s = Koc * 0.1	na	0.44	days/kg milk	MDEQ	2001
C9-C18 Aliphatics	na	na	na	na	na	na	na	na	na	na	na	na
C11-C22 Aromatics	nv	na	na	na	nv	na	na	na	nv	na	na	na
Pentachlorophenol	0.01	--	USEPA	2005	160.0	L/kg	Kd_s = Koc * 0.1	na	0.6	days/kg milk	MDEQ	2001
TEQ (ND=1/2DL)	0.01	--	USEPA	2005	97724	L/kg	Kd_s = Koc * 0.1	na	0.92	days/kg milk	MDEQ	2001

Notes:

(1) Mean Kow for all dioxin congeners

ABSd = dermal absorption factor

BaP = benzo(a)pyrene

MDEQ = Montana Department of Environmental Quality

na = not applicable; in some cases a value may be available but was not used if a COPC would not be evaluated under a particular exposure scenario

nv = no value available

TEQ = 2,3,7,8-TCDD toxicity equivalents with non-detects set at 1/2 the detection limit

USEPA = U.S. Environmental Protection Agency

References:

MDEQ. 2009. Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases. Appendix E: Direct Contact. September. Montana Department of Environmental Quality.

USEPA. 2004. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005. July. U.S. Environmental Protection Agency, Washington, DC.

USEPA. 2012. Superfund Chemical Data Matrix.

TABLE D5.1

NON-CANCER TOXICITY DATA -- ORAL/DERMAL

S & W Sawmill Facility, Darby, MT

Chemical of Potential Concern (1)	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal (ABSgi) (2)	Absorbed RfD for Dermal (3)		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s)
C5-C8 Aliphatics (hexane)	Chronic	4E-02	mg/kg-day	1	4E-02	mg/kg-day	Body weight, nervous system	10,000	MassDep	2003
C9-C12 Aliphatics	Chronic	1E-02	mg/kg-day	1	1E-02	mg/kg-day	Liver, kidney, blood	10,000	USEPA	2009a,b
C9-C10 Aromatics	Chronic	3E-02	mg/kg-day	1	3E-02	mg/kg-day	Kidney	3,000	MassDep	2003
Ethylbenzene	Chronic	1E-01	mg/kg-day	1	1E-01	mg/kg-day	Liver and kidney	1,000	USEPA	2013
1-Methylnaphthalene	Chronic	7E-02	mg/kg-day	1	7E-02	mg/kg-day	Respiratory	nv	ATSDR	2005
2-Methylnaphthalene	Chronic	4E-03	mg/kg-day	1	4E-03	mg/kg-day	Lungs	1,000	USEPA	2013
Naphthalene	Chronic	2E-02	mg/kg-day	1	2E-02	mg/kg-day	Decreased body weight	3,000	USEPA	2013
BaP equivalents	na	nv	na	nv	nv	na	na	nv	na	na
C9-C18 Aliphatics	Chronic	1E-02	mg/kg-day	1	1E-02	mg/kg-day	Liver, kidney, blood	10,000	USEPA	2009a,b
C11-C22 Aromatics	Chronic	3E-02	mg/kg-day	1	3E-02	mg/kg-day	Kidney	3,000	MassDEP	2003

TABLE D5.1

NON-CANCER TOXICITY DATA -- ORAL/DERMAL

S & W Sawmill Facility, Darby, MT

Chemical of Potential Concern (1)	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal (ABSgi) (2)	Absorbed RfD for Dermal (3)		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s)
Pentachlorophenol	Chronic	5E-03	mg/kg-day	1	5E-03	mg/kg-day	Liver	300	USEPA	2013
TEQ (ND=1/2DL)	Chronic	7E-10	mg/kg-day	1	7E-10	mg/kg-day	Reproductive, developmental	30	USEPA	2013

Notes:

(1) Surrogates noted in parentheses.

(2) ABSgi is assumed to be 1 for all COPCs.

(3) Dermal RfD = Oral RfD / ABSgi.

BaP = benzo(a)pyrene

MassDEP = Massachusetts Department of Environmental Protection

MDEQ = Montana Department of Environmental Quality

na = not applicable

nv = no value available

RfD = reference dose

TEQ = 2,3,7,8-TCDD toxicity equivalents

USEPA = U.S. Environmental Protection Agency

Sources:

ATSDR. 2005. Toxicological profile for naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene.

MassDEP. 2003. Updated petroleum hydrocarbon fraction toxicity values for the VPH/EPH/APH methodology.

MDEQ. 2009. Montana tier 1 risk-based corrective action guidance for petroleum releases. Montana Department of Environmental Quality.

USEPA. 2009a. Provisional peer-reviewed toxicity values for complex mixtures of aliphatic and aromatic hydrocarbons. U.S. Environmental Protection Agency.

USEPA. 2009b. Provisional peer-reviewed toxicity values for midrange aliphatic hydrocarbon streams. U.S. Environmental Protection Agency.

USEPA. 2013. Integrated risk information system database. Accessed September 18, 2013. U.S. Environmental Protection Agency.

TABLE D5.2

NON-CANCER TOXICITY DATA -- INHALATION

S & W Sawmill Facility, Darby, MT

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units			Source(s)	Date(s)
C5-C8 Aliphatics (hexane)	Chronic	7E-01	mg/m^3	Nervous system	300	USEPA	2013
C9-C12 Aliphatics	Chronic	1E-01	mg/m^3	Nasal epithelium, adrenal	100	USEPA	2009a,b
C9-C10 Aromatics	Chronic	1E-01	mg/m^3	Body weight	1,000	USEPA	2009a,c
Ethylbenzene	Chronic	1E+00	mg/m^3	Developmental	300	USEPA	2013
1-Methylnaphthalene	na	nv	na	na	nv	na	na
2-Methylnaphthalene	na	nv	na	na	nv	na	na
Naphthalene	Chronic	3E-03	mg/m^3	Nasal epithelium	3,000	USEPA	2013
BaP equivalents	na	nv	na	na	nv	na	na
C9-C18 Aliphatics	Chronic	1E-01	mg/m^3	Nasal epithelium, adrenal	100	USEPA	2009 2009a,b
C11-C22 Aromatics	Chronic	1E-01	mg/m^3	Body weight	1,000	USEPA	2009a,c

TABLE D5.2

NON-CANCER TOXICITY DATA -- INHALATION

S & W Sawmill Facility, Darby, MT

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units			Source(s)	Date(s)
Pentachlorophenol	na	nv	na	na	nv	na	na
TEQ (ND=1/2DL)	Chronic	4E-08	mg/m^3 (1)	Liver, reproductive, developmental, endocrine, respiratory, blood	100	CalEPA	2008

Notes:

(1) Inhalation RfC value provided in source was shown in units of $\mu g/m^3$.

BaP = benzo(a)pyrene

CalEPA = California Environmental Protection Agency

na = not applicable

nv = no value available

RfC = reference concentration

TEQ = 2,3,7,8-TCDD toxicity equivalents

USEPA = U.S. Environmental Protection Agency

Sources:

CalEPA. 2008. Air toxics hot spots risk assessment guidelines, technical support document for the derivation of noncancer reference exposure levels. California Environmer

MassDEP. 2003. Updated petroleum hydrocarbon fraction toxicity values for the VPH/EPH/APH methodology.

USEPA. 2009a. Provisional peer-reviewed toxicity values for complex mixtures of aliphatic and aromatic hydrocarbons. U.S. Environmental Protection Agency.

USEPA. 2009b. Provisional peer-reviewed toxicity values for midrange aliphatic hydrocarbon streams. U.S. Environmental Protection Agency.

USEPA. 2009c. Provisional peer-reviewed toxicity values for high flash aromatic naphtha. U.S. Environmental Protection Agency.

USEPA. 2013. Integrated risk information system database. Accessed September 18, 2013. U.S. Environmental Protection Agency.

TABLE D6.1

CANCER TOXICITY DATA -- ORAL/DERMAL

S & W Sawmill Facility, Darby, MT

Chemical of Potential Concern	Oral CSF		Oral Absorption Efficiency for Dermal (ABSgi) (1)	Absorbed Cancer Slope Factor for Dermal (2)		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s)
C5-C8 Aliphatics (hexane)	nv	na	nv	nv	na	Inadequate information	USEPA	2013
C9-C12 Aliphatics	nv	na	nv	nv	na	Suggestive	USEPA	2009a,b
C9-C10 Aromatics	nv	na	nv	nv	na	Inadequate data	na	na
Ethylbenzene	1.1E-02	$(mg/kg\text{-}day)^{-1}$	1	1.1E-02	$(mg/kg\text{-}day)^{-1}$	B2	CalEPA	2009
1-Methylnaphthalene	2.9E-02	$(mg/kg\text{-}day)^{-1}$	1	2.9E-02	$(mg/kg\text{-}day)^{-1}$	Suggestive	USEPA	2008
2-Methylnaphthalene	nv	na	nv	nv	na	Data inadequate	USEPA	2013
Naphthalene	nv	na	nv	nv	na	C	USEPA	2013
BaP equivalents	7.3E+00	$(mg/kg\text{-}day)^{-1}$	1	7.3E+00	$(mg/kg\text{-}day)^{-1}$	B2	USEPA	2013
C9-C18 Aliphatics	nv	na	nv	nv	na	Suggestive	USEPA	2009a,b
C11-C22 Aromatics	nv	na	nv	nv	na	Inadequate data	na	na

TABLE D6.1

CANCER TOXICITY DATA -- ORAL/DERMAL

S & W Sawmill Facility, Darby, MT

Chemical of Potential Concern	Oral CSF		Oral Absorption Efficiency for Dermal (ABSgi) (1)	Absorbed Cancer Slope Factor for Dermal (2)		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s)
Pentachlorophenol	4E-01	$(mg/kg\text{-}day)^{-1}$	1	4E-01	$(mg/kg\text{-}day)^{-1}$	Likely	USEPA	2013
TEQ (ND=1/2DL)	1.3E+05	$(mg/kg\text{-}day)^{-1}$	1	1.3E+05	$(mg/kg\text{-}day)^{-1}$	B2	CalEPA	2009

Notes:

(1) ABSgi is assumed to be 1 for all COPCs.

(2) Dermal CSF = Oral CSF x ABSgi.

BaP = benzo(a)pyrene

CalEPA = California Environmental Protection Agency

CSF = cancer slope factor

na = not applicable

nv = no value available

TEQ = 2,3,7,8-TCDD toxicity equivalents

USEPA = U.S. Environmental Protection Agency

Sources:

CalEPA. 2009. Technical support document for cancer potency factors. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment.

MassDEP. 2003. Updated petroleum hydrocarbon fraction toxicity values for the VPH/EPH/APH methodology.

USEPA. 2008. Provisional peer-reviewed toxicity values (PPRTVs) for 1-methylnaphthalene. U.S. Environmental Protection Agency.

USEPA. 2009a. Provisional peer-reviewed toxicity values for complex mixtures of aliphatic and aromatic hydrocarbons. U.S. Environmental Protection Agency.

USEPA. 2009b. Provisional peer-reviewed toxicity values for midrange aliphatic hydrocarbon streams. U.S. Environmental Protection Agency.

USEPA. 2013. Integrated risk information system database. Accessed September 18, 2013. U.S. Environmental Protection Agency.

TABLE D6.2

CANCER TOXICITY DATA -- INHALATION

S & W Sawmill Facility, Darby, MT

Chemical of Potential Concern	Unit Risk (1)		Weight of Evidence/ Cancer Guideline Description	Inhalation Unit Risk	
	Value	Units		Source(s)	Date(s)
C5-C8 Aliphatics (hexane)	nv	na	Inadequate information	USEPA	2013
C9-C12 Aliphatics	nv	na	Suggestive	USEPA	2009a,b
C9-C10 Aromatics	nv	na	Inadequate data	na	na
Ethylbenzene	2.5E-03	$(mg/m^3)^{-1}$	B2	CalEPA	2009
1-Methylnaphthalene	nv	na	na	na	na
2-Methylnaphthalene	nv	na	na	na	na
Naphthalene	3.4E-02	$(mg/m^3)^{-1}$	B2	CalEPA	2004
BaP equivalents	1.1E+00	$(mg/m^3)^{-1}$	B2	CalEPA	2009
C9-C18 Aliphatics	nv	na	Suggestive	USEPA	2009a,b
C11-C22 Aromatics	nv	na	Inadequate data	na	na

TABLE D6.2

CANCER TOXICITY DATA -- INHALATION

S & W Sawmill Facility, Darby, MT

Chemical of Potential Concern	Unit Risk (1)		Weight of Evidence/ Cancer Guideline Description	Inhalation Unit Risk	
	Value	Units		Source(s)	Date(s)
Pentachlorophenol	5.1E-03	$(mg/m^3)^{-1}$	B2	CalEPA	2009
TEQ (ND=1/2DL)	3.8E+04	$(mg/m^3)^{-1}$	B2	CalEPA	2009

Notes:

(1) Unit risk values provided in sources were shown in units of $(\mu g/m^3)^{-1}$.

BaP = benzo(a)pyrene

CalEPA = California Environmental Protection Agency

na = not applicable

nv = no value available

TEQ = 2,3,7,8-TCDD toxicity equivalents

USEPA = U.S. Environmental Protection Agency

Sources:

CalEPA. 2004. Memorandum: Adoption of unit risk value for naphthalene. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment.

CalEPA. 2009. Technical support document for cancer potency factors. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment.

MassDEP. 2003. Updated petroleum hydrocarbon fraction toxicity values for the VPH/EPH/APH methodology.

USEPA. 2009a. Provisional peer-reviewed toxicity values for complex mixtures of aliphatic and aromatic hydrocarbons. U.S. Environmental Protection Agency.

USEPA. 2009b. Provisional peer-reviewed toxicity values for midrange aliphatic hydrocarbon streams. U.S. Environmental Protection Agency.

USEPA. 2013. Integrated risk information system database. Accessed September 18, 2013. U.S. Environmental Protection Agency.

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Parcel A Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	1.3E+02	mg/kg	1.3E-03	mg/kg-day	4.0E-02	mg/kg-day	3.3E-02
				C9-C12 Aliphatics	2.0E+00	mg/kg	2.0E-05	mg/kg-day	1.0E-02	mg/kg-day	2.0E-03
				C9-C10 Aromatics	2.0E+00	mg/kg	2.0E-05	mg/kg-day	3.0E-02	mg/kg-day	6.6E-04
				Ethylbenzene	5.0E-02	mg/kg	4.9E-07	mg/kg-day	1.0E-01	mg/kg-day	4.9E-06
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	3.3E-01	mg/kg	3.3E-06	mg/kg-day	4.0E-03	mg/kg-day	8.1E-04
				Naphthalene	1.0E-01	mg/kg	9.9E-07	mg/kg-day	2.0E-02	mg/kg-day	4.9E-05
				BaP equivalents	4.1E-01	mg/kg	4.1E-06	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.2E+01	mg/kg	1.2E-04	mg/kg-day	1.0E-02	mg/kg-day	1.2E-02
				C11-C22 Aromatics	2.6E+02	mg/kg	2.6E-03	mg/kg-day	3.0E-02	mg/kg-day	8.5E-02
				Pentachlorophenol	2.3E-01	mg/kg	2.3E-06	mg/kg-day	5.0E-03	mg/kg-day	4.5E-04
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	1.8E-08	mg/kg-day	7.0E-10	mg/kg-day	2.6E+01
			Total Ingestion								2.6E+01
			Dermal	C5-C8 Aliphatics	1.3E+02	mg/kg	6.7E-04	mg/kg-day	4.0E-02	mg/kg-day	1.7E-02
				C9-C12 Aliphatics	2.0E+00	mg/kg	5.1E-06	mg/kg-day	1.0E-02	mg/kg-day	5.1E-04
				C9-C10 Aromatics	2.0E+00	mg/kg	5.1E-06	mg/kg-day	3.0E-02	mg/kg-day	1.7E-04
				Ethylbenzene	5.0E-02	mg/kg	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	3.3E-01	mg/kg	2.2E-07	mg/kg-day	4.0E-03	mg/kg-day	5.5E-05
				Naphthalene	1.0E-01	mg/kg	6.6E-08	mg/kg-day	2.0E-02	mg/kg-day	3.3E-06
				BaP equivalents	4.1E-01	mg/kg	2.7E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.2E+01	mg/kg	3.1E-05	mg/kg-day	1.0E-02	mg/kg-day	3.1E-03
				C11-C22 Aromatics	2.6E+02	mg/kg	1.3E-04	mg/kg-day	3.0E-02	mg/kg-day	4.4E-03
				Pentachlorophenol	2.3E-01	mg/kg	2.9E-07	mg/kg-day	5.0E-03	mg/kg-day	5.9E-05
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	2.8E-10	mg/kg-day	7.0E-10	mg/kg-day	4.1E-01
			Total Dermal								4.3E-01
		Total Soil Direct Contact									2.7E+01

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	9.7E-08	mg/m^3	7.2E-08	mg/m^3	7.0E-01	mg/m3	1.0E-07
				C9-C12 Aliphatics	1.5E-09	mg/m^3	1.1E-09	mg/m^3	1.0E-01	mg/m3	1.1E-08
				C9-C10 Aromatics	1.5E-09	mg/m^3	1.1E-09	mg/m^3	1.0E-01	mg/m3	1.1E-08
				Ethylbenzene	3.7E-11	mg/m^3	2.7E-11	mg/m^3	1.0E+00	mg/m3	2.7E-11
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	2.4E-10	mg/m^3	1.8E-10	mg/m^3	nv	na	--
				Naphthalene	7.4E-11	mg/m^3	5.4E-11	mg/m^3	3.0E-03	mg/m3	1.8E-08
				BaP equivalents	3.0E-10	mg/m^3	2.2E-10	mg/m^3	nv	na	--
				C9-C18 Aliphatics	8.8E-09	mg/m^3	6.5E-09	mg/m^3	1.0E-01	mg/m3	6.5E-08
				C11-C22 Aromatics	1.9E-07	mg/m^3	1.4E-07	mg/m^3	1.0E-01	mg/m3	1.4E-06
				Pentachlorophenol	1.7E-10	mg/m^3	1.3E-10	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-12	mg/m^3	1.0E-12	mg/m^3	4.0E-08	mg/m3	2.5E-05
		Total Dust Inhalation									2.7E-05
	Total Soil Direct Contact and Dust Inhalation										2.7E+01
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	7.1E-05	mg/kg	3.1E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	5.1E-04	mg/kg	2.2E-06	mg/kg-day	5.0E-03	mg/kg-day	4.4E-04
				TEQ (ND=1/2DL)	2.8E-07	mg/kg	1.2E-09	mg/kg-day	7.0E-10	mg/kg-day	1.7E+00
	Total Produce Ingestion										1.7E+00

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Parcel B Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	7.9E+00	mg/kg	7.8E-05	mg/kg-day	4.0E-02	mg/kg-day	1.9E-03
				C9-C12 Aliphatics	9.1E+02	mg/kg	9.0E-03	mg/kg-day	1.0E-02	mg/kg-day	9.0E-01
				C9-C10 Aromatics	3.7E+02	mg/kg	3.7E-03	mg/kg-day	3.0E-02	mg/kg-day	1.2E-01
				Ethylbenzene	4.6E-02	mg/kg	4.5E-07	mg/kg-day	1.0E-01	mg/kg-day	4.5E-06
				1-Methylnaphthalene	3.4E+00	mg/kg	3.4E-05	mg/kg-day	7.0E-02	mg/kg-day	4.8E-04
				2-Methylnaphthalene	2.0E+00	mg/kg	2.0E-05	mg/kg-day	4.0E-03	mg/kg-day	5.0E-03
				Naphthalene	4.9E-01	mg/kg	4.8E-06	mg/kg-day	2.0E-02	mg/kg-day	2.4E-04
				BaP equivalents	6.1E-01	mg/kg	6.0E-06	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.8E+03	mg/kg	1.8E-02	mg/kg-day	1.0E-02	mg/kg-day	1.8E+00
				C11-C22 Aromatics	6.1E+03	mg/kg	6.1E-02	mg/kg-day	3.0E-02	mg/kg-day	2.0E+00
				Pentachlorophenol	3.4E+03	mg/kg	3.3E-02	mg/kg-day	5.0E-03	mg/kg-day	6.7E+00
				TEQ (ND=1/2DL)	3.8E-03	mg/kg	3.7E-08	mg/kg-day	7.0E-10	mg/kg-day	5.3E+01
			Total Ingestion								6.5E+01
			Dermal	C5-C8 Aliphatics	7.9E+00	mg/kg	4.0E-05	mg/kg-day	4.0E-02	mg/kg-day	1.0E-03
				C9-C12 Aliphatics	9.1E+02	mg/kg	2.3E-03	mg/kg-day	1.0E-02	mg/kg-day	2.3E-01
				C9-C10 Aromatics	3.7E+02	mg/kg	9.5E-04	mg/kg-day	3.0E-02	mg/kg-day	3.2E-02
				Ethylbenzene	4.6E-02	mg/kg	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	3.4E+00	mg/kg	2.3E-06	mg/kg-day	7.0E-02	mg/kg-day	3.2E-05
				2-Methylnaphthalene	2.0E+00	mg/kg	1.3E-06	mg/kg-day	4.0E-03	mg/kg-day	3.4E-04
				Naphthalene	4.9E-01	mg/kg	3.3E-07	mg/kg-day	2.0E-02	mg/kg-day	1.6E-05
				BaP equivalents	6.1E-01	mg/kg	4.1E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.8E+03	mg/kg	4.7E-03	mg/kg-day	1.0E-02	mg/kg-day	4.7E-01
				C11-C22 Aromatics	6.1E+03	mg/kg	3.1E-03	mg/kg-day	3.0E-02	mg/kg-day	1.0E-01
				Pentachlorophenol	3.4E+03	mg/kg	4.3E-03	mg/kg-day	5.0E-03	mg/kg-day	8.6E-01
				TEQ (ND=1/2DL)	3.8E-03	mg/kg	5.8E-10	mg/kg-day	7.0E-10	mg/kg-day	8.3E-01
			Total Dermal								2.5E+00
		Total Soil Direct Contact									6.7E+01

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	5.8E-09	mg/m^3	4.3E-09	mg/m^3	7.0E-01	mg/m3	6.1E-09
				C9-C12 Aliphatics	6.7E-07	mg/m^3	4.9E-07	mg/m^3	1.0E-01	mg/m3	4.9E-06
				C9-C10 Aromatics	2.7E-07	mg/m^3	2.0E-07	mg/m^3	1.0E-01	mg/m3	2.0E-06
				Ethylbenzene	3.4E-11	mg/m^3	2.5E-11	mg/m^3	1.0E+00	mg/m3	2.5E-11
				1-Methylnaphthalene	2.5E-09	mg/m^3	1.8E-09	mg/m^3	nv	na	--
				2-Methylnaphthalene	1.5E-09	mg/m^3	1.1E-09	mg/m^3	nv	na	--
				Naphthalene	3.6E-10	mg/m^3	2.7E-10	mg/m^3	3.0E-03	mg/m3	8.9E-08
				BaP equivalents	4.5E-10	mg/m^3	3.3E-10	mg/m^3	nv	na	--
				C9-C18 Aliphatics	1.3E-06	mg/m^3	9.9E-07	mg/m^3	1.0E-01	mg/m3	9.9E-06
				C11-C22 Aromatics	4.5E-06	mg/m^3	3.3E-06	mg/m^3	1.0E-01	mg/m3	3.3E-05
				Pentachlorophenol	2.5E-06	mg/m^3	1.8E-06	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.8E-12	mg/m^3	2.1E-12	mg/m^3	4.0E-08	mg/m3	5.1E-05
		Total Dust Inhalation									1.0E-04
	Total Soil Direct Contact and Dust Inhalation										6.7E+01
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	1.1E-04	mg/kg	4.6E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	7.5E+00	mg/kg	3.3E-02	mg/kg-day	5.0E-03	mg/kg-day	6.5E+00
				TEQ (ND=1/2DL)	5.7E-07	mg/kg	2.5E-09	mg/kg-day	7.0E-10	mg/kg-day	3.5E+00
	Total Produce Ingestion										1.0E+01

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Spigot Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	5.1E-02	mg/kg	5.0E-07	mg/kg-day	5.0E-03	mg/kg-day	1.0E-04
				TEQ (ND=1/2DL)	1.0E-04	mg/kg	9.9E-10	mg/kg-day	7.0E-10	mg/kg-day	1.4E+00
			Total Ingestion								1.4E+00
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	5.1E-02	mg/kg	6.5E-08	mg/kg-day	5.0E-03	mg/kg-day	1.3E-05
				TEQ (ND=1/2DL)	1.0E-04	mg/kg	1.5E-11	mg/kg-day	7.0E-10	mg/kg-day	2.2E-02
			Total Dermal								2.2E-02
		Total Soil Direct Contact									1.4E+00

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	3.8E-11	mg/m^3	2.8E-11	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.4E-14	mg/m^3	5.4E-14	mg/m^3	4.0E-08	mg/m3	1.4E-06
		Total Dust Inhalation									1.4E-06
	Total Soil Direct Contact and Dust Inhalation										1.4E+00
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.1E-04	mg/kg	4.9E-07	mg/kg-day	5.0E-03	mg/kg-day	9.9E-05
				TEQ (ND=1/2DL)	1.5E-08	mg/kg	6.5E-11	mg/kg-day	7.0E-10	mg/kg-day	9.3E-02
	Total Produce Ingestion										9.4E-02

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Cassell Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.3E+00	mg/kg	3.4E-06	mg/kg-day	5.0E-03	mg/kg-day	6.7E-04
				TEQ (ND=1/2DL)	1.5E-03	mg/kg	2.2E-09	mg/kg-day	7.0E-10	mg/kg-day	3.1E+00
			Total Ingestion								3.1E+00
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.3E+00	mg/kg	4.4E-07	mg/kg-day	5.0E-03	mg/kg-day	8.7E-05
				TEQ (ND=1/2DL)	1.5E-03	mg/kg	3.4E-11	mg/kg-day	7.0E-10	mg/kg-day	4.8E-02
			Total Dermal								4.8E-02
		Total Soil Direct Contact									3.2E+00

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.7E-09	mg/m^3	1.9E-10	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.1E-12	mg/m^3	1.2E-13	mg/m^3	4.0E-08	mg/m3	3.0E-06
		Total Dust Inhalation									3.0E-06
	Total Soil Direct Contact and Dust Inhalation										3.2E+00
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	5.1E-03	mg/kg	2.2E-05	mg/kg-day	5.0E-03	mg/kg-day	4.4E-03
				TEQ (ND=1/2DL)	2.3E-07	mg/kg	9.7E-10	mg/kg-day	7.0E-10	mg/kg-day	1.4E+00
	Total Produce Ingestion										1.4E+00

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Parmenter Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	4.4E-03	mg/kg	6.4E-09	mg/kg-day	5.0E-03	mg/kg-day	1.3E-06
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	2.7E-11	mg/kg-day	7.0E-10	mg/kg-day	3.9E-02
			Total Ingestion								3.9E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	4.4E-03	mg/kg	8.3E-10	mg/kg-day	5.0E-03	mg/kg-day	1.7E-07
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	4.2E-13	mg/kg-day	7.0E-10	mg/kg-day	6.0E-04
			Total Dermal								6.0E-04
		Total Soil Direct Contact									3.9E-02

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	3.2E-12	mg/m^3	3.5E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-14	mg/m^3	1.5E-15	mg/m^3	4.0E-08	mg/m3	3.7E-08
		Total Dust Inhalation									3.7E-08
	Total Soil Direct Contact and Dust Inhalation										3.9E-02
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.8E-06	mg/kg	4.2E-08	mg/kg-day	5.0E-03	mg/kg-day	8.5E-06
				TEQ (ND=1/2DL)	2.8E-09	mg/kg	1.2E-11	mg/kg-day	7.0E-10	mg/kg-day	1.7E-02
	Total Produce Ingestion										1.7E-02

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Skroch Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.2E-01	mg/kg	1.8E-07	mg/kg-day	5.0E-03	mg/kg-day	3.5E-05
				TEQ (ND=1/2DL)	3.0E-04	mg/kg	4.4E-10	mg/kg-day	7.0E-10	mg/kg-day	6.3E-01
			Total Ingestion								6.3E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.2E-01	mg/kg	2.3E-08	mg/kg-day	5.0E-03	mg/kg-day	4.5E-06
				TEQ (ND=1/2DL)	3.0E-04	mg/kg	6.8E-12	mg/kg-day	7.0E-10	mg/kg-day	9.7E-03
			Total Dermal								9.7E-03
		Total Soil Direct Contact									6.4E-01

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	8.8E-11	mg/m^3	9.7E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.2E-13	mg/m^3	2.4E-14	mg/m^3	4.0E-08	mg/m3	6.0E-07
		Total Dust Inhalation									6.0E-07
	Total Soil Direct Contact and Dust Inhalation										6.4E-01
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.7E-04	mg/kg	1.2E-06	mg/kg-day	5.0E-03	mg/kg-day	2.3E-04
				TEQ (ND=1/2DL)	4.5E-08	mg/kg	2.0E-10	mg/kg-day	7.0E-10	mg/kg-day	2.8E-01
	Total Produce Ingestion										2.8E-01

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Chaney Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-04	mg/kg	2.2E-09	mg/kg-day	5.0E-03	mg/kg-day	4.4E-07
				TEQ (ND=1/2DL)	1.0E-05	mg/kg	9.8E-11	mg/kg-day	7.0E-10	mg/kg-day	1.4E-01
			Total Ingestion								1.4E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-04	mg/kg	2.9E-10	mg/kg-day	5.0E-03	mg/kg-day	5.7E-08
				TEQ (ND=1/2DL)	1.0E-05	mg/kg	1.5E-12	mg/kg-day	7.0E-10	mg/kg-day	2.2E-03
			Total Dermal								2.2E-03
		Total Soil Direct Contact									1.4E-01

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.6E-13	mg/m^3	1.2E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.3E-15	mg/m^3	5.4E-15	mg/m^3	4.0E-08	mg/m3	1.4E-07
		Total Dust Inhalation									1.4E-07
	Total Soil Direct Contact and Dust Inhalation										1.4E-01
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	5.0E-07	mg/kg	2.2E-09	mg/kg-day	5.0E-03	mg/kg-day	4.3E-07
				TEQ (ND=1/2DL)	1.5E-09	mg/kg	6.5E-12	mg/kg-day	7.0E-10	mg/kg-day	9.3E-03
	Total Produce Ingestion										9.3E-03

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Peirano Tract B Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-03	mg/kg	2.4E-09	mg/kg-day	7.0E-10	mg/kg-day	3.5E+00
			Total Ingestion								3.5E+00
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-03	mg/kg	3.8E-11	mg/kg-day	7.0E-10	mg/kg-day	5.4E-02
			Total Dermal								5.4E-02
		Total Soil Direct Contact									3.5E+00

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.2E-12	mg/m^3	1.3E-13	mg/m^3	4.0E-08	mg/m3	3.4E-06
		Total Dust Inhalation									3.4E-06
	Total Soil Direct Contact and Dust Inhalation										3.5E+00
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.5E-07	mg/kg	1.1E-09	mg/kg-day	7.0E-10	mg/kg-day	1.6E+00
	Total Produce Ingestion										1.6E+00

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Renfroe Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-05	mg/kg	1.7E-10	mg/kg-day	7.0E-10	mg/kg-day	2.4E-01
			Total Ingestion								2.4E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-05	mg/kg	2.6E-12	mg/kg-day	7.0E-10	mg/kg-day	3.8E-03
			Total Dermal								3.8E-03
		Total Soil Direct Contact									2.5E-01

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.3E-14	mg/m^3	9.3E-15	mg/m^3	4.0E-08	mg/m3	2.3E-07
		Total Dust Inhalation									2.3E-07
	Total Soil Direct Contact and Dust Inhalation										2.5E-01
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.6E-09	mg/kg	1.1E-11	mg/kg-day	7.0E-10	mg/kg-day	1.6E-02
	Total Produce Ingestion										1.6E-02

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
3WT Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	2.0E-10	mg/kg-day	7.0E-10	mg/kg-day	2.9E-01
			Total Ingestion								2.9E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	3.1E-12	mg/kg-day	7.0E-10	mg/kg-day	4.5E-03
			Total Dermal								4.5E-03
		Total Soil Direct Contact									2.9E-01

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.5E-14	mg/m^3	1.1E-14	mg/m^3	4.0E-08	mg/m3	2.8E-07
		Total Dust Inhalation									2.8E-07
	Total Soil Direct Contact and Dust Inhalation										2.9E-01
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	3.1E-09	mg/kg	1.3E-11	mg/kg-day	7.0E-10	mg/kg-day	1.9E-02
	Total Produce Ingestion										1.9E-02

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Milton Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.5E-02	mg/kg	1.5E-07	mg/kg-day	5.0E-03	mg/kg-day	3.0E-05
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	3.4E-10	mg/kg-day	7.0E-10	mg/kg-day	4.8E-01
			Total Ingestion								4.8E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.5E-02	mg/kg	1.9E-08	mg/kg-day	5.0E-03	mg/kg-day	3.9E-06
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	5.2E-12	mg/kg-day	7.0E-10	mg/kg-day	7.4E-03
			Total Dermal								7.4E-03
		Total Soil Direct Contact									4.9E-01

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.1E-11	mg/m^3	8.2E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.5E-14	mg/m^3	1.8E-14	mg/m^3	4.0E-08	mg/m3	4.6E-07
		Total Dust Inhalation									4.6E-07
	Total Soil Direct Contact and Dust Inhalation										4.9E-01
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.4E-05	mg/kg	1.5E-07	mg/kg-day	5.0E-03	mg/kg-day	2.9E-05
				TEQ (ND=1/2DL)	5.1E-09	mg/kg	2.2E-11	mg/kg-day	7.0E-10	mg/kg-day	3.2E-02
	Total Produce Ingestion										3.2E-02

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Peirano Parcel B Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.0E-02	mg/kg	8.8E-08	mg/kg-day	5.0E-03	mg/kg-day	1.8E-05
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	2.8E-09	mg/kg-day	7.0E-10	mg/kg-day	4.0E+00
			Total Ingestion								4.0E+00
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.0E-02	mg/kg	1.1E-08	mg/kg-day	5.0E-03	mg/kg-day	2.3E-06
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	4.4E-11	mg/kg-day	7.0E-10	mg/kg-day	6.2E-02
			Total Dermal								6.2E-02
		Total Soil Direct Contact									4.1E+00

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	4.4E-11	mg/m^3	4.8E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-12	mg/m^3	1.5E-13	mg/m^3	4.0E-08	mg/m3	3.9E-06
		Total Dust Inhalation									3.9E-06
	Total Soil Direct Contact and Dust Inhalation										4.1E+00
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.3E-04	mg/kg	5.8E-07	mg/kg-day	5.0E-03	mg/kg-day	1.2E-04
				TEQ (ND=1/2DL)	2.9E-07	mg/kg	1.3E-09	mg/kg-day	7.0E-10	mg/kg-day	1.8E+00
	Total Produce Ingestion										1.8E+00

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Peirano Tract A Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.5E-04	mg/kg	5.1E-10	mg/kg-day	5.0E-03	mg/kg-day	1.0E-07
				TEQ (ND=1/2DL)	1.8E-03	mg/kg	2.6E-09	mg/kg-day	7.0E-10	mg/kg-day	3.7E+00
			Total Ingestion								3.7E+00
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.5E-04	mg/kg	6.7E-11	mg/kg-day	5.0E-03	mg/kg-day	1.3E-08
				TEQ (ND=1/2DL)	1.8E-03	mg/kg	4.0E-11	mg/kg-day	7.0E-10	mg/kg-day	5.8E-02
			Total Dermal								5.8E-02
		Total Soil Direct Contact									3.8E+00

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.6E-13	mg/m^3	2.8E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.3E-12	mg/m^3	1.4E-13	mg/m^3	4.0E-08	mg/m3	3.6E-06
		Total Dust Inhalation									3.6E-06
	Total Soil Direct Contact and Dust Inhalation										3.8E+00
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	7.9E-07	mg/kg	3.4E-09	mg/kg-day	5.0E-03	mg/kg-day	6.8E-07
				TEQ (ND=1/2DL)	2.7E-07	mg/kg	1.2E-09	mg/kg-day	7.0E-10	mg/kg-day	1.7E+00
	Total Produce Ingestion										1.7E+00

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Robak Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-03	mg/kg	9.5E-08	mg/kg-day	5.0E-03	mg/kg-day	1.9E-05
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	3.4E-10	mg/kg-day	7.0E-10	mg/kg-day	4.8E-01
			Total Ingestion								4.8E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-03	mg/kg	1.2E-08	mg/kg-day	5.0E-03	mg/kg-day	2.5E-06
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	5.2E-12	mg/kg-day	7.0E-10	mg/kg-day	7.4E-03
			Total Dermal								7.4E-03
		Total Soil Direct Contact									4.9E-01

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	7.1E-12	mg/m^3	5.2E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.5E-14	mg/m^3	1.8E-14	mg/m^3	4.0E-08	mg/m3	4.6E-07
		Total Dust Inhalation									4.6E-07
	Total Soil Direct Contact and Dust Inhalation										4.9E-01
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-05	mg/kg	9.3E-08	mg/kg-day	5.0E-03	mg/kg-day	1.9E-05
				TEQ (ND=1/2DL)	5.1E-09	mg/kg	2.2E-11	mg/kg-day	7.0E-10	mg/kg-day	3.2E-02
	Total Produce Ingestion										3.2E-02

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Smith Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.1E-05	mg/kg	2.1E-10	mg/kg-day	7.0E-10	mg/kg-day	2.9E-01
			Total Ingestion								2.9E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.1E-05	mg/kg	3.2E-12	mg/kg-day	7.0E-10	mg/kg-day	4.6E-03
			Total Dermal								4.6E-03
		Total Soil Direct Contact									3.0E-01

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.5E-14	mg/m^3	1.1E-14	mg/m^3	4.0E-08	mg/m3	2.8E-07
		Total Dust Inhalation									2.8E-07
	Total Soil Direct Contact and Dust Inhalation										3.0E-01
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	3.2E-09	mg/kg	1.4E-11	mg/kg-day	7.0E-10	mg/kg-day	1.9E-02
	Total Produce Ingestion										1.9E-02

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Stevenson Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.8E-04	mg/kg	6.7E-09	mg/kg-day	5.0E-03	mg/kg-day	1.3E-06
				TEQ (ND=1/2DL)	7.6E-06	mg/kg	7.5E-11	mg/kg-day	7.0E-10	mg/kg-day	1.1E-01
			Total Ingestion								1.1E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.8E-04	mg/kg	8.7E-10	mg/kg-day	5.0E-03	mg/kg-day	1.7E-07
				TEQ (ND=1/2DL)	7.6E-06	mg/kg	1.2E-12	mg/kg-day	7.0E-10	mg/kg-day	1.7E-03
			Total Dermal								1.7E-03
		Total Soil Direct Contact									1.1E-01

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	5.0E-13	mg/m^3	3.7E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	5.6E-15	mg/m^3	4.1E-15	mg/m^3	4.0E-08	mg/m3	1.0E-07
		Total Dust Inhalation									1.0E-07
	Total Soil Direct Contact and Dust Inhalation										1.1E-01
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.5E-06	mg/kg	6.6E-09	mg/kg-day	5.0E-03	mg/kg-day	1.3E-06
				TEQ (ND=1/2DL)	1.1E-09	mg/kg	4.9E-12	mg/kg-day	7.0E-10	mg/kg-day	7.1E-03
	Total Produce Ingestion										7.1E-03

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Vintage Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	3.9E-11	mg/kg-day	7.0E-10	mg/kg-day	5.6E-02
			Total Ingestion								5.6E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	6.1E-13	mg/kg-day	7.0E-10	mg/kg-day	8.7E-04
			Total Dermal								8.7E-04
		Total Soil Direct Contact									5.7E-02

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.9E-15	mg/m^3	2.2E-15	mg/m^3	4.0E-08	mg/m3	5.4E-08
		Total Dust Inhalation									5.4E-08
	Total Soil Direct Contact and Dust Inhalation										5.7E-02
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	6.0E-10	mg/kg	2.6E-12	mg/kg-day	7.0E-10	mg/kg-day	3.7E-03
	Total Produce Ingestion										3.7E-03

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Right-of-Way Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.8E+01	mg/kg	3.7E-04	mg/kg-day	5.0E-03	mg/kg-day	7.5E-02
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Ingestion								7.5E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.8E+01	mg/kg	4.9E-05	mg/kg-day	5.0E-03	mg/kg-day	9.7E-03
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Dermal								9.7E-03
		Total Soil Direct Contact									8.5E-02

TABLE D7.1 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.8E-08	mg/m^3	2.1E-08	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	--	mg/m^3	--	mg/m^3	4.0E-08	mg/m3	--
		Total Dust Inhalation									--
	Total Soil Direct Contact and Dust Inhalation										8.5E-02
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	8.5E-02	mg/kg	3.7E-04	mg/kg-day	5.0E-03	mg/kg-day	7.3E-02
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	7.0E-10	mg/kg-day	--
	Total Produce Ingestion										7.3E-02

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

BaP = benzo(a)pyrene
CSF = cancer slope factor
EPC = exposure point concentration
na = not applicable
nv = no value
RfC = inhalation reference dose
RfD = oral reference dose
TEQ = 2,3,7,8-TCDD toxicity equivalents
-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Parcel A Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	1.3E+02	mg/kg	1.8E-04	mg/kg-day	4.0E-02	mg/kg-day	4.5E-03
(non-ditch)				C9-C12 Aliphatics	2.0E+00	mg/kg	2.7E-06	mg/kg-day	1.0E-02	mg/kg-day	2.7E-04
				C9-C10 Aromatics	2.0E+00	mg/kg	2.7E-06	mg/kg-day	3.0E-02	mg/kg-day	9.1E-05
				Ethylbenzene	5.0E-02	mg/kg	6.8E-08	mg/kg-day	1.0E-01	mg/kg-day	6.8E-07
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	3.3E-01	mg/kg	4.5E-07	mg/kg-day	4.0E-03	mg/kg-day	1.1E-04
				Naphthalene	1.0E-01	mg/kg	1.4E-07	mg/kg-day	2.0E-02	mg/kg-day	6.8E-06
				BaP equivalents	4.1E-01	mg/kg	5.7E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.2E+01	mg/kg	1.6E-05	mg/kg-day	1.0E-02	mg/kg-day	1.6E-03
				C11-C22 Aromatics	2.6E+02	mg/kg	3.5E-04	mg/kg-day	3.0E-02	mg/kg-day	1.2E-02
				Pentachlorophenol	4.7E-02	mg/kg	6.5E-08	mg/kg-day	5.0E-03	mg/kg-day	1.3E-05
				TEQ (ND=1/2DL)	1.9E-04	mg/kg	2.6E-10	mg/kg-day	7.0E-10	mg/kg-day	3.7E-01
			Total Ingestion								3.9E-01
			Dermal	C5-C8 Aliphatics	1.3E+02	mg/kg	3.7E-04	mg/kg-day	4.0E-02	mg/kg-day	9.4E-03
				C9-C12 Aliphatics	2.0E+00	mg/kg	2.8E-06	mg/kg-day	1.0E-02	mg/kg-day	2.8E-04
				C9-C10 Aromatics	2.0E+00	mg/kg	2.8E-06	mg/kg-day	3.0E-02	mg/kg-day	9.5E-05
				Ethylbenzene	5.0E-02	mg/kg	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	3.3E-01	mg/kg	1.2E-07	mg/kg-day	4.0E-03	mg/kg-day	3.0E-05
				Naphthalene	1.0E-01	mg/kg	3.7E-08	mg/kg-day	2.0E-02	mg/kg-day	1.8E-06
				BaP equivalents	4.1E-01	mg/kg	1.5E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.2E+01	mg/kg	1.7E-05	mg/kg-day	1.0E-02	mg/kg-day	1.7E-03
				C11-C22 Aromatics	2.6E+02	mg/kg	7.4E-05	mg/kg-day	3.0E-02	mg/kg-day	2.5E-03
				Pentachlorophenol	4.7E-02	mg/kg	3.3E-08	mg/kg-day	5.0E-03	mg/kg-day	6.7E-06
				TEQ (ND=1/2DL)	1.9E-04	mg/kg	1.6E-11	mg/kg-day	7.0E-10	mg/kg-day	2.3E-02
			Total Dermal								3.7E-02
		Total Soil Direct Contact									4.3E-01

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	9.7E-08	mg/m^3	4.0E-08	mg/m^3	7.0E-01	mg/m3	5.7E-08
				C9-C12 Aliphatics	1.5E-09	mg/m^3	6.0E-10	mg/m^3	1.0E-01	mg/m3	6.0E-09
				C9-C10 Aromatics	1.5E-09	mg/m^3	6.0E-10	mg/m^3	1.0E-01	mg/m3	6.0E-09
				Ethylbenzene	3.7E-11	mg/m^3	1.5E-11	mg/m^3	1.0E+00	mg/m3	1.5E-11
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	2.4E-10	mg/m^3	1.0E-10	mg/m^3	nv	na	--
				Naphthalene	7.4E-11	mg/m^3	3.0E-11	mg/m^3	3.0E-03	mg/m3	1.0E-08
				BaP equivalents	3.0E-10	mg/m^3	1.2E-10	mg/m^3	nv	na	--
				C9-C18 Aliphatics	8.8E-09	mg/m^3	3.6E-09	mg/m^3	1.0E-01	mg/m3	3.6E-08
				C11-C22 Aromatics	1.9E-07	mg/m^3	7.8E-08	mg/m^3	1.0E-01	mg/m3	7.8E-07
				Pentachlorophenol	3.5E-11	mg/m^3	1.4E-11	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-13	mg/m^3	5.7E-14	mg/m^3	4.0E-08	mg/m3	1.4E-06
		Total Dust Inhalation									2.3E-06
	Total Soil Direct Contact and Dust Inhalation										4.3E-01
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	7.1E-05	mg/kg	7.5E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.1E-04	mg/kg	1.1E-07	mg/kg-day	5.0E-03	mg/kg-day	2.2E-05
				TEQ (ND=1/2DL)	2.9E-08	mg/kg	3.0E-11	mg/kg-day	7.0E-10	mg/kg-day	4.3E-02
	Total Produce Ingestion										4.3E-02

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Parcel B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	5.6E+00	mg/kg	7.6E-06	mg/kg-day	4.0E-02	mg/kg-day	1.9E-04
(non-ditch)				C9-C12 Aliphatics	2.4E+02	mg/kg	3.2E-04	mg/kg-day	1.0E-02	mg/kg-day	3.2E-02
				C9-C10 Aromatics	9.2E+01	mg/kg	1.3E-04	mg/kg-day	3.0E-02	mg/kg-day	4.2E-03
				Ethylbenzene	4.6E-02	mg/kg	6.3E-08	mg/kg-day	1.0E-01	mg/kg-day	6.3E-07
				1-Methylnaphthalene	3.4E+00	mg/kg	4.7E-06	mg/kg-day	7.0E-02	mg/kg-day	6.7E-05
				2-Methylnaphthalene	4.8E-01	mg/kg	6.6E-07	mg/kg-day	4.0E-03	mg/kg-day	1.7E-04
				Naphthalene	9.3E-02	mg/kg	1.3E-07	mg/kg-day	2.0E-02	mg/kg-day	6.3E-06
				BaP equivalents	3.0E-01	mg/kg	4.1E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	6.8E+02	mg/kg	9.3E-04	mg/kg-day	1.0E-02	mg/kg-day	9.3E-02
				C11-C22 Aromatics	8.3E+02	mg/kg	1.1E-03	mg/kg-day	3.0E-02	mg/kg-day	3.8E-02
				Pentachlorophenol	5.7E+02	mg/kg	7.9E-04	mg/kg-day	5.0E-03	mg/kg-day	1.6E-01
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	1.5E-09	mg/kg-day	7.0E-10	mg/kg-day	2.2E+00
			Total Ingestion								2.5E+00
			Dermal	C5-C8 Aliphatics	5.6E+00	mg/kg	1.6E-05	mg/kg-day	4.0E-02	mg/kg-day	3.9E-04
				C9-C12 Aliphatics	2.4E+02	mg/kg	3.4E-04	mg/kg-day	1.0E-02	mg/kg-day	3.4E-02
				C9-C10 Aromatics	9.2E+01	mg/kg	1.3E-04	mg/kg-day	3.0E-02	mg/kg-day	4.4E-03
				Ethylbenzene	4.6E-02	mg/kg	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	3.4E+00	mg/kg	1.3E-06	mg/kg-day	7.0E-02	mg/kg-day	1.8E-05
				2-Methylnaphthalene	4.8E-01	mg/kg	1.8E-07	mg/kg-day	4.0E-03	mg/kg-day	4.5E-05
				Naphthalene	9.3E-02	mg/kg	3.4E-08	mg/kg-day	2.0E-02	mg/kg-day	1.7E-06
				BaP equivalents	3.0E-01	mg/kg	1.1E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	6.8E+02	mg/kg	9.7E-04	mg/kg-day	1.0E-02	mg/kg-day	9.7E-02
				C11-C22 Aromatics	8.3E+02	mg/kg	2.4E-04	mg/kg-day	3.0E-02	mg/kg-day	7.9E-03
				Pentachlorophenol	5.7E+02	mg/kg	4.1E-04	mg/kg-day	5.0E-03	mg/kg-day	8.2E-02
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	9.6E-11	mg/kg-day	7.0E-10	mg/kg-day	1.4E-01
			Total Dermal								3.6E-01
		Total Soil Direct Contact									2.9E+00

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	4.1E-09	mg/m^3	1.7E-09	mg/m^3	7.0E-01	mg/m3	2.4E-09
				C9-C12 Aliphatics	1.7E-07	mg/m^3	7.2E-08	mg/m^3	1.0E-01	mg/m3	7.2E-07
				C9-C10 Aromatics	6.8E-08	mg/m^3	2.8E-08	mg/m^3	1.0E-01	mg/m3	2.8E-07
				Ethylbenzene	3.4E-11	mg/m^3	1.4E-11	mg/m^3	1.0E+00	mg/m3	1.4E-11
				1-Methylnaphthalene	2.5E-09	mg/m^3	1.0E-09	mg/m^3	nv	na	--
				2-Methylnaphthalene	3.6E-10	mg/m^3	1.5E-10	mg/m^3	nv	na	--
				Naphthalene	6.8E-11	mg/m^3	2.8E-11	mg/m^3	3.0E-03	mg/m3	9.3E-09
				BaP equivalents	2.2E-10	mg/m^3	8.9E-11	mg/m^3	nv	na	--
				C9-C18 Aliphatics	5.0E-07	mg/m^3	2.1E-07	mg/m^3	1.0E-01	mg/m3	2.1E-06
				C11-C22 Aromatics	6.1E-07	mg/m^3	2.5E-07	mg/m^3	1.0E-01	mg/m3	2.5E-06
				Pentachlorophenol	4.2E-07	mg/m^3	1.7E-07	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	8.3E-13	mg/m^3	3.4E-13	mg/m^3	4.0E-08	mg/m3	8.5E-06
		Total Dust Inhalation									1.4E-05
	Total Soil Direct Contact and Dust Inhalation										2.9E+00
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	5.1E-05	mg/kg	5.4E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.3E+00	mg/kg	1.4E-03	mg/kg-day	5.0E-03	mg/kg-day	2.7E-01
				TEQ (ND=1/2DL)	1.7E-07	mg/kg	1.8E-10	mg/kg-day	7.0E-10	mg/kg-day	2.6E-01
	Total Produce Ingestion										5.3E-01

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Spigot Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.1E-02	mg/kg	4.3E-08	mg/kg-day	5.0E-03	mg/kg-day	8.6E-06
				TEQ (ND=1/2DL)	5.3E-05	mg/kg	7.2E-11	mg/kg-day	7.0E-10	mg/kg-day	1.0E-01
			Total Ingestion								1.0E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.1E-02	mg/kg	2.2E-08	mg/kg-day	5.0E-03	mg/kg-day	4.5E-06
				TEQ (ND=1/2DL)	5.3E-05	mg/kg	4.5E-12	mg/kg-day	7.0E-10	mg/kg-day	6.4E-03
			Total Dermal								6.4E-03
		Total Soil Direct Contact									1.1E-01

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.3E-11	mg/m^3	9.5E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	3.9E-14	mg/m^3	1.6E-14	mg/m^3	4.0E-08	mg/m3	4.0E-07
		Total Dust Inhalation									4.0E-07
	Total Soil Direct Contact and Dust Inhalation										1.1E-01
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	7.0E-05	mg/kg	7.4E-08	mg/kg-day	5.0E-03	mg/kg-day	1.5E-05
				TEQ (ND=1/2DL)	8.0E-09	mg/kg	8.4E-12	mg/kg-day	7.0E-10	mg/kg-day	1.2E-02
	Total Produce Ingestion										1.2E-02

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Cassell Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-01	mg/kg	1.8E-07	mg/kg-day	5.0E-03	mg/kg-day	3.5E-05
				TEQ (ND=1/2DL)	6.2E-04	mg/kg	1.1E-10	mg/kg-day	7.0E-10	mg/kg-day	1.6E-01
			Total Ingestion								1.6E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-01	mg/kg	9.1E-08	mg/kg-day	5.0E-03	mg/kg-day	1.8E-05
				TEQ (ND=1/2DL)	6.2E-04	mg/kg	7.0E-12	mg/kg-day	7.0E-10	mg/kg-day	1.0E-02
			Total Dermal								1.0E-02
		Total Soil Direct Contact									1.7E-01

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	7.1E-10	mg/m^3	3.9E-11	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	4.6E-13	mg/m^3	2.5E-14	mg/m^3	4.0E-08	mg/m3	6.2E-07
		Total Dust Inhalation									6.2E-07
	Total Soil Direct Contact and Dust Inhalation										1.7E-01
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-03	mg/kg	2.3E-06	mg/kg-day	5.0E-03	mg/kg-day	4.5E-04
				TEQ (ND=1/2DL)	9.4E-08	mg/kg	9.9E-11	mg/kg-day	7.0E-10	mg/kg-day	1.4E-01
	Total Produce Ingestion										1.4E-01

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Parmenter Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.2E-03	mg/kg	5.8E-10	mg/kg-day	5.0E-03	mg/kg-day	1.2E-07
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	1.9E-12	mg/kg-day	7.0E-10	mg/kg-day	2.8E-03
			Total Ingestion								2.8E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.2E-03	mg/kg	3.0E-10	mg/kg-day	5.0E-03	mg/kg-day	6.1E-08
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	1.2E-13	mg/kg-day	7.0E-10	mg/kg-day	1.7E-04
			Total Dermal								1.7E-04
		Total Soil Direct Contact									2.9E-03

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.4E-12	mg/m^3	1.3E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.8E-15	mg/m^3	4.3E-16	mg/m^3	4.0E-08	mg/m3	1.1E-08
		Total Dust Inhalation									1.1E-08
	Total Soil Direct Contact and Dust Inhalation										2.9E-03
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	7.1E-06	mg/kg	7.5E-09	mg/kg-day	5.0E-03	mg/kg-day	1.5E-06
				TEQ (ND=1/2DL)	1.6E-09	mg/kg	1.7E-12	mg/kg-day	7.0E-10	mg/kg-day	2.4E-03
	Total Produce Ingestion										2.4E-03

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Skroch Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.5E-02	mg/kg	4.6E-09	mg/kg-day	5.0E-03	mg/kg-day	9.1E-07
				TEQ (ND=1/2DL)	9.9E-05	mg/kg	1.8E-11	mg/kg-day	7.0E-10	mg/kg-day	2.6E-02
			Total Ingestion								2.6E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.5E-02	mg/kg	2.4E-09	mg/kg-day	5.0E-03	mg/kg-day	4.7E-07
				TEQ (ND=1/2DL)	9.9E-05	mg/kg	1.1E-12	mg/kg-day	7.0E-10	mg/kg-day	1.6E-03
			Total Dermal								1.6E-03
		Total Soil Direct Contact									2.7E-02

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.8E-11	mg/m^3	1.0E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.3E-14	mg/m^3	4.0E-15	mg/m^3	4.0E-08	mg/m3	1.0E-07
		Total Dust Inhalation									1.0E-07
	Total Soil Direct Contact and Dust Inhalation										2.7E-02
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	5.6E-05	mg/kg	5.9E-08	mg/kg-day	5.0E-03	mg/kg-day	1.2E-05
				TEQ (ND=1/2DL)	1.5E-08	mg/kg	1.6E-11	mg/kg-day	7.0E-10	mg/kg-day	2.3E-02
	Total Produce Ingestion										2.3E-02

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Chaney Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-04	mg/kg	3.1E-10	mg/kg-day	5.0E-03	mg/kg-day	6.1E-08
				TEQ (ND=1/2DL)	8.6E-06	mg/kg	1.2E-11	mg/kg-day	7.0E-10	mg/kg-day	1.7E-02
			Total Ingestion								1.7E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-04	mg/kg	1.6E-10	mg/kg-day	5.0E-03	mg/kg-day	3.2E-08
				TEQ (ND=1/2DL)	8.6E-06	mg/kg	7.4E-13	mg/kg-day	7.0E-10	mg/kg-day	1.1E-03
			Total Dermal								1.1E-03
		Total Soil Direct Contact									1.8E-02

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.6E-13	mg/m^3	6.8E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	6.3E-15	mg/m^3	2.6E-15	mg/m^3	4.0E-08	mg/m3	6.5E-08
		Total Dust Inhalation									6.5E-08
	Total Soil Direct Contact and Dust Inhalation										1.8E-02
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	5.0E-07	mg/kg	5.3E-10	mg/kg-day	5.0E-03	mg/kg-day	1.1E-07
				TEQ (ND=1/2DL)	1.3E-09	mg/kg	1.4E-12	mg/kg-day	7.0E-10	mg/kg-day	2.0E-03
	Total Produce Ingestion										2.0E-03

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Peirano Tract B Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	8.5E-04	mg/kg	1.6E-10	mg/kg-day	7.0E-10	mg/kg-day	2.2E-01
			Total Ingestion								2.2E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	8.5E-04	mg/kg	9.7E-12	mg/kg-day	7.0E-10	mg/kg-day	1.4E-02
			Total Dermal								1.4E-02
		Total Soil Direct Contact									2.4E-01

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	6.3E-13	mg/m^3	3.4E-14	mg/m^3	4.0E-08	mg/m3	8.6E-07
		Total Dust Inhalation									8.6E-07
	Total Soil Direct Contact and Dust Inhalation										2.4E-01
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.3E-07	mg/kg	1.4E-10	mg/kg-day	7.0E-10	mg/kg-day	1.9E-01
	Total Produce Ingestion										1.9E-01

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Renfroe Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	1.6E-11	mg/kg-day	7.0E-10	mg/kg-day	2.2E-02
			Total Ingestion								2.2E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	9.7E-13	mg/kg-day	7.0E-10	mg/kg-day	1.4E-03
			Total Dermal								1.4E-03
		Total Soil Direct Contact									2.4E-02

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	8.3E-15	mg/m^3	3.4E-15	mg/m^3	4.0E-08	mg/m3	8.6E-08
		Total Dust Inhalation									8.6E-08
	Total Soil Direct Contact and Dust Inhalation										2.4E-02
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-09	mg/kg	1.8E-12	mg/kg-day	7.0E-10	mg/kg-day	2.6E-03
	Total Produce Ingestion										2.6E-03

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
3WT Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	2.8E-11	mg/kg-day	7.0E-10	mg/kg-day	4.0E-02
			Total Ingestion								4.0E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	1.7E-12	mg/kg-day	7.0E-10	mg/kg-day	2.5E-03
			Total Dermal								2.5E-03
		Total Soil Direct Contact									4.3E-02

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.5E-14	mg/m^3	6.2E-15	mg/m^3	4.0E-08	mg/m3	1.5E-07
		Total Dust Inhalation									1.5E-07
	Total Soil Direct Contact and Dust Inhalation										4.3E-02
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	3.1E-09	mg/kg	3.3E-12	mg/kg-day	7.0E-10	mg/kg-day	4.7E-03
	Total Produce Ingestion										4.7E-03

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Milton Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	7.6E-03	mg/kg	1.0E-08	mg/kg-day	5.0E-03	mg/kg-day	2.1E-06
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	2.6E-11	mg/kg-day	7.0E-10	mg/kg-day	3.8E-02
			Total Ingestion								3.8E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	7.6E-03	mg/kg	5.4E-09	mg/kg-day	5.0E-03	mg/kg-day	1.1E-06
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	1.6E-12	mg/kg-day	7.0E-10	mg/kg-day	2.4E-03
			Total Dermal								2.4E-03
		Total Soil Direct Contact									4.0E-02

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	5.6E-12	mg/m^3	2.3E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-14	mg/m^3	5.8E-15	mg/m^3	4.0E-08	mg/m3	1.5E-07
		Total Dust Inhalation									1.5E-07
	Total Soil Direct Contact and Dust Inhalation										4.0E-02
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.7E-05	mg/kg	1.8E-08	mg/kg-day	5.0E-03	mg/kg-day	3.6E-06
				TEQ (ND=1/2DL)	2.9E-09	mg/kg	3.1E-12	mg/kg-day	7.0E-10	mg/kg-day	4.4E-03
	Total Produce Ingestion										4.4E-03

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Peirano Parcel B Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.7E-02	mg/kg	3.0E-09	mg/kg-day	5.0E-03	mg/kg-day	6.1E-07
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	1.9E-10	mg/kg-day	7.0E-10	mg/kg-day	2.7E-01
			Total Ingestion								2.7E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.7E-02	mg/kg	1.6E-09	mg/kg-day	5.0E-03	mg/kg-day	3.1E-07
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	1.2E-11	mg/kg-day	7.0E-10	mg/kg-day	1.7E-02
			Total Dermal								1.7E-02
		Total Soil Direct Contact									2.9E-01

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.2E-11	mg/m^3	6.7E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.7E-13	mg/m^3	4.2E-14	mg/m^3	4.0E-08	mg/m3	1.1E-06
		Total Dust Inhalation									1.1E-06
	Total Soil Direct Contact and Dust Inhalation										2.9E-01
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.7E-05	mg/kg	3.9E-08	mg/kg-day	5.0E-03	mg/kg-day	7.8E-06
				TEQ (ND=1/2DL)	1.6E-07	mg/kg	1.7E-10	mg/kg-day	7.0E-10	mg/kg-day	2.4E-01
	Total Produce Ingestion										2.4E-01

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Peirano Tract A Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.5E-04	mg/kg	6.4E-11	mg/kg-day	5.0E-03	mg/kg-day	1.3E-08
				TEQ (ND=1/2DL)	2.8E-04	mg/kg	5.1E-11	mg/kg-day	7.0E-10	mg/kg-day	7.3E-02
			Total Ingestion								7.3E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.5E-04	mg/kg	3.3E-11	mg/kg-day	5.0E-03	mg/kg-day	6.7E-09
				TEQ (ND=1/2DL)	2.8E-04	mg/kg	3.2E-12	mg/kg-day	7.0E-10	mg/kg-day	4.5E-03
			Total Dermal								4.5E-03
		Total Soil Direct Contact									7.7E-02

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.6E-13	mg/m^3	1.4E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.1E-13	mg/m^3	1.1E-14	mg/m^3	4.0E-08	mg/m3	2.8E-07
		Total Dust Inhalation									2.8E-07
	Total Soil Direct Contact and Dust Inhalation										7.7E-02
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	7.9E-07	mg/kg	8.3E-10	mg/kg-day	5.0E-03	mg/kg-day	1.7E-07
				TEQ (ND=1/2DL)	4.2E-08	mg/kg	4.5E-11	mg/kg-day	7.0E-10	mg/kg-day	6.4E-02
	Total Produce Ingestion										6.4E-02

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Robak Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-03	mg/kg	1.3E-08	mg/kg-day	5.0E-03	mg/kg-day	2.6E-06
				TEQ (ND=1/2DL)	2.2E-05	mg/kg	3.1E-11	mg/kg-day	7.0E-10	mg/kg-day	4.4E-02
			Total Ingestion								4.4E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-03	mg/kg	6.8E-09	mg/kg-day	5.0E-03	mg/kg-day	1.4E-06
				TEQ (ND=1/2DL)	2.2E-05	mg/kg	1.9E-12	mg/kg-day	7.0E-10	mg/kg-day	2.7E-03
			Total Dermal								2.7E-03
		Total Soil Direct Contact									4.7E-02

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	7.1E-12	mg/m^3	2.9E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.7E-14	mg/m^3	6.8E-15	mg/m^3	4.0E-08	mg/m3	1.7E-07
		Total Dust Inhalation									1.7E-07
	Total Soil Direct Contact and Dust Inhalation										4.7E-02
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-05	mg/kg	2.3E-08	mg/kg-day	5.0E-03	mg/kg-day	4.5E-06
				TEQ (ND=1/2DL)	3.4E-09	mg/kg	3.6E-12	mg/kg-day	7.0E-10	mg/kg-day	5.1E-03
	Total Produce Ingestion										5.1E-03

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Smith Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.6E-05	mg/kg	2.2E-11	mg/kg-day	7.0E-10	mg/kg-day	3.1E-02
			Total Ingestion								3.1E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.6E-05	mg/kg	1.4E-12	mg/kg-day	7.0E-10	mg/kg-day	1.9E-03
			Total Dermal								1.9E-03
		Total Soil Direct Contact									3.3E-02

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.2E-14	mg/m^3	4.8E-15	mg/m^3	4.0E-08	mg/m3	1.2E-07
		Total Dust Inhalation									1.2E-07
	Total Soil Direct Contact and Dust Inhalation										3.3E-02
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.4E-09	mg/kg	2.5E-12	mg/kg-day	7.0E-10	mg/kg-day	3.6E-03
	Total Produce Ingestion										3.6E-03

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Stevenson Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.8E-04	mg/kg	9.4E-10	mg/kg-day	5.0E-03	mg/kg-day	1.9E-07
				TEQ (ND=1/2DL)	1.8E-06	mg/kg	2.4E-12	mg/kg-day	7.0E-10	mg/kg-day	3.4E-03
			Total Ingestion								3.4E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.8E-04	mg/kg	4.8E-10	mg/kg-day	5.0E-03	mg/kg-day	9.7E-08
				TEQ (ND=1/2DL)	1.8E-06	mg/kg	1.5E-13	mg/kg-day	7.0E-10	mg/kg-day	2.1E-04
			Total Dermal								2.1E-04
		Total Soil Direct Contact									3.7E-03

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	5.0E-13	mg/m^3	2.1E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.3E-15	mg/m^3	5.3E-16	mg/m^3	4.0E-08	mg/m3	1.3E-08
		Total Dust Inhalation									1.3E-08
	Total Soil Direct Contact and Dust Inhalation										3.7E-03
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.5E-06	mg/kg	1.6E-09	mg/kg-day	5.0E-03	mg/kg-day	3.2E-07
				TEQ (ND=1/2DL)	2.7E-10	mg/kg	2.8E-13	mg/kg-day	7.0E-10	mg/kg-day	4.0E-04
	Total Produce Ingestion										4.0E-04

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Vintage Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	5.5E-12	mg/kg-day	7.0E-10	mg/kg-day	7.8E-03
			Total Ingestion								7.8E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	3.4E-13	mg/kg-day	7.0E-10	mg/kg-day	4.8E-04
			Total Dermal								4.8E-04
		Total Soil Direct Contact									8.3E-03

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.9E-15	mg/m^3	1.2E-15	mg/m^3	4.0E-08	mg/m3	3.0E-08
		Total Dust Inhalation									3.0E-08
	Total Soil Direct Contact and Dust Inhalation										8.3E-03
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	6.0E-10	mg/kg	6.4E-13	mg/kg-day	7.0E-10	mg/kg-day	9.1E-04
	Total Produce Ingestion										9.1E-04

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
Right-of-Way Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.8E+01	mg/kg	5.2E-05	mg/kg-day	5.0E-03	mg/kg-day	1.0E-02
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Ingestion								1.0E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.8E+01	mg/kg	2.7E-05	mg/kg-day	5.0E-03	mg/kg-day	5.4E-03
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Dermal								5.4E-03
		Total Soil Direct Contact									1.6E-02

TABLE D7.1 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.8E-08	mg/m^3	1.1E-08	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	--	mg/m^3	--	mg/m^3	4.0E-08	mg/m3	--
		Total Dust Inhalation									--
	Total Soil Direct Contact and Dust Inhalation										1.6E-02
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	8.5E-02	mg/kg	9.0E-05	mg/kg-day	5.0E-03	mg/kg-day	1.8E-02
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	7.0E-10	mg/kg-day	--
	Total Produce Ingestion										1.8E-02

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

BaP = benzo(a)pyrene
CSF = cancer slope factor
EPC = exposure point concentration
na = not applicable
nv = no value
RfC = inhalation reference dose
RfD = oral reference dose
TEQ = 2,3,7,8-TCDD toxicity equivalents
-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

SSCL Calculations, Table D7.1

Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	Non-Cancer Hazard Calculations						
				THQ	RfD/RfC	Units	RME $SSCL_{nc}$ Value	RME $SSCL_{nc}$ Units	CTE $SSCL_{nc}$ Value	CTE $SSCL_{nc}$ Units
Soil (non-ditch)	Surface Soil	Ingestion	C5-C8 Aliphatics	5.0E-01	4.0E-02	mg/kg-day	2.0E+03	mg/kg	1.5E+04	mg/kg
			C9-C12 Aliphatics	2.0E-01	1.0E-02	mg/kg-day	2.0E+02	mg/kg	1.5E+03	mg/kg
			C9-C10 Aromatics	2.0E-01	3.0E-02	mg/kg-day	6.1E+02	mg/kg	4.4E+03	mg/kg
			Ethylbenzene	2.0E-01	1.0E-01	mg/kg-day	2.0E+03	mg/kg	1.5E+04	mg/kg
			1-Methylnaphthalene	5.0E-01	7.0E-02	mg/kg-day	3.5E+03	mg/kg	2.6E+04	mg/kg
			2-Methylnaphthalene	5.0E-01	4.0E-03	mg/kg-day	2.0E+02	mg/kg	1.5E+03	mg/kg
			Naphthalene	5.0E-01	2.0E-02	mg/kg-day	1.0E+03	mg/kg	7.3E+03	mg/kg
			BaP equivalents	na	nv	na	--	mg/kg	--	mg/kg
			C9-C18 Aliphatics	2.0E-01	1.0E-02	mg/kg-day	2.0E+02	mg/kg	1.5E+03	mg/kg
			C11-C22 Aromatics	2.0E-01	3.0E-02	mg/kg-day	6.1E+02	mg/kg	4.4E+03	mg/kg
			Pentachlorophenol	2.5E-01	5.0E-03	mg/kg-day	1.3E+02	mg/kg	9.1E+02	mg/kg
			TEQ (ND=1/2DL)	1.0E+00	7.0E-10	mg/kg-day	7.1E-05	mg/kg	5.1E-04	mg/kg
		Dermal	C5-C8 Aliphatics	5.0E-01	4.0E-02	mg/kg-day	3.9E+03	mg/kg	7.0E+03	mg/kg
			C9-C12 Aliphatics	2.0E-01	1.0E-02	mg/kg-day	7.8E+02	mg/kg	1.4E+03	mg/kg
			C9-C10 Aromatics	2.0E-01	3.0E-02	mg/kg-day	2.3E+03	mg/kg	4.2E+03	mg/kg
			Ethylbenzene	2.0E-01	1.0E-01	mg/kg-day	--	mg/kg	--	mg/kg
			1-Methylnaphthalene	5.0E-01	7.0E-02	mg/kg-day	5.3E+04	mg/kg	9.5E+04	mg/kg
			2-Methylnaphthalene	5.0E-01	4.0E-03	mg/kg-day	3.0E+03	mg/kg	5.4E+03	mg/kg
			Naphthalene	5.0E-01	2.0E-02	mg/kg-day	1.5E+04	mg/kg	2.7E+04	mg/kg
			BaP equivalents	na	nv	na	--	mg/kg	--	mg/kg
			C9-C18 Aliphatics	2.0E-01	1.0E-02	mg/kg-day	7.8E+02	mg/kg	1.4E+03	mg/kg
			C11-C22 Aromatics	2.0E-01	3.0E-02	mg/kg-day	1.2E+04	mg/kg	2.1E+04	mg/kg
			Pentachlorophenol	2.5E-01	5.0E-03	mg/kg-day	9.8E+02	mg/kg	1.8E+03	mg/kg
			TEQ (ND=1/2DL)	1.0E+00	7.0E-10	mg/kg-day	4.6E-03	mg/kg	8.2E-03	mg/kg
Air (non-ditch)	Airborne Dust	Inhalation	C5-C8 Aliphatics	1.0E+00	7.0E-01	mg/m3	9.5E-01	mg/m3	1.7E+00	mg/m3
			C9-C12 Aliphatics	2.5E-01	1.0E-01	mg/m3	3.4E-02	mg/m3	6.1E-02	mg/m3
			C9-C10 Aromatics	5.0E-01	1.0E-01	mg/m3	6.8E-02	mg/m3	1.2E-01	mg/m3
			Ethylbenzene	2.5E-01	1.0E+00	mg/m3	3.4E-01	mg/m3	6.1E-01	mg/m3
			1-Methylnaphthalene	na	nv	na	--	mg/m3	--	mg/m3
			2-Methylnaphthalene	na	nv	na	--	mg/m3	--	mg/m3
			Naphthalene	2.5E-01	3.0E-03	mg/m3	1.0E-03	mg/m3	1.8E-03	mg/m3
			BaP equivalents	na	nv	na	--	mg/m3	--	mg/m3
			C9-C18 Aliphatics	2.5E-01	1.0E-01	mg/m3	3.4E-02	mg/m3	6.1E-02	mg/m3
			C11-C22 Aromatics	2.5E-01	1.0E-01	mg/m3	3.4E-02	mg/m3	6.1E-02	mg/m3
			Pentachlorophenol	na	nv	na	--	mg/m3	--	mg/m3
			TEQ (ND=1/2DL)	2.5E-01	4.0E-08	mg/m3	1.4E-08	mg/m3	2.4E-08	mg/m3
Soil (ditch)	Surface Soil	Ingestion	C5-C8 Aliphatics	5.0E-01	4.0E-02	mg/kg-day	1.4E+04	mg/kg	1.1E+05	mg/kg
			C9-C12 Aliphatics	2.0E-01	1.0E-02	mg/kg-day	1.4E+03	mg/kg	1.1E+04	mg/kg
			C9-C10 Aromatics	2.0E-01	3.0E-02	mg/kg-day	4.1E+03	mg/kg	3.3E+04	mg/kg
			Ethylbenzene	2.0E-01	1.0E-01	mg/kg-day	1.4E+04	mg/kg	1.1E+05	mg/kg
			1-Methylnaphthalene	5.0E-01	7.0E-02	mg/kg-day	2.4E+04	mg/kg	1.9E+05	mg/kg
			2-Methylnaphthalene	5.0E-01	4.0E-03	mg/kg-day	1.4E+03	mg/kg	1.1E+04	mg/kg
			Naphthalene	5.0E-01	2.0E-02	mg/kg-day	6.8E+03	mg/kg	5.5E+04	mg/kg
			BaP equivalents	na	nv	na	--	mg/kg	--	mg/kg
			C9-C18 Aliphatics	2.0E-01	1.0E-02	mg/kg-day	1.4E+03	mg/kg	1.1E+04	mg/kg
			C11-C22 Aromatics	2.0E-01	3.0E-02	mg/kg-day	4.1E+03	mg/kg	3.3E+04	mg/kg
			Pentachlorophenol	2.5E-01	5.0E-03	mg/kg-day	8.6E+02	mg/kg	6.8E+03	mg/kg
			TEQ (ND=1/2DL)	1.0E+00	7.0E-10	mg/kg-day	4.8E-04	mg/kg	3.8E-03	mg/kg

COPC	Total SSCLs	
	RME $SSCL_{nc}$	CTE $SSCL_{nc}$
Non-ditch Properties		
C5-C8 Aliphatics	1.3E+03	4.8E+03
C9-C12 Aliphatics	1.6E+02	7.2E+02
C9-C10 Aromatics	4.8E+02	2.2E+03
Ethylbenzene	2.0E+03	1.5E+04
1-Methylnaphthalene	3.3E+03	2.0E+04
2-Methylnaphthalene	1.9E+02	1.1E+03
Naphthalene	9.5E+02	5.7E+03
BaP equivalents	nv	nv
C9-C18 Aliphatics	1.6E+02	7.2E+02
C11-C22 Aromatics	5.8E+02	3.6E+03
Pentachlorophenol	1.1E+02	6.0E+02
TEQ (ND=1/2DL)	7.0E-05	4.8E-04
Ditch Properties		
C5-C8 Aliphatics	9.0E+03	3.6E+04
C9-C12 Aliphatics	1.1E+03	5.4E+03
C9-C10 Aromatics	3.3E+03	1.6E+04
Ethylbenzene	1.4E+04	1.1E+05
1-Methylnaphthalene	2.2E+04	1.5E+05
2-Methylnaphthalene	1.3E+03	8.6E+03
Naphthalene	6.4E+03	4.3E+04
BaP equivalents	nv	nv
C9-C18 Aliphatics	1.1E+03	5.4E+03
C11-C22 Aromatics	3.9E+03	2.7E+04
Pentachlorophenol	7.6E+02	4.5E+03
TEQ (ND=1/2DL)	4.7E-04	3.6E-03

SSCL Calculations, Table D7.1

Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	Non-Cancer Hazard Calculations						
				THQ	RfD/RfC	Units	RME $SSCL_{nc}$		CTE $SSCL_{nc}$	
							Value	Units	Value	Units
		Dermal	C5-C8 Aliphatics	5.0E-01	4.0E-02	mg/kg-day	2.6E+04	mg/kg	5.3E+04	mg/kg
			C9-C12 Aliphatics	2.0E-01	1.0E-02	mg/kg-day	5.3E+03	mg/kg	1.1E+04	mg/kg
			C9-C10 Aromatics	2.0E-01	3.0E-02	mg/kg-day	1.6E+04	mg/kg	3.2E+04	mg/kg
			Ethylbenzene	2.0E-01	1.0E-01	mg/kg-day	--	mg/kg	--	mg/kg
			1-Methylnaphthalene	5.0E-01	7.0E-02	mg/kg-day	3.6E+05	mg/kg	7.1E+05	mg/kg
			2-Methylnaphthalene	5.0E-01	4.0E-03	mg/kg-day	2.0E+04	mg/kg	4.1E+04	mg/kg
			Naphthalene	5.0E-01	2.0E-02	mg/kg-day	1.0E+05	mg/kg	2.0E+05	mg/kg
			BaP equivalents	na	nv	na	--	mg/kg	--	mg/kg
			C9-C18 Aliphatics	2.0E-01	1.0E-02	mg/kg-day	5.3E+03	mg/kg	1.1E+04	mg/kg
			C11-C22 Aromatics	2.0E-01	3.0E-02	mg/kg-day	7.9E+04	mg/kg	1.6E+05	mg/kg
			Pentachlorophenol	2.5E-01	5.0E-03	mg/kg-day	6.6E+03	mg/kg	1.3E+04	mg/kg
			TEQ (ND=1/2DL)	1.0E+00	7.0E-10	mg/kg-day	3.1E-02	mg/kg	6.2E-02	mg/kg
Air (ditch)	Airborne Dust	Inhalation	C5-C8 Aliphatics	1.0E+00	7.0E-01	mg/m3	6.4E+00	mg/m3	1.3E+01	mg/m3
			C9-C12 Aliphatics	2.5E-01	1.0E-01	mg/m3	2.3E-01	mg/m3	4.6E-01	mg/m3
			C9-C10 Aromatics	5.0E-01	1.0E-01	mg/m3	4.6E-01	mg/m3	9.1E-01	mg/m3
			Ethylbenzene	2.5E-01	1.0E+00	mg/m3	2.3E+00	mg/m3	4.6E+00	mg/m3
			1-Methylnaphthalene	na	nv	na	--	mg/m3	--	mg/m3
			2-Methylnaphthalene	na	nv	na	--	mg/m3	--	mg/m3
			Naphthalene	2.5E-01	3.0E-03	mg/m3	6.8E-03	mg/m3	1.4E-02	mg/m3
			BaP equivalents	na	nv	na	--	mg/m3	--	mg/m3
			C9-C18 Aliphatics	2.5E-01	1.0E-01	mg/m3	2.3E-01	mg/m3	4.6E-01	mg/m3
			C11-C22 Aromatics	2.5E-01	1.0E-01	mg/m3	2.3E-01	mg/m3	4.6E-01	mg/m3
			Pentachlorophenol	na	nv	na	--	mg/m3	--	mg/m3
			TEQ (ND=1/2DL)	2.5E-01	4.0E-08	mg/m3	9.1E-08	mg/m3	1.8E-07	mg/m3

COPC	Total SSCLs	
	RME $SSCL_{nc}$	CTE $SSCL_{nc}$

Notes:

-- = no toxicity value available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene

CTE = central tendency exposure

na = not applicable

nc = noncarcinogen

nv = no value

RfC = inhalation reference concentration

RfD = oral reference dose

RME = reasonable maximum exposure

SSCL = site-specific cleanup level

TEQ = 2,3,7,8-TCDD toxicity equivalents

THQ = target hazard quotient

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Parcel A Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	1.3E+02	mg/kg	1.2E-04	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	2.0E+00	mg/kg	1.8E-06	mg/kg-day	nv	na	--
				C9-C10 Aromatics	2.0E+00	mg/kg	1.8E-06	mg/kg-day	nv	na	--
				Ethylbenzene	5.0E-02	mg/kg	4.5E-08	mg/kg-day	1.1E-02	(mg/kg-day)-1	5.0E-10
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	3.3E-01	mg/kg	3.0E-07	mg/kg-day	nv	na	--
				Naphthalene	1.0E-01	mg/kg	9.0E-08	mg/kg-day	nv	na	--
				BaP equivalents	4.1E-01	mg/kg	1.8E-06	mg/kg-day	7.3E+00	(mg/kg-day)-1	1.3E-05
				C9-C18 Aliphatics	1.2E+01	mg/kg	1.1E-05	mg/kg-day	nv	na	--
				C11-C22 Aromatics	2.6E+02	mg/kg	2.3E-04	mg/kg-day	nv	na	--
				Pentachlorophenol	2.3E-01	mg/kg	2.1E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.3E-08
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	1.7E-09	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.2E-04
			Total Ingestion								2.3E-04
			Dermal	C5-C8 Aliphatics	1.3E+02	mg/kg	3.0E-04	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	2.0E+00	mg/kg	2.3E-06	mg/kg-day	nv	na	--
				C9-C10 Aromatics	2.0E+00	mg/kg	2.3E-06	mg/kg-day	nv	na	--
				Ethylbenzene	5.0E-02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	3.3E-01	mg/kg	9.7E-08	mg/kg-day	nv	na	--
				Naphthalene	1.0E-01	mg/kg	2.9E-08	mg/kg-day	nv	na	--
				BaP equivalents	4.1E-01	mg/kg	3.0E-07	mg/kg-day	7.3E+00	(mg/kg-day)-1	2.2E-06
				C9-C18 Aliphatics	1.2E+01	mg/kg	1.4E-05	mg/kg-day	nv	na	--
				C11-C22 Aromatics	2.6E+02	mg/kg	5.8E-05	mg/kg-day	nv	na	--
				Pentachlorophenol	2.3E-01	mg/kg	1.3E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.2E-08
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	1.2E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.6E-05
			Total Dermal								1.8E-05
		Total Soil Direct Contact									2.5E-04

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	9.7E-08	mg/m^3	2.8E-08	mg/m^3	nv	na	--
				C9-C12 Aliphatics	1.5E-09	mg/m^3	4.2E-10	mg/m^3	nv	na	--
				C9-C10 Aromatics	1.5E-09	mg/m^3	4.2E-10	mg/m^3	nv	na	--
				Ethylbenzene	3.7E-11	mg/m^3	1.0E-11	mg/m^3	2.5E-03	(mg/m3)-1	2.6E-14
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	2.4E-10	mg/m^3	6.9E-11	mg/m^3	nv	na	--
				Naphthalene	7.4E-11	mg/m^3	2.1E-11	mg/m^3	3.4E-02	(mg/m3)-1	7.1E-13
				BaP equivalents	3.0E-10	mg/m^3	2.2E-10	mg/m^3	1.1E+00	(mg/m3)-1	2.4E-10
				C9-C18 Aliphatics	8.8E-09	mg/m^3	2.5E-09	mg/m^3	nv	na	--
				C11-C22 Aromatics	1.9E-07	mg/m^3	5.4E-08	mg/m^3	nv	na	--
				Pentachlorophenol	1.7E-10	mg/m^3	4.8E-11	mg/m^3	5.1E-03	(mg/m3)-1	2.5E-13
				TEQ (ND=1/2DL)	1.4E-12	mg/m^3	3.9E-13	mg/m^3	3.8E+04	(mg/m3)-1	1.5E-08
		Total Dust Inhalation									1.5E-08
	Total Soil Direct Contact and Dust Inhalation										2.5E-04
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	7.1E-05	mg/kg	2.1E-07	mg/kg-day	7.3E+00	(mg/kg-day)-1	1.5E-06
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	5.1E-04	mg/kg	4.9E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.0E-07
				TEQ (ND=1/2DL)	2.8E-07	mg/kg	2.7E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.5E-05
	Total Produce Ingestion										3.6E-05

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Parcel B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	7.9E+00	mg/kg	7.1E-06	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	9.1E+02	mg/kg	8.2E-04	mg/kg-day	nv	na	--
				C9-C10 Aromatics	3.7E+02	mg/kg	3.4E-04	mg/kg-day	nv	na	--
				Ethylbenzene	4.6E-02	mg/kg	4.1E-08	mg/kg-day	1.1E-02	(mg/kg-day)-1	4.6E-10
				1-Methylnaphthalene	3.4E+00	mg/kg	3.1E-06	mg/kg-day	2.9E-02	(mg/kg-day)-1	8.9E-08
				2-Methylnaphthalene	2.0E+00	mg/kg	1.8E-06	mg/kg-day	nv	na	--
				Naphthalene	4.9E-01	mg/kg	4.4E-07	mg/kg-day	nv	na	--
				BaP equivalents	6.1E-01	mg/kg	2.6E-06	mg/kg-day	7.3E+00	(mg/kg-day)-1	1.9E-05
				C9-C18 Aliphatics	1.8E+03	mg/kg	1.6E-03	mg/kg-day	nv	na	--
				C11-C22 Aromatics	6.1E+03	mg/kg	5.5E-03	mg/kg-day	nv	na	--
				Pentachlorophenol	3.4E+03	mg/kg	3.0E-03	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.2E-03
				TEQ (ND=1/2DL)	3.8E-03	mg/kg	3.4E-09	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.4E-04
			Total Ingestion								1.7E-03
			Dermal	C5-C8 Aliphatics	7.9E+00	mg/kg	1.8E-05	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	9.1E+02	mg/kg	1.0E-03	mg/kg-day	nv	na	--
				C9-C10 Aromatics	3.7E+02	mg/kg	4.2E-04	mg/kg-day	nv	na	--
				Ethylbenzene	4.6E-02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00
				1-Methylnaphthalene	3.4E+00	mg/kg	9.9E-07	mg/kg-day	2.9E-02	(mg/kg-day)-1	2.9E-08
				2-Methylnaphthalene	2.0E+00	mg/kg	5.9E-07	mg/kg-day	nv	na	--
				Naphthalene	4.9E-01	mg/kg	1.4E-07	mg/kg-day	nv	na	--
				BaP equivalents	6.1E-01	mg/kg	4.4E-07	mg/kg-day	7.3E+00	(mg/kg-day)-1	3.2E-06
				C9-C18 Aliphatics	1.8E+03	mg/kg	2.0E-03	mg/kg-day	nv	na	--
				C11-C22 Aromatics	6.1E+03	mg/kg	1.4E-03	mg/kg-day	nv	na	--
				Pentachlorophenol	3.4E+03	mg/kg	1.9E-03	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.6E-04
				TEQ (ND=1/2DL)	3.8E-03	mg/kg	2.6E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.3E-05
			Total Dermal								8.0E-04
		Total Soil Direct Contact									2.5E-03

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	5.8E-09	mg/m^3	1.6E-09	mg/m^3	nv	na	--
				C9-C12 Aliphatics	6.7E-07	mg/m^3	1.9E-07	mg/m^3	nv	na	--
				C9-C10 Aromatics	2.7E-07	mg/m^3	7.8E-08	mg/m^3	nv	na	--
				Ethylbenzene	3.4E-11	mg/m^3	9.6E-12	mg/m^3	2.5E-03	(mg/m3)-1	2.4E-14
				1-Methylnaphthalene	2.5E-09	mg/m^3	7.1E-10	mg/m^3	nv	na	--
				2-Methylnaphthalene	1.5E-09	mg/m^3	4.2E-10	mg/m^3	nv	na	--
				Naphthalene	3.6E-10	mg/m^3	1.0E-10	mg/m^3	3.4E-02	(mg/m3)-1	3.5E-12
				BaP equivalents	4.5E-10	mg/m^3	3.2E-10	mg/m^3	1.1E+00	(mg/m3)-1	3.6E-10
				C9-C18 Aliphatics	1.3E-06	mg/m^3	3.8E-07	mg/m^3	nv	na	--
				C11-C22 Aromatics	4.5E-06	mg/m^3	1.3E-06	mg/m^3	nv	na	--
				Pentachlorophenol	2.5E-06	mg/m^3	7.1E-07	mg/m^3	5.1E-03	(mg/m3)-1	3.6E-09
				TEQ (ND=1/2DL)	2.8E-12	mg/m^3	7.9E-13	mg/m^3	3.8E+04	(mg/m3)-1	3.0E-08
		Total Dust Inhalation									3.4E-08
	Total Soil Direct Contact and Dust Inhalation										2.5E-03
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	1.1E-04	mg/kg	3.1E-07	mg/kg-day	7.3E+00	(mg/kg-day)-1	2.2E-06
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	7.5E+00	mg/kg	7.2E-03	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.9E-03
				TEQ (ND=1/2DL)	5.7E-07	mg/kg	5.4E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	7.1E-05
	Total Produce Ingestion										2.9E-03

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Spigot Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	5.1E-02	mg/kg	4.6E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.8E-08
				TEQ (ND=1/2DL)	1.0E-04	mg/kg	9.0E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.2E-05
			Total Ingestion								1.2E-05
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	5.1E-02	mg/kg	2.9E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.2E-08
				TEQ (ND=1/2DL)	1.0E-04	mg/kg	6.8E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.8E-07
			Total Dermal								8.9E-07
		Total Soil Direct Contact									1.3E-05

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	3.8E-11	mg/m^3	1.1E-11	mg/m^3	5.1E-03	(mg/m3)-1	5.5E-14
				TEQ (ND=1/2DL)	7.4E-14	mg/m^3	2.1E-14	mg/m^3	3.8E+04	(mg/m3)-1	8.0E-10
		Total Dust Inhalation									8.0E-10
	Total Soil Direct Contact and Dust Inhalation										1.3E-05
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	1.1E-04	mg/kg	1.1E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.3E-08
				TEQ (ND=1/2DL)	1.5E-08	mg/kg	1.4E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.9E-06
	Total Produce Ingestion										1.9E-06

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Cassell Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	2.3E+00	mg/kg	3.1E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.2E-07
				TEQ (ND=1/2DL)	1.5E-03	mg/kg	2.0E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.6E-05
			Total Ingestion								2.6E-05
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	2.3E+00	mg/kg	1.9E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.7E-08
				TEQ (ND=1/2DL)	1.5E-03	mg/kg	1.5E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.9E-06
			Total Dermal								2.0E-06
		Total Soil Direct Contact									2.8E-05

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	1.7E-09	mg/m^3	7.1E-11	mg/m^3	5.1E-03	(mg/m3)-1	3.6E-13
				TEQ (ND=1/2DL)	1.1E-12	mg/m^3	4.6E-14	mg/m^3	3.8E+04	(mg/m3)-1	1.8E-09
		Total Dust Inhalation									1.8E-09
	Total Soil Direct Contact and Dust Inhalation										2.8E-05
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	5.1E-03	mg/kg	4.9E-06	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.0E-06
				TEQ (ND=1/2DL)	2.3E-07	mg/kg	2.1E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.8E-05
	Total Produce Ingestion										3.0E-05

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Parmenter Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	4.4E-03	mg/kg	5.9E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.3E-10
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	2.5E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.2E-07
			Total Ingestion								3.2E-07
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	4.4E-03	mg/kg	3.7E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.5E-10
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	1.9E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.4E-08
			Total Dermal								2.4E-08
		Total Soil Direct Contact									3.5E-07

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	3.2E-12	mg/m^3	1.4E-13	mg/m^3	5.1E-03	(mg/m3)-1	7.0E-16
				TEQ (ND=1/2DL)	1.4E-14	mg/m^3	5.7E-16	mg/m^3	3.8E+04	(mg/m3)-1	2.2E-11
		Total Dust Inhalation									2.2E-11
	Total Soil Direct Contact and Dust Inhalation										3.5E-07
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	9.8E-06	mg/kg	9.4E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.7E-09
				TEQ (ND=1/2DL)	2.8E-09	mg/kg	2.7E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.5E-07
	Total Produce Ingestion										3.5E-07

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Skroch Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	1.2E-01	mg/kg	1.6E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.4E-09
				TEQ (ND=1/2DL)	3.0E-04	mg/kg	4.0E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.2E-06
			Total Ingestion								5.2E-06
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	1.2E-01	mg/kg	1.0E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.0E-09
				TEQ (ND=1/2DL)	3.0E-04	mg/kg	3.0E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.9E-07
			Total Dermal								3.9E-07
		Total Soil Direct Contact									5.6E-06

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	8.8E-11	mg/m^3	3.7E-12	mg/m^3	5.1E-03	(mg/m3)-1	1.9E-14
				TEQ (ND=1/2DL)	2.2E-13	mg/m^3	9.3E-15	mg/m^3	3.8E+04	(mg/m3)-1	3.5E-10
		Total Dust Inhalation									3.5E-10
	Total Soil Direct Contact and Dust Inhalation										5.6E-06
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	2.7E-04	mg/kg	2.6E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.0E-07
				TEQ (ND=1/2DL)	4.5E-08	mg/kg	4.3E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.6E-06
	Total Produce Ingestion										5.7E-06

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Chaney Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	2.2E-04	mg/kg	2.0E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.1E-11
				TEQ (ND=1/2DL)	1.0E-05	mg/kg	9.0E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.2E-06
			Total Ingestion								1.2E-06
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	2.2E-04	mg/kg	1.3E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.0E-11
				TEQ (ND=1/2DL)	1.0E-05	mg/kg	6.7E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.8E-08
			Total Dermal								8.8E-08
		Total Soil Direct Contact									1.3E-06

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	1.6E-13	mg/m^3	4.7E-14	mg/m^3	5.1E-03	(mg/m3)-1	2.4E-16
				TEQ (ND=1/2DL)	7.3E-15	mg/m^3	2.1E-15	mg/m^3	3.8E+04	(mg/m3)-1	7.9E-11
		Total Dust Inhalation									7.9E-11
	Total Soil Direct Contact and Dust Inhalation										1.3E-06
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	5.0E-07	mg/kg	4.8E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.9E-10
				TEQ (ND=1/2DL)	1.5E-09	mg/kg	1.4E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.9E-07
	Total Produce Ingestion										1.9E-07

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Peirano Tract B Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	1.7E-03	mg/kg	2.2E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.9E-05
			Total Ingestion								2.9E-05
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	1.7E-03	mg/kg	1.7E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.2E-06
			Total Dermal								2.2E-06
		Total Soil Direct Contact									3.1E-05

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--
				TEQ (ND=1/2DL)	1.2E-12	mg/m^3	5.2E-14	mg/m^3	3.8E+04	(mg/m3)-1	2.0E-09
		Total Dust Inhalation									2.0E-09
	Total Soil Direct Contact and Dust Inhalation										3.1E-05
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	2.5E-07	mg/kg	2.4E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.1E-05
	Total Produce Ingestion										3.1E-05

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Renfroe Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	1.7E-05	mg/kg	1.5E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.0E-06
			Total Ingestion								2.0E-06
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	1.7E-05	mg/kg	1.2E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.5E-07
			Total Dermal								1.5E-07
		Total Soil Direct Contact									2.2E-06

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--
				TEQ (ND=1/2DL)	1.3E-14	mg/m^3	3.6E-15	mg/m^3	3.8E+04	(mg/m3)-1	1.4E-10
		Total Dust Inhalation									1.4E-10
	Total Soil Direct Contact and Dust Inhalation										2.2E-06
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	2.6E-09	mg/kg	2.5E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.2E-07
	Total Produce Ingestion										3.2E-07

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
3WT Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	1.8E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.4E-06
			Total Ingestion								2.4E-06
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	1.4E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.8E-07
			Total Dermal								1.8E-07
		Total Soil Direct Contact									2.6E-06

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--
				TEQ (ND=1/2DL)	1.5E-14	mg/m^3	4.3E-15	mg/m^3	3.8E+04	(mg/m3)-1	1.6E-10
		Total Dust Inhalation									1.6E-10
	Total Soil Direct Contact and Dust Inhalation										2.6E-06
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	3.1E-09	mg/kg	3.0E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.8E-07
	Total Produce Ingestion										3.8E-07

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Milton Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	1.5E-02	mg/kg	1.4E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.5E-09
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	3.1E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.0E-06
			Total Ingestion								4.0E-06
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	1.5E-02	mg/kg	8.5E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.4E-09
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	2.3E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.0E-07
			Total Dermal								3.0E-07
		Total Soil Direct Contact									4.3E-06

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	1.1E-11	mg/m^3	3.2E-12	mg/m^3	5.1E-03	(mg/m3)-1	1.6E-14
				TEQ (ND=1/2DL)	2.5E-14	mg/m^3	7.1E-15	mg/m^3	3.8E+04	(mg/m3)-1	2.7E-10
		Total Dust Inhalation									2.7E-10
	Total Soil Direct Contact and Dust Inhalation										4.3E-06
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	3.4E-05	mg/kg	3.2E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.3E-08
				TEQ (ND=1/2DL)	5.1E-09	mg/kg	4.9E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.4E-07
	Total Produce Ingestion										6.5E-07

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Peirano Parcel B Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	6.0E-02	mg/kg	8.0E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.2E-09
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	2.6E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.3E-05
			Total Ingestion								3.3E-05
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	6.0E-02	mg/kg	5.0E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.0E-09
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	1.9E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.5E-06
			Total Dermal								2.5E-06
		Total Soil Direct Contact									3.6E-05

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	4.4E-11	mg/m^3	1.9E-12	mg/m^3	5.1E-03	(mg/m3)-1	9.5E-15
				TEQ (ND=1/2DL)	1.4E-12	mg/m^3	6.0E-14	mg/m^3	3.8E+04	(mg/m3)-1	2.3E-09
		Total Dust Inhalation									2.3E-09
	Total Soil Direct Contact and Dust Inhalation										3.6E-05
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	1.3E-04	mg/kg	1.3E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.1E-08
				TEQ (ND=1/2DL)	2.9E-07	mg/kg	2.8E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.6E-05
	Total Produce Ingestion										3.6E-05

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Peirano Tract A Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	3.5E-04	mg/kg	4.7E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.9E-11
				TEQ (ND=1/2DL)	1.8E-03	mg/kg	2.4E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.1E-05
			Total Ingestion								3.1E-05
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	3.5E-04	mg/kg	2.9E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.2E-11
				TEQ (ND=1/2DL)	1.8E-03	mg/kg	1.8E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.3E-06
			Total Dermal								2.3E-06
		Total Soil Direct Contact									3.3E-05

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	2.6E-13	mg/m^3	1.1E-14	mg/m^3	5.1E-03	(mg/m3)-1	5.6E-17
				TEQ (ND=1/2DL)	1.3E-12	mg/m^3	5.5E-14	mg/m^3	3.8E+04	(mg/m3)-1	2.1E-09
		Total Dust Inhalation									2.1E-09
	Total Soil Direct Contact and Dust Inhalation										3.3E-05
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	7.9E-07	mg/kg	7.5E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.0E-10
				TEQ (ND=1/2DL)	2.7E-07	mg/kg	2.6E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.3E-05
	Total Produce Ingestion										3.3E-05

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Robak Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	9.6E-03	mg/kg	8.7E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.5E-09
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	3.1E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.0E-06
			Total Ingestion								4.0E-06
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	9.6E-03	mg/kg	5.4E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.2E-09
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	2.3E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.0E-07
			Total Dermal								3.0E-07
		Total Soil Direct Contact									4.3E-06

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	7.1E-12	mg/m^3	2.0E-12	mg/m^3	5.1E-03	(mg/m3)-1	1.0E-14
				TEQ (ND=1/2DL)	2.5E-14	mg/m^3	7.1E-15	mg/m^3	3.8E+04	(mg/m3)-1	2.7E-10
		Total Dust Inhalation									2.7E-10
	Total Soil Direct Contact and Dust Inhalation										4.3E-06
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	2.1E-05	mg/kg	2.0E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.2E-09
				TEQ (ND=1/2DL)	5.1E-09	mg/kg	4.9E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.4E-07
	Total Produce Ingestion										6.4E-07

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Smith Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	2.1E-05	mg/kg	1.9E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.4E-06
			Total Ingestion								2.4E-06
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	2.1E-05	mg/kg	1.4E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.8E-07
			Total Dermal								1.8E-07
		Total Soil Direct Contact									2.6E-06

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--
				TEQ (ND=1/2DL)	1.5E-14	mg/m^3	4.4E-15	mg/m^3	3.8E+04	(mg/m3)-1	1.7E-10
		Total Dust Inhalation									1.7E-10
	Total Soil Direct Contact and Dust Inhalation										2.6E-06
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	3.2E-09	mg/kg	3.0E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.9E-07
	Total Produce Ingestion										3.9E-07

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Stevenson Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	6.8E-04	mg/kg	6.2E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.5E-10
				TEQ (ND=1/2DL)	7.6E-06	mg/kg	6.8E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.9E-07
			Total Ingestion								8.9E-07
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	6.8E-04	mg/kg	3.8E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.5E-10
				TEQ (ND=1/2DL)	7.6E-06	mg/kg	5.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.6E-08
			Total Dermal								6.7E-08
		Total Soil Direct Contact									9.5E-07

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	5.0E-13	mg/m^3	1.4E-13	mg/m^3	5.1E-03	(mg/m3)-1	7.3E-16
				TEQ (ND=1/2DL)	5.6E-15	mg/m^3	1.6E-15	mg/m^3	3.8E+04	(mg/m3)-1	6.0E-11
		Total Dust Inhalation									6.0E-11
	Total Soil Direct Contact and Dust Inhalation										9.5E-07
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	1.5E-06	mg/kg	1.5E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.8E-10
				TEQ (ND=1/2DL)	1.1E-09	mg/kg	1.1E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.4E-07
	Total Produce Ingestion										1.4E-07

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Vintage Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	3.6E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.7E-07
			Total Ingestion								4.7E-07
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	2.7E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.5E-08
			Total Dermal								3.5E-08
		Total Soil Direct Contact									5.0E-07

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--
				TEQ (ND=1/2DL)	2.9E-15	mg/m^3	8.3E-16	mg/m^3	3.8E+04	(mg/m3)-1	3.2E-11
		Total Dust Inhalation									3.2E-11
	Total Soil Direct Contact and Dust Inhalation										5.0E-07
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	6.0E-10	mg/kg	5.7E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	7.5E-08
	Total Produce Ingestion										7.5E-08

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Right-of-Way Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	3.8E+01	mg/kg	3.4E-05	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.4E-05
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--
			Total Ingestion								1.4E-05
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	3.8E+01	mg/kg	2.1E-05	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.6E-06
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--
			Total Dermal								8.6E-06
		Total Soil Direct Contact									2.2E-05

TABLE D7.2 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	2.8E-08	mg/m^3	7.9E-09	mg/m^3	5.1E-03	(mg/m3)-1	4.1E-11
				TEQ (ND=1/2DL)	--	mg/m^3	--	mg/m^3	3.8E+04	(mg/m3)-1	--
		Total Dust Inhalation									4.1E-11
	Total Soil Direct Contact and Dust Inhalation										2.2E-05
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	8.5E-02	mg/kg	8.1E-05	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.2E-05
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--
	Total Produce Ingestion										3.2E-05

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

BaP = benzo(a)pyrene

CSF = cancer slope factor

EPC = exposure point concentration

na = not applicable

nv = no value

TEQ = 2,3,7,8-TCDD toxicity equivalents

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Parcel A Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	1.3E+02	mg/kg	1.6E-05	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	2.0E+00	mg/kg	2.4E-07	mg/kg-day	nv	na	--
				C9-C10 Aromatics	2.0E+00	mg/kg	2.4E-07	mg/kg-day	nv	na	--
				Ethylbenzene	5.0E-02	mg/kg	6.1E-09	mg/kg-day	1.1E-02	(mg/kg-day)-1	6.7E-11
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	3.3E-01	mg/kg	4.0E-08	mg/kg-day	nv	na	--
				Naphthalene	1.0E-01	mg/kg	1.2E-08	mg/kg-day	nv	na	--
				BaP equivalents	4.1E-01	mg/kg	2.5E-07	mg/kg-day	7.3E+00	(mg/kg-day)-1	1.8E-06
				C9-C18 Aliphatics	1.2E+01	mg/kg	1.5E-06	mg/kg-day	nv	na	--
				C11-C22 Aromatics	2.6E+02	mg/kg	3.1E-05	mg/kg-day	nv	na	--
				Pentachlorophenol	4.7E-02	mg/kg	5.7E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.3E-09
				TEQ (ND=1/2DL)	1.9E-04	mg/kg	2.3E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.0E-06
			Total Ingestion								4.8E-06
			Dermal	C5-C8 Aliphatics	1.3E+02	mg/kg	9.7E-05	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	2.0E+00	mg/kg	7.3E-07	mg/kg-day	nv	na	--
				C9-C10 Aromatics	2.0E+00	mg/kg	7.3E-07	mg/kg-day	nv	na	--
				Ethylbenzene	5.0E-02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	3.3E-01	mg/kg	3.2E-08	mg/kg-day	nv	na	--
				Naphthalene	1.0E-01	mg/kg	9.5E-09	mg/kg-day	nv	na	--
				BaP equivalents	4.1E-01	mg/kg	1.4E-07	mg/kg-day	7.3E+00	(mg/kg-day)-1	1.0E-06
				C9-C18 Aliphatics	1.2E+01	mg/kg	4.4E-06	mg/kg-day	nv	na	--
				C11-C22 Aromatics	2.6E+02	mg/kg	1.9E-05	mg/kg-day	nv	na	--
				Pentachlorophenol	4.7E-02	mg/kg	8.6E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.5E-09
				TEQ (ND=1/2DL)	1.9E-04	mg/kg	4.2E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.4E-07
			Total Dermal								1.5E-06
		Total Soil Direct Contact									6.4E-06

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	9.7E-08	mg/m^3	9.2E-09	mg/m^3	nv	na	--
				C9-C12 Aliphatics	1.5E-09	mg/m^3	1.4E-10	mg/m^3	nv	na	--
				C9-C10 Aromatics	1.5E-09	mg/m^3	1.4E-10	mg/m^3	nv	na	--
				Ethylbenzene	3.7E-11	mg/m^3	3.5E-12	mg/m^3	2.5E-03	(mg/m3)-1	8.7E-15
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	2.4E-10	mg/m^3	2.3E-11	mg/m^3	nv	na	--
				Naphthalene	7.4E-11	mg/m^3	7.0E-12	mg/m^3	3.4E-02	(mg/m3)-1	2.4E-13
				BaP equivalents	3.0E-10	mg/m^3	1.0E-10	mg/m^3	1.1E+00	(mg/m3)-1	1.1E-10
				C9-C18 Aliphatics	8.8E-09	mg/m^3	8.4E-10	mg/m^3	nv	na	--
				C11-C22 Aromatics	1.9E-07	mg/m^3	1.8E-08	mg/m^3	nv	na	--
				Pentachlorophenol	3.5E-11	mg/m^3	3.3E-12	mg/m^3	5.1E-03	(mg/m3)-1	1.7E-14
				TEQ (ND=1/2DL)	1.4E-13	mg/m^3	1.3E-14	mg/m^3	3.8E+04	(mg/m3)-1	5.0E-10
		Total Dust Inhalation									6.2E-10
	Total Soil Direct Contact and Dust Inhalation										6.4E-06
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	7.1E-05	mg/kg	4.8E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	3.5E-07
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	1.1E-04	mg/kg	1.8E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.1E-09
				TEQ (ND=1/2DL)	2.9E-08	mg/kg	4.9E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.3E-07
	Total Produce Ingestion										9.9E-07

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Parcel B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	5.6E+00	mg/kg	6.7E-07	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	2.4E+02	mg/kg	2.9E-05	mg/kg-day	nv	na	--
				C9-C10 Aromatics	9.2E+01	mg/kg	1.1E-05	mg/kg-day	nv	na	--
				Ethylbenzene	4.6E-02	mg/kg	5.6E-09	mg/kg-day	1.1E-02	(mg/kg-day)-1	6.1E-11
				1-Methylnaphthalene	3.4E+00	mg/kg	4.1E-07	mg/kg-day	2.9E-02	(mg/kg-day)-1	1.2E-08
				2-Methylnaphthalene	4.8E-01	mg/kg	5.9E-08	mg/kg-day	nv	na	--
				Naphthalene	9.3E-02	mg/kg	1.1E-08	mg/kg-day	nv	na	--
				BaP equivalents	3.0E-01	mg/kg	1.8E-07	mg/kg-day	7.3E+00	(mg/kg-day)-1	1.3E-06
				C9-C18 Aliphatics	6.8E+02	mg/kg	8.2E-05	mg/kg-day	nv	na	--
				C11-C22 Aromatics	8.3E+02	mg/kg	1.0E-04	mg/kg-day	nv	na	--
				Pentachlorophenol	5.7E+02	mg/kg	7.0E-05	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.8E-05
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	1.4E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.8E-05
			Total Ingestion								4.7E-05
			Dermal	C5-C8 Aliphatics	5.6E+00	mg/kg	4.1E-06	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	2.4E+02	mg/kg	8.7E-05	mg/kg-day	nv	na	--
				C9-C10 Aromatics	9.2E+01	mg/kg	3.4E-05	mg/kg-day	nv	na	--
				Ethylbenzene	4.6E-02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00
				1-Methylnaphthalene	3.4E+00	mg/kg	3.2E-07	mg/kg-day	2.9E-02	(mg/kg-day)-1	9.4E-09
				2-Methylnaphthalene	4.8E-01	mg/kg	4.6E-08	mg/kg-day	nv	na	--
				Naphthalene	9.3E-02	mg/kg	8.8E-09	mg/kg-day	nv	na	--
				BaP equivalents	3.0E-01	mg/kg	9.8E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	7.1E-07
				C9-C18 Aliphatics	6.8E+02	mg/kg	2.5E-04	mg/kg-day	nv	na	--
				C11-C22 Aromatics	8.3E+02	mg/kg	6.1E-05	mg/kg-day	nv	na	--
				Pentachlorophenol	5.7E+02	mg/kg	1.1E-04	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.2E-05
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	2.5E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.2E-06
			Total Dermal								4.6E-05
		Total Soil Direct Contact									9.3E-05

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	4.1E-09	mg/m^3	3.9E-10	mg/m^3	nv	na	--
				C9-C12 Aliphatics	1.7E-07	mg/m^3	1.7E-08	mg/m^3	nv	na	--
				C9-C10 Aromatics	6.8E-08	mg/m^3	6.4E-09	mg/m^3	nv	na	--
				Ethylbenzene	3.4E-11	mg/m^3	3.2E-12	mg/m^3	2.5E-03	(mg/m3)-1	8.0E-15
				1-Methylnaphthalene	2.5E-09	mg/m^3	2.4E-10	mg/m^3	nv	na	--
				2-Methylnaphthalene	3.6E-10	mg/m^3	3.4E-11	mg/m^3	nv	na	--
				Naphthalene	6.8E-11	mg/m^3	6.5E-12	mg/m^3	3.4E-02	(mg/m3)-1	2.2E-13
				BaP equivalents	2.2E-10	mg/m^3	7.3E-11	mg/m^3	1.1E+00	(mg/m3)-1	8.1E-11
				C9-C18 Aliphatics	5.0E-07	mg/m^3	4.7E-08	mg/m^3	nv	na	--
				C11-C22 Aromatics	6.1E-07	mg/m^3	5.8E-08	mg/m^3	nv	na	--
				Pentachlorophenol	4.2E-07	mg/m^3	4.0E-08	mg/m^3	5.1E-03	(mg/m3)-1	2.0E-10
				TEQ (ND=1/2DL)	8.3E-13	mg/m^3	7.9E-14	mg/m^3	3.8E+04	(mg/m3)-1	3.0E-09
		Total Dust Inhalation									3.3E-09
	Total Soil Direct Contact and Dust Inhalation										9.3E-05
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	5.1E-05	mg/kg	3.4E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	2.5E-07
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	1.3E+00	mg/kg	2.2E-04	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.7E-05
				TEQ (ND=1/2DL)	1.7E-07	mg/kg	2.9E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.8E-06
	Total Produce Ingestion										9.1E-05

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Spigot Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	3.1E-02	mg/kg	3.8E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.5E-09
				TEQ (ND=1/2DL)	5.3E-05	mg/kg	6.4E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.3E-07
			Total Ingestion								8.3E-07
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	3.1E-02	mg/kg	5.8E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.3E-09
				TEQ (ND=1/2DL)	5.3E-05	mg/kg	1.2E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.5E-07
			Total Dermal								1.5E-07
		Total Soil Direct Contact									9.9E-07

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	2.3E-11	mg/m^3	2.2E-12	mg/m^3	5.1E-03	(mg/m3)-1	1.1E-14
				TEQ (ND=1/2DL)	3.9E-14	mg/m^3	3.7E-15	mg/m^3	3.8E+04	(mg/m3)-1	1.4E-10
		Total Dust Inhalation									1.4E-10
	Total Soil Direct Contact and Dust Inhalation										9.9E-07
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	7.0E-05	mg/kg	1.2E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.8E-09
				TEQ (ND=1/2DL)	8.0E-09	mg/kg	1.4E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.8E-07
	Total Produce Ingestion										1.8E-07

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Cassell Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	9.6E-01	mg/kg	1.6E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.2E-09
				TEQ (ND=1/2DL)	6.2E-04	mg/kg	1.0E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.3E-06
			Total Ingestion								1.3E-06
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	9.6E-01	mg/kg	2.4E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.4E-09
				TEQ (ND=1/2DL)	6.2E-04	mg/kg	1.8E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.4E-07
			Total Dermal								2.5E-07
		Total Soil Direct Contact									1.6E-06

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	7.1E-10	mg/m^3	8.9E-12	mg/m^3	5.1E-03	(mg/m3)-1	4.6E-14
				TEQ (ND=1/2DL)	4.6E-13	mg/m^3	5.8E-15	mg/m^3	3.8E+04	(mg/m3)-1	2.2E-10
		Total Dust Inhalation									2.2E-10
	Total Soil Direct Contact and Dust Inhalation										1.6E-06
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	2.1E-03	mg/kg	3.6E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.5E-07
				TEQ (ND=1/2DL)	9.4E-08	mg/kg	1.6E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.1E-06
	Total Produce Ingestion										2.2E-06

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Parmenter Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	3.2E-03	mg/kg	5.2E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.1E-11
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	1.7E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.2E-08
			Total Ingestion								2.2E-08
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	3.2E-03	mg/kg	7.8E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.1E-11
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	3.1E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.0E-09
			Total Dermal								4.1E-09
		Total Soil Direct Contact									2.6E-08

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	2.4E-12	mg/m^3	3.0E-14	mg/m^3	5.1E-03	(mg/m3)-1	1.5E-16
				TEQ (ND=1/2DL)	7.8E-15	mg/m^3	9.9E-17	mg/m^3	3.8E+04	(mg/m3)-1	3.7E-12
		Total Dust Inhalation									3.7E-12
	Total Soil Direct Contact and Dust Inhalation										2.6E-08
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	7.1E-06	mg/kg	1.2E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.9E-10
				TEQ (ND=1/2DL)	1.6E-09	mg/kg	2.7E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.5E-08
	Total Produce Ingestion										3.6E-08

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Skroch Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	2.5E-02	mg/kg	4.0E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.6E-10
				TEQ (ND=1/2DL)	9.9E-05	mg/kg	1.6E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.1E-07
			Total Ingestion								2.1E-07
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	2.5E-02	mg/kg	6.1E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.4E-10
				TEQ (ND=1/2DL)	9.9E-05	mg/kg	2.9E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.8E-08
			Total Dermal								3.8E-08
		Total Soil Direct Contact									2.5E-07

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	1.8E-11	mg/m^3	2.3E-13	mg/m^3	5.1E-03	(mg/m3)-1	1.2E-15
				TEQ (ND=1/2DL)	7.3E-14	mg/m^3	9.2E-16	mg/m^3	3.8E+04	(mg/m3)-1	3.5E-11
		Total Dust Inhalation									3.5E-11
	Total Soil Direct Contact and Dust Inhalation										2.5E-07
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	5.6E-05	mg/kg	9.5E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.8E-09
				TEQ (ND=1/2DL)	1.5E-08	mg/kg	2.5E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.3E-07
	Total Produce Ingestion										3.3E-07

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Chaney Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	2.2E-04	mg/kg	2.7E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.1E-11
				TEQ (ND=1/2DL)	8.6E-06	mg/kg	1.0E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.4E-07
			Total Ingestion								1.4E-07
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	2.2E-04	mg/kg	4.1E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.6E-11
				TEQ (ND=1/2DL)	8.6E-06	mg/kg	1.9E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.5E-08
			Total Dermal								2.5E-08
		Total Soil Direct Contact									1.6E-07

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	1.6E-13	mg/m^3	1.6E-14	mg/m^3	5.1E-03	(mg/m3)-1	7.9E-17
				TEQ (ND=1/2DL)	6.3E-15	mg/m^3	6.0E-16	mg/m^3	3.8E+04	(mg/m3)-1	2.3E-11
		Total Dust Inhalation									2.3E-11
	Total Soil Direct Contact and Dust Inhalation										1.6E-07
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	5.0E-07	mg/kg	8.5E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.4E-11
				TEQ (ND=1/2DL)	1.3E-09	mg/kg	2.2E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.9E-08
	Total Produce Ingestion										2.9E-08

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Peirano Tract B Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	8.5E-04	mg/kg	1.4E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.8E-06
			Total Ingestion								1.8E-06
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	8.5E-04	mg/kg	2.5E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.3E-07
			Total Dermal								3.3E-07
		Total Soil Direct Contact									2.1E-06

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--
				TEQ (ND=1/2DL)	6.3E-13	mg/m^3	7.9E-15	mg/m^3	3.8E+04	(mg/m3)-1	3.0E-10
		Total Dust Inhalation									3.0E-10
	Total Soil Direct Contact and Dust Inhalation										2.1E-06
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	1.3E-07	mg/kg	2.2E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.9E-06
	Total Produce Ingestion										2.9E-06

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Renfroe Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	1.4E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.8E-07
			Total Ingestion								1.8E-07
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	2.5E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.3E-08
			Total Dermal								3.3E-08
		Total Soil Direct Contact									2.1E-07

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--
				TEQ (ND=1/2DL)	8.3E-15	mg/m^3	7.9E-16	mg/m^3	3.8E+04	(mg/m3)-1	3.0E-11
		Total Dust Inhalation									3.0E-11
	Total Soil Direct Contact and Dust Inhalation										2.1E-07
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	1.7E-09	mg/kg	2.9E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.8E-08
	Total Produce Ingestion										3.8E-08

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
3WT Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	2.5E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.2E-07
			Total Ingestion								3.2E-07
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	4.5E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.9E-08
			Total Dermal								5.9E-08
		Total Soil Direct Contact									3.8E-07

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--
				TEQ (ND=1/2DL)	1.5E-14	mg/m^3	1.4E-15	mg/m^3	3.8E+04	(mg/m3)-1	5.4E-11
		Total Dust Inhalation									5.4E-11
	Total Soil Direct Contact and Dust Inhalation										3.8E-07
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	3.1E-09	mg/kg	5.3E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.8E-08
	Total Produce Ingestion										6.8E-08

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Milton Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	7.6E-03	mg/kg	9.2E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.7E-10
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	2.3E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.0E-07
			Total Ingestion								3.1E-07
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	7.6E-03	mg/kg	1.4E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.6E-10
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	4.3E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.5E-08
			Total Dermal								5.6E-08
		Total Soil Direct Contact									3.6E-07

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	5.6E-12	mg/m^3	5.3E-13	mg/m^3	5.1E-03	(mg/m3)-1	2.7E-15
				TEQ (ND=1/2DL)	1.4E-14	mg/m^3	1.3E-15	mg/m^3	3.8E+04	(mg/m3)-1	5.1E-11
		Total Dust Inhalation									5.1E-11
	Total Soil Direct Contact and Dust Inhalation										3.6E-07
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	1.7E-05	mg/kg	2.9E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.2E-09
				TEQ (ND=1/2DL)	2.9E-09	mg/kg	5.0E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.5E-08
	Total Produce Ingestion										6.6E-08

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Peirano Parcel B Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	1.7E-02	mg/kg	2.7E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.1E-10
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	1.7E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.2E-06
			Total Ingestion								2.2E-06
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	1.7E-02	mg/kg	4.1E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.6E-10
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	3.1E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.0E-07
			Total Dermal								4.0E-07
		Total Soil Direct Contact									2.6E-06

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	1.2E-11	mg/m^3	1.5E-13	mg/m^3	5.1E-03	(mg/m3)-1	7.9E-16
				TEQ (ND=1/2DL)	7.7E-13	mg/m^3	9.8E-15	mg/m^3	3.8E+04	(mg/m3)-1	3.7E-10
		Total Dust Inhalation									3.7E-10
	Total Soil Direct Contact and Dust Inhalation										2.6E-06
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	3.7E-05	mg/kg	6.3E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.5E-09
				TEQ (ND=1/2DL)	1.6E-07	mg/kg	2.7E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.5E-06
	Total Produce Ingestion										3.5E-06

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Peirano Tract A Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	3.5E-04	mg/kg	5.7E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.3E-12
				TEQ (ND=1/2DL)	2.8E-04	mg/kg	4.5E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.9E-07
			Total Ingestion								5.9E-07
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	3.5E-04	mg/kg	8.6E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.4E-12
				TEQ (ND=1/2DL)	2.8E-04	mg/kg	8.2E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.1E-07
			Total Dermal								1.1E-07
		Total Soil Direct Contact									6.9E-07

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	2.6E-13	mg/m^3	3.3E-15	mg/m^3	5.1E-03	(mg/m3)-1	1.7E-17
				TEQ (ND=1/2DL)	2.1E-13	mg/m^3	2.6E-15	mg/m^3	3.8E+04	(mg/m3)-1	9.9E-11
		Total Dust Inhalation									9.9E-11
	Total Soil Direct Contact and Dust Inhalation										6.9E-07
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	7.9E-07	mg/kg	1.3E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.3E-11
				TEQ (ND=1/2DL)	4.2E-08	mg/kg	7.2E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	9.3E-07
	Total Produce Ingestion										9.3E-07

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Robak Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	9.6E-03	mg/kg	1.2E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.7E-10
				TEQ (ND=1/2DL)	2.2E-05	mg/kg	2.7E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.5E-07
			Total Ingestion								3.5E-07
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	9.6E-03	mg/kg	1.8E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.1E-10
				TEQ (ND=1/2DL)	2.2E-05	mg/kg	5.0E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.4E-08
			Total Dermal								6.5E-08
		Total Soil Direct Contact									4.2E-07

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	7.1E-12	mg/m^3	6.7E-13	mg/m^3	5.1E-03	(mg/m3)-1	3.4E-15
				TEQ (ND=1/2DL)	1.7E-14	mg/m^3	1.6E-15	mg/m^3	3.8E+04	(mg/m3)-1	6.0E-11
		Total Dust Inhalation									6.0E-11
	Total Soil Direct Contact and Dust Inhalation										4.2E-07
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	2.1E-05	mg/kg	3.6E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.5E-09
				TEQ (ND=1/2DL)	3.4E-09	mg/kg	5.8E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	7.5E-08
	Total Produce Ingestion										7.7E-08

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Smith Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	1.6E-05	mg/kg	1.9E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.5E-07
			Total Ingestion								2.5E-07
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	1.6E-05	mg/kg	3.5E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.6E-08
			Total Dermal								4.6E-08
		Total Soil Direct Contact									3.0E-07

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--
				TEQ (ND=1/2DL)	1.2E-14	mg/m^3	1.1E-15	mg/m^3	3.8E+04	(mg/m3)-1	4.2E-11
		Total Dust Inhalation									4.2E-11
	Total Soil Direct Contact and Dust Inhalation										3.0E-07
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	2.4E-09	mg/kg	4.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.3E-08
	Total Produce Ingestion										5.3E-08

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Stevenson Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	6.8E-04	mg/kg	8.3E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.3E-11
				TEQ (ND=1/2DL)	1.8E-06	mg/kg	2.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.8E-08
			Total Ingestion								2.8E-08
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	6.8E-04	mg/kg	1.3E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.0E-11
				TEQ (ND=1/2DL)	1.8E-06	mg/kg	3.9E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.0E-09
			Total Dermal								5.1E-09
		Total Soil Direct Contact									3.3E-08

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	5.0E-13	mg/m^3	4.8E-14	mg/m^3	5.1E-03	(mg/m3)-1	2.4E-16
				TEQ (ND=1/2DL)	1.3E-15	mg/m^3	1.2E-16	mg/m^3	3.8E+04	(mg/m3)-1	4.7E-12
		Total Dust Inhalation									4.7E-12
	Total Soil Direct Contact and Dust Inhalation										3.3E-08
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	1.5E-06	mg/kg	2.6E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.0E-10
				TEQ (ND=1/2DL)	2.7E-10	mg/kg	4.5E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.9E-09
	Total Produce Ingestion										6.0E-09

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Vintage Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	4.8E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.3E-08
			Total Ingestion								6.3E-08
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	8.8E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.1E-08
			Total Dermal								1.1E-08
		Total Soil Direct Contact									7.4E-08

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--
				TEQ (ND=1/2DL)	2.9E-15	mg/m^3	2.8E-16	mg/m^3	3.8E+04	(mg/m3)-1	1.1E-11
		Total Dust Inhalation									1.1E-11
	Total Soil Direct Contact and Dust Inhalation										7.4E-08
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--
				TEQ (ND=1/2DL)	6.0E-10	mg/kg	1.0E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.3E-08
	Total Produce Ingestion										1.3E-08

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
Right-of-Way Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	3.8E+01	mg/kg	4.6E-06	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.8E-06
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--
			Total Ingestion								1.8E-06
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	3.8E+01	mg/kg	7.0E-06	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.8E-06
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--
			Total Dermal								2.8E-06
		Total Soil Direct Contact									4.6E-06

TABLE D7.2 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk
							Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--
				Pentachlorophenol	2.8E-08	mg/m^3	2.6E-09	mg/m^3	5.1E-03	(mg/m3)-1	1.4E-11
				TEQ (ND=1/2DL)	--	mg/m^3	--	mg/m^3	3.8E+04	(mg/m3)-1	--
		Total Dust Inhalation									1.4E-11
	Total Soil Direct Contact and Dust Inhalation										4.6E-06
	Plant Tissue	Homegrown Produce	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--
				Pentachlorophenol	8.5E-02	mg/kg	1.4E-05	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.8E-06
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--
	Total Produce Ingestion										5.8E-06

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

BaP = benzo(a)pyrene

CSF = cancer slope factor

EPC = exposure point concentration

na = not applicable

nv = no value

TEQ = 2,3,7,8-TCDD toxicity equivalents

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

SSCL Calculations Table D7.2

Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	Cancer Risk Calculations							
				C/NC	TR	CSF/Unit Risk	Units	RME $SSCL_c$		CTE $SSCL_c$	
								Value	Units	Value	Units
Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg
(non-ditch)			C9-C12 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			C9-C10 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			Ethylbenzene	c	1.7E-06	1.1E-02	(mg/kg-day)-1	1.7E+02	mg/kg	1.3E+03	mg/kg
			1-Methylnaphthalene	c	1.7E-06	2.9E-02	(mg/kg-day)-1	6.5E+01	mg/kg	4.8E+02	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg
			Naphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg
			BaP equivalents	c	1.7E-06	7.3E+00	(mg/kg-day)-1	5.4E-02	mg/kg	3.9E-01	mg/kg
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			C11-C22 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			Pentachlorophenol	c	1.7E-06	4.0E-01	(mg/kg-day)-1	4.7E+00	mg/kg	3.5E+01	mg/kg
			TEQ (ND=1/2DL)	c	1.7E-06	1.3E+05	(mg/kg-day)-1	1.5E-05	mg/kg	1.1E-04	mg/kg
		Dermal	C5-C8 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			C9-C12 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			C9-C10 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			Ethylbenzene	c	1.7E-06	1.1E-02	(mg/kg-day)-1	--	mg/kg	--	mg/kg
			1-Methylnaphthalene	c	1.7E-06	2.9E-02	(mg/kg-day)-1	2.0E+02	mg/kg	6.1E+02	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg
			Naphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg
			BaP equivalents	c	1.7E-06	7.3E+00	(mg/kg-day)-1	3.3E-01	mg/kg	7.0E-01	mg/kg
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			C11-C22 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			Pentachlorophenol	c	1.7E-06	4.0E-01	(mg/kg-day)-1	7.6E+00	mg/kg	2.3E+01	mg/kg
			TEQ (ND=1/2DL)	c	1.7E-06	1.3E+05	(mg/kg-day)-1	1.9E-04	mg/kg	5.9E-04	mg/kg
Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3
(non-ditch)			C9-C12 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3
			C9-C10 Aromatics	nc	--	nv	na	--	mg/m3	--	mg/m3
			Ethylbenzene	c	1.7E-06	2.5E-03	(mg/m3)-1	2.4E-03	mg/m3	7.2E-03	mg/m3
			1-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/m3	--	mg/m3
			Naphthalene	c	1.7E-06	3.4E-02	(mg/m3)-1	1.8E-04	mg/m3	5.3E-04	mg/m3
			BaP equivalents	c	1.7E-06	1.1E+00	(mg/m3)-1	2.1E-06	mg/m3	4.6E-06	mg/m3
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3
			C11-C22 Aromatics	nc	--	nv	na	--	mg/m3	--	mg/m3
			Pentachlorophenol	c	1.7E-06	5.1E-03	(mg/m3)-1	1.2E-03	mg/m3	3.5E-03	mg/m3
			TEQ (ND=1/2DL)	c	1.7E-06	3.8E+04	(mg/m3)-1	1.6E-10	mg/m3	4.7E-10	mg/m3
Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg
(ditch)			C9-C12 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			C9-C10 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			Ethylbenzene	c	1.7E-06	1.1E-02	(mg/kg-day)-1	1.2E+03	mg/kg	9.6E+03	mg/kg
			1-Methylnaphthalene	c	1.7E-06	2.9E-02	(mg/kg-day)-1	4.4E+02	mg/kg	3.6E+03	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg
			Naphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg
			BaP equivalents	c	1.7E-06	7.3E+00	(mg/kg-day)-1	3.6E-01	mg/kg	2.9E+00	mg/kg
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			C11-C22 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			Pentachlorophenol	c	1.7E-06	4.0E-01	(mg/kg-day)-1	3.2E+01	mg/kg	2.6E+02	mg/kg
			TEQ (ND=1/2DL)	c	1.7E-06	1.3E+05	(mg/kg-day)-1	9.8E-05	mg/kg	8.1E-04	mg/kg

COPC	Total SSCLs	
	RME $SSCL_c$	CTE $SSCL_c$
Non-ditch Properties		
C5-C8 Aliphatics	nv	nv
C9-C12 Aliphatics	nv	nv
C9-C10 Aromatics	nv	nv
Ethylbenzene	1.7E+02	1.3E+03
1-Methylnaphthalene	4.9E+01	2.7E+02
2-Methylnaphthalene	nv	nv
Naphthalene	2.4E+05	7.2E+05
BaP equivalents	4.6E-02	2.5E-01
C9-C18 Aliphatics	nv	nv
C11-C22 Aromatics	nv	nv
Pentachlorophenol	2.9E+00	1.4E+01
TEQ (ND=1/2DL)	1.4E-05	9.1E-05
Ditch Properties		
C5-C8 Aliphatics	nv	nv
C9-C12 Aliphatics	nv	nv
C9-C10 Aromatics	nv	nv
Ethylbenzene	1.2E+03	9.6E+03
1-Methylnaphthalene	3.3E+02	2.0E+03
2-Methylnaphthalene	nv	nv
Naphthalene	1.6E+06	5.4E+06
BaP equivalents	3.1E-01	1.9E+00
C9-C18 Aliphatics	nv	nv
C11-C22 Aromatics	nv	nv
Pentachlorophenol	2.0E+01	1.0E+02
TEQ (ND=1/2DL)	9.1E-05	6.8E-04

SSCL Calculations Table D7.2

Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	Cancer Risk Calculations							
				C/NC	TR	CSF/Unit Risk	Units	RME $SSCL_c$		CTE $SSCL_c$	
								Value	Units	Value	Units
		Dermal	C5-C8 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			C9-C12 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			C9-C10 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			Ethylbenzene	c	1.7E-06	1.1E-02	(mg/kg-day)-1	--	mg/kg	--	mg/kg
			1-Methylnaphthalene	c	1.7E-06	2.9E-02	(mg/kg-day)-1	1.4E+03	mg/kg	4.6E+03	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg
			Naphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg
			BaP equivalents	c	1.7E-06	7.3E+00	(mg/kg-day)-1	2.2E+00	mg/kg	5.3E+00	mg/kg
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			C11-C22 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg
			Pentachlorophenol	c	1.7E-06	4.0E-01	(mg/kg-day)-1	5.1E+01	mg/kg	1.7E+02	mg/kg
			TEQ (ND=1/2DL)	c	1.7E-06	1.3E+05	(mg/kg-day)-1	1.3E-03	mg/kg	4.5E-03	mg/kg
Air (ditch)	Airborne Dust	Inhalation	C5-C8 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3
			C9-C12 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3
			C9-C10 Aromatics	nc	--	nv	na	--	mg/m3	--	mg/m3
			Ethylbenzene	c	1.7E-06	2.5E-03	(mg/m3)-1	1.6E-02	mg/m3	5.4E-02	mg/m3
			1-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/m3	--	mg/m3
			Naphthalene	c	1.7E-06	3.4E-02	(mg/m3)-1	1.2E-03	mg/m3	4.0E-03	mg/m3
			BaP equivalents	c	1.7E-06	1.1E+00	(mg/m3)-1	1.4E-05	mg/m3	3.4E-05	mg/m3
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3
			C11-C22 Aromatics	nc	--	nv	na	--	mg/m3	--	mg/m3
			Pentachlorophenol	c	1.7E-06	5.1E-03	(mg/m3)-1	7.9E-03	mg/m3	2.6E-02	mg/m3
			TEQ (ND=1/2DL)	c	1.7E-06	3.8E+04	(mg/m3)-1	1.1E-09	mg/m3	3.5E-09	mg/m3

COPC	Total SSCLs	
	RME $SSCL_c$	CTE $SSCL_c$

Notes:

-- = no toxicity value available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene

c = carcinogen

CSF = cancer slope factor

CTE = central tendency exposure

na = not applicable

nc = noncarcinogen

nv = no value

RME = reasonable maximum exposure

SSCL = site-specific cleanup level

TEQ = 2,3,7,8-TCDD toxicity equivalents

TR = target risk

TABLE D7.3 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parcel A Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	1.8E-04	mg/L	1.2E-07	mg/kg-day	7.3E+00	(mg/kg-day)-1	8.9E-07	9.5E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	4.3E-05	mg/L	2.9E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.2E-09	2.3E-07	mg/kg-day	5.0E-03	mg/kg-day	4.5E-05
				TEQ (ND=1/2DL)	3.4E-07	mg/L	2.3E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.9E-06	1.8E-09	mg/kg-day	7.0E-10	mg/kg-day	2.5E+00
	Total Breast Milk Ingestion										3.8E-06					2.5E+00
Parcel B Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	2.7E-04	mg/L	1.8E-07	mg/kg-day	7.3E+00	(mg/kg-day)-1	1.3E-06	1.4E-06	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.3E-01	mg/L	4.2E-05	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.7E-05	3.3E-03	mg/kg-day	5.0E-03	mg/kg-day	6.6E-01
				TEQ (ND=1/2DL)	6.8E-07	mg/L	4.6E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.0E-06	3.6E-09	mg/kg-day	7.0E-10	mg/kg-day	5.1E+00
	Total Breast Milk Ingestion										2.4E-05					5.8E+00
Spigot Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.5E-06	mg/L	6.4E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.6E-10	5.0E-08	mg/kg-day	5.0E-03	mg/kg-day	1.0E-05
				TEQ (ND=1/2DL)	1.8E-08	mg/L	1.2E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.6E-07	9.5E-11	mg/kg-day	7.0E-10	mg/kg-day	1.4E-01
	Total Breast Milk Ingestion										1.6E-07					1.4E-01

TABLE D7.3 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Cassell Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.4E-05	mg/L	4.3E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.7E-09	3.3E-07	mg/kg-day	5.0E-03	mg/kg-day	6.7E-05
				TEQ (ND=1/2DL)	4.0E-08	mg/L	2.7E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.5E-07	2.1E-10	mg/kg-day	7.0E-10	mg/kg-day	3.0E-01
	Total Breast Milk Ingestion										3.5E-07					3.0E-01
Parmenter Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.2E-07	mg/L	8.2E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.3E-12	6.4E-10	mg/kg-day	5.0E-03	mg/kg-day	1.3E-07
				TEQ (ND=1/2DL)	5.0E-10	mg/L	3.4E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.4E-09	2.6E-12	mg/kg-day	7.0E-10	mg/kg-day	3.7E-03
	Total Breast Milk Ingestion										4.4E-09					3.7E-03
Skroch Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.3E-06	mg/L	2.2E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.9E-11	1.7E-08	mg/kg-day	5.0E-03	mg/kg-day	3.5E-06
				TEQ (ND=1/2DL)	8.1E-09	mg/L	5.4E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	7.1E-08	4.2E-11	mg/kg-day	7.0E-10	mg/kg-day	6.0E-02
	Total Breast Milk Ingestion										7.1E-08					6.0E-02

TABLE D7.3 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Chaney Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	4.2E-08	mg/L	2.8E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.1E-12	2.2E-10	mg/kg-day	5.0E-03	mg/kg-day	4.4E-08
				TEQ (ND=1/2DL)	1.8E-09	mg/L	1.2E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.6E-08	9.5E-12	mg/kg-day	7.0E-10	mg/kg-day	1.4E-02
	Total Breast Milk Ingestion										1.6E-08					1.4E-02
Peirano Tract B Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/L	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.5E-08	mg/L	3.0E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.9E-07	2.4E-10	mg/kg-day	7.0E-10	mg/kg-day	3.4E-01
	Total Breast Milk Ingestion										3.9E-07					3.4E-01
Renfroe Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/L	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	3.1E-09	mg/L	2.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.7E-08	1.6E-11	mg/kg-day	7.0E-10	mg/kg-day	2.3E-02
	Total Breast Milk Ingestion										2.7E-08					2.3E-02

TABLE D7.3 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
3WT Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/L	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	3.7E-09	mg/L	2.5E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.2E-08	1.9E-11	mg/kg-day	7.0E-10	mg/kg-day	2.8E-02
	Total Breast Milk Ingestion										3.2E-08					2.8E-02
Milton Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.8E-06	mg/L	1.9E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.6E-11	1.5E-08	mg/kg-day	5.0E-03	mg/kg-day	3.0E-06
				TEQ (ND=1/2DL)	6.2E-09	mg/L	4.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.4E-08	3.2E-11	mg/kg-day	7.0E-10	mg/kg-day	4.6E-02
	Total Breast Milk Ingestion										5.4E-08					4.6E-02
Peirano Parcel B Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.7E-06	mg/L	1.1E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.5E-11	8.7E-09	mg/kg-day	5.0E-03	mg/kg-day	1.7E-06
				TEQ (ND=1/2DL)	5.2E-08	mg/L	3.5E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.5E-07	2.7E-10	mg/kg-day	7.0E-10	mg/kg-day	3.9E-01
	Total Breast Milk Ingestion										4.5E-07					3.9E-01

TABLE D7.3 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Tract A Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.7E-09	mg/L	6.6E-13	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.6E-13	5.1E-11	mg/kg-day	5.0E-03	mg/kg-day	1.0E-08
				TEQ (ND=1/2DL)	4.8E-08	mg/L	3.2E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.2E-07	2.5E-10	mg/kg-day	7.0E-10	mg/kg-day	3.6E-01
	Total Breast Milk Ingestion										4.2E-07					3.6E-01
Robak Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.8E-06	mg/L	1.2E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.8E-11	9.4E-09	mg/kg-day	5.0E-03	mg/kg-day	1.9E-06
				TEQ (ND=1/2DL)	6.2E-09	mg/L	4.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.4E-08	3.2E-11	mg/kg-day	7.0E-10	mg/kg-day	4.6E-02
	Total Breast Milk Ingestion										5.4E-08					4.6E-02
Smith Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/L	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	3.8E-09	mg/L	2.5E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.3E-08	2.0E-11	mg/kg-day	7.0E-10	mg/kg-day	2.8E-02
	Total Breast Milk Ingestion										3.3E-08					2.8E-02

TABLE D7.3 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Stevenson Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.3E-07	mg/L	8.6E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.4E-12	6.7E-10	mg/kg-day	5.0E-03	mg/kg-day	1.3E-07
				TEQ (ND=1/2DL)	1.4E-09	mg/L	9.2E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.2E-08	7.2E-12	mg/kg-day	7.0E-10	mg/kg-day	1.0E-02
	Total Breast Milk Ingestion										1.2E-08					1.0E-02
Vintage Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/L	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	7.2E-10	mg/L	4.9E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.3E-09	3.8E-12	mg/kg-day	7.0E-10	mg/kg-day	5.4E-03
	Total Breast Milk Ingestion										6.3E-09					5.4E-03

TABLE D7.3 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Right-of-Way Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	7.1E-03	mg/L	4.8E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.9E-07	3.7E-05	mg/kg-day	5.0E-03	mg/kg-day	7.5E-03
				TEQ (ND=1/2DL)	--	mg/L	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
	Total Breast Milk Ingestion										1.9E-07					7.5E-03

Notes:

BaP = benzo(a)pyrene

CSF = cancer slope factor

CT = central tendency

EPC = exposure point concentration

na = not applicable

nv = no value

RfC = inhalation reference dose

RfD = oral reference dose

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

TABLE D7.3 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parcel A Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	6.9E-05	mg/L	2.9E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	2.2E-07	2.3E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.7E-06	mg/L	1.6E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.3E-11	1.2E-08	mg/kg-day	5.0E-03	mg/kg-day	2.5E-06
				TEQ (ND=1/2DL)	1.0E-08	mg/L	4.3E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.6E-08	3.4E-11	mg/kg-day	7.0E-10	mg/kg-day	4.8E-02
	Total Breast Milk Ingestion										2.7E-07					4.8E-02
Parcel B Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	4.9E-05	mg/L	2.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	1.5E-07	1.6E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	4.5E-02	mg/L	1.9E-06	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.7E-07	1.5E-04	mg/kg-day	5.0E-03	mg/kg-day	3.0E-02
				TEQ (ND=1/2DL)	6.1E-08	mg/L	2.6E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.4E-07	2.0E-10	mg/kg-day	7.0E-10	mg/kg-day	2.9E-01
	Total Breast Milk Ingestion										1.3E-06					3.2E-01
Spigot Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.5E-06	mg/L	1.1E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.2E-11	8.2E-09	mg/kg-day	5.0E-03	mg/kg-day	1.6E-06
				TEQ (ND=1/2DL)	2.8E-09	mg/L	1.2E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.6E-08	9.4E-12	mg/kg-day	7.0E-10	mg/kg-day	1.3E-02
	Total Breast Milk Ingestion										1.6E-08					1.3E-02

TABLE D7.3 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Cassell Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.0E-05	mg/L	4.3E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.7E-10	3.4E-08	mg/kg-day	5.0E-03	mg/kg-day	6.7E-06
				TEQ (ND=1/2DL)	4.4E-09	mg/L	1.9E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.5E-08	1.5E-11	mg/kg-day	7.0E-10	mg/kg-day	2.1E-02
	Total Breast Milk Ingestion										2.5E-08					2.1E-02
Parmenter Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.3E-08	mg/L	1.4E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.7E-13	1.1E-10	mg/kg-day	5.0E-03	mg/kg-day	2.2E-08
				TEQ (ND=1/2DL)	7.6E-11	mg/L	3.2E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.2E-10	2.5E-13	mg/kg-day	7.0E-10	mg/kg-day	3.6E-04
	Total Breast Milk Ingestion										4.2E-10					3.6E-04
Skroch Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.6E-07	mg/L	1.1E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.5E-12	8.7E-10	mg/kg-day	5.0E-03	mg/kg-day	1.7E-07
				TEQ (ND=1/2DL)	7.1E-10	mg/L	3.0E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.9E-09	2.4E-12	mg/kg-day	7.0E-10	mg/kg-day	3.4E-03
	Total Breast Milk Ingestion										3.9E-09					3.4E-03

TABLE D7.3 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Chaney Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.8E-08	mg/L	7.5E-13	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.0E-13	5.8E-11	mg/kg-day	5.0E-03	mg/kg-day	1.2E-08
				TEQ (ND=1/2DL)	4.6E-10	mg/L	2.0E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.6E-09	1.5E-12	mg/kg-day	7.0E-10	mg/kg-day	2.2E-03
	Total Breast Milk Ingestion										2.6E-09					2.2E-03
Peirano Tract B Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/L	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	6.1E-09	mg/L	2.6E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.4E-08	2.0E-11	mg/kg-day	7.0E-10	mg/kg-day	2.9E-02
	Total Breast Milk Ingestion										3.4E-08					2.9E-02
Renfroe Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/L	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	6.1E-10	mg/L	2.6E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.4E-09	2.0E-12	mg/kg-day	7.0E-10	mg/kg-day	2.9E-03
	Total Breast Milk Ingestion										3.4E-09					2.9E-03

TABLE D7.3 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
3WT Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/L	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.1E-09	mg/L	4.7E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.1E-09	3.7E-12	mg/kg-day	7.0E-10	mg/kg-day	5.2E-03
	Total Breast Milk Ingestion										6.1E-09					5.2E-03
Milton Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.0E-07	mg/L	2.5E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.0E-11	2.0E-09	mg/kg-day	5.0E-03	mg/kg-day	4.0E-07
				TEQ (ND=1/2DL)	1.0E-09	mg/L	4.4E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.7E-09	3.4E-12	mg/kg-day	7.0E-10	mg/kg-day	4.9E-03
	Total Breast Milk Ingestion										5.8E-09					4.9E-03
Peirano Parcel B Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.7E-07	mg/L	7.4E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.0E-12	5.8E-10	mg/kg-day	5.0E-03	mg/kg-day	1.2E-07
				TEQ (ND=1/2DL)	7.5E-09	mg/L	3.2E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.2E-08	2.5E-11	mg/kg-day	7.0E-10	mg/kg-day	3.6E-02
	Total Breast Milk Ingestion										4.2E-08					3.6E-02

TABLE D7.3 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Tract A Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.7E-09	mg/L	1.6E-13	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.3E-14	1.2E-11	mg/kg-day	5.0E-03	mg/kg-day	2.5E-09
				TEQ (ND=1/2DL)	2.0E-09	mg/L	8.5E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.1E-08	6.6E-12	mg/kg-day	7.0E-10	mg/kg-day	9.5E-03
	Total Breast Milk Ingestion										1.1E-08					9.5E-03
Robak Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	7.5E-07	mg/L	3.2E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.3E-11	2.5E-09	mg/kg-day	5.0E-03	mg/kg-day	5.0E-07
				TEQ (ND=1/2DL)	1.2E-09	mg/L	5.1E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.7E-09	4.0E-12	mg/kg-day	7.0E-10	mg/kg-day	5.7E-03
	Total Breast Milk Ingestion										6.7E-09					5.7E-03
Smith Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/L	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	8.5E-10	mg/L	3.6E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.7E-09	2.8E-12	mg/kg-day	7.0E-10	mg/kg-day	4.1E-03
	Total Breast Milk Ingestion										4.7E-09					4.1E-03

TABLE D7.3 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Stevenson Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	5.4E-08	mg/L	2.3E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.2E-13	1.8E-10	mg/kg-day	5.0E-03	mg/kg-day	3.6E-08
				TEQ (ND=1/2DL)	9.4E-11	mg/L	4.0E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.2E-10	3.1E-13	mg/kg-day	7.0E-10	mg/kg-day	4.5E-04
	Total Breast Milk Ingestion										5.2E-10					4.5E-04
Vintage Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/L	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.1E-10	mg/L	9.1E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.2E-09	7.1E-13	mg/kg-day	7.0E-10	mg/kg-day	1.0E-03
	Total Breast Milk Ingestion										1.2E-09					1.0E-03

TABLE D7.3 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Right-of-Way Soil	Breast Milk	Breast Milk	Ingestion	C5-C8 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/L	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/L	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/L	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/L	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.0E-03	mg/L	1.3E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.1E-08	9.9E-06	mg/kg-day	5.0E-03	mg/kg-day	2.0E-03
				TEQ (ND=1/2DL)	--	mg/L	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
	Total Breast Milk Ingestion										5.1E-08					2.0E-03

Notes:

BaP = benzo(a)pyrene

CSF = cancer slope factor

CT = central tendency

EPC = exposure point concentration

na = not applicable

nv = no value

RfC = inhalation reference dose

RfD = oral reference dose

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parcel A Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	1.3E+02	mg/kg	1.4E-05	mg/kg-day	nv	na	--	4.2E-05	mg/kg-day	4.0E-02	mg/kg-day	1.1E-03
(non-ditch)				C9-C12 Aliphatics	2.0E+00	mg/kg	2.1E-07	mg/kg-day	nv	na	--	6.4E-07	mg/kg-day	1.0E-02	mg/kg-day	6.4E-05
				C9-C10 Aromatics	2.0E+00	mg/kg	2.1E-07	mg/kg-day	nv	na	--	6.4E-07	mg/kg-day	3.0E-02	mg/kg-day	2.1E-05
				Ethylbenzene	5.0E-02	mg/kg	5.1E-09	mg/kg-day	1.1E-02	(mg/kg-day)-1	5.6E-11	1.6E-08	mg/kg-day	1.0E-01	mg/kg-day	1.6E-07
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	3.3E-01	mg/kg	3.4E-08	mg/kg-day	nv	na	--	1.1E-07	mg/kg-day	4.0E-03	mg/kg-day	2.6E-05
				Naphthalene	1.0E-01	mg/kg	1.0E-08	mg/kg-day	nv	na	--	3.2E-08	mg/kg-day	2.0E-02	mg/kg-day	1.6E-06
				BaP equivalents	4.1E-01	mg/kg	4.2E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	3.1E-07	1.3E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.2E+01	mg/kg	1.2E-06	mg/kg-day	nv	na	--	3.8E-06	mg/kg-day	1.0E-02	mg/kg-day	3.8E-04
				C11-C22 Aromatics	2.6E+02	mg/kg	2.7E-05	mg/kg-day	nv	na	--	8.3E-05	mg/kg-day	3.0E-02	mg/kg-day	2.8E-03
				Pentachlorophenol	2.3E-01	mg/kg	2.4E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.4E-09	7.4E-08	mg/kg-day	5.0E-03	mg/kg-day	1.5E-05
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	1.9E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.5E-05	5.9E-10	mg/kg-day	7.0E-10	mg/kg-day	8.5E-01
			Total Ingestion								2.5E-05					8.5E-01
			Dermal	C5-C8 Aliphatics	1.3E+02	mg/kg	9.1E-05	mg/kg-day	nv	na	--	2.8E-04	mg/kg-day	4.0E-02	mg/kg-day	7.1E-03
				C9-C12 Aliphatics	2.0E+00	mg/kg	6.9E-07	mg/kg-day	nv	na	--	2.1E-06	mg/kg-day	1.0E-02	mg/kg-day	2.1E-04
				C9-C10 Aromatics	2.0E+00	mg/kg	6.9E-07	mg/kg-day	nv	na	--	2.1E-06	mg/kg-day	3.0E-02	mg/kg-day	7.1E-05
				Ethylbenzene	5.0E-02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	3.3E-01	mg/kg	2.9E-08	mg/kg-day	nv	na	--	9.2E-08	mg/kg-day	4.0E-03	mg/kg-day	2.3E-05
				Naphthalene	1.0E-01	mg/kg	8.9E-09	mg/kg-day	nv	na	--	2.8E-08	mg/kg-day	2.0E-02	mg/kg-day	1.4E-06
				BaP equivalents	4.1E-01	mg/kg	3.7E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	2.7E-07	1.2E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.2E+01	mg/kg	4.1E-06	mg/kg-day	nv	na	--	1.3E-05	mg/kg-day	1.0E-02	mg/kg-day	1.3E-03
				C11-C22 Aromatics	2.6E+02	mg/kg	1.8E-05	mg/kg-day	nv	na	--	5.5E-05	mg/kg-day	3.0E-02	mg/kg-day	1.8E-03
				Pentachlorophenol	2.3E-01	mg/kg	3.9E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.6E-08	1.2E-07	mg/kg-day	5.0E-03	mg/kg-day	2.5E-05
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	3.8E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.0E-06	1.2E-10	mg/kg-day	7.0E-10	mg/kg-day	1.7E-01
			Total Dermal								5.2E-06					1.8E-01
		Total Soil Direct Contact									3.0E-05					1.0E+00
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	9.7E-08	mg/m^3	5.3E-09	mg/m^3	nv	na	--	1.7E-08	mg/m^3	7.0E-01	mg/m3	2.4E-08
				C9-C12 Aliphatics	1.5E-09	mg/m^3	8.0E-11	mg/m^3	nv	na	--	2.5E-10	mg/m^3	1.0E-01	mg/m3	2.5E-09
				C9-C10 Aromatics	1.5E-09	mg/m^3	8.0E-11	mg/m^3	nv	na	--	2.5E-10	mg/m^3	1.0E-01	mg/m3	2.5E-09
				Ethylbenzene	3.7E-11	mg/m^3	2.0E-12	mg/m^3	2.5E-03	(mg/m3)-1	5.0E-15	6.3E-12	mg/m^3	1.0E+00	mg/m3	6.3E-12
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	2.4E-10	mg/m^3	1.3E-11	mg/m^3	nv	na	--	4.1E-11	mg/m^3	nv	na	--
				Naphthalene	7.4E-11	mg/m^3	4.0E-12	mg/m^3	3.4E-02	(mg/m3)-1	1.4E-13	1.3E-11	mg/m^3	3.0E-03	mg/m3	4.2E-09
				BaP equivalents	3.0E-10	mg/m^3	1.7E-11	mg/m^3	1.1E+00	(mg/m3)-1	1.8E-11	5.2E-11	mg/m^3	nv	na	--
				C9-C18 Aliphatics	8.8E-09	mg/m^3	4.8E-10	mg/m^3	nv	na	--	1.5E-09	mg/m^3	1.0E-01	mg/m3	1.5E-08
				C11-C22 Aromatics	1.9E-07	mg/m^3	1.0E-08	mg/m^3	nv	na	--	3.3E-08	mg/m^3	1.0E-01	mg/m3	3.3E-07
				Pentachlorophenol	1.7E-10	mg/m^3	9.3E-12	mg/m^3	5.1E-03	(mg/m3)-1	4.7E-14	2.9E-11	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-12	mg/m^3	7.4E-14	mg/m^3	3.8E+04	(mg/m3)-1	2.8E-09	2.3E-13	mg/m^3	4.0E-08	mg/m3	5.8E-06
		Total Dust Inhalation									2.8E-09					6.2E-06
	Total Soil Direct Contact and Dust Inhalation										3.0E-05					1.0E+00

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parcel B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	7.9E+00	mg/kg	8.1E-07	mg/kg-day	nv	na	--	2.5E-06	mg/kg-day	4.0E-02	mg/kg-day	6.3E-05
(non-ditch)				C9-C12 Aliphatics	9.1E+02	mg/kg	9.3E-05	mg/kg-day	nv	na	--	2.9E-04	mg/kg-day	1.0E-02	mg/kg-day	2.9E-02
				C9-C10 Aromatics	3.7E+02	mg/kg	3.8E-05	mg/kg-day	nv	na	--	1.2E-04	mg/kg-day	3.0E-02	mg/kg-day	4.0E-03
				Ethylbenzene	4.6E-02	mg/kg	4.7E-09	mg/kg-day	1.1E-02	(mg/kg-day)-1	5.2E-11	1.5E-08	mg/kg-day	1.0E-01	mg/kg-day	1.5E-07
				1-Methylnaphthalene	3.4E+00	mg/kg	3.5E-07	mg/kg-day	2.9E-02	(mg/kg-day)-1	1.0E-08	1.1E-06	mg/kg-day	7.0E-02	mg/kg-day	1.6E-05
				2-Methylnaphthalene	2.0E+00	mg/kg	2.1E-07	mg/kg-day	nv	na	--	6.5E-07	mg/kg-day	4.0E-03	mg/kg-day	1.6E-04
				Naphthalene	4.9E-01	mg/kg	5.0E-08	mg/kg-day	nv	na	--	1.6E-07	mg/kg-day	2.0E-02	mg/kg-day	7.8E-06
				BaP equivalents	6.1E-01	mg/kg	6.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	4.6E-07	2.0E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.8E+03	mg/kg	1.9E-04	mg/kg-day	nv	na	--	5.8E-04	mg/kg-day	1.0E-02	mg/kg-day	5.8E-02
				C11-C22 Aromatics	6.1E+03	mg/kg	6.3E-04	mg/kg-day	nv	na	--	2.0E-03	mg/kg-day	3.0E-02	mg/kg-day	6.6E-02
				Pentachlorophenol	3.4E+03	mg/kg	3.5E-04	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.4E-04	1.1E-03	mg/kg-day	5.0E-03	mg/kg-day	2.2E-01
				TEQ (ND=1/2DL)	3.8E-03	mg/kg	3.9E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.0E-05	1.2E-09	mg/kg-day	7.0E-10	mg/kg-day	1.7E+00
			Total Ingestion								1.9E-04					2.1E+00
			Dermal	C5-C8 Aliphatics	7.9E+00	mg/kg	5.4E-06	mg/kg-day	nv	na	--	1.7E-05	mg/kg-day	4.0E-02	mg/kg-day	4.2E-04
				C9-C12 Aliphatics	9.1E+02	mg/kg	3.1E-04	mg/kg-day	nv	na	--	9.7E-04	mg/kg-day	1.0E-02	mg/kg-day	9.7E-02
				C9-C10 Aromatics	3.7E+02	mg/kg	1.3E-04	mg/kg-day	nv	na	--	4.0E-04	mg/kg-day	3.0E-02	mg/kg-day	1.3E-02
				Ethylbenzene	4.6E-02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	3.4E+00	mg/kg	3.0E-07	mg/kg-day	2.9E-02	(mg/kg-day)-1	8.8E-09	9.5E-07	mg/kg-day	7.0E-02	mg/kg-day	1.4E-05
				2-Methylnaphthalene	2.0E+00	mg/kg	1.8E-07	mg/kg-day	nv	na	--	5.6E-07	mg/kg-day	4.0E-03	mg/kg-day	1.4E-04
				Naphthalene	4.9E-01	mg/kg	4.4E-08	mg/kg-day	nv	na	--	1.4E-07	mg/kg-day	2.0E-02	mg/kg-day	6.8E-06
				BaP equivalents	6.1E-01	mg/kg	5.5E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	4.0E-07	1.7E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.8E+03	mg/kg	6.2E-04	mg/kg-day	nv	na	--	1.9E-03	mg/kg-day	1.0E-02	mg/kg-day	1.9E-01
				C11-C22 Aromatics	6.1E+03	mg/kg	4.2E-04	mg/kg-day	nv	na	--	1.3E-03	mg/kg-day	3.0E-02	mg/kg-day	4.4E-02
				Pentachlorophenol	3.4E+03	mg/kg	5.8E-04	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.3E-04	1.8E-03	mg/kg-day	5.0E-03	mg/kg-day	3.6E-01
				TEQ (ND=1/2DL)	3.8E-03	mg/kg	7.8E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.0E-05	2.4E-10	mg/kg-day	7.0E-10	mg/kg-day	3.5E-01
			Total Dermal								2.4E-04					1.1E+00
		Total Soil Direct Contact									4.3E-04					3.2E+00
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	5.8E-09	mg/m^3	3.2E-10	mg/m^3	nv	na	--	9.9E-10	mg/m^3	7.0E-01	mg/m3	1.4E-09
				C9-C12 Aliphatics	6.7E-07	mg/m^3	3.7E-08	mg/m^3	nv	na	--	1.1E-07	mg/m^3	1.0E-01	mg/m3	1.1E-06
				C9-C10 Aromatics	2.7E-07	mg/m^3	1.5E-08	mg/m^3	nv	na	--	4.7E-08	mg/m^3	1.0E-01	mg/m3	4.7E-07
				Ethylbenzene	3.4E-11	mg/m^3	1.9E-12	mg/m^3	2.5E-03	(mg/m3)-1	4.6E-15	5.8E-12	mg/m^3	1.0E+00	mg/m3	5.8E-12
				1-Methylnaphthalene	2.5E-09	mg/m^3	1.4E-10	mg/m^3	nv	na	--	4.3E-10	mg/m^3	nv	na	--
				2-Methylnaphthalene	1.5E-09	mg/m^3	8.1E-11	mg/m^3	nv	na	--	2.5E-10	mg/m^3	nv	na	--
				Naphthalene	3.6E-10	mg/m^3	2.0E-11	mg/m^3	3.4E-02	(mg/m3)-1	6.7E-13	6.2E-11	mg/m^3	3.0E-03	mg/m3	2.1E-08
				BaP equivalents	4.5E-10	mg/m^3	2.5E-11	mg/m^3	1.1E+00	(mg/m3)-1	2.7E-11	7.7E-11	mg/m^3	nv	na	--
				C9-C18 Aliphatics	1.3E-06	mg/m^3	7.3E-08	mg/m^3	nv	na	--	2.3E-07	mg/m^3	1.0E-01	mg/m3	2.3E-06
				C11-C22 Aromatics	4.5E-06	mg/m^3	2.5E-07	mg/m^3	nv	na	--	7.7E-07	mg/m^3	1.0E-01	mg/m3	7.7E-06
				Pentachlorophenol	2.5E-06	mg/m^3	1.4E-07	mg/m^3	5.1E-03	(mg/m3)-1	6.9E-10	4.2E-07	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.8E-12	mg/m^3	1.5E-13	mg/m^3	3.8E+04	(mg/m3)-1	5.8E-09	4.7E-13	mg/m^3	4.0E-08	mg/m3	1.2E-05
		Total Dust Inhalation									6.5E-09					2.3E-05
	Total Soil Direct Contact and Dust Inhalation										4.3E-04					3.2E+00

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Spigot Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	5.1E-02	mg/kg	5.2E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.1E-09	1.6E-08	mg/kg-day	5.0E-03	mg/kg-day	3.3E-06
				TEQ (ND=1/2DL)	1.0E-04	mg/kg	1.0E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.3E-06	3.2E-11	mg/kg-day	7.0E-10	mg/kg-day	4.6E-02
			Total Ingestion								1.3E-06					4.6E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	5.1E-02	mg/kg	8.8E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.5E-09	2.7E-08	mg/kg-day	5.0E-03	mg/kg-day	5.5E-06
				TEQ (ND=1/2DL)	1.0E-04	mg/kg	2.1E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.7E-07	6.4E-12	mg/kg-day	7.0E-10	mg/kg-day	9.2E-03
			Total Dermal								2.7E-07					9.2E-03
		Total Soil Direct Contact									1.6E-06					5.5E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	3.8E-11	mg/m^3	2.1E-12	mg/m^3	5.1E-03	(mg/m3)-1	1.0E-14	6.4E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.4E-14	mg/m^3	4.0E-15	mg/m^3	3.8E+04	(mg/m3)-1	1.5E-10	1.3E-14	mg/m^3	4.0E-08	mg/m3	3.1E-07
		Total Dust Inhalation									1.5E-10					3.1E-07
	Total Soil Direct Contact and Dust Inhalation										1.6E-06					5.5E-02

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Cassell Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.3E+00	mg/kg	1.2E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.7E-08	3.7E-07	mg/kg-day	5.0E-03	mg/kg-day	7.4E-05
				TEQ (ND=1/2DL)	1.5E-03	mg/kg	7.7E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.0E-05	2.4E-10	mg/kg-day	7.0E-10	mg/kg-day	3.4E-01
			Total Ingestion								1.0E-05					3.4E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.3E+00	mg/kg	2.0E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.9E-08	6.2E-07	mg/kg-day	5.0E-03	mg/kg-day	1.2E-04
				TEQ (ND=1/2DL)	1.5E-03	mg/kg	1.5E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.0E-06	4.8E-11	mg/kg-day	7.0E-10	mg/kg-day	6.9E-02
			Total Dermal								2.1E-06					6.9E-02
		Total Soil Direct Contact									1.2E-05					4.1E-01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.7E-09	mg/m^3	4.7E-11	mg/m^3	5.1E-03	(mg/m3)-1	2.4E-13	1.5E-10	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.1E-12	mg/m^3	3.0E-14	mg/m^3	3.8E+04	(mg/m3)-1	1.1E-09	9.4E-14	mg/m^3	4.0E-08	mg/m3	2.3E-06
		Total Dust Inhalation									1.1E-09					2.3E-06
	Total Soil Direct Contact and Dust Inhalation										1.2E-05					4.1E-01

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parmenter Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	4.4E-03	mg/kg	2.3E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.1E-11	7.1E-10	mg/kg-day	5.0E-03	mg/kg-day	1.4E-07
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	9.6E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.2E-07	3.0E-12	mg/kg-day	7.0E-10	mg/kg-day	4.3E-03
			Total Ingestion								1.2E-07					4.3E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	4.4E-03	mg/kg	3.8E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.5E-10	1.2E-09	mg/kg-day	5.0E-03	mg/kg-day	2.4E-07
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	1.9E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.5E-08	6.0E-13	mg/kg-day	7.0E-10	mg/kg-day	8.6E-04
			Total Dermal								2.5E-08					8.6E-04
		Total Soil Direct Contact									1.5E-07					5.1E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	3.2E-12	mg/m^3	8.9E-14	mg/m^3	5.1E-03	(mg/m3)-1	4.5E-16	2.8E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-14	mg/m^3	3.8E-16	mg/m^3	3.8E+04	(mg/m3)-1	1.4E-11	1.2E-15	mg/m^3	4.0E-08	mg/m3	2.9E-08
		Total Dust Inhalation									1.4E-11					2.9E-08
	Total Soil Direct Contact and Dust Inhalation										1.5E-07					5.1E-03

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Skroch Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.2E-01	mg/kg	6.2E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.5E-09	1.9E-08	mg/kg-day	5.0E-03	mg/kg-day	3.9E-06
				TEQ (ND=1/2DL)	3.0E-04	mg/kg	1.5E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.0E-06	4.8E-11	mg/kg-day	7.0E-10	mg/kg-day	6.9E-02
			Total Ingestion								2.0E-06					6.9E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.2E-01	mg/kg	1.0E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.1E-09	3.2E-08	mg/kg-day	5.0E-03	mg/kg-day	6.5E-06
				TEQ (ND=1/2DL)	3.0E-04	mg/kg	3.1E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.0E-07	9.7E-12	mg/kg-day	7.0E-10	mg/kg-day	1.4E-02
			Total Dermal								4.1E-07					1.4E-02
		Total Soil Direct Contact									2.4E-06					8.3E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	8.8E-11	mg/m^3	2.4E-12	mg/m^3	5.1E-03	(mg/m3)-1	1.2E-14	7.6E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.2E-13	mg/m^3	6.1E-15	mg/m^3	3.8E+04	(mg/m3)-1	2.3E-10	1.9E-14	mg/m^3	4.0E-08	mg/m3	4.7E-07
		Total Dust Inhalation									2.3E-10					4.7E-07
	Total Soil Direct Contact and Dust Inhalation										2.4E-06					8.3E-02

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Chaney Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-04	mg/kg	2.3E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.2E-12	7.2E-11	mg/kg-day	5.0E-03	mg/kg-day	1.4E-08
				TEQ (ND=1/2DL)	1.0E-05	mg/kg	1.0E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.3E-07	3.2E-12	mg/kg-day	7.0E-10	mg/kg-day	4.6E-03
			Total Ingestion								1.3E-07					4.6E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-04	mg/kg	3.8E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.5E-11	1.2E-10	mg/kg-day	5.0E-03	mg/kg-day	2.4E-08
				TEQ (ND=1/2DL)	1.0E-05	mg/kg	2.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.7E-08	6.4E-13	mg/kg-day	7.0E-10	mg/kg-day	9.2E-04
			Total Dermal								2.7E-08					9.2E-04
		Total Soil Direct Contact									1.6E-07					5.5E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.6E-13	mg/m^3	9.0E-15	mg/m^3	5.1E-03	(mg/m3)-1	4.6E-17	2.8E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.3E-15	mg/m^3	4.0E-16	mg/m^3	3.8E+04	(mg/m3)-1	1.5E-11	1.3E-15	mg/m^3	4.0E-08	mg/m3	3.1E-08
		Total Dust Inhalation									1.5E-11					3.1E-08
	Total Soil Direct Contact and Dust Inhalation										1.6E-07					5.5E-03

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Tract B Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-03	mg/kg	8.6E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.1E-05	2.7E-10	mg/kg-day	7.0E-10	mg/kg-day	3.8E-01
			Total Ingestion								1.1E-05					3.8E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-03	mg/kg	1.7E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.3E-06	5.4E-11	mg/kg-day	7.0E-10	mg/kg-day	7.7E-02
			Total Dermal								2.3E-06					7.7E-02
		Total Soil Direct Contact									1.3E-05					4.6E-01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.2E-12	mg/m^3	3.4E-14	mg/m^3	3.8E+04	(mg/m3)-1	1.3E-09	1.1E-13	mg/m^3	4.0E-08	mg/m3	2.6E-06
		Total Dust Inhalation									1.3E-09					2.6E-06
	Total Soil Direct Contact and Dust Inhalation										1.3E-05					4.6E-01

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Renfroe Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-05	mg/kg	1.8E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.3E-07	5.5E-12	mg/kg-day	7.0E-10	mg/kg-day	7.8E-03
			Total Ingestion								2.3E-07					7.8E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-05	mg/kg	3.5E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.6E-08	1.1E-12	mg/kg-day	7.0E-10	mg/kg-day	1.6E-03
			Total Dermal								4.6E-08					1.6E-03
		Total Soil Direct Contact									2.7E-07					9.4E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.3E-14	mg/m^3	6.9E-16	mg/m^3	3.8E+04	(mg/m3)-1	2.6E-11	2.2E-15	mg/m^3	4.0E-08	mg/m3	5.4E-08
		Total Dust Inhalation									2.6E-11					5.4E-08
	Total Soil Direct Contact and Dust Inhalation										2.7E-07					9.4E-03

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
3WT Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	2.1E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.7E-07	6.6E-12	mg/kg-day	7.0E-10	mg/kg-day	9.4E-03
			Total Ingestion								2.7E-07					9.4E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	4.2E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.5E-08	1.3E-12	mg/kg-day	7.0E-10	mg/kg-day	1.9E-03
			Total Dermal								5.5E-08					1.9E-03
		Total Soil Direct Contact									3.3E-07					1.1E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.5E-14	mg/m^3	8.2E-16	mg/m^3	3.8E+04	(mg/m3)-1	3.1E-11	2.6E-15	mg/m^3	4.0E-08	mg/m3	6.4E-08
		Total Dust Inhalation									3.1E-11					6.4E-08
	Total Soil Direct Contact and Dust Inhalation										3.3E-07					1.1E-02

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Milton Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.5E-02	mg/kg	1.6E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.2E-10	4.8E-09	mg/kg-day	5.0E-03	mg/kg-day	9.7E-07
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	3.5E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.5E-07	1.1E-11	mg/kg-day	7.0E-10	mg/kg-day	1.6E-02
			Total Ingestion								4.5E-07					1.6E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.5E-02	mg/kg	2.6E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.0E-09	8.1E-09	mg/kg-day	5.0E-03	mg/kg-day	1.6E-06
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	7.0E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	9.1E-08	2.2E-12	mg/kg-day	7.0E-10	mg/kg-day	3.1E-03
			Total Dermal								9.2E-08					3.1E-03
		Total Soil Direct Contact									5.5E-07					1.9E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.1E-11	mg/m^3	6.1E-13	mg/m^3	5.1E-03	(mg/m3)-1	3.1E-15	1.9E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.5E-14	mg/m^3	1.4E-15	mg/m^3	3.8E+04	(mg/m3)-1	5.2E-11	4.3E-15	mg/m^3	4.0E-08	mg/m3	1.1E-07
		Total Dust Inhalation									5.2E-11					1.1E-07
	Total Soil Direct Contact and Dust Inhalation										5.5E-07					1.9E-02

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Parcel B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.0E-02	mg/kg	3.1E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.2E-09	9.7E-09	mg/kg-day	5.0E-03	mg/kg-day	1.9E-06
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	9.9E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.3E-05	3.1E-10	mg/kg-day	7.0E-10	mg/kg-day	4.4E-01
			Total Ingestion								1.3E-05					4.4E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.0E-02	mg/kg	5.2E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.1E-09	1.6E-08	mg/kg-day	5.0E-03	mg/kg-day	3.2E-06
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	2.0E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.6E-06	6.2E-11	mg/kg-day	7.0E-10	mg/kg-day	8.9E-02
			Total Dermal								2.6E-06					8.9E-02
		Total Soil Direct Contact									1.5E-05					5.3E-01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	4.4E-11	mg/m^3	1.2E-12	mg/m^3	5.1E-03	(mg/m3)-1	6.2E-15	3.8E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-12	mg/m^3	3.9E-14	mg/m^3	3.8E+04	(mg/m3)-1	1.5E-09	1.2E-13	mg/m^3	4.0E-08	mg/m3	3.0E-06
		Total Dust Inhalation									1.5E-09					3.0E-06
	Total Soil Direct Contact and Dust Inhalation										1.5E-05					5.3E-01

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Tract A Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.5E-04	mg/kg	1.8E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.3E-12	5.7E-11	mg/kg-day	5.0E-03	mg/kg-day	1.1E-08
				TEQ (ND=1/2DL)	1.8E-03	mg/kg	9.2E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.2E-05	2.9E-10	mg/kg-day	7.0E-10	mg/kg-day	4.1E-01
			Total Ingestion								1.2E-05					4.1E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.5E-04	mg/kg	3.0E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.2E-11	9.5E-11	mg/kg-day	5.0E-03	mg/kg-day	1.9E-08
				TEQ (ND=1/2DL)	1.8E-03	mg/kg	1.8E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.4E-06	5.8E-11	mg/kg-day	7.0E-10	mg/kg-day	8.2E-02
			Total Dermal								2.4E-06					8.2E-02
		Total Soil Direct Contact									1.4E-05					4.9E-01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.6E-13	mg/m^3	7.1E-15	mg/m^3	5.1E-03	(mg/m3)-1	3.6E-17	2.2E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.3E-12	mg/m^3	3.6E-14	mg/m^3	3.8E+04	(mg/m3)-1	1.4E-09	1.1E-13	mg/m^3	4.0E-08	mg/m3	2.8E-06
		Total Dust Inhalation									1.4E-09					2.8E-06
	Total Soil Direct Contact and Dust Inhalation										1.4E-05					4.9E-01

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Robak Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-03	mg/kg	9.9E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.9E-10	3.1E-09	mg/kg-day	5.0E-03	mg/kg-day	6.2E-07
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	3.5E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.5E-07	1.1E-11	mg/kg-day	7.0E-10	mg/kg-day	1.6E-02
			Total Ingestion								4.5E-07					1.6E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-03	mg/kg	1.6E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.6E-10	5.1E-09	mg/kg-day	5.0E-03	mg/kg-day	1.0E-06
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	7.0E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	9.1E-08	2.2E-12	mg/kg-day	7.0E-10	mg/kg-day	3.1E-03
			Total Dermal								9.2E-08					3.1E-03
		Total Soil Direct Contact									5.5E-07					1.9E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	7.1E-12	mg/m^3	3.9E-13	mg/m^3	5.1E-03	(mg/m3)-1	2.0E-15	1.2E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.5E-14	mg/m^3	1.4E-15	mg/m^3	3.8E+04	(mg/m3)-1	5.2E-11	4.3E-15	mg/m^3	4.0E-08	mg/m3	1.1E-07
		Total Dust Inhalation									5.2E-11					1.1E-07
	Total Soil Direct Contact and Dust Inhalation										5.5E-07					1.9E-02

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Smith Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.1E-05	mg/kg	2.1E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.8E-07	6.7E-12	mg/kg-day	7.0E-10	mg/kg-day	9.5E-03
			Total Ingestion								2.8E-07					9.5E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.1E-05	mg/kg	4.3E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.6E-08	1.3E-12	mg/kg-day	7.0E-10	mg/kg-day	1.9E-03
			Total Dermal								5.6E-08					1.9E-03
		Total Soil Direct Contact									3.3E-07					1.1E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.5E-14	mg/m^3	8.4E-16	mg/m^3	3.8E+04	(mg/m3)-1	3.2E-11	2.6E-15	mg/m^3	4.0E-08	mg/m3	6.5E-08
		Total Dust Inhalation									3.2E-11					6.5E-08
	Total Soil Direct Contact and Dust Inhalation										3.3E-07					1.1E-02

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Stevenson Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.8E-04	mg/kg	7.0E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.8E-11	2.2E-10	mg/kg-day	5.0E-03	mg/kg-day	4.4E-08
				TEQ (ND=1/2DL)	7.6E-06	mg/kg	7.8E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.0E-07	2.4E-12	mg/kg-day	7.0E-10	mg/kg-day	3.5E-03
			Total Ingestion								1.0E-07					3.5E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.8E-04	mg/kg	1.2E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.7E-11	3.7E-10	mg/kg-day	5.0E-03	mg/kg-day	7.3E-08
				TEQ (ND=1/2DL)	7.6E-06	mg/kg	1.6E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.0E-08	4.9E-13	mg/kg-day	7.0E-10	mg/kg-day	6.9E-04
			Total Dermal								2.0E-08					6.9E-04
		Total Soil Direct Contact									1.2E-07					4.2E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	5.0E-13	mg/m^3	2.7E-14	mg/m^3	5.1E-03	(mg/m3)-1	1.4E-16	8.6E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	5.6E-15	mg/m^3	3.0E-16	mg/m^3	3.8E+04	(mg/m3)-1	1.2E-11	9.5E-16	mg/m^3	4.0E-08	mg/m3	2.4E-08
		Total Dust Inhalation									1.2E-11					2.4E-08
	Total Soil Direct Contact and Dust Inhalation										1.2E-07					4.2E-03

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Vintage Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	4.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.3E-08	1.3E-12	mg/kg-day	7.0E-10	mg/kg-day	1.8E-03
			Total Ingestion								5.3E-08					1.8E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	8.2E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.1E-08	2.6E-13	mg/kg-day	7.0E-10	mg/kg-day	3.7E-04
			Total Dermal								1.1E-08					3.7E-04
		Total Soil Direct Contact									6.4E-08					2.2E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.9E-15	mg/m^3	1.6E-16	mg/m^3	3.8E+04	(mg/m3)-1	6.1E-12	5.0E-16	mg/m^3	4.0E-08	mg/m3	1.2E-08
		Total Dust Inhalation									6.1E-12					1.2E-08
	Total Soil Direct Contact and Dust Inhalation										6.4E-08					2.2E-03

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Right-of-Way Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.8E+01	mg/kg	3.9E-06	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.6E-06	1.2E-05	mg/kg-day	5.0E-03	mg/kg-day	2.4E-03
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Ingestion								1.6E-06					2.4E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.8E+01	mg/kg	6.5E-06	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.6E-06	2.0E-05	mg/kg-day	5.0E-03	mg/kg-day	4.1E-03
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Dermal								2.6E-06					4.1E-03
		Total Soil Direct Contact									4.2E-06					6.5E-03

TABLE D7.4 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.8E-08	mg/m^3	1.5E-09	mg/m^3	5.1E-03	(mg/m3)-1	7.8E-12	4.8E-09	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	--	mg/m^3	--	mg/m^3	3.8E+04	(mg/m3)-1	--	--	mg/m^3	4.0E-08	mg/m3	--
		Total Dust Inhalation									7.8E-12					--
	Total Soil Direct Contact and Dust Inhalation										4.2E-06					6.5E-03

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

BaP = benzo(a)pyrene

CSF = cancer slope factor

CT = central tendency

EPC = exposure point concentration

na = not applicable

nv = no value

RfC = inhalation reference dose

RfD = oral reference dose

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parcel A Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	1.3E+02	mg/kg	1.6E-06	mg/kg-day	nv	na	--	1.7E-05	mg/kg-day	4.0E-02	mg/kg-day	4.2E-04
(non-ditch)				C9-C12 Aliphatics	2.0E+00	mg/kg	2.4E-08	mg/kg-day	nv	na	--	2.6E-07	mg/kg-day	1.0E-02	mg/kg-day	2.6E-05
				C9-C10 Aromatics	2.0E+00	mg/kg	2.4E-08	mg/kg-day	nv	na	--	2.6E-07	mg/kg-day	3.0E-02	mg/kg-day	8.5E-06
				Ethylbenzene	5.0E-02	mg/kg	5.9E-10	mg/kg-day	1.1E-02	(mg/kg-day)-1	6.5E-12	6.4E-09	mg/kg-day	1.0E-01	mg/kg-day	6.4E-08
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	3.3E-01	mg/kg	3.9E-09	mg/kg-day	nv	na	--	4.2E-08	mg/kg-day	4.0E-03	mg/kg-day	1.1E-05
				Naphthalene	1.0E-01	mg/kg	1.2E-09	mg/kg-day	nv	na	--	1.3E-08	mg/kg-day	2.0E-02	mg/kg-day	6.4E-07
				BaP equivalents	4.1E-01	mg/kg	4.9E-09	mg/kg-day	7.3E+00	(mg/kg-day)-1	3.6E-08	5.3E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.2E+01	mg/kg	1.4E-07	mg/kg-day	nv	na	--	1.5E-06	mg/kg-day	1.0E-02	mg/kg-day	1.5E-04
				C11-C22 Aromatics	2.6E+02	mg/kg	3.1E-06	mg/kg-day	nv	na	--	3.3E-05	mg/kg-day	3.0E-02	mg/kg-day	1.1E-03
				Pentachlorophenol	4.7E-02	mg/kg	5.6E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.2E-10	6.0E-09	mg/kg-day	5.0E-03	mg/kg-day	1.2E-06
				TEQ (ND=1/2DL)	1.9E-04	mg/kg	2.2E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.9E-07	2.4E-11	mg/kg-day	7.0E-10	mg/kg-day	3.5E-02
			Total Ingestion								3.3E-07					3.6E-02
			Dermal	C5-C8 Aliphatics	1.3E+02	mg/kg	2.6E-05	mg/kg-day	nv	na	--	2.8E-04	mg/kg-day	4.0E-02	mg/kg-day	7.1E-03
				C9-C12 Aliphatics	2.0E+00	mg/kg	2.0E-07	mg/kg-day	nv	na	--	2.1E-06	mg/kg-day	1.0E-02	mg/kg-day	2.1E-04
				C9-C10 Aromatics	2.0E+00	mg/kg	2.0E-07	mg/kg-day	nv	na	--	2.1E-06	mg/kg-day	3.0E-02	mg/kg-day	7.1E-05
				Ethylbenzene	5.0E-02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	3.3E-01	mg/kg	8.5E-09	mg/kg-day	nv	na	--	9.2E-08	mg/kg-day	4.0E-03	mg/kg-day	2.3E-05
				Naphthalene	1.0E-01	mg/kg	2.6E-09	mg/kg-day	nv	na	--	2.8E-08	mg/kg-day	2.0E-02	mg/kg-day	1.4E-06
				BaP equivalents	4.1E-01	mg/kg	1.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	7.8E-08	1.2E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.2E+01	mg/kg	1.2E-06	mg/kg-day	nv	na	--	1.3E-05	mg/kg-day	1.0E-02	mg/kg-day	1.3E-03
				C11-C22 Aromatics	2.6E+02	mg/kg	5.1E-06	mg/kg-day	nv	na	--	5.5E-05	mg/kg-day	3.0E-02	mg/kg-day	1.8E-03
				Pentachlorophenol	4.7E-02	mg/kg	2.3E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.3E-10	2.5E-08	mg/kg-day	5.0E-03	mg/kg-day	5.0E-06
				TEQ (ND=1/2DL)	1.9E-04	mg/kg	1.1E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.5E-07	1.2E-11	mg/kg-day	7.0E-10	mg/kg-day	1.7E-02
			Total Dermal								2.2E-07					2.8E-02
		Total Soil Direct Contact									5.5E-07					6.4E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	9.7E-08	mg/m^3	1.5E-09	mg/m^3	nv	na	--	1.7E-08	mg/m^3	7.0E-01	mg/m3	2.4E-08
				C9-C12 Aliphatics	1.5E-09	mg/m^3	2.3E-11	mg/m^3	nv	na	--	2.5E-10	mg/m^3	1.0E-01	mg/m3	2.5E-09
				C9-C10 Aromatics	1.5E-09	mg/m^3	2.3E-11	mg/m^3	nv	na	--	2.5E-10	mg/m^3	1.0E-01	mg/m3	2.5E-09
				Ethylbenzene	3.7E-11	mg/m^3	5.8E-13	mg/m^3	2.5E-03	(mg/m3)-1	1.4E-15	6.3E-12	mg/m^3	1.0E+00	mg/m3	6.3E-12
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	2.4E-10	mg/m^3	3.8E-12	mg/m^3	nv	na	--	4.1E-11	mg/m^3	nv	na	--
				Naphthalene	7.4E-11	mg/m^3	1.2E-12	mg/m^3	3.4E-02	(mg/m3)-1	3.9E-14	1.3E-11	mg/m^3	3.0E-03	mg/m3	4.2E-09
				BaP equivalents	3.0E-10	mg/m^3	4.8E-12	mg/m^3	1.1E+00	(mg/m3)-1	5.3E-12	5.2E-11	mg/m^3	nv	na	--
				C9-C18 Aliphatics	8.8E-09	mg/m^3	1.4E-10	mg/m^3	nv	na	--	1.5E-09	mg/m^3	1.0E-01	mg/m3	1.5E-08
				C11-C22 Aromatics	1.9E-07	mg/m^3	3.0E-09	mg/m^3	nv	na	--	3.3E-08	mg/m^3	1.0E-01	mg/m3	3.3E-07
				Pentachlorophenol	3.5E-11	mg/m^3	5.5E-13	mg/m^3	5.1E-03	(mg/m3)-1	2.8E-15	5.9E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-13	mg/m^3	2.2E-15	mg/m^3	3.8E+04	(mg/m3)-1	8.3E-11	2.4E-14	mg/m^3	4.0E-08	mg/m3	6.0E-07
		Total Dust Inhalation									8.9E-11					9.7E-07
	Total Soil Direct Contact and Dust Inhalation										5.5E-07					6.4E-02

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parcel B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	5.6E+00	mg/kg	6.6E-08	mg/kg-day	nv	na	--	7.1E-07	mg/kg-day	4.0E-02	mg/kg-day	1.8E-05
(non-ditch)				C9-C12 Aliphatics	2.4E+02	mg/kg	2.8E-06	mg/kg-day	nv	na	--	3.0E-05	mg/kg-day	1.0E-02	mg/kg-day	3.0E-03
				C9-C10 Aromatics	9.2E+01	mg/kg	1.1E-06	mg/kg-day	nv	na	--	1.2E-05	mg/kg-day	3.0E-02	mg/kg-day	3.9E-04
				Ethylbenzene	4.6E-02	mg/kg	5.4E-10	mg/kg-day	1.1E-02	(mg/kg-day)-1	6.0E-12	5.9E-09	mg/kg-day	1.0E-01	mg/kg-day	5.9E-08
				1-Methylnaphthalene	3.4E+00	mg/kg	4.0E-08	mg/kg-day	2.9E-02	(mg/kg-day)-1	1.2E-09	4.4E-07	mg/kg-day	7.0E-02	mg/kg-day	6.2E-06
				2-Methylnaphthalene	4.8E-01	mg/kg	5.7E-09	mg/kg-day	nv	na	--	6.2E-08	mg/kg-day	4.0E-03	mg/kg-day	1.5E-05
				Naphthalene	9.3E-02	mg/kg	1.1E-09	mg/kg-day	nv	na	--	1.2E-08	mg/kg-day	2.0E-02	mg/kg-day	5.9E-07
				BaP equivalents	3.0E-01	mg/kg	3.5E-09	mg/kg-day	7.3E+00	(mg/kg-day)-1	2.6E-08	3.8E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	6.8E+02	mg/kg	8.0E-06	mg/kg-day	nv	na	--	8.7E-05	mg/kg-day	1.0E-02	mg/kg-day	8.7E-03
				C11-C22 Aromatics	8.3E+02	mg/kg	9.8E-06	mg/kg-day	nv	na	--	1.1E-04	mg/kg-day	3.0E-02	mg/kg-day	3.5E-03
				Pentachlorophenol	5.7E+02	mg/kg	6.8E-06	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.7E-06	7.4E-05	mg/kg-day	5.0E-03	mg/kg-day	1.5E-02
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	1.3E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.7E-06	1.4E-10	mg/kg-day	7.0E-10	mg/kg-day	2.1E-01
			Total Ingestion								4.5E-06					2.4E-01
			Dermal	C5-C8 Aliphatics	5.6E+00	mg/kg	1.1E-06	mg/kg-day	nv	na	--	1.2E-05	mg/kg-day	4.0E-02	mg/kg-day	3.0E-04
				C9-C12 Aliphatics	2.4E+02	mg/kg	2.3E-05	mg/kg-day	nv	na	--	2.5E-04	mg/kg-day	1.0E-02	mg/kg-day	2.5E-02
				C9-C10 Aromatics	9.2E+01	mg/kg	9.1E-06	mg/kg-day	nv	na	--	9.9E-05	mg/kg-day	3.0E-02	mg/kg-day	3.3E-03
				Ethylbenzene	4.6E-02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	3.4E+00	mg/kg	8.7E-08	mg/kg-day	2.9E-02	(mg/kg-day)-1	2.5E-09	9.5E-07	mg/kg-day	7.0E-02	mg/kg-day	1.4E-05
				2-Methylnaphthalene	4.8E-01	mg/kg	1.2E-08	mg/kg-day	nv	na	--	1.3E-07	mg/kg-day	4.0E-03	mg/kg-day	3.4E-05
				Naphthalene	9.3E-02	mg/kg	2.4E-09	mg/kg-day	nv	na	--	2.6E-08	mg/kg-day	2.0E-02	mg/kg-day	1.3E-06
				BaP equivalents	3.0E-01	mg/kg	7.6E-09	mg/kg-day	7.3E+00	(mg/kg-day)-1	5.6E-08	8.2E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	6.8E+02	mg/kg	6.7E-05	mg/kg-day	nv	na	--	7.3E-04	mg/kg-day	1.0E-02	mg/kg-day	7.3E-02
				C11-C22 Aromatics	8.3E+02	mg/kg	1.6E-05	mg/kg-day	nv	na	--	1.8E-04	mg/kg-day	3.0E-02	mg/kg-day	5.9E-03
				Pentachlorophenol	5.7E+02	mg/kg	2.8E-05	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.1E-05	3.1E-04	mg/kg-day	5.0E-03	mg/kg-day	6.1E-02
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	6.7E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.7E-07	7.3E-11	mg/kg-day	7.0E-10	mg/kg-day	1.0E-01
			Total Dermal								1.2E-05					2.7E-01
		Total Soil Direct Contact									1.7E-05					5.1E-01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	4.1E-09	mg/m^3	6.4E-11	mg/m^3	nv	na	--	7.0E-10	mg/m^3	7.0E-01	mg/m3	1.0E-09
				C9-C12 Aliphatics	1.7E-07	mg/m^3	2.7E-09	mg/m^3	nv	na	--	3.0E-08	mg/m^3	1.0E-01	mg/m3	3.0E-07
				C9-C10 Aromatics	6.8E-08	mg/m^3	1.1E-09	mg/m^3	nv	na	--	1.2E-08	mg/m^3	1.0E-01	mg/m3	1.2E-07
				Ethylbenzene	3.4E-11	mg/m^3	5.3E-13	mg/m^3	2.5E-03	(mg/m3)-1	1.3E-15	5.8E-12	mg/m^3	1.0E+00	mg/m3	5.8E-12
				1-Methylnaphthalene	2.5E-09	mg/m^3	3.9E-11	mg/m^3	nv	na	--	4.3E-10	mg/m^3	nv	na	--
				2-Methylnaphthalene	3.6E-10	mg/m^3	5.6E-12	mg/m^3	nv	na	--	6.1E-11	mg/m^3	nv	na	--
				Naphthalene	6.8E-11	mg/m^3	1.1E-12	mg/m^3	3.4E-02	(mg/m3)-1	3.6E-14	1.2E-11	mg/m^3	3.0E-03	mg/m3	3.9E-09
				BaP equivalents	2.2E-10	mg/m^3	3.4E-12	mg/m^3	1.1E+00	(mg/m3)-1	3.8E-12	3.7E-11	mg/m^3	nv	na	--
				C9-C18 Aliphatics	5.0E-07	mg/m^3	7.9E-09	mg/m^3	nv	na	--	8.5E-08	mg/m^3	1.0E-01	mg/m3	8.5E-07
				C11-C22 Aromatics	6.1E-07	mg/m^3	9.6E-09	mg/m^3	nv	na	--	1.0E-07	mg/m^3	1.0E-01	mg/m3	1.0E-06
				Pentachlorophenol	4.2E-07	mg/m^3	6.7E-09	mg/m^3	5.1E-03	(mg/m3)-1	3.4E-11	7.2E-08	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	8.3E-13	mg/m^3	1.3E-14	mg/m^3	3.8E+04	(mg/m3)-1	5.0E-10	1.4E-13	mg/m^3	4.0E-08	mg/m3	3.5E-06
		Total Dust Inhalation									5.4E-10					5.9E-06
	Total Soil Direct Contact and Dust Inhalation										1.7E-05					5.1E-01

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Spigot Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.1E-02	mg/kg	3.7E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.5E-10	4.0E-09	mg/kg-day	5.0E-03	mg/kg-day	8.0E-07
				TEQ (ND=1/2DL)	5.3E-05	mg/kg	6.2E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.1E-08	6.8E-12	mg/kg-day	7.0E-10	mg/kg-day	9.7E-03
			Total Ingestion								8.1E-08					9.7E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.1E-02	mg/kg	1.6E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.2E-10	1.7E-08	mg/kg-day	5.0E-03	mg/kg-day	3.4E-06
				TEQ (ND=1/2DL)	5.3E-05	mg/kg	3.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.1E-08	3.4E-12	mg/kg-day	7.0E-10	mg/kg-day	4.9E-03
			Total Dermal								4.1E-08					4.9E-03
		Total Soil Direct Contact									1.2E-07					1.5E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.3E-11	mg/m^3	3.6E-13	mg/m^3	5.1E-03	(mg/m3)-1	1.9E-15	3.9E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	3.9E-14	mg/m^3	6.1E-16	mg/m^3	3.8E+04	(mg/m3)-1	2.3E-11	6.6E-15	mg/m^3	4.0E-08	mg/m3	1.7E-07
		Total Dust Inhalation									2.3E-11					1.7E-07
	Total Soil Direct Contact and Dust Inhalation										1.2E-07					1.5E-02

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Cassell Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-01	mg/kg	5.7E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.3E-09	6.2E-08	mg/kg-day	5.0E-03	mg/kg-day	1.2E-05
				TEQ (ND=1/2DL)	6.2E-04	mg/kg	3.7E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.8E-07	4.0E-11	mg/kg-day	7.0E-10	mg/kg-day	5.7E-02
			Total Ingestion								4.8E-07					5.7E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-01	mg/kg	2.4E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.6E-09	2.6E-07	mg/kg-day	5.0E-03	mg/kg-day	5.2E-05
				TEQ (ND=1/2DL)	6.2E-04	mg/kg	1.9E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.4E-07	2.0E-11	mg/kg-day	7.0E-10	mg/kg-day	2.9E-02
			Total Dermal								2.5E-07					2.9E-02
		Total Soil Direct Contact									7.3E-07					8.6E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	7.1E-10	mg/m^3	5.6E-12	mg/m^3	5.1E-03	(mg/m3)-1	2.9E-14	6.1E-11	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	4.6E-13	mg/m^3	3.6E-15	mg/m^3	3.8E+04	(mg/m3)-1	1.4E-10	3.9E-14	mg/m^3	4.0E-08	mg/m3	9.8E-07
		Total Dust Inhalation									1.4E-10					9.8E-07
	Total Soil Direct Contact and Dust Inhalation										7.3E-07					8.6E-02

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parmenter Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.2E-03	mg/kg	1.9E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.6E-12	2.1E-10	mg/kg-day	5.0E-03	mg/kg-day	4.1E-08
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	6.3E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.2E-09	6.8E-13	mg/kg-day	7.0E-10	mg/kg-day	9.7E-04
			Total Ingestion								8.2E-09					9.7E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.2E-03	mg/kg	8.0E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.2E-11	8.6E-10	mg/kg-day	5.0E-03	mg/kg-day	1.7E-07
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	3.2E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.1E-09	3.4E-13	mg/kg-day	7.0E-10	mg/kg-day	4.9E-04
			Total Dermal								4.1E-09					4.9E-04
		Total Soil Direct Contact									1.2E-08					1.5E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.4E-12	mg/m^3	1.9E-14	mg/m^3	5.1E-03	(mg/m3)-1	9.5E-17	2.0E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.8E-15	mg/m^3	6.2E-17	mg/m^3	3.8E+04	(mg/m3)-1	2.3E-12	6.7E-16	mg/m^3	4.0E-08	mg/m3	1.7E-08
		Total Dust Inhalation									2.3E-12					1.7E-08
	Total Soil Direct Contact and Dust Inhalation										1.2E-08					1.5E-03

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Skroch Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.5E-02	mg/kg	1.5E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.9E-11	1.6E-09	mg/kg-day	5.0E-03	mg/kg-day	3.2E-07
				TEQ (ND=1/2DL)	9.9E-05	mg/kg	5.9E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	7.7E-08	6.4E-12	mg/kg-day	7.0E-10	mg/kg-day	9.1E-03
			Total Ingestion								7.7E-08					9.1E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.5E-02	mg/kg	6.2E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.5E-10	6.7E-09	mg/kg-day	5.0E-03	mg/kg-day	1.3E-06
				TEQ (ND=1/2DL)	9.9E-05	mg/kg	3.0E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.8E-08	3.2E-12	mg/kg-day	7.0E-10	mg/kg-day	4.6E-03
			Total Dermal								3.9E-08					4.6E-03
		Total Soil Direct Contact									1.2E-07					1.4E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.8E-11	mg/m^3	1.5E-13	mg/m^3	5.1E-03	(mg/m3)-1	7.4E-16	1.6E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.3E-14	mg/m^3	5.8E-16	mg/m^3	3.8E+04	(mg/m3)-1	2.2E-11	6.3E-15	mg/m^3	4.0E-08	mg/m3	1.6E-07
		Total Dust Inhalation									2.2E-11					1.6E-07
	Total Soil Direct Contact and Dust Inhalation										1.2E-07					1.4E-02

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Chaney Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-04	mg/kg	2.6E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.1E-12	2.9E-11	mg/kg-day	5.0E-03	mg/kg-day	5.7E-09
				TEQ (ND=1/2DL)	8.6E-06	mg/kg	1.0E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.3E-08	1.1E-12	mg/kg-day	7.0E-10	mg/kg-day	1.6E-03
			Total Ingestion								1.3E-08					1.6E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-04	mg/kg	1.1E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.4E-12	1.2E-10	mg/kg-day	5.0E-03	mg/kg-day	2.4E-08
				TEQ (ND=1/2DL)	8.6E-06	mg/kg	5.1E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.7E-09	5.6E-13	mg/kg-day	7.0E-10	mg/kg-day	7.9E-04
			Total Dermal								6.7E-09					7.9E-04
		Total Soil Direct Contact									2.0E-08					2.4E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.6E-13	mg/m^3	2.6E-15	mg/m^3	5.1E-03	(mg/m3)-1	1.3E-17	2.8E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	6.3E-15	mg/m^3	1.0E-16	mg/m^3	3.8E+04	(mg/m3)-1	3.8E-12	1.1E-15	mg/m^3	4.0E-08	mg/m3	2.7E-08
		Total Dust Inhalation									3.8E-12					2.7E-08
	Total Soil Direct Contact and Dust Inhalation										2.0E-08					2.4E-03

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Tract B Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	8.5E-04	mg/kg	5.1E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.6E-07	5.5E-11	mg/kg-day	7.0E-10	mg/kg-day	7.9E-02
			Total Ingestion								6.6E-07					7.9E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	8.5E-04	mg/kg	2.5E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.3E-07	2.8E-11	mg/kg-day	7.0E-10	mg/kg-day	3.9E-02
			Total Dermal								3.3E-07					3.9E-02
		Total Soil Direct Contact									9.9E-07					1.2E-01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	6.3E-13	mg/m^3	5.0E-15	mg/m^3	3.8E+04	(mg/m3)-1	1.9E-10	5.4E-14	mg/m^3	4.0E-08	mg/m3	1.3E-06
		Total Dust Inhalation									1.9E-10					1.3E-06
	Total Soil Direct Contact and Dust Inhalation										9.9E-07					1.2E-01

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Renfroe Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	1.3E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.7E-08	1.5E-12	mg/kg-day	7.0E-10	mg/kg-day	2.1E-03
			Total Ingestion								1.7E-08					2.1E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	6.7E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.8E-09	7.3E-13	mg/kg-day	7.0E-10	mg/kg-day	1.0E-03
			Total Dermal								8.8E-09					1.0E-03
		Total Soil Direct Contact									2.6E-08					3.1E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	8.3E-15	mg/m^3	1.3E-16	mg/m^3	3.8E+04	(mg/m3)-1	5.0E-12	1.4E-15	mg/m^3	4.0E-08	mg/m3	3.6E-08
		Total Dust Inhalation									5.0E-12					3.6E-08
	Total Soil Direct Contact and Dust Inhalation										2.6E-08					3.1E-03

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

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Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
3WT Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	2.4E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.1E-08	2.6E-12	mg/kg-day	7.0E-10	mg/kg-day	3.7E-03
			Total Ingestion								3.1E-08					3.7E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	1.2E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.6E-08	1.3E-12	mg/kg-day	7.0E-10	mg/kg-day	1.9E-03
			Total Dermal								1.6E-08					1.9E-03
		Total Soil Direct Contact									4.7E-08					5.6E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.5E-14	mg/m^3	2.4E-16	mg/m^3	3.8E+04	(mg/m3)-1	9.0E-12	2.6E-15	mg/m^3	4.0E-08	mg/m3	6.4E-08
		Total Dust Inhalation									9.0E-12					6.4E-08
	Total Soil Direct Contact and Dust Inhalation										4.7E-08					5.6E-03

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Milton Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	7.6E-03	mg/kg	9.0E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.6E-11	9.7E-10	mg/kg-day	5.0E-03	mg/kg-day	1.9E-07
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	2.3E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.0E-08	2.5E-12	mg/kg-day	7.0E-10	mg/kg-day	3.5E-03
			Total Ingestion								3.0E-08					3.5E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	7.6E-03	mg/kg	3.8E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.5E-10	4.1E-09	mg/kg-day	5.0E-03	mg/kg-day	8.1E-07
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	1.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.5E-08	1.2E-12	mg/kg-day	7.0E-10	mg/kg-day	1.8E-03
			Total Dermal								1.5E-08					1.8E-03
		Total Soil Direct Contact									4.5E-08					5.3E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	5.6E-12	mg/m^3	8.8E-14	mg/m^3	5.1E-03	(mg/m3)-1	4.5E-16	9.5E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-14	mg/m^3	2.2E-16	mg/m^3	3.8E+04	(mg/m3)-1	8.5E-12	2.4E-15	mg/m^3	4.0E-08	mg/m3	6.1E-08
		Total Dust Inhalation									8.5E-12					6.1E-08
	Total Soil Direct Contact and Dust Inhalation										4.5E-08					5.3E-03

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Parcel B Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.7E-02	mg/kg	9.9E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.9E-11	1.1E-09	mg/kg-day	5.0E-03	mg/kg-day	2.1E-07
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	6.2E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.1E-07	6.8E-11	mg/kg-day	7.0E-10	mg/kg-day	9.7E-02
			Total Ingestion								8.1E-07					9.7E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.7E-02	mg/kg	4.1E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.7E-10	4.5E-09	mg/kg-day	5.0E-03	mg/kg-day	8.9E-07
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	3.1E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.1E-07	3.4E-11	mg/kg-day	7.0E-10	mg/kg-day	4.8E-02
			Total Dermal								4.1E-07					4.8E-02
		Total Soil Direct Contact									1.2E-06					1.5E-01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.2E-11	mg/m^3	9.7E-14	mg/m^3	5.1E-03	(mg/m3)-1	4.9E-16	1.0E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.7E-13	mg/m^3	6.1E-15	mg/m^3	3.8E+04	(mg/m3)-1	2.3E-10	6.6E-14	mg/m^3	4.0E-08	mg/m3	1.7E-06
		Total Dust Inhalation									2.3E-10					1.7E-06
	Total Soil Direct Contact and Dust Inhalation										1.2E-06					1.5E-01

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Tract A Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.5E-04	mg/kg	2.1E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.4E-13	2.3E-11	mg/kg-day	5.0E-03	mg/kg-day	4.5E-09
				TEQ (ND=1/2DL)	2.8E-04	mg/kg	1.7E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.2E-07	1.8E-11	mg/kg-day	7.0E-10	mg/kg-day	2.6E-02
			Total Ingestion								2.2E-07					2.6E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.5E-04	mg/kg	8.7E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.5E-12	9.5E-11	mg/kg-day	5.0E-03	mg/kg-day	1.9E-08
				TEQ (ND=1/2DL)	2.8E-04	mg/kg	8.3E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.1E-07	9.0E-12	mg/kg-day	7.0E-10	mg/kg-day	1.3E-02
			Total Dermal								1.1E-07					1.3E-02
		Total Soil Direct Contact									3.2E-07					3.9E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.6E-13	mg/m^3	2.1E-15	mg/m^3	5.1E-03	(mg/m3)-1	1.0E-17	2.2E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.1E-13	mg/m^3	1.6E-15	mg/m^3	3.8E+04	(mg/m3)-1	6.2E-11	1.8E-14	mg/m^3	4.0E-08	mg/m3	4.4E-07
		Total Dust Inhalation									6.2E-11					4.4E-07
	Total Soil Direct Contact and Dust Inhalation										3.2E-07					3.9E-02

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Robak Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-03	mg/kg	1.1E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.5E-11	1.2E-09	mg/kg-day	5.0E-03	mg/kg-day	2.5E-07
				TEQ (ND=1/2DL)	2.2E-05	mg/kg	2.7E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.5E-08	2.9E-12	mg/kg-day	7.0E-10	mg/kg-day	4.1E-03
			Total Ingestion								3.5E-08					4.1E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-03	mg/kg	4.7E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.9E-10	5.1E-09	mg/kg-day	5.0E-03	mg/kg-day	1.0E-06
				TEQ (ND=1/2DL)	2.2E-05	mg/kg	1.3E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.7E-08	1.4E-12	mg/kg-day	7.0E-10	mg/kg-day	2.1E-03
			Total Dermal								1.8E-08					2.1E-03
		Total Soil Direct Contact									5.2E-08					6.2E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	7.1E-12	mg/m^3	1.1E-13	mg/m^3	5.1E-03	(mg/m3)-1	5.7E-16	1.2E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.7E-14	mg/m^3	2.6E-16	mg/m^3	3.8E+04	(mg/m3)-1	9.9E-12	2.8E-15	mg/m^3	4.0E-08	mg/m3	7.1E-08
		Total Dust Inhalation									9.9E-12					7.1E-08
	Total Soil Direct Contact and Dust Inhalation										5.2E-08					6.2E-03

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Smith Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.6E-05	mg/kg	1.9E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.4E-08	2.0E-12	mg/kg-day	7.0E-10	mg/kg-day	2.9E-03
			Total Ingestion								2.4E-08					2.9E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.6E-05	mg/kg	9.4E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.2E-08	1.0E-12	mg/kg-day	7.0E-10	mg/kg-day	1.5E-03
			Total Dermal								1.2E-08					1.5E-03
		Total Soil Direct Contact									3.7E-08					4.4E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.2E-14	mg/m^3	1.8E-16	mg/m^3	3.8E+04	(mg/m3)-1	7.0E-12	2.0E-15	mg/m^3	4.0E-08	mg/m3	5.0E-08
		Total Dust Inhalation									7.0E-12					5.0E-08
	Total Soil Direct Contact and Dust Inhalation										3.7E-08					4.4E-03

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Stevenson Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.8E-04	mg/kg	8.1E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.2E-12	8.7E-11	mg/kg-day	5.0E-03	mg/kg-day	1.7E-08
				TEQ (ND=1/2DL)	1.8E-06	mg/kg	2.1E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.7E-09	2.3E-13	mg/kg-day	7.0E-10	mg/kg-day	3.2E-04
			Total Ingestion								2.7E-09					3.2E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.8E-04	mg/kg	3.4E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.4E-11	3.7E-10	mg/kg-day	5.0E-03	mg/kg-day	7.3E-08
				TEQ (ND=1/2DL)	1.8E-06	mg/kg	1.0E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.4E-09	1.1E-13	mg/kg-day	7.0E-10	mg/kg-day	1.6E-04
			Total Dermal								1.4E-09					1.6E-04
		Total Soil Direct Contact									4.1E-09					4.8E-04
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	5.0E-13	mg/m^3	7.9E-15	mg/m^3	5.1E-03	(mg/m3)-1	4.0E-17	8.6E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.3E-15	mg/m^3	2.0E-17	mg/m^3	3.8E+04	(mg/m3)-1	7.7E-13	2.2E-16	mg/m^3	4.0E-08	mg/m3	5.5E-09
		Total Dust Inhalation									7.7E-13					5.5E-09
	Total Soil Direct Contact and Dust Inhalation										4.1E-09					4.8E-04

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Vintage Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	4.7E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.1E-09	5.1E-13	mg/kg-day	7.0E-10	mg/kg-day	7.3E-04
			Total Ingestion								6.1E-09					7.3E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	2.4E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.1E-09	2.6E-13	mg/kg-day	7.0E-10	mg/kg-day	3.7E-04
			Total Dermal								3.1E-09					3.7E-04
		Total Soil Direct Contact									9.2E-09					1.1E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.9E-15	mg/m^3	4.6E-17	mg/m^3	3.8E+04	(mg/m3)-1	1.8E-12	5.0E-16	mg/m^3	4.0E-08	mg/m3	1.2E-08
		Total Dust Inhalation									1.8E-12					1.2E-08
	Total Soil Direct Contact and Dust Inhalation										9.2E-09					1.1E-03

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Right-of-Way Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.8E+01	mg/kg	4.5E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.8E-07	4.9E-06	mg/kg-day	5.0E-03	mg/kg-day	9.7E-04
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Ingestion								1.8E-07					9.7E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.8E+01	mg/kg	1.9E-06	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.5E-07	2.0E-05	mg/kg-day	5.0E-03	mg/kg-day	4.1E-03
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Dermal								7.5E-07					4.1E-03
		Total Soil Direct Contact									9.3E-07					5.0E-03

TABLE D7.4 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.8E-08	mg/m^3	4.4E-10	mg/m^3	5.1E-03	(mg/m3)-1	2.2E-12	4.8E-09	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	--	mg/m^3	--	mg/m^3	3.8E+04	(mg/m3)-1	--	--	mg/m^3	4.0E-08	mg/m3	--
		Total Dust Inhalation									2.2E-12					--
	Total Soil Direct Contact and Dust Inhalation										9.3E-07					5.0E-03

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

BaP = benzo(a)pyrene

CSF = cancer slope factor

CT = central tendency

EPC = exposure point concentration

na = not applicable

nv = no value

RfC = inhalation reference dose

RfD = oral reference dose

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

SSCL calculations, Table D7.4

Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	Cancer Risk Calculations								Non-Cancer Hazard Calculations						
								RME $SSCL_c$		CTE $SSCL_c$					RME $SSCL_{nc}$		CTE $SSCL_{nc}$	
				C/NC	TR	CSF/Unit Risk	Units	Value	Units	Value	Units	THQ	RfD/RfC	Units	Value	Units	Value	Units
Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-02	mg/kg-day	6.2E+04	mg/kg	1.6E+05	mg/kg
(non-ditch)			C9-C12 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	6.2E+03	mg/kg	1.6E+04	mg/kg
			C9-C10 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	1.9E+04	mg/kg	4.7E+04	mg/kg
			Ethylbenzene	c	1.7E-06	1.1E-02	(mg/kg-day)-1	1.5E+03	mg/kg	1.3E+04	mg/kg	2.0E-01	1.0E-01	mg/kg-day	6.2E+04	mg/kg	1.6E+05	mg/kg
			1-Methylnaphthalene	c	1.7E-06	2.9E-02	(mg/kg-day)-1	5.7E+02	mg/kg	5.0E+03	mg/kg	5.0E-01	7.0E-02	mg/kg-day	1.1E+05	mg/kg	2.7E+05	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-03	mg/kg-day	6.2E+03	mg/kg	1.6E+04	mg/kg
			Naphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	2.0E-02	mg/kg-day	3.1E+04	mg/kg	7.8E+04	mg/kg
			BaP equivalents	c	1.7E-06	7.3E+00	(mg/kg-day)-1	2.3E+00	mg/kg	2.0E+01	mg/kg	na	nv	na	--	mg/kg	--	mg/kg
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	6.2E+03	mg/kg	1.6E+04	mg/kg
			C11-C22 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	1.9E+04	mg/kg	4.7E+04	mg/kg
			Pentachlorophenol	c	1.7E-06	4.0E-01	(mg/kg-day)-1	4.1E+01	mg/kg	3.6E+02	mg/kg	2.5E-01	5.0E-03	mg/kg-day	3.9E+03	mg/kg	9.8E+03	mg/kg
			TEQ (ND=1/2DL)	c	1.7E-06	1.3E+05	(mg/kg-day)-1	1.3E-04	mg/kg	1.1E-03	mg/kg	1.0E+00	7.0E-10	mg/kg-day	2.2E-03	mg/kg	5.5E-03	mg/kg
		Dermal	C5-C8 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-02	mg/kg-day	9.3E+03	mg/kg	9.3E+03	mg/kg
			C9-C12 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	1.9E+03	mg/kg	1.9E+03	mg/kg
			C9-C10 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	5.6E+03	mg/kg	5.6E+03	mg/kg
			Ethylbenzene	c	1.7E-06	1.1E-02	(mg/kg-day)-1	--	mg/kg	--	mg/kg	2.0E-01	1.0E-01	mg/kg-day	--	mg/kg	--	mg/kg
			1-Methylnaphthalene	c	1.7E-06	2.9E-02	(mg/kg-day)-1	6.6E+02	mg/kg	2.3E+03	mg/kg	5.0E-01	7.0E-02	mg/kg-day	1.3E+05	mg/kg	1.3E+05	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-03	mg/kg-day	7.2E+03	mg/kg	7.2E+03	mg/kg
			Naphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	2.0E-02	mg/kg-day	3.6E+04	mg/kg	3.6E+04	mg/kg
			BaP equivalents	c	1.7E-06	7.3E+00	(mg/kg-day)-1	2.6E+00	mg/kg	9.1E+00	mg/kg	na	nv	na	--	mg/kg	--	mg/kg
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	1.9E+03	mg/kg	1.9E+03	mg/kg
			C11-C22 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	2.8E+04	mg/kg	2.8E+04	mg/kg
			Pentachlorophenol	c	1.7E-06	4.0E-01	(mg/kg-day)-1	2.5E+01	mg/kg	8.6E+01	mg/kg	2.5E-01	5.0E-03	mg/kg-day	2.3E+03	mg/kg	2.3E+03	mg/kg
			TEQ (ND=1/2DL)	c	1.7E-06	1.3E+05	(mg/kg-day)-1	6.3E-04	mg/kg	2.2E-03	mg/kg	1.0E+00	7.0E-10	mg/kg-day	1.1E-02	mg/kg	1.1E-02	mg/kg
Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	1.0E+00	7.0E-01	mg/m3	4.1E+00	mg/m3	4.1E+00	mg/m3
(non-ditch)			C9-C12 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	1.5E-01	mg/m3	1.5E-01	mg/m3
			C9-C10 Aromatics	nc	--	nv	na	--	mg/m3	--	mg/m3	5.0E-01	1.0E-01	mg/m3	2.9E-01	mg/m3	2.9E-01	mg/m3
			Ethylbenzene	c	1.7E-06	2.5E-03	(mg/m3)-1	1.2E-02	mg/m3	4.3E-02	mg/m3	2.5E-01	1.0E+00	mg/m3	1.5E+00	mg/m3	1.5E+00	mg/m3
			1-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	na	nv	na	--	mg/m3	--	mg/m3
			2-Methylnaphthalene	nc	--	nv	na	--	mg/m3	--	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			Naphthalene	c	1.7E-06	3.4E-02	(mg/m3)-1	9.1E-04	mg/m3	3.2E-03	mg/m3	2.5E-01	3.0E-03	mg/m3	4.4E-03	mg/m3	4.4E-03	mg/m3
			BaP equivalents	c	1.7E-06	1.1E+00	(mg/m3)-1	2.8E-05	mg/m3	9.8E-05	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	1.5E-01	mg/m3	1.5E-01	mg/m3
			C11-C22 Aromatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	1.5E-01	mg/m3	1.5E-01	mg/m3
			Pentachlorophenol	c	1.7E-06	5.1E-03	(mg/m3)-1	6.1E-03	mg/m3	2.1E-02	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			TEQ (ND=1/2DL)	c	1.7E-06	3.8E+04	(mg/m3)-1	8.2E-10	mg/m3	2.8E-09	mg/m3	2.5E-01	4.0E-08	mg/m3	5.9E-08	mg/m3	5.9E-08	mg/m3
Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-02	mg/kg-day	1.2E+05	mg/kg	3.1E+05	mg/kg
(ditch)			C9-C12 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	1.2E+04	mg/kg	3.1E+04	mg/kg
			C9-C10 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	3.7E+04	mg/kg	9.3E+04	mg/kg
			Ethylbenzene	c	1.7E-06	1.1E-02	(mg/kg-day)-1	3.0E+03	mg/kg	2.6E+04	mg/kg	2.0E-01	1.0E-01	mg/kg-day	1.2E+05	mg/kg	3.1E+05	mg/kg
			1-Methylnaphthalene	c	1.7E-06	2.9E-02	(mg/kg-day)-1	1.1E+03	mg/kg	9.9E+03	mg/kg	5.0E-01	7.0E-02	mg/kg-day	2.2E+05	mg/kg	5.4E+05	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-03	mg/kg-day	1.2E+04	mg/kg	3.1E+04	mg/kg
			Naphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	2.0E-02	mg/kg-day	6.2E+04	mg/kg	1.6E+05	mg/kg
			BaP equivalents	c	1.7E-06	7.3E+00	(mg/kg-day)-1	4.5E+00	mg/kg	3.9E+01	mg/kg	na	nv	na	--	mg/kg	--	mg/kg
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	1.2E+04	mg/kg	3.1E+04	mg/kg
			C11-C22 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	3.7E+04	mg/kg	9.3E+04	mg/kg
			Pentachlorophenol	c	1.7E-06	4.0E-01	(mg/kg-day)-1	8.2E+01	mg/kg	7.2E+02	mg/kg	2.5E-01	5.0E-03	mg/kg-day	7.8E+03	mg/kg	1.9E+04	mg/kg
			TEQ (ND=1/2DL)	c	1.7E-06	1.3E+05	(mg/kg-day)-1	2.5E-04	mg/kg	2.2E-03	mg/kg	1.0E+00	7.0E-10	mg/kg-day	4.3E-03	mg/kg	1.1E-02	mg/kg
		Dermal	C5-C8 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-02	mg/kg-day	1.9E+04	mg/kg	1.9E+04	mg/kg
			C9-C12 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	3.7E+03	mg/kg	3.7E+03	mg/kg
			C9-C10 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	1.1E+04	mg/kg	1.1E+04	mg/kg
			Ethylbenzene	c	1.7E-06	1.1E-02	(mg/kg-day)-1	--	mg/kg	--	mg/kg	2.0E-01	1.0E-01	mg/kg-day	--	mg/kg	--	mg/kg
			1-Methylnaphthalene	c	1.7E-06	2.9E-02	(mg/kg-day)-1	1.3E+03	mg/kg	4.5E+03	mg/kg	5.0E-01	7.0E-02	mg/kg-day	2.5E+05	mg/kg	2.5E+05	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-03	mg/kg-day	1.4E+04	mg/kg	1.4E+04	mg/kg
			Naphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	2.0E-02	mg/kg-day	7.1E+04	mg/kg	7.1E+04	mg/kg
			BaP equivalents	c	1.7E-06	7.3E+00	(mg/kg-day)-1	5.2E+00	mg/kg	1.8E+01	mg/kg	na	nv	na	--	mg/kg	--	mg/kg
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	3.7E+03	mg/kg	3.7E+03	mg/kg
			C11-C22 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	5.6E+04	mg/kg	5.6E+04	mg/kg
			Pentachlorophenol	c	1.7E-06	4.0E-01	(mg/kg-day)-1	4.9E+01	mg/kg	1.7E+02	mg/kg	2.5E-01	5.0E-03	mg/kg-day	4.6E+03	mg/kg	4.6E+03	mg/kg
			TEQ (ND=1/2DL)	c	1.7E-06	1.3E+05	(mg/kg-day)-1	1.3E-03	mg/kg	4.4E-03	mg/kg	1.0E+00	7.0E-10	mg/kg-day	2.2E-02	mg/kg	2.2E-02	mg/kg

COPC	Total SSCLs		Total SSCLs	
	RME $SSCL_c$	CTE $SSCL_c$	RME $SSCL_{nc}$	CTE $SSCL_{nc}$
Non-ditch Properties				
C5-C8 Aliphatics	nv	nv	8.1E+03	8.8E+03
C9-C12 Aliphatics	nv	nv	1.4E+03	1.7E+03
C9-C10 Aromatics	nv	nv	4.3E+03	5.0E+03
Ethylbenzene	1.5E+03	1.3E+04	6.2E+04	1.6E+05
1-Methylnaphthalene	3.1E+02	1.6E+03	5.8E+04	8.6E+04
2-Methylnaphthalene	nv	nv	3.3E+03	4.9E+03
Naphthalene	1.2E+06	4.3E+06	1.7E+04	2.4E+04
BaP equivalents	1.2E+00	6.2E+00	nv	nv
C9-C18 Aliphatics	nv	nv	1.4E+03	1.7E+03
C11-C22 Aromatics	nv	nv	1.1E+04	1.8E+04
Pentachlorophenol	1.5E+01	6.9E+01	1.5E+03	1.9E+03
TEQ (ND=1/2DL)	1.1E-04	7.4E-04	1.8E-03	3.6E-03
Ditch Properties				
C5-C8 Aliphatics	nv	nv	1.6E+04	1.8E+04
C9-C12 Aliphatics	nv	nv	2.9E+03	3.3E+03
C9-C10 Aromatics	nv	nv	8.6E+03	1.0E+04
Ethylbenzene	3.0E+03	2.6E+04	1.2E+05	3.1E+05
1-Methylnaphthalene	6.1E+02	3.1E+03	1.2E+05	1.7E+05
2-Methylnaphthalene	nv	nv	6.6E+03	9.8E+03
Naphthalene	2.5E+06	8.6E+06	3.3E+04	4.9E+04
BaP equivalents	2.4E+00	1.2E+01	nv	nv
C9-C18 Aliphatics	nv	nv	2.9E+03	3.3E+03
C11-C22 Aromatics	nv	nv	2.2E+04	3.5E+04
Pentachlorophenol	3.1E+01	1.4E+02	2.9E+03	3.7E+03
TEQ (ND=1/2DL)	2.1E-04	1.5E-03	3.6E-03	7.2E-03

SSCL calculations, Table D7.4

Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	Cancer Risk Calculations								Non-Cancer Hazard Calculations						
								RME $SSCL_c$		CTE $SSCL_c$					RME $SSCL_{nc}$		CTE $SSCL_{nc}$	
				C/NC	TR	CSF/Unit Risk	Units	Value	Units	Value	Units	THQ	RfD/RfC	Units	Value	Units	Value	Units
Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	1.0E+00	7.0E-01	mg/m3	8.2E+00	mg/m3	8.2E+00	mg/m3
(ditch)			C9-C12 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	2.9E-01	mg/m3	2.9E-01	mg/m3
			C9-C10 Aromatics	nc	--	nv	na	--	mg/m3	--	mg/m3	5.0E-01	1.0E-01	mg/m3	5.8E-01	mg/m3	5.8E-01	mg/m3
			Ethylbenzene	c	1.7E-06	2.5E-03	(mg/m3)-1	2.5E-02	mg/m3	8.6E-02	mg/m3	2.5E-01	1.0E+00	mg/m3	2.9E+00	mg/m3	2.9E+00	mg/m3
			1-Methylnaphthalene	nc	--	nv	na	--	mg/m3	--	mg/kg	na	nv	na	--	mg/m3	--	mg/m3
			2-Methylnaphthalene	nc	--	nv	na	--	mg/m3	--	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			Naphthalene	c	1.7E-06	3.4E-02	(mg/m3)-1	1.8E-03	mg/m3	6.3E-03	mg/m3	2.5E-01	3.0E-03	mg/m3	8.7E-03	mg/m3	8.7E-03	mg/m3
			BaP equivalents	c	1.7E-06	1.1E+00	(mg/m3)-1	5.6E-05	mg/m3	2.0E-04	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	2.9E-01	mg/m3	2.9E-01	mg/m3
			C11-C22 Aromatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	2.9E-01	mg/m3	2.9E-01	mg/m3
			Pentachlorophenol	c	1.7E-06	5.1E-03	(mg/m3)-1	1.2E-02	mg/m3	4.2E-02	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			TEQ (ND=1/2DL)	c	1.7E-06	3.8E+04	(mg/m3)-1	1.6E-09	mg/m3	5.6E-09	mg/m3	2.5E-01	4.0E-08	mg/m3	1.2E-07	mg/m3	1.2E-07	mg/m3

COPC	Total SSCLs		Total SSCLs	
	RME $SSCL_c$	CTE $SSCL_c$	RME $SSCL_{nc}$	CTE $SSCL_{nc}$

Notes:

-- = no toxicity value available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene

c = carcinogen

CSF = cancer slope factor

CTE = central tendency exposure

na = not applicable

nc = noncarcinogen

nv = no value

RfC = inhalation reference concentration

RfD = oral reference dose

RME = reasonable maximum exposure

SSCL = site-specific cleanup level

TEQ = 2,3,7,8-TCDD toxicity equivalents

THQ = target hazard quotient

TR = target risk

TABLE D7.5 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Cassell Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.3E+00	mg/kg	1.1E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.5E-08	3.5E-07	mg/kg-day	5.0E-03	mg/kg-day	7.1E-05
				TEQ (ND=1/2DL)	1.5E-03	mg/kg	7.3E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	9.6E-06	2.3E-10	mg/kg-day	7.0E-10	mg/kg-day	3.3E-01
			Total Ingestion								9.6E-06					3.3E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.3E+00	mg/kg	1.9E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.6E-08	5.9E-07	mg/kg-day	5.0E-03	mg/kg-day	1.2E-04
				TEQ (ND=1/2DL)	1.5E-03	mg/kg	1.5E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.9E-06	4.6E-11	mg/kg-day	7.0E-10	mg/kg-day	6.6E-02
			Total Dermal								2.0E-06					6.6E-02
		Total Soil Direct Contact									1.2E-05					3.9E-01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.7E-09	mg/m^3	4.5E-11	mg/m^3	5.1E-03	(mg/m3)-1	2.3E-13	1.4E-10	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.1E-12	mg/m^3	2.9E-14	mg/m^3	3.8E+04	(mg/m3)-1	1.1E-09	9.0E-14	mg/m^3	4.0E-08	mg/m3	2.2E-06
		Total Dust Inhalation									1.1E-09					2.2E-06
	Total Soil Direct Contact and Dust Inhalation										1.2E-05					3.9E-01

TABLE D7.5 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parmenter Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	4.4E-03	mg/kg	2.2E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.7E-11	6.8E-10	mg/kg-day	5.0E-03	mg/kg-day	1.4E-07
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	9.2E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.2E-07	2.9E-12	mg/kg-day	7.0E-10	mg/kg-day	4.1E-03
			Total Ingestion								1.2E-07					4.1E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	4.4E-03	mg/kg	3.6E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.5E-10	1.1E-09	mg/kg-day	5.0E-03	mg/kg-day	2.3E-07
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	1.8E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.4E-08	5.7E-13	mg/kg-day	7.0E-10	mg/kg-day	8.2E-04
			Total Dermal								2.4E-08					8.2E-04
		Total Soil Direct Contact									1.4E-07					4.9E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	3.2E-12	mg/m^3	8.5E-14	mg/m^3	5.1E-03	(mg/m3)-1	4.3E-16	2.7E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-14	mg/m^3	3.6E-16	mg/m^3	3.8E+04	(mg/m3)-1	1.4E-11	1.1E-15	mg/m^3	4.0E-08	mg/m3	2.8E-08
		Total Dust Inhalation									1.4E-11					2.8E-08
	Total Soil Direct Contact and Dust Inhalation										1.4E-07					4.9E-03

TABLE D7.5 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Skroch Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.2E-01	mg/kg	5.9E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.4E-09	1.8E-08	mg/kg-day	5.0E-03	mg/kg-day	3.7E-06
				TEQ (ND=1/2DL)	3.0E-04	mg/kg	1.5E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.9E-06	4.6E-11	mg/kg-day	7.0E-10	mg/kg-day	6.6E-02
			Total Ingestion								1.9E-06					6.6E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.2E-01	mg/kg	9.9E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.0E-09	3.1E-08	mg/kg-day	5.0E-03	mg/kg-day	6.2E-06
				TEQ (ND=1/2DL)	3.0E-04	mg/kg	3.0E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.9E-07	9.3E-12	mg/kg-day	7.0E-10	mg/kg-day	1.3E-02
			Total Dermal								3.9E-07					1.3E-02
		Total Soil Direct Contact									2.3E-06					7.9E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	8.8E-11	mg/m^3	2.3E-12	mg/m^3	5.1E-03	(mg/m3)-1	1.2E-14	7.3E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.2E-13	mg/m^3	5.8E-15	mg/m^3	3.8E+04	(mg/m3)-1	2.2E-10	1.8E-14	mg/m^3	4.0E-08	mg/m3	4.5E-07
		Total Dust Inhalation									2.2E-10					4.5E-07
	Total Soil Direct Contact and Dust Inhalation										2.3E-06					7.9E-02

TABLE D7.5 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Cemetery Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	5.1E-06	mg/kg	2.5E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.3E-08	7.9E-13	mg/kg-day	7.0E-10	mg/kg-day	1.1E-03
			Total Ingestion								3.3E-08					1.1E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	5.1E-06	mg/kg	5.1E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.6E-09	1.6E-13	mg/kg-day	7.0E-10	mg/kg-day	2.3E-04
			Total Dermal								6.6E-09					2.3E-04
		Total Soil Direct Contact									4.0E-08					1.4E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	3.8E-15	mg/m^3	1.0E-16	mg/m^3	3.8E+04	(mg/m3)-1	3.8E-12	3.1E-16	mg/m^3	4.0E-08	mg/m3	7.8E-09
		Total Dust Inhalation									3.8E-12					7.8E-09
	Total Soil Direct Contact and Dust Inhalation										4.0E-08					1.4E-03

TABLE D7.5 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Rodeo Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	6.2E-07	mg/kg	3.1E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.0E-09	9.6E-14	mg/kg-day	7.0E-10	mg/kg-day	1.4E-04
			Total Ingestion								4.0E-09					1.4E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	6.2E-07	mg/kg	6.2E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.0E-10	1.9E-14	mg/kg-day	7.0E-10	mg/kg-day	2.8E-05
			Total Dermal								8.0E-10					2.8E-05
		Total Soil Direct Contact									4.8E-09					1.7E-04
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	4.6E-16	mg/m^3	1.2E-17	mg/m^3	3.8E+04	(mg/m3)-1	4.6E-13	3.8E-17	mg/m^3	4.0E-08	mg/m3	9.4E-10
		Total Dust Inhalation									4.6E-13					9.4E-10
	Total Soil Direct Contact and Dust Inhalation										4.8E-09					1.7E-04

TABLE D7.5 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
School Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-04	mg/kg	1.0E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.1E-12	3.2E-11	mg/kg-day	5.0E-03	mg/kg-day	6.4E-09
				TEQ (ND=1/2DL)	1.7E-06	mg/kg	8.4E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.1E-08	2.6E-13	mg/kg-day	7.0E-10	mg/kg-day	3.7E-04
			Total Ingestion								1.1E-08					3.7E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-04	mg/kg	1.7E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.8E-12	5.3E-11	mg/kg-day	5.0E-03	mg/kg-day	1.1E-08
				TEQ (ND=1/2DL)	1.7E-06	mg/kg	1.7E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.2E-09	5.2E-14	mg/kg-day	7.0E-10	mg/kg-day	7.5E-05
			Total Dermal								2.2E-09					7.5E-05
		Total Soil Direct Contact									1.3E-08					4.5E-04

TABLE D7.5 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.5E-13	mg/m^3	4.0E-15	mg/m^3	5.1E-03	(mg/m3)-1	2.0E-17	1.3E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.2E-15	mg/m^3	3.3E-17	mg/m^3	3.8E+04	(mg/m3)-1	1.2E-12	1.0E-16	mg/m^3	4.0E-08	mg/m3	2.6E-09
		Total Dust Inhalation									1.2E-12					2.6E-09
	Total Soil Direct Contact and Dust Inhalation										1.3E-08					4.5E-04

Notes:

BaP = benzo(a)pyrene

CSF = cancer slope factor

CT = central tendency

EPC = exposure point concentration

na = not applicable

nv = no value

RfC = inhalation reference dose

RfD = oral reference dose

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

TABLE D7.5 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Cassell Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-01	mg/kg	2.7E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.1E-09	3.0E-08	mg/kg-day	5.0E-03	mg/kg-day	5.9E-06
				TEQ (ND=1/2DL)	6.2E-04	mg/kg	1.8E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.3E-07	1.9E-11	mg/kg-day	7.0E-10	mg/kg-day	2.7E-02
			Total Ingestion								2.3E-07					2.7E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-01	mg/kg	1.1E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.6E-09	1.2E-07	mg/kg-day	5.0E-03	mg/kg-day	2.5E-05
				TEQ (ND=1/2DL)	6.2E-04	mg/kg	8.9E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.2E-07	9.6E-12	mg/kg-day	7.0E-10	mg/kg-day	1.4E-02
			Total Dermal								1.2E-07					1.4E-02
		Total Soil Direct Contact									3.5E-07					4.1E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	7.1E-10	mg/m^3	2.7E-12	mg/m^3	5.1E-03	(mg/m3)-1	1.4E-14	2.9E-11	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	4.6E-13	mg/m^3	1.7E-15	mg/m^3	3.8E+04	(mg/m3)-1	6.6E-11	1.9E-14	mg/m^3	4.0E-08	mg/m3	4.7E-07
		Total Dust Inhalation									6.6E-11					4.7E-07
	Total Soil Direct Contact and Dust Inhalation										3.5E-07					4.1E-02

TABLE D7.5 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parmenter Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.2E-03	mg/kg	9.1E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.6E-12	9.9E-11	mg/kg-day	5.0E-03	mg/kg-day	2.0E-08
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	3.0E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.9E-09	3.3E-13	mg/kg-day	7.0E-10	mg/kg-day	4.7E-04
			Total Ingestion								3.9E-09					4.7E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.2E-03	mg/kg	3.8E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.5E-11	4.1E-10	mg/kg-day	5.0E-03	mg/kg-day	8.3E-08
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	1.5E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.0E-09	1.6E-13	mg/kg-day	7.0E-10	mg/kg-day	2.3E-04
			Total Dermal								2.0E-09					2.3E-04
		Total Soil Direct Contact									5.9E-09					7.0E-04
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.4E-12	mg/m^3	8.9E-15	mg/m^3	5.1E-03	(mg/m3)-1	4.6E-17	9.7E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.8E-15	mg/m^3	3.0E-17	mg/m^3	3.8E+04	(mg/m3)-1	1.1E-12	3.2E-16	mg/m^3	4.0E-08	mg/m3	8.0E-09
		Total Dust Inhalation									1.1E-12					8.0E-09
	Total Soil Direct Contact and Dust Inhalation										5.9E-09					7.0E-04

TABLE D7.5 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Skroch Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.5E-02	mg/kg	7.1E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.8E-11	7.7E-10	mg/kg-day	5.0E-03	mg/kg-day	1.5E-07
				TEQ (ND=1/2DL)	9.9E-05	mg/kg	2.8E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.7E-08	3.1E-12	mg/kg-day	7.0E-10	mg/kg-day	4.4E-03
			Total Ingestion								3.7E-08					4.4E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.5E-02	mg/kg	3.0E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.2E-10	3.2E-09	mg/kg-day	5.0E-03	mg/kg-day	6.4E-07
				TEQ (ND=1/2DL)	9.9E-05	mg/kg	1.4E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.8E-08	1.5E-12	mg/kg-day	7.0E-10	mg/kg-day	2.2E-03
			Total Dermal								1.9E-08					2.2E-03
		Total Soil Direct Contact									5.5E-08					6.6E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.8E-11	mg/m^3	7.0E-14	mg/m^3	5.1E-03	(mg/m3)-1	3.6E-16	7.6E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.3E-14	mg/m^3	2.8E-16	mg/m^3	3.8E+04	(mg/m3)-1	1.1E-11	3.0E-15	mg/m^3	4.0E-08	mg/m3	7.5E-08
		Total Dust Inhalation									1.1E-11					7.5E-08
	Total Soil Direct Contact and Dust Inhalation										5.5E-08					6.6E-03

TABLE D7.5 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Cemetery Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	5.1E-06	mg/kg	1.5E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.9E-09	1.6E-13	mg/kg-day	7.0E-10	mg/kg-day	2.3E-04
			Total Ingestion								1.9E-09					2.3E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	5.1E-06	mg/kg	7.4E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	9.6E-10	8.0E-14	mg/kg-day	7.0E-10	mg/kg-day	1.1E-04
			Total Dermal								9.6E-10					1.1E-04
		Total Soil Direct Contact									2.9E-09					3.4E-04
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	3.8E-15	mg/m^3	1.4E-17	mg/m^3	3.8E+04	(mg/m3)-1	5.5E-13	1.6E-16	mg/m^3	4.0E-08	mg/m3	3.9E-09
		Total Dust Inhalation									5.5E-13					3.9E-09
	Total Soil Direct Contact and Dust Inhalation										2.9E-09					3.4E-04

TABLE D7.5 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Rodeo Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	6.2E-07	mg/kg	1.8E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.3E-10	1.9E-14	mg/kg-day	7.0E-10	mg/kg-day	2.7E-05
			Total Ingestion								2.3E-10					2.7E-05
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	6.2E-07	mg/kg	8.9E-16	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.2E-10	9.7E-15	mg/kg-day	7.0E-10	mg/kg-day	1.4E-05
			Total Dermal								1.2E-10					1.4E-05
		Total Soil Direct Contact									3.5E-10					4.1E-05
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	4.6E-16	mg/m^3	1.7E-18	mg/m^3	3.8E+04	(mg/m3)-1	6.6E-14	1.9E-17	mg/m^3	4.0E-08	mg/m3	4.7E-10
		Total Dust Inhalation									6.6E-14					4.7E-10
	Total Soil Direct Contact and Dust Inhalation										3.5E-10					4.1E-05

TABLE D7.5 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
School Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-04	mg/kg	5.9E-13	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.4E-13	6.4E-12	mg/kg-day	5.0E-03	mg/kg-day	1.3E-09
				TEQ (ND=1/2DL)	1.1E-06	mg/kg	3.0E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.9E-10	3.3E-14	mg/kg-day	7.0E-10	mg/kg-day	4.7E-05
			Total Ingestion								3.9E-10					4.7E-05
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-04	mg/kg	2.5E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.9E-13	2.7E-11	mg/kg-day	5.0E-03	mg/kg-day	5.3E-09
				TEQ (ND=1/2DL)	1.1E-06	mg/kg	1.5E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.0E-10	1.6E-14	mg/kg-day	7.0E-10	mg/kg-day	2.4E-05
			Total Dermal								2.0E-10					2.4E-05
		Total Soil Direct Contact									5.9E-10					7.0E-05

TABLE D7.5 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.5E-13	mg/m^3	5.8E-16	mg/m^3	5.1E-03	(mg/m3)-1	2.9E-18	6.3E-15	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.8E-16	mg/m^3	3.0E-18	mg/m^3	3.8E+04	(mg/m3)-1	1.1E-13	3.2E-17	mg/m^3	4.0E-08	mg/m3	8.0E-10
		Total Dust Inhalation									1.1E-13					8.0E-10
	Total Soil Direct Contact and Dust Inhalation										5.9E-10					7.0E-05

Notes:

BaP = benzo(a)pyrene

CSF = cancer slope factor

CT = central tendency

EPC = exposure point concentration

na = not applicable

nv = no value

RfC = inhalation reference dose

RfD = oral reference dose

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parcel A Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	1.3E+02	mg/kg	8.9E-06	mg/kg-day	nv	na	--	5.3E-05	mg/kg-day	4.0E-02	mg/kg-day	1.3E-03
(non-ditch)				C9-C12 Aliphatics	2.0E+00	mg/kg	1.3E-07	mg/kg-day	nv	na	--	8.1E-07	mg/kg-day	1.0E-02	mg/kg-day	8.1E-05
				C9-C10 Aromatics	2.0E+00	mg/kg	1.3E-07	mg/kg-day	nv	na	--	8.1E-07	mg/kg-day	3.0E-02	mg/kg-day	2.7E-05
				Ethylbenzene	5.0E-02	mg/kg	3.4E-09	mg/kg-day	1.1E-02	(mg/kg-day)-1	3.7E-11	2.0E-08	mg/kg-day	1.0E-01	mg/kg-day	2.0E-07
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	3.3E-01	mg/kg	2.2E-08	mg/kg-day	nv	na	--	1.3E-07	mg/kg-day	4.0E-03	mg/kg-day	3.3E-05
				Naphthalene	1.0E-01	mg/kg	6.7E-09	mg/kg-day	nv	na	--	4.0E-08	mg/kg-day	2.0E-02	mg/kg-day	2.0E-06
				BaP equivalents	4.1E-01	mg/kg	7.5E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	5.5E-07	1.7E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.2E+01	mg/kg	8.1E-07	mg/kg-day	nv	na	--	4.8E-06	mg/kg-day	1.0E-02	mg/kg-day	4.8E-04
				C11-C22 Aromatics	2.6E+02	mg/kg	1.7E-05	mg/kg-day	nv	na	--	1.0E-04	mg/kg-day	3.0E-02	mg/kg-day	3.5E-03
				Pentachlorophenol	2.3E-01	mg/kg	1.5E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.2E-09	9.3E-08	mg/kg-day	5.0E-03	mg/kg-day	1.9E-05
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	1.2E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.6E-05	7.5E-10	mg/kg-day	7.0E-10	mg/kg-day	1.1E+00
			Total Ingestion								1.7E-05					1.1E+00
			Dermal	C5-C8 Aliphatics	1.3E+02	mg/kg	1.5E-05	mg/kg-day	nv	na	--	9.2E-05	mg/kg-day	4.0E-02	mg/kg-day	2.3E-03
				C9-C12 Aliphatics	2.0E+00	mg/kg	1.2E-07	mg/kg-day	nv	na	--	7.0E-07	mg/kg-day	1.0E-02	mg/kg-day	7.0E-05
				C9-C10 Aromatics	2.0E+00	mg/kg	1.2E-07	mg/kg-day	nv	na	--	7.0E-07	mg/kg-day	3.0E-02	mg/kg-day	2.3E-05
				Ethylbenzene	5.0E-02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	3.3E-01	mg/kg	5.0E-09	mg/kg-day	nv	na	--	3.0E-08	mg/kg-day	4.0E-03	mg/kg-day	7.5E-06
				Naphthalene	1.0E-01	mg/kg	1.5E-09	mg/kg-day	nv	na	--	9.1E-09	mg/kg-day	2.0E-02	mg/kg-day	4.5E-07
				BaP equivalents	4.1E-01	mg/kg	1.7E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	1.2E-07	3.7E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.2E+01	mg/kg	7.0E-07	mg/kg-day	nv	na	--	4.2E-06	mg/kg-day	1.0E-02	mg/kg-day	4.2E-04
				C11-C22 Aromatics	2.6E+02	mg/kg	3.0E-06	mg/kg-day	nv	na	--	1.8E-05	mg/kg-day	3.0E-02	mg/kg-day	6.0E-04
				Pentachlorophenol	2.3E-01	mg/kg	6.7E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.7E-09	4.0E-08	mg/kg-day	5.0E-03	mg/kg-day	8.0E-06
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	6.4E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.4E-07	3.9E-11	mg/kg-day	7.0E-10	mg/kg-day	5.5E-02
			Total Dermal								9.6E-07					5.9E-02
		Total Soil Direct Contact									1.8E-05					1.1E+00
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	9.7E-08	mg/m^3	2.8E-10	mg/m^3	nv	na	--	1.7E-09	mg/m^3	7.0E-01	mg/m3	2.4E-09
				C9-C12 Aliphatics	1.5E-09	mg/m^3	4.2E-12	mg/m^3	nv	na	--	2.5E-11	mg/m^3	1.0E-01	mg/m3	2.5E-10
				C9-C10 Aromatics	1.5E-09	mg/m^3	4.2E-12	mg/m^3	nv	na	--	2.5E-11	mg/m^3	1.0E-01	mg/m3	2.5E-10
				Ethylbenzene	3.7E-11	mg/m^3	1.0E-13	mg/m^3	2.5E-03	(mg/m3)-1	2.6E-16	6.3E-13	mg/m^3	1.0E+00	mg/m3	6.3E-13
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	2.4E-10	mg/m^3	6.9E-13	mg/m^3	nv	na	--	4.2E-12	mg/m^3	nv	na	--
				Naphthalene	7.4E-11	mg/m^3	2.1E-13	mg/m^3	3.4E-02	(mg/m3)-1	7.1E-15	1.3E-12	mg/m^3	3.0E-03	mg/m3	4.2E-10
				BaP equivalents	3.0E-10	mg/m^3	2.3E-12	mg/m^3	1.1E+00	(mg/m3)-1	2.6E-12	5.2E-12	mg/m^3	nv	na	--
				C9-C18 Aliphatics	8.8E-09	mg/m^3	2.5E-11	mg/m^3	nv	na	--	1.5E-10	mg/m^3	1.0E-01	mg/m3	1.5E-09
				C11-C22 Aromatics	1.9E-07	mg/m^3	5.4E-10	mg/m^3	nv	na	--	3.3E-09	mg/m^3	1.0E-01	mg/m3	3.3E-08
				Pentachlorophenol	1.7E-10	mg/m^3	4.8E-13	mg/m^3	5.1E-03	(mg/m3)-1	2.5E-15	2.9E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-12	mg/m^3	3.9E-15	mg/m^3	3.8E+04	(mg/m3)-1	1.5E-10	2.3E-14	mg/m^3	4.0E-08	mg/m3	5.8E-07
		Total Dust Inhalation									1.5E-10					6.2E-07
	Total Soil Direct Contact and Dust Inhalation										1.8E-05					1.1E+00

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parcel B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	7.9E+00	mg/kg	5.3E-07	mg/kg-day	nv	na	--	3.2E-06	mg/kg-day	4.0E-02	mg/kg-day	7.9E-05
(non-ditch)				C9-C12 Aliphatics	9.1E+02	mg/kg	6.1E-05	mg/kg-day	nv	na	--	3.7E-04	mg/kg-day	1.0E-02	mg/kg-day	3.7E-02
				C9-C10 Aromatics	3.7E+02	mg/kg	2.5E-05	mg/kg-day	nv	na	--	1.5E-04	mg/kg-day	3.0E-02	mg/kg-day	5.0E-03
				Ethylbenzene	4.6E-02	mg/kg	3.1E-09	mg/kg-day	1.1E-02	(mg/kg-day)-1	3.4E-11	1.9E-08	mg/kg-day	1.0E-01	mg/kg-day	1.9E-07
				1-Methylnaphthalene	3.4E+00	mg/kg	2.3E-07	mg/kg-day	2.9E-02	(mg/kg-day)-1	6.6E-09	1.4E-06	mg/kg-day	7.0E-02	mg/kg-day	2.0E-05
				2-Methylnaphthalene	2.0E+00	mg/kg	1.4E-07	mg/kg-day	nv	na	--	8.1E-07	mg/kg-day	4.0E-03	mg/kg-day	2.0E-04
				Naphthalene	4.9E-01	mg/kg	3.3E-08	mg/kg-day	nv	na	--	2.0E-07	mg/kg-day	2.0E-02	mg/kg-day	9.9E-06
				BaP equivalents	6.1E-01	mg/kg	1.1E-07	mg/kg-day	7.3E+00	(mg/kg-day)-1	8.1E-07	2.5E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.8E+03	mg/kg	1.2E-04	mg/kg-day	nv	na	--	7.3E-04	mg/kg-day	1.0E-02	mg/kg-day	7.3E-02
				C11-C22 Aromatics	6.1E+03	mg/kg	4.1E-04	mg/kg-day	nv	na	--	2.5E-03	mg/kg-day	3.0E-02	mg/kg-day	8.3E-02
				Pentachlorophenol	3.4E+03	mg/kg	2.3E-04	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.1E-05	1.4E-03	mg/kg-day	5.0E-03	mg/kg-day	2.7E-01
				TEQ (ND=1/2DL)	3.8E-03	mg/kg	2.5E-10	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.3E-05	1.5E-09	mg/kg-day	7.0E-10	mg/kg-day	2.2E+00
			Total Ingestion								1.2E-04					2.6E+00
			Dermal	C5-C8 Aliphatics	7.9E+00	mg/kg	9.1E-07	mg/kg-day	nv	na	--	5.5E-06	mg/kg-day	4.0E-02	mg/kg-day	1.4E-04
				C9-C12 Aliphatics	9.1E+02	mg/kg	5.3E-05	mg/kg-day	nv	na	--	3.2E-04	mg/kg-day	1.0E-02	mg/kg-day	3.2E-02
				C9-C10 Aromatics	3.7E+02	mg/kg	2.2E-05	mg/kg-day	nv	na	--	1.3E-04	mg/kg-day	3.0E-02	mg/kg-day	4.3E-03
				Ethylbenzene	4.6E-02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	3.4E+00	mg/kg	5.1E-08	mg/kg-day	2.9E-02	(mg/kg-day)-1	1.5E-09	3.1E-07	mg/kg-day	7.0E-02	mg/kg-day	4.4E-06
				2-Methylnaphthalene	2.0E+00	mg/kg	3.0E-08	mg/kg-day	nv	na	--	1.8E-07	mg/kg-day	4.0E-03	mg/kg-day	4.6E-05
				Naphthalene	4.9E-01	mg/kg	7.4E-09	mg/kg-day	nv	na	--	4.4E-08	mg/kg-day	2.0E-02	mg/kg-day	2.2E-06
				BaP equivalents	6.1E-01	mg/kg	2.5E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	1.8E-07	5.5E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.8E+03	mg/kg	1.1E-04	mg/kg-day	nv	na	--	6.3E-04	mg/kg-day	1.0E-02	mg/kg-day	6.3E-02
				C11-C22 Aromatics	6.1E+03	mg/kg	7.1E-05	mg/kg-day	nv	na	--	4.3E-04	mg/kg-day	3.0E-02	mg/kg-day	1.4E-02
				Pentachlorophenol	3.4E+03	mg/kg	9.8E-05	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.9E-05	5.9E-04	mg/kg-day	5.0E-03	mg/kg-day	1.2E-01
				TEQ (ND=1/2DL)	3.8E-03	mg/kg	1.3E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.7E-06	7.9E-11	mg/kg-day	7.0E-10	mg/kg-day	1.1E-01
			Total Dermal								4.1E-05					3.4E-01
		Total Soil Direct Contact									1.7E-04					3.0E+00
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	5.8E-09	mg/m^3	1.6E-11	mg/m^3	nv	na	--	9.9E-11	mg/m^3	7.0E-01	mg/m3	1.4E-10
				C9-C12 Aliphatics	6.7E-07	mg/m^3	1.9E-09	mg/m^3	nv	na	--	1.1E-08	mg/m^3	1.0E-01	mg/m3	1.1E-07
				C9-C10 Aromatics	2.7E-07	mg/m^3	7.8E-10	mg/m^3	nv	na	--	4.7E-09	mg/m^3	1.0E-01	mg/m3	4.7E-08
				Ethylbenzene	3.4E-11	mg/m^3	9.7E-14	mg/m^3	2.5E-03	(mg/m3)-1	2.4E-16	5.8E-13	mg/m^3	1.0E+00	mg/m3	5.8E-13
				1-Methylnaphthalene	2.5E-09	mg/m^3	7.1E-12	mg/m^3	nv	na	--	4.3E-11	mg/m^3	nv	na	--
				2-Methylnaphthalene	1.5E-09	mg/m^3	4.2E-12	mg/m^3	nv	na	--	2.5E-11	mg/m^3	nv	na	--
				Naphthalene	3.6E-10	mg/m^3	1.0E-12	mg/m^3	3.4E-02	(mg/m3)-1	3.5E-14	6.2E-12	mg/m^3	3.0E-03	mg/m3	2.1E-09
				BaP equivalents	4.5E-10	mg/m^3	3.5E-12	mg/m^3	1.1E+00	(mg/m3)-1	3.8E-12	7.7E-12	mg/m^3	nv	na	--
				C9-C18 Aliphatics	1.3E-06	mg/m^3	3.8E-09	mg/m^3	nv	na	--	2.3E-08	mg/m^3	1.0E-01	mg/m3	2.3E-07
				C11-C22 Aromatics	4.5E-06	mg/m^3	1.3E-08	mg/m^3	nv	na	--	7.7E-08	mg/m^3	1.0E-01	mg/m3	7.7E-07
				Pentachlorophenol	2.5E-06	mg/m^3	7.1E-09	mg/m^3	5.1E-03	(mg/m3)-1	3.6E-11	4.2E-08	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.8E-12	mg/m^3	7.9E-15	mg/m^3	3.8E+04	(mg/m3)-1	3.0E-10	4.8E-14	mg/m^3	4.0E-08	mg/m3	1.2E-06
		Total Dust Inhalation									3.4E-10					2.4E-06
	Total Soil Direct Contact and Dust Inhalation										1.7E-04					3.0E+00

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Spigot Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	5.1E-02	mg/kg	3.4E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.4E-09	2.1E-08	mg/kg-day	5.0E-03	mg/kg-day	4.1E-06
				TEQ (ND=1/2DL)	1.0E-04	mg/kg	6.7E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.7E-07	4.0E-11	mg/kg-day	7.0E-10	mg/kg-day	5.8E-02
			Total Ingestion								8.8E-07					5.8E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	5.1E-02	mg/kg	1.5E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.9E-10	8.9E-09	mg/kg-day	5.0E-03	mg/kg-day	1.8E-06
				TEQ (ND=1/2DL)	1.0E-04	mg/kg	3.5E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.5E-08	2.1E-12	mg/kg-day	7.0E-10	mg/kg-day	3.0E-03
		Total Dermal									4.6E-08					3.0E-03
	Total Soil Direct Contact										9.2E-07					6.1E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	3.8E-11	mg/m^3	1.1E-13	mg/m^3	5.1E-03	(mg/m3)-1	5.5E-16	6.4E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.4E-14	mg/m^3	2.1E-16	mg/m^3	3.8E+04	(mg/m3)-1	8.0E-12	1.3E-15	mg/m^3	4.0E-08	mg/m3	3.2E-08
		Total Dust Inhalation									8.0E-12					3.2E-08
	Total Soil Direct Contact and Dust Inhalation										9.2E-07					6.1E-02

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Cassell Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.3E+00	mg/kg	2.3E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.1E-09	1.4E-07	mg/kg-day	5.0E-03	mg/kg-day	2.7E-05
				TEQ (ND=1/2DL)	1.5E-03	mg/kg	1.5E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.9E-06	8.8E-11	mg/kg-day	7.0E-10	mg/kg-day	1.3E-01
			Total Ingestion								1.9E-06					1.3E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.3E+00	mg/kg	9.8E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.9E-09	5.9E-08	mg/kg-day	5.0E-03	mg/kg-day	1.2E-05
				TEQ (ND=1/2DL)	1.5E-03	mg/kg	7.6E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	9.9E-08	4.6E-12	mg/kg-day	7.0E-10	mg/kg-day	6.5E-03
			Total Dermal								1.0E-07					6.5E-03
		Total Soil Direct Contact									2.0E-06					1.3E-01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.7E-09	mg/m^3	7.1E-13	mg/m^3	5.1E-03	(mg/m3)-1	3.6E-15	4.2E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.1E-12	mg/m^3	4.6E-16	mg/m^3	3.8E+04	(mg/m3)-1	1.7E-11	2.7E-15	mg/m^3	4.0E-08	mg/m3	6.9E-08
		Total Dust Inhalation									1.7E-11					6.9E-08
	Total Soil Direct Contact and Dust Inhalation										2.0E-06					1.3E-01

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parmenter Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	4.4E-03	mg/kg	4.3E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.7E-11	2.6E-10	mg/kg-day	5.0E-03	mg/kg-day	5.2E-08
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	1.8E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.4E-08	1.1E-12	mg/kg-day	7.0E-10	mg/kg-day	1.6E-03
			Total Ingestion								2.4E-08					1.6E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	4.4E-03	mg/kg	1.9E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.5E-12	1.1E-10	mg/kg-day	5.0E-03	mg/kg-day	2.2E-08
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	9.5E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.2E-09	5.7E-14	mg/kg-day	7.0E-10	mg/kg-day	8.1E-05
			Total Dermal								1.2E-09					8.1E-05
		Total Soil Direct Contact									2.5E-08					1.6E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	3.2E-12	mg/m^3	1.4E-15	mg/m^3	5.1E-03	(mg/m3)-1	6.9E-18	8.1E-15	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-14	mg/m^3	5.7E-18	mg/m^3	3.8E+04	(mg/m3)-1	2.2E-13	3.4E-17	mg/m^3	4.0E-08	mg/m3	8.6E-10
		Total Dust Inhalation									2.2E-13					8.6E-10
	Total Soil Direct Contact and Dust Inhalation										2.5E-08					1.6E-03

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Skroch Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.2E-01	mg/kg	1.2E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.7E-10	7.1E-09	mg/kg-day	5.0E-03	mg/kg-day	1.4E-06
				TEQ (ND=1/2DL)	3.0E-04	mg/kg	3.0E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.8E-07	1.8E-11	mg/kg-day	7.0E-10	mg/kg-day	2.5E-02
			Total Ingestion								3.8E-07					2.5E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.2E-01	mg/kg	5.1E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.0E-10	3.1E-09	mg/kg-day	5.0E-03	mg/kg-day	6.1E-07
				TEQ (ND=1/2DL)	3.0E-04	mg/kg	1.5E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.0E-08	9.2E-13	mg/kg-day	7.0E-10	mg/kg-day	1.3E-03
			Total Dermal								2.0E-08					1.3E-03
		Total Soil Direct Contact									4.0E-07					2.7E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	8.8E-11	mg/m^3	3.7E-14	mg/m^3	5.1E-03	(mg/m3)-1	1.9E-16	2.2E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.2E-13	mg/m^3	9.2E-17	mg/m^3	3.8E+04	(mg/m3)-1	3.5E-12	5.5E-16	mg/m^3	4.0E-08	mg/m3	1.4E-08
		Total Dust Inhalation									3.5E-12					1.4E-08
	Total Soil Direct Contact and Dust Inhalation										4.0E-07					2.7E-02

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Chaney Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-04	mg/kg	1.5E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.0E-12	9.0E-11	mg/kg-day	5.0E-03	mg/kg-day	1.8E-08
				TEQ (ND=1/2DL)	1.0E-05	mg/kg	6.7E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.7E-08	4.0E-12	mg/kg-day	7.0E-10	mg/kg-day	5.7E-03
			Total Ingestion								8.7E-08					5.7E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-04	mg/kg	6.5E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.6E-12	3.9E-11	mg/kg-day	5.0E-03	mg/kg-day	7.8E-09
				TEQ (ND=1/2DL)	1.0E-05	mg/kg	3.5E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.5E-09	2.1E-13	mg/kg-day	7.0E-10	mg/kg-day	3.0E-04
			Total Dermal								4.5E-09					3.0E-04
		Total Soil Direct Contact									9.2E-08					6.0E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.6E-13	mg/m^3	4.7E-16	mg/m^3	5.1E-03	(mg/m3)-1	2.4E-18	2.8E-15	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.3E-15	mg/m^3	2.1E-17	mg/m^3	3.8E+04	(mg/m3)-1	8.0E-13	1.3E-16	mg/m^3	4.0E-08	mg/m3	3.1E-09
		Total Dust Inhalation									8.0E-13					3.1E-09
	Total Soil Direct Contact and Dust Inhalation										9.2E-08					6.0E-03

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Tract B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-03	mg/kg	1.6E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.1E-06	9.9E-11	mg/kg-day	7.0E-10	mg/kg-day	1.4E-01
			Total Ingestion								2.1E-06					1.4E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-03	mg/kg	8.5E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.1E-07	5.1E-12	mg/kg-day	7.0E-10	mg/kg-day	7.3E-03
			Total Dermal								1.1E-07					7.3E-03
		Total Soil Direct Contact									2.3E-06					1.5E-01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.2E-12	mg/m^3	5.1E-16	mg/m^3	3.8E+04	(mg/m3)-1	2.0E-11	3.1E-15	mg/m^3	4.0E-08	mg/m3	7.7E-08
		Total Dust Inhalation									2.0E-11					7.7E-08
	Total Soil Direct Contact and Dust Inhalation										2.3E-06					1.5E-01

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Renfroe Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-05	mg/kg	1.2E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.5E-07	6.9E-12	mg/kg-day	7.0E-10	mg/kg-day	9.9E-03
			Total Ingestion								1.5E-07					9.9E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-05	mg/kg	6.0E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	7.8E-09	3.6E-13	mg/kg-day	7.0E-10	mg/kg-day	5.1E-04
			Total Dermal								7.8E-09					5.1E-04
		Total Soil Direct Contact									1.6E-07					1.0E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.3E-14	mg/m^3	3.6E-17	mg/m^3	3.8E+04	(mg/m3)-1	1.4E-12	2.2E-16	mg/m^3	4.0E-08	mg/m3	5.4E-09
		Total Dust Inhalation									1.4E-12					5.4E-09
	Total Soil Direct Contact and Dust Inhalation										1.6E-07					1.0E-02

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
3WT Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	1.4E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.8E-07	8.3E-12	mg/kg-day	7.0E-10	mg/kg-day	1.2E-02
			Total Ingestion								1.8E-07					1.2E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	7.1E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	9.3E-09	4.3E-13	mg/kg-day	7.0E-10	mg/kg-day	6.1E-04
			Total Dermal								9.3E-09					6.1E-04
		Total Soil Direct Contact									1.9E-07					1.2E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.5E-14	mg/m^3	4.3E-17	mg/m^3	3.8E+04	(mg/m3)-1	1.6E-12	2.6E-16	mg/m^3	4.0E-08	mg/m3	6.4E-09
		Total Dust Inhalation									1.6E-12					6.4E-09
	Total Soil Direct Contact and Dust Inhalation										1.9E-07					1.2E-02

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Milton Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.5E-02	mg/kg	1.0E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.1E-10	6.1E-09	mg/kg-day	5.0E-03	mg/kg-day	1.2E-06
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	2.3E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.0E-07	1.4E-11	mg/kg-day	7.0E-10	mg/kg-day	2.0E-02
			Total Ingestion								3.0E-07					2.0E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.5E-02	mg/kg	4.4E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.8E-10	2.6E-09	mg/kg-day	5.0E-03	mg/kg-day	5.3E-07
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	1.2E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.5E-08	7.1E-13	mg/kg-day	7.0E-10	mg/kg-day	1.0E-03
			Total Dermal								1.6E-08					1.0E-03
		Total Soil Direct Contact									3.1E-07					2.1E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.1E-11	mg/m^3	3.2E-14	mg/m^3	5.1E-03	(mg/m3)-1	1.6E-16	1.9E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.5E-14	mg/m^3	7.1E-17	mg/m^3	3.8E+04	(mg/m3)-1	2.7E-12	4.3E-16	mg/m^3	4.0E-08	mg/m3	1.1E-08
		Total Dust Inhalation									2.7E-12					1.1E-08
	Total Soil Direct Contact and Dust Inhalation										3.1E-07					2.1E-02

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Parcel B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.0E-02	mg/kg	5.9E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.4E-10	3.5E-09	mg/kg-day	5.0E-03	mg/kg-day	7.1E-07
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	1.9E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.5E-06	1.1E-10	mg/kg-day	7.0E-10	mg/kg-day	1.6E-01
			Total Ingestion								2.5E-06					1.6E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.0E-02	mg/kg	2.6E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.0E-10	1.5E-09	mg/kg-day	5.0E-03	mg/kg-day	3.1E-07
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	9.8E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.3E-07	5.9E-12	mg/kg-day	7.0E-10	mg/kg-day	8.4E-03
			Total Dermal								1.3E-07					8.4E-03
		Total Soil Direct Contact									2.6E-06					1.7E-01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	4.4E-11	mg/m^3	1.8E-14	mg/m^3	5.1E-03	(mg/m3)-1	9.4E-17	1.1E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-12	mg/m^3	5.9E-16	mg/m^3	3.8E+04	(mg/m3)-1	2.2E-11	3.5E-15	mg/m^3	4.0E-08	mg/m3	8.9E-08
		Total Dust Inhalation									2.2E-11					8.9E-08
	Total Soil Direct Contact and Dust Inhalation										2.6E-06					1.7E-01

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Tract A Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.5E-04	mg/kg	3.5E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.4E-12	2.1E-11	mg/kg-day	5.0E-03	mg/kg-day	4.2E-09
				TEQ (ND=1/2DL)	1.8E-03	mg/kg	1.8E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.3E-06	1.1E-10	mg/kg-day	7.0E-10	mg/kg-day	1.5E-01
			Total Ingestion								2.3E-06					1.5E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.5E-04	mg/kg	1.5E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.0E-13	9.0E-12	mg/kg-day	5.0E-03	mg/kg-day	1.8E-09
				TEQ (ND=1/2DL)	1.8E-03	mg/kg	9.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.2E-07	5.5E-12	mg/kg-day	7.0E-10	mg/kg-day	7.8E-03
			Total Dermal								1.2E-07					7.8E-03
		Total Soil Direct Contact									2.4E-06					1.6E-01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.6E-13	mg/m^3	1.1E-16	mg/m^3	5.1E-03	(mg/m3)-1	5.5E-19	6.5E-16	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.3E-12	mg/m^3	5.5E-16	mg/m^3	3.8E+04	(mg/m3)-1	2.1E-11	3.3E-15	mg/m^3	4.0E-08	mg/m3	8.2E-08
		Total Dust Inhalation									2.1E-11					8.2E-08
	Total Soil Direct Contact and Dust Inhalation										2.4E-06					1.6E-01

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Robak Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-03	mg/kg	6.4E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.6E-10	3.9E-09	mg/kg-day	5.0E-03	mg/kg-day	7.7E-07
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	2.3E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.0E-07	1.4E-11	mg/kg-day	7.0E-10	mg/kg-day	2.0E-02
			Total Ingestion								3.0E-07					2.0E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-03	mg/kg	2.8E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.1E-10	1.7E-09	mg/kg-day	5.0E-03	mg/kg-day	3.3E-07
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	1.2E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.5E-08	7.1E-13	mg/kg-day	7.0E-10	mg/kg-day	1.0E-03
			Total Dermal								1.5E-08					1.0E-03
		Total Soil Direct Contact									3.1E-07					2.1E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	7.1E-12	mg/m^3	2.0E-14	mg/m^3	5.1E-03	(mg/m3)-1	1.0E-16	1.2E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.5E-14	mg/m^3	7.1E-17	mg/m^3	3.8E+04	(mg/m3)-1	2.7E-12	4.3E-16	mg/m^3	4.0E-08	mg/m3	1.1E-08
		Total Dust Inhalation									2.7E-12					1.1E-08
	Total Soil Direct Contact and Dust Inhalation										3.1E-07					2.1E-02

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Smith Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.1E-05	mg/kg	1.4E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.8E-07	8.4E-12	mg/kg-day	7.0E-10	mg/kg-day	1.2E-02
			Total Ingestion								1.8E-07					1.2E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.1E-05	mg/kg	7.2E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	9.4E-09	4.3E-13	mg/kg-day	7.0E-10	mg/kg-day	6.2E-04
			Total Dermal								9.4E-09					6.2E-04
		Total Soil Direct Contact									1.9E-07					1.3E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.5E-14	mg/m^3	4.4E-17	mg/m^3	3.8E+04	(mg/m3)-1	1.7E-12	2.6E-16	mg/m^3	4.0E-08	mg/m3	6.6E-09
		Total Dust Inhalation									1.7E-12					6.6E-09
	Total Soil Direct Contact and Dust Inhalation										1.9E-07					1.3E-02

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Stevenson Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.8E-04	mg/kg	4.6E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.8E-11	2.8E-10	mg/kg-day	5.0E-03	mg/kg-day	5.5E-08
				TEQ (ND=1/2DL)	7.6E-06	mg/kg	5.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.6E-08	3.0E-12	mg/kg-day	7.0E-10	mg/kg-day	4.4E-03
			Total Ingestion								6.6E-08					4.4E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.8E-04	mg/kg	2.0E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.9E-12	1.2E-10	mg/kg-day	5.0E-03	mg/kg-day	2.4E-08
				TEQ (ND=1/2DL)	7.6E-06	mg/kg	2.6E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.4E-09	1.6E-13	mg/kg-day	7.0E-10	mg/kg-day	2.3E-04
			Total Dermal								3.4E-09					2.3E-04
		Total Soil Direct Contact									6.9E-08					4.6E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	5.0E-13	mg/m^3	1.4E-15	mg/m^3	5.1E-03	(mg/m3)-1	7.3E-18	8.6E-15	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	5.6E-15	mg/m^3	1.6E-17	mg/m^3	3.8E+04	(mg/m3)-1	6.0E-13	9.5E-17	mg/m^3	4.0E-08	mg/m3	2.4E-09
		Total Dust Inhalation									6.0E-13					2.4E-09
	Total Soil Direct Contact and Dust Inhalation										6.9E-08					4.6E-03

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Vintage Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	2.7E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.5E-08	1.6E-12	mg/kg-day	7.0E-10	mg/kg-day	2.3E-03
			Total Ingestion								3.5E-08					2.3E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	1.4E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.8E-09	8.3E-14	mg/kg-day	7.0E-10	mg/kg-day	1.2E-04
			Total Dermal								1.8E-09					1.2E-04
		Total Soil Direct Contact									3.7E-08					2.4E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.9E-15	mg/m^3	8.4E-18	mg/m^3	3.8E+04	(mg/m3)-1	3.2E-13	5.0E-17	mg/m^3	4.0E-08	mg/m3	1.3E-09
		Total Dust Inhalation									3.2E-13					1.3E-09
	Total Soil Direct Contact and Dust Inhalation										3.7E-08					2.4E-03

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Cemetery Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	5.1E-06	mg/kg	3.5E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.5E-08	2.1E-12	mg/kg-day	7.0E-10	mg/kg-day	3.0E-03
			Total Ingestion								4.5E-08					3.0E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	5.1E-06	mg/kg	1.8E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.3E-09	1.1E-13	mg/kg-day	7.0E-10	mg/kg-day	1.5E-04
			Total Dermal								2.3E-09					1.5E-04
		Total Soil Direct Contact									4.7E-08					3.1E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	3.8E-15	mg/m^3	1.1E-17	mg/m^3	3.8E+04	(mg/m3)-1	4.1E-13	6.5E-17	mg/m^3	4.0E-08	mg/m3	1.6E-09
		Total Dust Inhalation									4.1E-13					1.6E-09
	Total Soil Direct Contact and Dust Inhalation										4.7E-08					3.1E-03

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Right-of-Way Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.8E+01	mg/kg	2.6E-06	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.0E-06	1.5E-05	mg/kg-day	5.0E-03	mg/kg-day	3.1E-03
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Ingestion								1.0E-06					3.1E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.8E+01	mg/kg	1.1E-06	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.4E-07	6.6E-06	mg/kg-day	5.0E-03	mg/kg-day	1.3E-03
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Dermal								4.4E-07					1.3E-03
		Total Soil Direct Contact									1.5E-06					4.4E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.8E-08	mg/m^3	8.0E-11	mg/m^3	5.1E-03	(mg/m3)-1	4.1E-13	4.8E-10	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	--	mg/m^3	--	mg/m^3	3.8E+04	(mg/m3)-1	--	--	mg/m^3	4.0E-08	mg/m3	--
		Total Dust Inhalation									4.1E-13					--
	Total Soil Direct Contact and Dust Inhalation										1.5E-06					4.4E-03

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Receptor Population:	Recreator/Trespasser
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Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Rodeo Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	6.2E-07	mg/kg	4.2E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.4E-09	2.5E-13	mg/kg-day	7.0E-10	mg/kg-day	3.6E-04
			Total Ingestion								5.4E-09					3.6E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	6.2E-07	mg/kg	2.2E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.8E-10	1.3E-14	mg/kg-day	7.0E-10	mg/kg-day	1.9E-05
			Total Dermal								2.8E-10					1.9E-05
		Total Soil Direct Contact									5.7E-09					3.8E-04
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	4.6E-16	mg/m^3	1.3E-18	mg/m^3	3.8E+04	(mg/m3)-1	5.0E-14	7.9E-18	mg/m^3	4.0E-08	mg/m3	2.0E-10
		Total Dust Inhalation									5.0E-14					2.0E-10
	Total Soil Direct Contact and Dust Inhalation										5.7E-09					3.8E-04

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
School Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-04	mg/kg	1.4E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.6E-12	8.3E-11	mg/kg-day	5.0E-03	mg/kg-day	1.7E-08
				TEQ (ND=1/2DL)	1.7E-06	mg/kg	1.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.5E-08	6.8E-13	mg/kg-day	7.0E-10	mg/kg-day	9.7E-04
			Total Ingestion								1.5E-08					9.7E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-04	mg/kg	6.0E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.4E-12	3.6E-11	mg/kg-day	5.0E-03	mg/kg-day	7.2E-09
				TEQ (ND=1/2DL)	1.7E-06	mg/kg	5.9E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	7.7E-10	3.5E-14	mg/kg-day	7.0E-10	mg/kg-day	5.0E-05
			Total Dermal								7.7E-10					5.1E-05
		Total Soil Direct Contact									1.6E-08					1.0E-03

TABLE D7.6 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.5E-13	mg/m^3	4.3E-16	mg/m^3	5.1E-03	(mg/m3)-1	2.2E-18	2.6E-15	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.2E-15	mg/m^3	3.5E-18	mg/m^3	3.8E+04	(mg/m3)-1	1.3E-13	2.1E-17	mg/m^3	4.0E-08	mg/m3	5.3E-10
		Total Dust Inhalation									1.3E-13					5.3E-10
	Total Soil Direct Contact and Dust Inhalation										1.6E-08					1.0E-03

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

BaP = benzo(a)pyrene

CSF = cancer slope factor

CT = central tendency

EPC = exposure point concentration

na = not applicable

nv = no value

RfC = inhalation reference dose

RfD = oral reference dose

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parcel A Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	1.3E+02	mg/kg	2.0E-06	mg/kg-day	nv	na	--	2.7E-05	mg/kg-day	4.0E-02	mg/kg-day	6.6E-04
(non-ditch)				C9-C12 Aliphatics	2.0E+00	mg/kg	3.1E-08	mg/kg-day	nv	na	--	4.0E-07	mg/kg-day	1.0E-02	mg/kg-day	4.0E-05
				C9-C10 Aromatics	2.0E+00	mg/kg	3.1E-08	mg/kg-day	nv	na	--	4.0E-07	mg/kg-day	3.0E-02	mg/kg-day	1.3E-05
				Ethylbenzene	5.0E-02	mg/kg	7.7E-10	mg/kg-day	1.1E-02	(mg/kg-day)-1	8.5E-12	1.0E-08	mg/kg-day	1.0E-01	mg/kg-day	1.0E-07
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	3.3E-01	mg/kg	5.1E-09	mg/kg-day	nv	na	--	6.6E-08	mg/kg-day	4.0E-03	mg/kg-day	1.7E-05
				Naphthalene	1.0E-01	mg/kg	1.5E-09	mg/kg-day	nv	na	--	2.0E-08	mg/kg-day	2.0E-02	mg/kg-day	1.0E-06
				BaP equivalents	4.1E-01	mg/kg	1.9E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	1.4E-07	8.3E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.2E+01	mg/kg	1.9E-07	mg/kg-day	nv	na	--	2.4E-06	mg/kg-day	1.0E-02	mg/kg-day	2.4E-04
				C11-C22 Aromatics	2.6E+02	mg/kg	4.0E-06	mg/kg-day	nv	na	--	5.2E-05	mg/kg-day	3.0E-02	mg/kg-day	1.7E-03
				Pentachlorophenol	4.7E-02	mg/kg	7.3E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.9E-10	9.5E-09	mg/kg-day	5.0E-03	mg/kg-day	1.9E-06
				TEQ (ND=1/2DL)	1.9E-04	mg/kg	2.9E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.8E-07	3.8E-11	mg/kg-day	7.0E-10	mg/kg-day	5.5E-02
			Total Ingestion								5.2E-07					5.7E-02
			Dermal	C5-C8 Aliphatics	1.3E+02	mg/kg	7.1E-06	mg/kg-day	nv	na	--	9.2E-05	mg/kg-day	4.0E-02	mg/kg-day	2.3E-03
				C9-C12 Aliphatics	2.0E+00	mg/kg	5.4E-08	mg/kg-day	nv	na	--	7.0E-07	mg/kg-day	1.0E-02	mg/kg-day	7.0E-05
				C9-C10 Aromatics	2.0E+00	mg/kg	5.4E-08	mg/kg-day	nv	na	--	7.0E-07	mg/kg-day	3.0E-02	mg/kg-day	2.3E-05
				Ethylbenzene	5.0E-02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	3.3E-01	mg/kg	2.3E-09	mg/kg-day	nv	na	--	3.0E-08	mg/kg-day	4.0E-03	mg/kg-day	7.5E-06
				Naphthalene	1.0E-01	mg/kg	7.0E-10	mg/kg-day	nv	na	--	9.1E-09	mg/kg-day	2.0E-02	mg/kg-day	4.5E-07
				BaP equivalents	4.1E-01	mg/kg	8.6E-09	mg/kg-day	7.3E+00	(mg/kg-day)-1	6.3E-08	3.7E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.2E+01	mg/kg	3.2E-07	mg/kg-day	nv	na	--	4.2E-06	mg/kg-day	1.0E-02	mg/kg-day	4.2E-04
				C11-C22 Aromatics	2.6E+02	mg/kg	1.4E-06	mg/kg-day	nv	na	--	1.8E-05	mg/kg-day	3.0E-02	mg/kg-day	6.0E-04
				Pentachlorophenol	4.7E-02	mg/kg	6.3E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.5E-10	8.2E-09	mg/kg-day	5.0E-03	mg/kg-day	1.6E-06
				TEQ (ND=1/2DL)	1.9E-04	mg/kg	3.0E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.0E-08	4.0E-12	mg/kg-day	7.0E-10	mg/kg-day	5.7E-03
			Total Dermal								1.0E-07					9.1E-03
		Total Soil Direct Contact									6.3E-07					6.6E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	9.7E-08	mg/m^3	1.3E-10	mg/m^3	nv	na	--	1.7E-09	mg/m^3	7.0E-01	mg/m3	2.4E-09
				C9-C12 Aliphatics	1.5E-09	mg/m^3	1.9E-12	mg/m^3	nv	na	--	2.5E-11	mg/m^3	1.0E-01	mg/m3	2.5E-10
				C9-C10 Aromatics	1.5E-09	mg/m^3	1.9E-12	mg/m^3	nv	na	--	2.5E-11	mg/m^3	1.0E-01	mg/m3	2.5E-10
				Ethylbenzene	3.7E-11	mg/m^3	4.8E-14	mg/m^3	2.5E-03	(mg/m3)-1	1.2E-16	6.3E-13	mg/m^3	1.0E+00	mg/m3	6.3E-13
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	2.4E-10	mg/m^3	3.2E-13	mg/m^3	nv	na	--	4.2E-12	mg/m^3	nv	na	--
				Naphthalene	7.4E-11	mg/m^3	9.7E-14	mg/m^3	3.4E-02	(mg/m3)-1	3.3E-15	1.3E-12	mg/m^3	3.0E-03	mg/m3	4.2E-10
				BaP equivalents	3.0E-10	mg/m^3	1.2E-12	mg/m^3	1.1E+00	(mg/m3)-1	1.3E-12	5.2E-12	mg/m^3	nv	na	--
				C9-C18 Aliphatics	8.8E-09	mg/m^3	1.2E-11	mg/m^3	nv	na	--	1.5E-10	mg/m^3	1.0E-01	mg/m3	1.5E-09
				C11-C22 Aromatics	1.9E-07	mg/m^3	2.5E-10	mg/m^3	nv	na	--	3.3E-09	mg/m^3	1.0E-01	mg/m3	3.3E-08
				Pentachlorophenol	3.5E-11	mg/m^3	4.6E-14	mg/m^3	5.1E-03	(mg/m3)-1	2.3E-16	5.9E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-13	mg/m^3	1.8E-16	mg/m^3	3.8E+04	(mg/m3)-1	7.0E-12	2.4E-15	mg/m^3	4.0E-08	mg/m3	6.0E-08
		Total Dust Inhalation									8.3E-12					9.7E-08
	Total Soil Direct Contact and Dust Inhalation										6.3E-07					6.6E-02

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parcel B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	5.6E+00	mg/kg	8.6E-08	mg/kg-day	nv	na	--	1.1E-06	mg/kg-day	4.0E-02	mg/kg-day	2.8E-05
(non-ditch)				C9-C12 Aliphatics	2.4E+02	mg/kg	3.7E-06	mg/kg-day	nv	na	--	4.8E-05	mg/kg-day	1.0E-02	mg/kg-day	4.8E-03
				C9-C10 Aromatics	9.2E+01	mg/kg	1.4E-06	mg/kg-day	nv	na	--	1.9E-05	mg/kg-day	3.0E-02	mg/kg-day	6.2E-04
				Ethylbenzene	4.6E-02	mg/kg	7.1E-10	mg/kg-day	1.1E-02	(mg/kg-day)-1	7.8E-12	9.3E-09	mg/kg-day	1.0E-01	mg/kg-day	9.3E-08
				1-Methylnaphthalene	3.4E+00	mg/kg	5.3E-08	mg/kg-day	2.9E-02	(mg/kg-day)-1	1.5E-09	6.8E-07	mg/kg-day	7.0E-02	mg/kg-day	9.8E-06
				2-Methylnaphthalene	4.8E-01	mg/kg	7.5E-09	mg/kg-day	nv	na	--	9.8E-08	mg/kg-day	4.0E-03	mg/kg-day	2.4E-05
				Naphthalene	9.3E-02	mg/kg	1.4E-09	mg/kg-day	nv	na	--	1.9E-08	mg/kg-day	2.0E-02	mg/kg-day	9.3E-07
				BaP equivalents	3.0E-01	mg/kg	1.4E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	1.0E-07	6.0E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	6.8E+02	mg/kg	1.1E-05	mg/kg-day	nv	na	--	1.4E-04	mg/kg-day	1.0E-02	mg/kg-day	1.4E-02
				C11-C22 Aromatics	8.3E+02	mg/kg	1.3E-05	mg/kg-day	nv	na	--	1.7E-04	mg/kg-day	3.0E-02	mg/kg-day	5.6E-03
				Pentachlorophenol	5.7E+02	mg/kg	8.9E-06	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.6E-06	1.2E-04	mg/kg-day	5.0E-03	mg/kg-day	2.3E-02
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	1.8E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.3E-06	2.3E-10	mg/kg-day	7.0E-10	mg/kg-day	3.3E-01
			Total Ingestion								5.9E-06					3.7E-01
			Dermal	C5-C8 Aliphatics	5.6E+00	mg/kg	3.0E-07	mg/kg-day	nv	na	--	3.9E-06	mg/kg-day	4.0E-02	mg/kg-day	9.7E-05
				C9-C12 Aliphatics	2.4E+02	mg/kg	6.4E-06	mg/kg-day	nv	na	--	8.3E-05	mg/kg-day	1.0E-02	mg/kg-day	8.3E-03
				C9-C10 Aromatics	9.2E+01	mg/kg	2.5E-06	mg/kg-day	nv	na	--	3.2E-05	mg/kg-day	3.0E-02	mg/kg-day	1.1E-03
				Ethylbenzene	4.6E-02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	3.4E+00	mg/kg	2.4E-08	mg/kg-day	2.9E-02	(mg/kg-day)-1	6.9E-10	3.1E-07	mg/kg-day	7.0E-02	mg/kg-day	4.4E-06
				2-Methylnaphthalene	4.8E-01	mg/kg	3.4E-09	mg/kg-day	nv	na	--	4.4E-08	mg/kg-day	4.0E-03	mg/kg-day	1.1E-05
				Naphthalene	9.3E-02	mg/kg	6.5E-10	mg/kg-day	nv	na	--	8.4E-09	mg/kg-day	2.0E-02	mg/kg-day	4.2E-07
				BaP equivalents	3.0E-01	mg/kg	6.2E-09	mg/kg-day	7.3E+00	(mg/kg-day)-1	4.5E-08	2.7E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	6.8E+02	mg/kg	1.8E-05	mg/kg-day	nv	na	--	2.4E-04	mg/kg-day	1.0E-02	mg/kg-day	2.4E-02
				C11-C22 Aromatics	8.3E+02	mg/kg	4.5E-06	mg/kg-day	nv	na	--	5.8E-05	mg/kg-day	3.0E-02	mg/kg-day	1.9E-03
				Pentachlorophenol	5.7E+02	mg/kg	7.7E-06	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.1E-06	1.0E-04	mg/kg-day	5.0E-03	mg/kg-day	2.0E-02
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	1.8E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.4E-07	2.4E-11	mg/kg-day	7.0E-10	mg/kg-day	3.4E-02
			Total Dermal								3.4E-06					8.9E-02
		Total Soil Direct Contact									9.3E-06					4.6E-01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	4.1E-09	mg/m^3	5.4E-12	mg/m^3	nv	na	--	7.0E-11	mg/m^3	7.0E-01	mg/m3	1.0E-10
				C9-C12 Aliphatics	1.7E-07	mg/m^3	2.3E-10	mg/m^3	nv	na	--	3.0E-09	mg/m^3	1.0E-01	mg/m3	3.0E-08
				C9-C10 Aromatics	6.8E-08	mg/m^3	9.0E-11	mg/m^3	nv	na	--	1.2E-09	mg/m^3	1.0E-01	mg/m3	1.2E-08
				Ethylbenzene	3.4E-11	mg/m^3	4.5E-14	mg/m^3	2.5E-03	(mg/m3)-1	1.1E-16	5.8E-13	mg/m^3	1.0E+00	mg/m3	5.8E-13
				1-Methylnaphthalene	2.5E-09	mg/m^3	3.3E-12	mg/m^3	nv	na	--	4.3E-11	mg/m^3	nv	na	--
				2-Methylnaphthalene	3.6E-10	mg/m^3	4.7E-13	mg/m^3	nv	na	--	6.1E-12	mg/m^3	nv	na	--
				Naphthalene	6.8E-11	mg/m^3	9.0E-14	mg/m^3	3.4E-02	(mg/m3)-1	3.0E-15	1.2E-12	mg/m^3	3.0E-03	mg/m3	3.9E-10
				BaP equivalents	2.2E-10	mg/m^3	8.6E-13	mg/m^3	1.1E+00	(mg/m3)-1	9.5E-13	3.7E-12	mg/m^3	nv	na	--
				C9-C18 Aliphatics	5.0E-07	mg/m^3	6.6E-10	mg/m^3	nv	na	--	8.6E-09	mg/m^3	1.0E-01	mg/m3	8.6E-08
				C11-C22 Aromatics	6.1E-07	mg/m^3	8.0E-10	mg/m^3	nv	na	--	1.0E-08	mg/m^3	1.0E-01	mg/m3	1.0E-07
				Pentachlorophenol	4.2E-07	mg/m^3	5.6E-10	mg/m^3	5.1E-03	(mg/m3)-1	2.8E-12	7.2E-09	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	8.3E-13	mg/m^3	1.1E-15	mg/m^3	3.8E+04	(mg/m3)-1	4.2E-11	1.4E-14	mg/m^3	4.0E-08	mg/m3	3.6E-07
		Total Dust Inhalation									4.5E-11					5.9E-07
	Total Soil Direct Contact and Dust Inhalation										9.3E-06					4.6E-01

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Spigot Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.1E-02	mg/kg	4.9E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.9E-10	6.3E-09	mg/kg-day	5.0E-03	mg/kg-day	1.3E-06
				TEQ (ND=1/2DL)	5.3E-05	mg/kg	8.2E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.1E-07	1.1E-11	mg/kg-day	7.0E-10	mg/kg-day	1.5E-02
			Total Ingestion								1.1E-07					1.5E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.1E-02	mg/kg	4.2E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.7E-10	5.5E-09	mg/kg-day	5.0E-03	mg/kg-day	1.1E-06
				TEQ (ND=1/2DL)	5.3E-05	mg/kg	8.5E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.1E-08	1.1E-12	mg/kg-day	7.0E-10	mg/kg-day	1.6E-03
			Total Dermal								1.1E-08					1.6E-03
		Total Soil Direct Contact									1.2E-07					1.7E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.3E-11	mg/m^3	3.0E-14	mg/m^3	5.1E-03	(mg/m3)-1	1.6E-16	4.0E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	3.9E-14	mg/m^3	5.1E-17	mg/m^3	3.8E+04	(mg/m3)-1	1.9E-12	6.7E-16	mg/m^3	4.0E-08	mg/m3	1.7E-08
		Total Dust Inhalation									1.9E-12					1.7E-08
	Total Soil Direct Contact and Dust Inhalation										1.2E-07					1.7E-02

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Cassell Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-01	mg/kg	2.2E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.7E-10	2.8E-08	mg/kg-day	5.0E-03	mg/kg-day	5.7E-06
				TEQ (ND=1/2DL)	6.2E-04	mg/kg	1.4E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.8E-07	1.8E-11	mg/kg-day	7.0E-10	mg/kg-day	2.6E-02
			Total Ingestion								1.8E-07					2.6E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-01	mg/kg	1.9E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.6E-10	2.5E-08	mg/kg-day	5.0E-03	mg/kg-day	4.9E-06
				TEQ (ND=1/2DL)	6.2E-04	mg/kg	1.5E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.9E-08	1.9E-12	mg/kg-day	7.0E-10	mg/kg-day	2.7E-03
			Total Dermal								2.0E-08					2.7E-03
		Total Soil Direct Contact									2.0E-07					2.9E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	7.1E-10	mg/m^3	1.4E-13	mg/m^3	5.1E-03	(mg/m3)-1	7.0E-16	1.8E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	4.6E-13	mg/m^3	8.8E-17	mg/m^3	3.8E+04	(mg/m3)-1	3.3E-12	1.1E-15	mg/m^3	4.0E-08	mg/m3	2.9E-08
		Total Dust Inhalation									3.3E-12					2.9E-08
	Total Soil Direct Contact and Dust Inhalation										2.0E-07					2.9E-02

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parmenter Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.2E-03	mg/kg	7.3E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.9E-12	9.5E-11	mg/kg-day	5.0E-03	mg/kg-day	1.9E-08
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	2.4E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.1E-09	3.1E-13	mg/kg-day	7.0E-10	mg/kg-day	4.5E-04
			Total Ingestion								3.1E-09					4.5E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.2E-03	mg/kg	6.3E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.5E-12	8.2E-11	mg/kg-day	5.0E-03	mg/kg-day	1.6E-08
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	2.5E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.2E-10	3.2E-14	mg/kg-day	7.0E-10	mg/kg-day	4.6E-05
			Total Dermal								3.3E-10					4.6E-05
		Total Soil Direct Contact									3.5E-09					4.9E-04
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.4E-12	mg/m^3	4.5E-16	mg/m^3	5.1E-03	(mg/m3)-1	2.3E-18	5.9E-15	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.8E-15	mg/m^3	1.5E-18	mg/m^3	3.8E+04	(mg/m3)-1	5.7E-14	2.0E-17	mg/m^3	4.0E-08	mg/m3	4.9E-10
		Total Dust Inhalation									5.7E-14					4.9E-10
	Total Soil Direct Contact and Dust Inhalation										3.5E-09					4.9E-04

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Skroch Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.5E-02	mg/kg	5.7E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.3E-11	7.4E-10	mg/kg-day	5.0E-03	mg/kg-day	1.5E-07
				TEQ (ND=1/2DL)	9.9E-05	mg/kg	2.3E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.9E-08	2.9E-12	mg/kg-day	7.0E-10	mg/kg-day	4.2E-03
			Total Ingestion								2.9E-08					4.2E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.5E-02	mg/kg	4.9E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.0E-11	6.4E-10	mg/kg-day	5.0E-03	mg/kg-day	1.3E-07
				TEQ (ND=1/2DL)	9.9E-05	mg/kg	2.3E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.0E-09	3.0E-13	mg/kg-day	7.0E-10	mg/kg-day	4.3E-04
			Total Dermal								3.1E-09					4.3E-04
		Total Soil Direct Contact									3.2E-08					4.6E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.8E-11	mg/m^3	3.6E-15	mg/m^3	5.1E-03	(mg/m3)-1	1.8E-17	4.6E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.3E-14	mg/m^3	1.4E-17	mg/m^3	3.8E+04	(mg/m3)-1	5.4E-13	1.8E-16	mg/m^3	4.0E-08	mg/m3	4.6E-09
		Total Dust Inhalation									5.4E-13					4.6E-09
	Total Soil Direct Contact and Dust Inhalation										3.2E-08					4.6E-03

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Chaney Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-04	mg/kg	3.5E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.4E-12	4.5E-11	mg/kg-day	5.0E-03	mg/kg-day	9.0E-09
				TEQ (ND=1/2DL)	8.6E-06	mg/kg	1.3E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.7E-08	1.7E-12	mg/kg-day	7.0E-10	mg/kg-day	2.5E-03
			Total Ingestion								1.7E-08					2.5E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-04	mg/kg	3.0E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.2E-12	3.9E-11	mg/kg-day	5.0E-03	mg/kg-day	7.8E-09
				TEQ (ND=1/2DL)	8.6E-06	mg/kg	1.4E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.8E-09	1.8E-13	mg/kg-day	7.0E-10	mg/kg-day	2.6E-04
			Total Dermal								1.8E-09					2.6E-04
		Total Soil Direct Contact									1.9E-08					2.7E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.6E-13	mg/m^3	2.2E-16	mg/m^3	5.1E-03	(mg/m3)-1	1.1E-18	2.8E-15	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	6.3E-15	mg/m^3	8.4E-18	mg/m^3	3.8E+04	(mg/m3)-1	3.2E-13	1.1E-16	mg/m^3	4.0E-08	mg/m3	2.7E-09
		Total Dust Inhalation									3.2E-13					2.7E-09
	Total Soil Direct Contact and Dust Inhalation										1.9E-08					2.7E-03

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Tract B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	8.5E-04	mg/kg	1.9E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.5E-07	2.5E-11	mg/kg-day	7.0E-10	mg/kg-day	3.6E-02
			Total Ingestion								2.5E-07					3.6E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	8.5E-04	mg/kg	2.0E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.6E-08	2.6E-12	mg/kg-day	7.0E-10	mg/kg-day	3.7E-03
			Total Dermal								2.6E-08					3.7E-03
		Total Soil Direct Contact									2.8E-07					4.0E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	6.3E-13	mg/m^3	1.2E-16	mg/m^3	3.8E+04	(mg/m3)-1	4.6E-12	1.6E-15	mg/m^3	4.0E-08	mg/m3	3.9E-08
		Total Dust Inhalation									4.6E-12					3.9E-08
	Total Soil Direct Contact and Dust Inhalation										2.8E-07					4.0E-02

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Renfroe Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	1.8E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.3E-08	2.3E-12	mg/kg-day	7.0E-10	mg/kg-day	3.3E-03
			Total Ingestion								2.3E-08					3.3E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	1.8E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.4E-09	2.4E-13	mg/kg-day	7.0E-10	mg/kg-day	3.4E-04
			Total Dermal								2.4E-09					3.4E-04
		Total Soil Direct Contact									2.5E-08					3.6E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	8.3E-15	mg/m^3	1.1E-17	mg/m^3	3.8E+04	(mg/m3)-1	4.2E-13	1.4E-16	mg/m^3	4.0E-08	mg/m3	3.6E-09
		Total Dust Inhalation									4.2E-13					3.6E-09
	Total Soil Direct Contact and Dust Inhalation										2.5E-08					3.6E-03

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
3WT Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	3.2E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.1E-08	4.1E-12	mg/kg-day	7.0E-10	mg/kg-day	5.9E-03
			Total Ingestion								4.1E-08					5.9E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	3.3E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.3E-09	4.3E-13	mg/kg-day	7.0E-10	mg/kg-day	6.1E-04
			Total Dermal								4.3E-09					6.1E-04
		Total Soil Direct Contact									4.6E-08					6.5E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.5E-14	mg/m^3	2.0E-17	mg/m^3	3.8E+04	(mg/m3)-1	7.5E-13	2.6E-16	mg/m^3	4.0E-08	mg/m3	6.4E-09
		Total Dust Inhalation									7.5E-13					6.4E-09
	Total Soil Direct Contact and Dust Inhalation										4.6E-08					6.5E-03

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Milton Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	7.6E-03	mg/kg	1.2E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.7E-11	1.5E-09	mg/kg-day	5.0E-03	mg/kg-day	3.1E-07
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	3.0E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.9E-08	3.9E-12	mg/kg-day	7.0E-10	mg/kg-day	5.6E-03
			Total Ingestion								3.9E-08					5.6E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	7.6E-03	mg/kg	1.0E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.1E-11	1.3E-09	mg/kg-day	5.0E-03	mg/kg-day	2.6E-07
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	3.1E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.0E-09	4.0E-13	mg/kg-day	7.0E-10	mg/kg-day	5.8E-04
			Total Dermal								4.1E-09					5.8E-04
		Total Soil Direct Contact									4.3E-08					6.1E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	5.6E-12	mg/m^3	7.4E-15	mg/m^3	5.1E-03	(mg/m3)-1	3.8E-17	9.6E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-14	mg/m^3	1.9E-17	mg/m^3	3.8E+04	(mg/m3)-1	7.1E-13	2.4E-16	mg/m^3	4.0E-08	mg/m3	6.1E-09
		Total Dust Inhalation									7.1E-13					6.1E-09
	Total Soil Direct Contact and Dust Inhalation										4.3E-08					6.1E-03

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Parcel B Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.7E-02	mg/kg	3.8E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.5E-11	4.9E-10	mg/kg-day	5.0E-03	mg/kg-day	9.8E-08
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	2.4E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.1E-07	3.1E-11	mg/kg-day	7.0E-10	mg/kg-day	4.4E-02
			Total Ingestion								3.1E-07					4.4E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.7E-02	mg/kg	3.3E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.3E-11	4.2E-10	mg/kg-day	5.0E-03	mg/kg-day	8.5E-08
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	2.5E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.2E-08	3.2E-12	mg/kg-day	7.0E-10	mg/kg-day	4.6E-03
			Total Dermal								3.2E-08					4.6E-03
		Total Soil Direct Contact									3.4E-07					4.9E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.2E-11	mg/m^3	2.4E-15	mg/m^3	5.1E-03	(mg/m3)-1	1.2E-17	3.1E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.7E-13	mg/m^3	1.5E-16	mg/m^3	3.8E+04	(mg/m3)-1	5.7E-12	1.9E-15	mg/m^3	4.0E-08	mg/m3	4.8E-08
		Total Dust Inhalation									5.7E-12					4.8E-08
	Total Soil Direct Contact and Dust Inhalation										3.4E-07					4.9E-02

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Tract A Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.5E-04	mg/kg	8.0E-13	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.2E-13	1.0E-11	mg/kg-day	5.0E-03	mg/kg-day	2.1E-09
				TEQ (ND=1/2DL)	2.8E-04	mg/kg	6.3E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.2E-08	8.2E-12	mg/kg-day	7.0E-10	mg/kg-day	1.2E-02
			Total Ingestion								8.2E-08					1.2E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.5E-04	mg/kg	6.9E-13	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.8E-13	9.0E-12	mg/kg-day	5.0E-03	mg/kg-day	1.8E-09
				TEQ (ND=1/2DL)	2.8E-04	mg/kg	6.6E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.6E-09	8.6E-13	mg/kg-day	7.0E-10	mg/kg-day	1.2E-03
			Total Dermal								8.6E-09					1.2E-03
		Total Soil Direct Contact									9.1E-08					1.3E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.6E-13	mg/m^3	5.0E-17	mg/m^3	5.1E-03	(mg/m3)-1	2.5E-19	6.5E-16	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.1E-13	mg/m^3	4.0E-17	mg/m^3	3.8E+04	(mg/m3)-1	1.5E-12	5.2E-16	mg/m^3	4.0E-08	mg/m3	1.3E-08
		Total Dust Inhalation									1.5E-12					1.3E-08
	Total Soil Direct Contact and Dust Inhalation										9.1E-08					1.3E-02

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Robak Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-03	mg/kg	1.5E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.0E-11	1.9E-09	mg/kg-day	5.0E-03	mg/kg-day	3.9E-07
				TEQ (ND=1/2DL)	2.2E-05	mg/kg	3.5E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.5E-08	4.5E-12	mg/kg-day	7.0E-10	mg/kg-day	6.5E-03
			Total Ingestion								4.5E-08					6.5E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-03	mg/kg	1.3E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.1E-11	1.7E-09	mg/kg-day	5.0E-03	mg/kg-day	3.3E-07
				TEQ (ND=1/2DL)	2.2E-05	mg/kg	3.6E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.7E-09	4.7E-13	mg/kg-day	7.0E-10	mg/kg-day	6.7E-04
			Total Dermal								4.7E-09					6.7E-04
		Total Soil Direct Contact									5.0E-08					7.1E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	7.1E-12	mg/m^3	9.3E-15	mg/m^3	5.1E-03	(mg/m3)-1	4.7E-17	1.2E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.7E-14	mg/m^3	2.2E-17	mg/m^3	3.8E+04	(mg/m3)-1	8.3E-13	2.8E-16	mg/m^3	4.0E-08	mg/m3	7.1E-09
		Total Dust Inhalation									8.3E-13					7.1E-09
	Total Soil Direct Contact and Dust Inhalation										5.0E-08					7.1E-03

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Smith Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.6E-05	mg/kg	2.5E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.2E-08	3.2E-12	mg/kg-day	7.0E-10	mg/kg-day	4.6E-03
			Total Ingestion								3.2E-08					4.6E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.6E-05	mg/kg	2.6E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.3E-09	3.3E-13	mg/kg-day	7.0E-10	mg/kg-day	4.7E-04
			Total Dermal								3.3E-09					4.7E-04
		Total Soil Direct Contact									3.5E-08					5.0E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.2E-14	mg/m^3	1.5E-17	mg/m^3	3.8E+04	(mg/m3)-1	5.8E-13	2.0E-16	mg/m^3	4.0E-08	mg/m3	5.0E-09
		Total Dust Inhalation									5.8E-13					5.0E-09
	Total Soil Direct Contact and Dust Inhalation										3.5E-08					5.0E-03

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Stevenson Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.8E-04	mg/kg	1.1E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.2E-12	1.4E-10	mg/kg-day	5.0E-03	mg/kg-day	2.8E-08
				TEQ (ND=1/2DL)	1.8E-06	mg/kg	2.7E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.5E-09	3.5E-13	mg/kg-day	7.0E-10	mg/kg-day	5.1E-04
			Total Ingestion								3.5E-09					5.1E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.8E-04	mg/kg	9.1E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.7E-12	1.2E-10	mg/kg-day	5.0E-03	mg/kg-day	2.4E-08
				TEQ (ND=1/2DL)	1.8E-06	mg/kg	2.8E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.7E-10	3.7E-14	mg/kg-day	7.0E-10	mg/kg-day	5.3E-05
			Total Dermal								3.7E-10					5.3E-05
		Total Soil Direct Contact									3.9E-09					5.6E-04
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	5.0E-13	mg/m^3	6.6E-16	mg/m^3	5.1E-03	(mg/m3)-1	3.4E-18	8.6E-15	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.3E-15	mg/m^3	1.7E-18	mg/m^3	3.8E+04	(mg/m3)-1	6.5E-14	2.2E-17	mg/m^3	4.0E-08	mg/m3	5.5E-10
		Total Dust Inhalation									6.5E-14					5.5E-10
	Total Soil Direct Contact and Dust Inhalation										3.9E-09					5.6E-04

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Vintage Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	6.2E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.0E-09	8.0E-13	mg/kg-day	7.0E-10	mg/kg-day	1.1E-03
			Total Ingestion								8.0E-09					1.1E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	6.4E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.3E-10	8.3E-14	mg/kg-day	7.0E-10	mg/kg-day	1.2E-04
			Total Dermal								8.3E-10					1.2E-04
		Total Soil Direct Contact									8.8E-09					1.3E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.9E-15	mg/m^3	3.9E-18	mg/m^3	3.8E+04	(mg/m3)-1	1.5E-13	5.0E-17	mg/m^3	4.0E-08	mg/m3	1.3E-09
		Total Dust Inhalation									1.5E-13					1.3E-09
	Total Soil Direct Contact and Dust Inhalation										8.9E-09					1.3E-03

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Cemetery Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	5.1E-06	mg/kg	8.0E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.0E-08	1.0E-12	mg/kg-day	7.0E-10	mg/kg-day	1.5E-03
			Total Ingestion								1.0E-08					1.5E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	5.1E-06	mg/kg	8.3E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.1E-09	1.1E-13	mg/kg-day	7.0E-10	mg/kg-day	1.5E-04
			Total Dermal								1.1E-09					1.5E-04
		Total Soil Direct Contact									1.1E-08					1.6E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	3.8E-15	mg/m^3	5.0E-18	mg/m^3	3.8E+04	(mg/m3)-1	1.9E-13	6.5E-17	mg/m^3	4.0E-08	mg/m3	1.6E-09
		Total Dust Inhalation									1.9E-13					1.6E-09
	Total Soil Direct Contact and Dust Inhalation										1.1E-08					1.6E-03

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Right-of-Way Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.8E+01	mg/kg	5.9E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.4E-07	7.7E-06	mg/kg-day	5.0E-03	mg/kg-day	1.5E-03
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Ingestion								2.4E-07					1.5E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.8E+01	mg/kg	5.1E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.0E-07	6.6E-06	mg/kg-day	5.0E-03	mg/kg-day	1.3E-03
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Dermal								2.0E-07					1.3E-03
		Total Soil Direct Contact									4.4E-07					2.9E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.8E-08	mg/m^3	3.7E-11	mg/m^3	5.1E-03	(mg/m3)-1	1.9E-13	4.8E-10	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	--	mg/m^3	--	mg/m^3	3.8E+04	(mg/m3)-1	--	--	mg/m^3	4.0E-08	mg/m3	--
		Total Dust Inhalation									1.9E-13					--
	Total Soil Direct Contact and Dust Inhalation										4.4E-07					2.9E-03

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Rodeo Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	6.2E-07	mg/kg	9.7E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.3E-09	1.3E-13	mg/kg-day	7.0E-10	mg/kg-day	1.8E-04
			Total Ingestion								1.3E-09					1.8E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	6.2E-07	mg/kg	1.0E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.3E-10	1.3E-14	mg/kg-day	7.0E-10	mg/kg-day	1.9E-05
			Total Dermal								1.3E-10					1.9E-05
		Total Soil Direct Contact									1.4E-09					2.0E-04
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	4.6E-16	mg/m^3	6.0E-19	mg/m^3	3.8E+04	(mg/m3)-1	2.3E-14	7.9E-18	mg/m^3	4.0E-08	mg/m3	2.0E-10
		Total Dust Inhalation									2.3E-14					2.0E-10
	Total Soil Direct Contact and Dust Inhalation										1.4E-09					2.0E-04

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
School Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-04	mg/kg	3.2E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.3E-12	4.2E-11	mg/kg-day	5.0E-03	mg/kg-day	8.3E-09
				TEQ (ND=1/2DL)	1.1E-06	mg/kg	1.6E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.1E-09	2.1E-13	mg/kg-day	7.0E-10	mg/kg-day	3.1E-04
			Total Ingestion								2.1E-09					3.1E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-04	mg/kg	2.8E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.1E-12	3.6E-11	mg/kg-day	5.0E-03	mg/kg-day	7.2E-09
				TEQ (ND=1/2DL)	1.1E-06	mg/kg	1.7E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.2E-10	2.2E-14	mg/kg-day	7.0E-10	mg/kg-day	3.2E-05
			Total Dermal								2.2E-10					3.2E-05
		Total Soil Direct Contact									2.4E-09					3.4E-04

TABLE D7.6 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
				C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.5E-13	mg/m^3	2.0E-16	mg/m^3	5.1E-03	(mg/m3)-1	1.0E-18	2.6E-15	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.8E-16	mg/m^3	1.0E-18	mg/m^3	3.8E+04	(mg/m3)-1	3.9E-14	1.3E-17	mg/m^3	4.0E-08	mg/m3	3.4E-10
		Total Dust Inhalation									3.9E-14					3.4E-10
	Total Soil Direct Contact and Dust Inhalation										2.4E-09					3.4E-04

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

BaP = benzo(a)pyrene

CSF = cancer slope factor

CT = central tendency

EPC = exposure point concentration

na = not applicable

nv = no value

RfC = inhalation reference dose

RfD = oral reference dose

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

SSCL Calculations, Table D7.6

Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	Cancer Risk Calculations								Non-Cancer Hazard Calculations						
								RME $SSCL_c$		CTE $SSCL_c$					RME $SSCL_{nc}$		CTE $SSCL_{nc}$	
				C/NC	TR	CSF/Unit Risk	Units	Value	Units	Value	Units	THQ	RfD/RfC	Units	Value	Units	Value	Units
Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-02	mg/kg-day	5.0E+04	mg/kg	9.9E+04	mg/kg
(non-ditch)			C9-C12 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	5.0E+03	mg/kg	9.9E+03	mg/kg
			C9-C10 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	1.5E+04	mg/kg	3.0E+04	mg/kg
			Ethylbenzene	c	1.7E-06	1.1E-02	(mg/kg-day)-1	2.3E+03	mg/kg	1.0E+04	mg/kg	2.0E-01	1.0E-01	mg/kg-day	5.0E+04	mg/kg	9.9E+04	mg/kg
			1-Methylnaphthalene	c	1.7E-06	2.9E-02	(mg/kg-day)-1	8.7E+02	mg/kg	3.8E+03	mg/kg	5.0E-01	7.0E-02	mg/kg-day	8.7E+04	mg/kg	1.7E+05	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-03	mg/kg-day	5.0E+03	mg/kg	9.9E+03	mg/kg
			Naphthalene	c	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	2.0E-02	mg/kg-day	2.5E+04	mg/kg	5.0E+04	mg/kg
			BaP equivalents	c	1.7E-06	7.3E+00	(mg/kg-day)-1	1.3E+00	mg/kg	5.0E+00	mg/kg	na	nv	na	--	mg/kg	--	mg/kg
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	5.0E+03	mg/kg	9.9E+03	mg/kg
			C11-C22 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	1.5E+04	mg/kg	3.0E+04	mg/kg
			Pentachlorophenol	c	1.7E-06	4.0E-01	(mg/kg-day)-1	6.3E+01	mg/kg	2.7E+02	mg/kg	2.5E-01	5.0E-03	mg/kg-day	3.1E+03	mg/kg	6.2E+03	mg/kg
			TEQ (ND=1/2DL)	c	1.7E-06	1.3E+05	(mg/kg-day)-1	1.9E-04	mg/kg	8.4E-04	mg/kg	1.0E+00	7.0E-10	mg/kg-day	1.7E-03	mg/kg	3.5E-03	mg/kg
		Dermal	C5-C8 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-02	mg/kg-day	2.9E+04	mg/kg	2.9E+04	mg/kg
			C9-C12 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	5.7E+03	mg/kg	5.7E+03	mg/kg
			C9-C10 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	1.7E+04	mg/kg	1.7E+04	mg/kg
			Ethylbenzene	c	1.7E-06	1.1E-02	(mg/kg-day)-1	--	mg/kg	--	mg/kg	2.0E-01	1.0E-01	mg/kg-day	--	mg/kg	--	mg/kg
			1-Methylnaphthalene	c	1.7E-06	2.9E-02	(mg/kg-day)-1	3.9E+03	mg/kg	8.4E+03	mg/kg	5.0E-01	7.0E-02	mg/kg-day	3.9E+05	mg/kg	3.9E+05	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-03	mg/kg-day	2.2E+04	mg/kg	2.2E+04	mg/kg
			Naphthalene	c	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	2.0E-02	mg/kg-day	1.1E+05	mg/kg	1.1E+05	mg/kg
			BaP equivalents	c	1.7E-06	7.3E+00	(mg/kg-day)-1	5.7E+00	mg/kg	1.1E+01	mg/kg	na	nv	na	--	mg/kg	--	mg/kg
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	5.7E+03	mg/kg	5.7E+03	mg/kg
			C11-C22 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	8.6E+04	mg/kg	8.6E+04	mg/kg
			Pentachlorophenol	c	1.7E-06	4.0E-01	(mg/kg-day)-1	1.5E+02	mg/kg	3.2E+02	mg/kg	2.5E-01	5.0E-03	mg/kg-day	7.2E+03	mg/kg	7.2E+03	mg/kg
			TEQ (ND=1/2DL)	c	1.7E-06	1.3E+05	(mg/kg-day)-1	3.8E-03	mg/kg	8.1E-03	mg/kg	1.0E+00	7.0E-10	mg/kg-day	3.3E-02	mg/kg	3.3E-02	mg/kg
Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	1.0E+00	7.0E-01	mg/m3	4.1E+01	mg/m3	4.1E+01	mg/m3
(non-ditch)			C9-C12 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	1.5E+00	mg/m3	1.5E+00	mg/m3
			C9-C10 Aromatics	nc	--	nv	na	--	mg/m3	--	mg/m3	5.0E-01	1.0E-01	mg/m3	2.9E+00	mg/m3	2.9E+00	mg/m3
			Ethylbenzene	c	1.7E-06	2.5E-03	(mg/m3)-1	2.4E-01	mg/m3	5.2E-01	mg/m3	2.5E-01	1.0E+00	mg/m3	1.5E+01	mg/m3	1.5E+01	mg/m3
			1-Methylnaphthalene	c	--	nv	na	--	mg/m3	--	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			2-Methylnaphthalene	nc	--	nv	na	--	mg/m3	--	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			Naphthalene	c	1.7E-06	3.4E-02	(mg/m3)-1	1.8E-02	mg/m3	3.8E-02	mg/m3	2.5E-01	3.0E-03	mg/m3	4.4E-02	mg/m3	4.4E-02	mg/m3
			BaP equivalents	c	1.7E-06	1.1E+00	(mg/m3)-1	2.0E-04	mg/m3	3.9E-04	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	1.5E+00	mg/m3	1.5E+00	mg/m3
			C11-C22 Aromatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	1.5E+00	mg/m3	1.5E+00	mg/m3
			Pentachlorophenol	c	1.7E-06	5.1E-03	(mg/m3)-1	1.2E-01	mg/m3	2.5E-01	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			TEQ (ND=1/2DL)	c	1.7E-06	3.8E+04	(mg/m3)-1	1.6E-08	mg/m3	3.4E-08	mg/m3	2.5E-01	4.0E-08	mg/m3	5.8E-07	mg/m3	5.8E-07	mg/m3
Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-02	mg/kg-day	3.4E+05	mg/kg	6.8E+05	mg/kg
(ditch)			C9-C12 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	3.4E+04	mg/kg	6.8E+04	mg/kg
			C9-C10 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	1.0E+05	mg/kg	2.0E+05	mg/kg
			Ethylbenzene	c	1.7E-06	1.1E-02	(mg/kg-day)-1	1.6E+04	mg/kg	6.8E+04	mg/kg	2.0E-01	1.0E-01	mg/kg-day	3.4E+05	mg/kg	6.8E+05	mg/kg
			1-Methylnaphthalene	c	1.7E-06	2.9E-02	(mg/kg-day)-1	6.0E+03	mg/kg	2.6E+04	mg/kg	5.0E-01	7.0E-02	mg/kg-day	5.9E+05	mg/kg	1.2E+06	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-03	mg/kg-day	3.4E+04	mg/kg	6.8E+04	mg/kg
			Naphthalene	c	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	2.0E-02	mg/kg-day	1.7E+05	mg/kg	3.4E+05	mg/kg
			BaP equivalents	c	1.7E-06	7.3E+00	(mg/kg-day)-1	8.8E+00	mg/kg	3.4E+01	mg/kg	na	nv	na	--	mg/kg	--	mg/kg
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	3.4E+04	mg/kg	6.8E+04	mg/kg
			C11-C22 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	1.0E+05	mg/kg	2.0E+05	mg/kg
			Pentachlorophenol	c	1.7E-06	4.0E-01	(mg/kg-day)-1	4.3E+02	mg/kg	1.9E+03	mg/kg	2.5E-01	5.0E-03	mg/kg-day	2.1E+04	mg/kg	4.2E+04	mg/kg
			TEQ (ND=1/2DL)	c	1.7E-06	1.3E+05	(mg/kg-day)-1	1.3E-03	mg/kg	5.8E-03	mg/kg	1.0E+00	7.0E-10	mg/kg-day	1.2E-02	mg/kg	2.4E-02	mg/kg
		Dermal	C5-C8 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-02	mg/kg-day	2.0E+05	mg/kg	2.0E+05	mg/kg
			C9-C12 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	3.9E+04	mg/kg	3.9E+04	mg/kg
			C9-C10 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	1.2E+05	mg/kg	1.2E+05	mg/kg
			Ethylbenzene	c	1.7E-06	1.1E-02	(mg/kg-day)-1	--	mg/kg	--	mg/kg	2.0E-01	1.0E-01	mg/kg-day	--	mg/kg	--	mg/kg
			1-Methylnaphthalene	c	1.7E-06	2.9E-02	(mg/kg-day)-1	2.6E+04	mg/kg	5.7E+04	mg/kg	5.0E-01	7.0E-02	mg/kg-day	2.6E+06	mg/kg	2.6E+06	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-03	mg/kg-day	1.5E+05	mg/kg	1.5E+05	mg/kg
			Naphthalene	c	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	2.0E-02	mg/kg-day	7.5E+05	mg/kg	7.5E+05	mg/kg
			BaP equivalents	c	1.7E-06	7.3E+00	(mg/kg-day)-1	3.9E+01	mg/kg	7.6E+01	mg/kg	na	nv	na	--	mg/kg	--	mg/kg
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	3.9E+04	mg/kg	3.9E+04	mg/kg
			C11-C22 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	5.9E+05	mg/kg	5.9E+05	mg/kg
			Pentachlorophenol	c	1.7E-06	4.0E-01	(mg/kg-day)-1	1.0E+03	mg/kg	2.2E+03	mg/kg	2.5E-01	5.0E-03	mg/kg-day	4.9E+04	mg/kg	4.9E+04	mg/kg
			TEQ (ND=1/2DL)	c	1.7E-06	1.3E+05	(mg/kg-day)-1	2.6E-02	mg/kg	5.5E-02	mg/kg	1.0E+00	7.0E-10	mg/kg-day	2.3E-01	mg/kg	2.3E-01	mg/kg

COPC	Total SSCLs		Total SSCLs	
	RME $SSCL_c$	CTE $SSCL_c$	RME $SSCL_{nc}$	CTE $SSCL_{nc}$
Non-ditch Properties				
C5-C8 Aliphatics	nv	nv	1.8E+04	2.2E+04
C9-C12 Aliphatics	nv	nv	2.7E+03	3.6E+03
C9-C10 Aromatics	nv	nv	8.0E+03	1.1E+04
Ethylbenzene	2.3E+03	1.0E+04	5.0E+04	9.9E+04
1-Methylnaphthalene	7.1E+02	2.6E+03	7.1E+04	1.2E+05
2-Methylnaphthalene	nv	nv	4.1E+03	6.8E+03
Naphthalene	2.4E+07	5.2E+07	2.0E+04	3.4E+04
BaP equivalents	1.1E+00	3.5E+00	nv	nv
C9-C18 Aliphatics	nv	nv	2.7E+03	3.6E+03
C11-C22 Aromatics	nv	nv	1.3E+04	2.2E+04
Pentachlorophenol	4.4E+01	1.5E+02	2.2E+03	3.3E+03
TEQ (ND=1/2DL)	1.9E-04	7.6E-04	1.7E-03	3.1E-03
Ditch Properties				
C5-C8 Aliphatics	nv	nv	1.2E+05	1.5E+05
C9-C12 Aliphatics	nv	nv	1.8E+04	2.5E+04
C9-C10 Aromatics	nv	nv	5.4E+04	7.4E+04
Ethylbenzene	1.6E+04	6.8E+04	3.4E+05	6.8E+05
1-Methylnaphthalene	4.9E+03	1.8E+04	4.8E+05	8.2E+05
2-Methylnaphthalene	nv	nv	2.8E+04	4.7E+04
Naphthalene	1.6E+08	3.5E+08	1.4E+05	2.3E+05
BaP equivalents	7.2E+00	2.4E+01	nv	nv
C9-C18 Aliphatics	nv	nv	1.8E+04	2.5E+04
C11-C22 Aromatics	nv	nv	8.7E+04	1.5E+05
Pentachlorophenol	3.0E+02	1.0E+03	1.5E+04	2.3E+04
TEQ (ND=1/2DL)	1.3E-03	5.2E-03	1.1E-02	2.1E-02

SSCL Calculations, Table D7.6

Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	Cancer Risk Calculations								Non-Cancer Hazard Calculations						
								RME $SSCL_c$		CTE $SSCL_c$					RME $SSCL_{nc}$		CTE $SSCL_{nc}$	
				C/NC	TR	CSF/Unit Risk	Units	Value	Units	Value	Units	THQ	RfD/RfC	Units	Value	Units	Value	Units
Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	1.0E+00	7.0E-01	mg/m3	2.8E+02	mg/m3	2.8E+02	mg/m3
(ditch)			C9-C12 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	1.0E+01	mg/m3	1.0E+01	mg/m3
			C9-C10 Aromatics	nc	--	nv	na	--	mg/m3	--	mg/m3	5.0E-01	1.0E-01	mg/m3	2.0E+01	mg/m3	2.0E+01	mg/m3
			Ethylbenzene	c	1.7E-06	2.5E-03	(mg/m3)-1	1.6E+00	mg/m3	3.5E+00	mg/m3	2.5E-01	1.0E+00	mg/m3	1.0E+02	mg/m3	1.0E+02	mg/m3
			1-Methylnaphthalene	c	--	nv	na	--	mg/m3	--	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			2-Methylnaphthalene	nc	--	nv	na	--	mg/m3	--	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			Naphthalene	c	1.7E-06	3.4E-02	(mg/m3)-1	1.2E-01	mg/m3	2.6E-01	mg/m3	2.5E-01	3.0E-03	mg/m3	3.0E-01	mg/m3	3.0E-01	mg/m3
			BaP equivalents	c	1.7E-06	1.1E+00	(mg/m3)-1	1.4E-03	mg/m3	2.7E-03	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	1.0E+01	mg/m3	1.0E+01	mg/m3
			C11-C22 Aromatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	1.0E+01	mg/m3	1.0E+01	mg/m3
			Pentachlorophenol	c	1.7E-06	5.1E-03	(mg/m3)-1	8.0E-01	mg/m3	1.7E+00	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			TEQ (ND=1/2DL)	c	1.7E-06	3.8E+04	(mg/m3)-1	1.1E-07	mg/m3	2.3E-07	mg/m3	2.5E-01	4.0E-08	mg/m3	4.0E-06	mg/m3	4.0E-06	mg/m3

COPC	Total SSCLs		Total SSCLs	
	RME $SSCL_c$	CTE $SSCL_c$	RME $SSCL_{nc}$	CTE $SSCL_{nc}$

Notes:

-- = no toxicity value available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene

c = carcinogen

CSF = cancer slope factor

CTE = central tendency exposure

na = not applicable

nc = noncarcinogen

nv = no value

RfC = inhalation reference concentration

RfD = oral reference dose

RME = reasonable maximum exposure

SSCL = site-specific cleanup level

TEQ = 2,3,7,8-TCDD toxicity equivalents

THQ = target hazard quotient

TR = target risk

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parcel A Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	1.3E+02	mg/kg	2.4E-06	mg/kg-day	nv	na	--	1.8E-04	mg/kg-day	4.0E-02	mg/kg-day	4.6E-03
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	2.0E+00	mg/kg	3.6E-08	mg/kg-day	nv	na	--	2.8E-06	mg/kg-day	1.0E-02	mg/kg-day	2.8E-04
				C9-C10 Aromatics	2.0E+00	mg/kg	3.6E-08	mg/kg-day	nv	na	--	2.8E-06	mg/kg-day	3.0E-02	mg/kg-day	9.3E-05
				Ethylbenzene	5.0E-02	mg/kg	9.0E-10	mg/kg-day	1.1E-02	(mg/kg-day)-1	9.9E-12	7.0E-08	mg/kg-day	1.0E-01	mg/kg-day	7.0E-07
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	3.3E-01	mg/kg	5.9E-09	mg/kg-day	nv	na	--	4.6E-07	mg/kg-day	4.0E-03	mg/kg-day	1.2E-04
				Naphthalene	1.0E-01	mg/kg	1.8E-09	mg/kg-day	nv	na	--	1.4E-07	mg/kg-day	2.0E-02	mg/kg-day	7.0E-06
				BaP equivalents	4.1E-01	mg/kg	7.4E-09	mg/kg-day	7.3E+00	(mg/kg-day)-1	5.4E-08	5.8E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.2E+01	mg/kg	2.2E-07	mg/kg-day	nv	na	--	1.7E-05	mg/kg-day	1.0E-02	mg/kg-day	1.7E-03
				C11-C22 Aromatics	2.6E+02	mg/kg	4.7E-06	mg/kg-day	nv	na	--	3.6E-04	mg/kg-day	3.0E-02	mg/kg-day	1.2E-02
				Pentachlorophenol	2.3E-01	mg/kg	4.1E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.7E-09	3.2E-07	mg/kg-day	5.0E-03	mg/kg-day	6.4E-05
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	3.3E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.3E-06	2.6E-09	mg/kg-day	7.0E-10	mg/kg-day	3.7E+00
			Total Ingestion								4.4E-06					3.7E+00
			Dermal	C5-C8 Aliphatics	1.3E+02	mg/kg	5.2E-06	mg/kg-day	nv	na	--	4.0E-04	mg/kg-day	4.0E-02	mg/kg-day	1.0E-02
				C9-C12 Aliphatics	2.0E+00	mg/kg	3.9E-08	mg/kg-day	nv	na	--	3.1E-06	mg/kg-day	1.0E-02	mg/kg-day	3.1E-04
				C9-C10 Aromatics	2.0E+00	mg/kg	3.9E-08	mg/kg-day	nv	na	--	3.1E-06	mg/kg-day	3.0E-02	mg/kg-day	1.0E-04
				Ethylbenzene	5.0E-02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	3.3E-01	mg/kg	1.7E-09	mg/kg-day	nv	na	--	1.3E-07	mg/kg-day	4.0E-03	mg/kg-day	3.3E-05
				Naphthalene	1.0E-01	mg/kg	5.1E-10	mg/kg-day	nv	na	--	4.0E-08	mg/kg-day	2.0E-02	mg/kg-day	2.0E-06
				BaP equivalents	4.1E-01	mg/kg	2.1E-09	mg/kg-day	7.3E+00	(mg/kg-day)-1	1.5E-08	1.6E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.2E+01	mg/kg	2.4E-07	mg/kg-day	nv	na	--	1.8E-05	mg/kg-day	1.0E-02	mg/kg-day	1.8E-03
				C11-C22 Aromatics	2.6E+02	mg/kg	1.0E-06	mg/kg-day	nv	na	--	7.9E-05	mg/kg-day	3.0E-02	mg/kg-day	2.6E-03
				Pentachlorophenol	2.3E-01	mg/kg	2.3E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.0E-10	1.8E-07	mg/kg-day	5.0E-03	mg/kg-day	3.5E-05
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	2.2E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.8E-07	1.7E-10	mg/kg-day	7.0E-10	mg/kg-day	2.4E-01
			Total Dermal								3.0E-07					2.6E-01
		Total Surface Soil Direct Contact									4.7E-06					4.0E+00
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	9.7E-08	mg/m^3	1.4E-10	mg/m^3	nv	na	--	1.1E-08	mg/m^3	7.0E-01	mg/m3	1.6E-08
		Surface Soil		C9-C12 Aliphatics	1.5E-09	mg/m^3	2.1E-12	mg/m^3	nv	na	--	1.7E-10	mg/m^3	1.0E-01	mg/m3	1.7E-09
		(0-2 ft bgs)		C9-C10 Aromatics	1.5E-09	mg/m^3	2.1E-12	mg/m^3	nv	na	--	1.7E-10	mg/m^3	1.0E-01	mg/m3	1.7E-09
				Ethylbenzene	3.7E-11	mg/m^3	5.3E-14	mg/m^3	2.5E-03	(mg/m3)-1	1.3E-16	4.2E-12	mg/m^3	1.0E+00	mg/m3	4.2E-12
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	2.4E-10	mg/m^3	3.5E-13	mg/m^3	nv	na	--	2.7E-11	mg/m^3	nv	na	--
				Naphthalene	7.4E-11	mg/m^3	1.1E-13	mg/m^3	3.4E-02	(mg/m3)-1	3.6E-15	8.3E-12	mg/m^3	3.0E-03	mg/m3	2.8E-09
				BaP equivalents	3.0E-10	mg/m^3	4.4E-13	mg/m^3	1.1E+00	(mg/m3)-1	4.9E-13	3.4E-11	mg/m^3	nv	na	--
				C9-C18 Aliphatics	8.8E-09	mg/m^3	1.3E-11	mg/m^3	nv	na	--	1.0E-09	mg/m^3	1.0E-01	mg/m3	1.0E-08
				C11-C22 Aromatics	1.9E-07	mg/m^3	2.8E-10	mg/m^3	nv	na	--	2.2E-08	mg/m^3	1.0E-01	mg/m3	2.2E-07
				Pentachlorophenol	1.7E-10	mg/m^3	2.5E-13	mg/m^3	5.1E-03	(mg/m3)-1	1.3E-15	1.9E-11	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-12	mg/m^3	2.0E-15	mg/m^3	3.8E+04	(mg/m3)-1	7.5E-11	1.5E-13	mg/m^3	4.0E-08	mg/m3	3.9E-06
		Total Dust Inhalation from Surface Soil									7.6E-11					4.1E-06
Total Surface Soil Direct Contact and Dust Inhalation											4.7E-06					4.0E+00
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parcel B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	7.9E+00	mg/kg	1.4E-07	mg/kg-day	nv	na	--	1.1E-05	mg/kg-day	4.0E-02	mg/kg-day	2.8E-04
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	9.1E+02	mg/kg	1.6E-05	mg/kg-day	nv	na	--	1.3E-03	mg/kg-day	1.0E-02	mg/kg-day	1.3E-01
				C9-C10 Aromatics	3.7E+02	mg/kg	6.7E-06	mg/kg-day	nv	na	--	5.2E-04	mg/kg-day	3.0E-02	mg/kg-day	1.7E-02
				Ethylbenzene	4.6E-02	mg/kg	8.3E-10	mg/kg-day	1.1E-02	(mg/kg-day)-1	9.1E-12	6.4E-08	mg/kg-day	1.0E-01	mg/kg-day	6.4E-07
				1-Methylnaphthalene	3.4E+00	mg/kg	6.1E-08	mg/kg-day	2.9E-02	(mg/kg-day)-1	1.8E-09	4.8E-06	mg/kg-day	7.0E-02	mg/kg-day	6.8E-05
				2-Methylnaphthalene	2.0E+00	mg/kg	3.6E-08	mg/kg-day	nv	na	--	2.8E-06	mg/kg-day	4.0E-03	mg/kg-day	7.1E-04
				Naphthalene	4.9E-01	mg/kg	8.8E-09	mg/kg-day	nv	na	--	6.9E-07	mg/kg-day	2.0E-02	mg/kg-day	3.4E-05
				BaP equivalents	6.1E-01	mg/kg	1.1E-08	mg/kg-day	7.3E+00	(mg/kg-day)-1	8.0E-08	8.6E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.8E+03	mg/kg	3.3E-05	mg/kg-day	nv	na	--	2.5E-03	mg/kg-day	1.0E-02	mg/kg-day	2.5E-01
				C11-C22 Aromatics	6.1E+03	mg/kg	1.1E-04	mg/kg-day	nv	na	--	8.6E-03	mg/kg-day	3.0E-02	mg/kg-day	2.9E-01
				Pentachlorophenol	3.4E+03	mg/kg	6.1E-05	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.4E-05	4.7E-03	mg/kg-day	5.0E-03	mg/kg-day	9.5E-01
				TEQ (ND=1/2DL)	3.8E-03	mg/kg	6.8E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.8E-06	5.3E-09	mg/kg-day	7.0E-10	mg/kg-day	7.6E+00
			Total Ingestion								3.3E-05					9.2E+00
			Dermal	C5-C8 Aliphatics	7.9E+00	mg/kg	3.1E-07	mg/kg-day	nv	na	--	2.4E-05	mg/kg-day	4.0E-02	mg/kg-day	6.0E-04
				C9-C12 Aliphatics	9.1E+02	mg/kg	1.8E-05	mg/kg-day	nv	na	--	1.4E-03	mg/kg-day	1.0E-02	mg/kg-day	1.4E-01
				C9-C10 Aromatics	3.7E+02	mg/kg	7.3E-06	mg/kg-day	nv	na	--	5.7E-04	mg/kg-day	3.0E-02	mg/kg-day	1.9E-02
				Ethylbenzene	4.6E-02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	3.4E+00	mg/kg	1.7E-08	mg/kg-day	2.9E-02	(mg/kg-day)-1	5.0E-10	1.4E-06	mg/kg-day	7.0E-02	mg/kg-day	1.9E-05
				2-Methylnaphthalene	2.0E+00	mg/kg	1.0E-08	mg/kg-day	nv	na	--	8.0E-07	mg/kg-day	4.0E-03	mg/kg-day	2.0E-04
				Naphthalene	4.9E-01	mg/kg	2.5E-09	mg/kg-day	nv	na	--	1.9E-07	mg/kg-day	2.0E-02	mg/kg-day	9.7E-06
				BaP equivalents	6.1E-01	mg/kg	3.1E-09	mg/kg-day	7.3E+00	(mg/kg-day)-1	2.3E-08	2.4E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.8E+03	mg/kg	3.6E-05	mg/kg-day	nv	na	--	2.8E-03	mg/kg-day	1.0E-02	mg/kg-day	2.8E-01
				C11-C22 Aromatics	6.1E+03	mg/kg	2.4E-05	mg/kg-day	nv	na	--	1.9E-03	mg/kg-day	3.0E-02	mg/kg-day	6.3E-02
				Pentachlorophenol	3.4E+03	mg/kg	3.3E-05	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.3E-05	2.6E-03	mg/kg-day	5.0E-03	mg/kg-day	5.2E-01
				TEQ (ND=1/2DL)	3.8E-03	mg/kg	4.4E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.8E-07	3.5E-10	mg/kg-day	7.0E-10	mg/kg-day	5.0E-01
			Total Dermal								1.4E-05					1.5E+00
		Total Surface Soil Direct Contact									4.7E-05					1.1E+01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	5.8E-09	mg/m^3	8.4E-12	mg/m^3	nv	na	--	6.5E-10	mg/m^3	7.0E-01	mg/m3	9.3E-10
		Surface Soil		C9-C12 Aliphatics	6.7E-07	mg/m^3	9.7E-10	mg/m^3	nv	na	--	7.6E-08	mg/m^3	1.0E-01	mg/m3	7.6E-07
		(0-2 ft bgs)		C9-C10 Aromatics	2.7E-07	mg/m^3	4.0E-10	mg/m^3	nv	na	--	3.1E-08	mg/m^3	1.0E-01	mg/m3	3.1E-07
				Ethylbenzene	3.4E-11	mg/m^3	4.9E-14	mg/m^3	2.5E-03	(mg/m3)-1	1.2E-16	3.8E-12	mg/m^3	1.0E+00	mg/m3	3.8E-12
				1-Methylnaphthalene	2.5E-09	mg/m^3	3.6E-12	mg/m^3	nv	na	--	2.8E-10	mg/m^3	nv	na	--
				2-Methylnaphthalene	1.5E-09	mg/m^3	2.2E-12	mg/m^3	nv	na	--	1.7E-10	mg/m^3	nv	na	--
				Naphthalene	3.6E-10	mg/m^3	5.2E-13	mg/m^3	3.4E-02	(mg/m3)-1	1.8E-14	4.1E-11	mg/m^3	3.0E-03	mg/m3	1.4E-08
				BaP equivalents	4.5E-10	mg/m^3	6.5E-13	mg/m^3	1.1E+00	(mg/m3)-1	7.2E-13	5.1E-11	mg/m^3	nv	na	--
				C9-C18 Aliphatics	1.3E-06	mg/m^3	1.9E-09	mg/m^3	nv	na	--	1.5E-07	mg/m^3	1.0E-01	mg/m3	1.5E-06
				C11-C22 Aromatics	4.5E-06	mg/m^3	6.6E-09	mg/m^3	nv	na	--	5.1E-07	mg/m^3	1.0E-01	mg/m3	5.1E-06
				Pentachlorophenol	2.5E-06	mg/m^3	3.6E-09	mg/m^3	5.1E-03	(mg/m3)-1	1.8E-11	2.8E-07	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.8E-12	mg/m^3	4.0E-15	mg/m^3	3.8E+04	(mg/m3)-1	1.5E-10	3.1E-13	mg/m^3	4.0E-08	mg/m3	7.9E-06
		Total Dust Inhalation from Surface Soil									1.7E-10					1.6E-05
Total Surface Soil Direct Contact and Dust Inhalation											4.7E-05					1.1E+01

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Soil	Subsurface Soil	Ingestion	C5-C8 Aliphatics	9.7E+00	mg/kg	1.7E-07	mg/kg-day	nv	na	--	1.4E-05	mg/kg-day	4.0E-02	mg/kg-day	3.4E-04
		(>2 ft bgs)		C9-C12 Aliphatics	7.8E+02	mg/kg	1.4E-05	mg/kg-day	nv	na	--	1.1E-03	mg/kg-day	1.0E-02	mg/kg-day	1.1E-01
				C9-C10 Aromatics	8.4E+01	mg/kg	1.5E-06	mg/kg-day	nv	na	--	1.2E-04	mg/kg-day	3.0E-02	mg/kg-day	3.9E-03
				Ethylbenzene	1.5E+02	mg/kg	2.7E-06	mg/kg-day	1.1E-02	(mg/kg-day)-1	3.0E-08	2.1E-04	mg/kg-day	1.0E-01	mg/kg-day	2.1E-03
				1-Methylnaphthalene	1.6E+02	mg/kg	2.9E-06	mg/kg-day	2.9E-02	(mg/kg-day)-1	8.5E-08	2.3E-04	mg/kg-day	7.0E-02	mg/kg-day	3.3E-03
				2-Methylnaphthalene	7.2E+01	mg/kg	1.3E-06	mg/kg-day	nv	na	--	1.0E-04	mg/kg-day	4.0E-03	mg/kg-day	2.5E-02
				Naphthalene	1.1E+01	mg/kg	2.0E-07	mg/kg-day	nv	na	--	1.6E-05	mg/kg-day	2.0E-02	mg/kg-day	8.0E-04
				BaP equivalents	3.1E-01	mg/kg	5.6E-09	mg/kg-day	7.3E+00	(mg/kg-day)-1	4.1E-08	4.3E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	7.9E+03	mg/kg	1.4E-04	mg/kg-day	nv	na	--	1.1E-02	mg/kg-day	1.0E-02	mg/kg-day	1.1E+00
				C11-C22 Aromatics	3.0E+03	mg/kg	5.4E-05	mg/kg-day	nv	na	--	4.2E-03	mg/kg-day	3.0E-02	mg/kg-day	1.4E-01
				Pentachlorophenol	1.2E+02	mg/kg	2.1E-06	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.3E-07	1.6E-04	mg/kg-day	5.0E-03	mg/kg-day	3.2E-02
				TEQ (ND=1/2DL)	1.6E-03	mg/kg	2.8E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.6E-06	2.2E-09	mg/kg-day	7.0E-10	mg/kg-day	3.1E+00
			Total Ingestion								4.6E-06					4.5E+00
			Dermal	C5-C8 Aliphatics	9.7E+00	mg/kg	3.8E-07	mg/kg-day	nv	na	--	3.0E-05	mg/kg-day	4.0E-02	mg/kg-day	7.4E-04
				C9-C12 Aliphatics	7.8E+02	mg/kg	1.5E-05	mg/kg-day	nv	na	--	1.2E-03	mg/kg-day	1.0E-02	mg/kg-day	1.2E-01
				C9-C10 Aromatics	8.4E+01	mg/kg	1.6E-06	mg/kg-day	nv	na	--	1.3E-04	mg/kg-day	3.0E-02	mg/kg-day	4.3E-03
				Ethylbenzene	1.5E+02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	1.6E+02	mg/kg	8.4E-07	mg/kg-day	2.9E-02	(mg/kg-day)-1	2.4E-08	6.5E-05	mg/kg-day	7.0E-02	mg/kg-day	9.3E-04
				2-Methylnaphthalene	7.2E+01	mg/kg	3.7E-07	mg/kg-day	nv	na	--	2.9E-05	mg/kg-day	4.0E-03	mg/kg-day	7.1E-03
				Naphthalene	1.1E+01	mg/kg	5.8E-08	mg/kg-day	nv	na	--	4.5E-06	mg/kg-day	2.0E-02	mg/kg-day	2.3E-04
				BaP equivalents	3.1E-01	mg/kg	1.6E-09	mg/kg-day	7.3E+00	(mg/kg-day)-1	1.1E-08	1.2E-07	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	7.9E+03	mg/kg	1.6E-04	mg/kg-day	nv	na	--	1.2E-02	mg/kg-day	1.0E-02	mg/kg-day	1.2E+00
				C11-C22 Aromatics	3.0E+03	mg/kg	1.2E-05	mg/kg-day	nv	na	--	9.2E-04	mg/kg-day	3.0E-02	mg/kg-day	3.1E-02
				Pentachlorophenol	1.2E+02	mg/kg	1.1E-06	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.5E-07	8.8E-05	mg/kg-day	5.0E-03	mg/kg-day	1.8E-02
				TEQ (ND=1/2DL)	1.6E-03	mg/kg	1.8E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.4E-07	1.4E-10	mg/kg-day	7.0E-10	mg/kg-day	2.0E-01
			Total Dermal								7.2E-07					1.6E+00
		Total Subsurface Soil Direct Contact									5.3E-06					6.1E+00
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	7.1E-09	mg/m^3	1.0E-11	mg/m^3	nv	na	--	8.1E-10	mg/m^3	7.0E-01	mg/m3	1.2E-09
		Subsurface Soil		C9-C12 Aliphatics	5.7E-07	mg/m^3	8.3E-10	mg/m^3	nv	na	--	6.5E-08	mg/m^3	1.0E-01	mg/m3	6.5E-07
		(>2 ft bgs)		C9-C10 Aromatics	6.2E-08	mg/m^3	8.9E-11	mg/m^3	nv	na	--	7.0E-09	mg/m^3	1.0E-01	mg/m3	7.0E-08
				Ethylbenzene	1.1E-07	mg/m^3	1.6E-10	mg/m^3	2.5E-03	(mg/m3)-1	4.1E-13	1.3E-08	mg/m^3	1.0E+00	mg/m3	1.3E-08
				1-Methylnaphthalene	1.2E-07	mg/m^3	1.8E-10	mg/m^3	nv	na	--	1.4E-08	mg/m^3	nv	na	--
				2-Methylnaphthalene	5.3E-08	mg/m^3	7.7E-11	mg/m^3	nv	na	--	6.0E-09	mg/m^3	nv	na	--
				Naphthalene	8.4E-09	mg/m^3	1.2E-11	mg/m^3	3.4E-02	(mg/m3)-1	4.1E-13	9.5E-10	mg/m^3	3.0E-03	mg/m3	3.2E-07
				BaP equivalents	2.3E-10	mg/m^3	3.3E-13	mg/m^3	1.1E+00	(mg/m3)-1	3.6E-13	2.6E-11	mg/m^3	nv	na	--
				C9-C18 Aliphatics	5.8E-06	mg/m^3	8.5E-09	mg/m^3	nv	na	--	6.6E-07	mg/m^3	1.0E-01	mg/m3	6.6E-06
				C11-C22 Aromatics	2.2E-06	mg/m^3	3.2E-09	mg/m^3	nv	na	--	2.5E-07	mg/m^3	1.0E-01	mg/m3	2.5E-06
				Pentachlorophenol	8.5E-08	mg/m^3	1.2E-10	mg/m^3	5.1E-03	(mg/m3)-1	6.3E-13	9.6E-09	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.1E-12	mg/m^3	1.7E-15	mg/m^3	3.8E+04	(mg/m3)-1	6.3E-11	1.3E-13	mg/m^3	4.0E-08	mg/m3	3.2E-06
		Total Dust Inhalation from Subsurface Soil									6.5E-11					1.3E-05
	Total Subsurface Soil Direct Contact and Dust Inhalation										5.3E-06					6.1E+00

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Spigot Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	5.1E-02	mg/kg	9.2E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.7E-10	7.2E-08	mg/kg-day	5.0E-03	mg/kg-day	1.4E-05
				TEQ (ND=1/2DL)	1.0E-04	mg/kg	1.8E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.3E-07	1.4E-10	mg/kg-day	7.0E-10	mg/kg-day	2.0E-01
			Total Ingestion								2.3E-07					2.0E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	5.1E-02	mg/kg	5.0E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.0E-10	3.9E-08	mg/kg-day	5.0E-03	mg/kg-day	7.8E-06
				TEQ (ND=1/2DL)	1.0E-04	mg/kg	1.2E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.5E-08	9.2E-12	mg/kg-day	7.0E-10	mg/kg-day	1.3E-02
			Total Dermal								1.5E-08					1.3E-02
		Total Surface Soil Direct Contact									2.5E-07					2.1E-01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	3.8E-11	mg/m^3	5.5E-14	mg/m^3	5.1E-03	(mg/m3)-1	2.8E-16	4.3E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.4E-14	mg/m^3	1.1E-16	mg/m^3	3.8E+04	(mg/m3)-1	4.1E-12	8.3E-15	mg/m^3	4.0E-08	mg/m3	2.1E-07
		Total Dust Inhalation from Surface Soil									4.1E-12					2.1E-07
	Total Surface Soil Direct Contact and Dust Inhalation										2.5E-07					2.1E-01
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Cassell Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.3E+00	mg/kg	2.1E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.3E-09	1.6E-06	mg/kg-day	5.0E-03	mg/kg-day	3.2E-04
				TEQ (ND=1/2DL)	1.5E-03	mg/kg	1.3E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.7E-06	1.0E-09	mg/kg-day	7.0E-10	mg/kg-day	1.5E+00
			Total Ingestion								1.7E-06					1.5E+00
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.3E+00	mg/kg	1.1E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.5E-09	8.8E-07	mg/kg-day	5.0E-03	mg/kg-day	1.8E-04
				TEQ (ND=1/2DL)	1.5E-03	mg/kg	8.7E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.1E-07	6.8E-11	mg/kg-day	7.0E-10	mg/kg-day	9.7E-02
			Total Dermal								1.2E-07					9.8E-02
		Total Surface Soil Direct Contact									1.9E-06					1.6E+00
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.7E-09	mg/m^3	1.2E-12	mg/m^3	5.1E-03	(mg/m3)-1	6.3E-15	9.6E-11	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.1E-12	mg/m^3	7.9E-16	mg/m^3	3.8E+04	(mg/m3)-1	3.0E-11	6.2E-14	mg/m^3	4.0E-08	mg/m3	1.5E-06
		Total Dust Inhalation from Surface Soil									3.0E-11					1.5E-06
Total Surface Soil Direct Contact and Dust Inhalation											1.9E-06					1.6E+00

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Soil	Subsurface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
		(>2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.6E-02	mg/kg	2.3E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.3E-11	1.8E-08	mg/kg-day	5.0E-03	mg/kg-day	3.6E-06
				TEQ (ND=1/2DL)	3.0E-05	mg/kg	2.7E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.6E-08	2.1E-11	mg/kg-day	7.0E-10	mg/kg-day	3.0E-02
			Total Ingestion								3.6E-08					3.0E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.6E-02	mg/kg	1.3E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.1E-11	9.9E-09	mg/kg-day	5.0E-03	mg/kg-day	2.0E-06
				TEQ (ND=1/2DL)	3.0E-05	mg/kg	1.8E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.3E-09	1.4E-12	mg/kg-day	7.0E-10	mg/kg-day	2.0E-03
			Total Dermal								2.4E-09					2.0E-03
		Total Subsurface Soil Direct Contact									3.8E-08					3.2E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Subsurface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(>2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.9E-11	mg/m^3	1.4E-14	mg/m^3	5.1E-03	(mg/m3)-1	7.1E-17	1.1E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.2E-14	mg/m^3	1.6E-17	mg/m^3	3.8E+04	(mg/m3)-1	6.2E-13	1.3E-15	mg/m^3	4.0E-08	mg/m3	3.2E-08
		Total Dust Inhalation from Subsurface Soil									6.2E-13					3.2E-08
	Total Subsurface Soil Direct Contact and Dust Inhalation										3.8E-08					3.2E-02

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parmenter Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	4.4E-03	mg/kg	4.0E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.6E-11	3.1E-09	mg/kg-day	5.0E-03	mg/kg-day	6.2E-07
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	1.7E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.2E-08	1.3E-11	mg/kg-day	7.0E-10	mg/kg-day	1.9E-02
			Total Ingestion								2.2E-08					1.9E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	4.4E-03	mg/kg	2.2E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.6E-12	1.7E-09	mg/kg-day	5.0E-03	mg/kg-day	3.4E-07
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	1.1E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.4E-09	8.5E-13	mg/kg-day	7.0E-10	mg/kg-day	1.2E-03
			Total Dermal								1.4E-09					1.2E-03
		Total Surface Soil Direct Contact									2.3E-08					2.0E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	3.2E-12	mg/m^3	2.3E-15	mg/m^3	5.1E-03	(mg/m3)-1	1.2E-17	1.8E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-14	mg/m^3	9.9E-18	mg/m^3	3.8E+04	(mg/m3)-1	3.8E-13	7.7E-16	mg/m^3	4.0E-08	mg/m3	1.9E-08
		Total Dust Inhalation from Surface Soil									3.8E-13					1.9E-08
Total Surface Soil Direct Contact and Dust Inhalation											2.3E-08					2.0E-02

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Soil	Subsurface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
		(>2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-03	mg/kg	2.0E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.9E-12	1.5E-09	mg/kg-day	5.0E-03	mg/kg-day	3.1E-07
				TEQ (ND=1/2DL)	5.8E-06	mg/kg	5.2E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.8E-09	4.1E-12	mg/kg-day	7.0E-10	mg/kg-day	5.8E-03
			Total Ingestion								6.8E-09					5.8E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-03	mg/kg	1.1E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.3E-12	8.4E-10	mg/kg-day	5.0E-03	mg/kg-day	1.7E-07
				TEQ (ND=1/2DL)	5.8E-06	mg/kg	3.4E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.5E-10	2.7E-13	mg/kg-day	7.0E-10	mg/kg-day	3.8E-04
			Total Dermal								4.5E-10					3.8E-04
		Total Subsurface Soil Direct Contact									7.3E-09					6.2E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Subsurface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(>2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.6E-12	mg/m^3	1.2E-15	mg/m^3	5.1E-03	(mg/m3)-1	6.0E-18	9.2E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	4.3E-15	mg/m^3	3.1E-18	mg/m^3	3.8E+04	(mg/m3)-1	1.2E-13	2.4E-16	mg/m^3	4.0E-08	mg/m3	6.1E-09
		Total Dust Inhalation from Subsurface Soil									1.2E-13					6.1E-09
	Total Subsurface Soil Direct Contact and Dust Inhalation										7.3E-09					6.2E-03

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Skroch Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.2E-01	mg/kg	1.1E-09	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.3E-10	8.4E-08	mg/kg-day	5.0E-03	mg/kg-day	1.7E-05
				TEQ (ND=1/2DL)	3.0E-04	mg/kg	2.7E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.5E-07	2.1E-10	mg/kg-day	7.0E-10	mg/kg-day	3.0E-01
			Total Ingestion								3.5E-07					3.0E-01
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.2E-01	mg/kg	5.9E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.4E-10	4.6E-08	mg/kg-day	5.0E-03	mg/kg-day	9.2E-06
				TEQ (ND=1/2DL)	3.0E-04	mg/kg	1.8E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.3E-08	1.4E-11	mg/kg-day	7.0E-10	mg/kg-day	2.0E-02
			Total Dermal								2.3E-08					2.0E-02
		Total Surface Soil Direct Contact									3.7E-07					3.2E-01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	8.8E-11	mg/m^3	6.4E-14	mg/m^3	5.1E-03	(mg/m3)-1	3.3E-16	5.0E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.2E-13	mg/m^3	1.6E-16	mg/m^3	3.8E+04	(mg/m3)-1	6.1E-12	1.2E-14	mg/m^3	4.0E-08	mg/m3	3.1E-07
		Total Dust Inhalation from Surface Soil									6.1E-12					3.1E-07
	Total Surface Soil Direct Contact and Dust Inhalation										3.7E-07					3.2E-01
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Chaney Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-04	mg/kg	4.0E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.6E-12	3.1E-10	mg/kg-day	5.0E-03	mg/kg-day	6.3E-08
				TEQ (ND=1/2DL)	1.0E-05	mg/kg	1.8E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.3E-08	1.4E-11	mg/kg-day	7.0E-10	mg/kg-day	2.0E-02
			Total Ingestion								2.3E-08					2.0E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-04	mg/kg	2.2E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.8E-13	1.7E-10	mg/kg-day	5.0E-03	mg/kg-day	3.4E-08
				TEQ (ND=1/2DL)	1.0E-05	mg/kg	1.2E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.5E-09	9.2E-13	mg/kg-day	7.0E-10	mg/kg-day	1.3E-03
			Total Dermal								1.5E-09					1.3E-03
		Total Surface Soil Direct Contact									2.5E-08					2.1E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.6E-13	mg/m^3	2.4E-16	mg/m^3	5.1E-03	(mg/m3)-1	1.2E-18	1.9E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.3E-15	mg/m^3	1.1E-17	mg/m^3	3.8E+04	(mg/m3)-1	4.1E-13	8.3E-16	mg/m^3	4.0E-08	mg/m3	2.1E-08
		Total Dust Inhalation from Surface Soil									4.1E-13					2.1E-08
	Total Surface Soil Direct Contact and Dust Inhalation										2.5E-08					2.1E-02
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

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REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
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Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Tract B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-03	mg/kg	1.5E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.0E-06	1.2E-09	mg/kg-day	7.0E-10	mg/kg-day	1.7E+00
			Total Ingestion								2.0E-06					1.7E+00
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-03	mg/kg	9.8E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.3E-07	7.7E-11	mg/kg-day	7.0E-10	mg/kg-day	1.1E-01
			Total Dermal								1.3E-07					1.1E-01
		Total Surface Soil Direct Contact									2.1E-06					1.8E+00
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.2E-12	mg/m^3	8.9E-16	mg/m^3	3.8E+04	(mg/m3)-1	3.4E-11	7.0E-14	mg/m^3	4.0E-08	mg/m3	1.7E-06
		Total Dust Inhalation from Surface Soil									3.4E-11					1.7E-06
	Total Surface Soil Direct Contact and Dust Inhalation										2.1E-06					1.8E+00
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Renfroe Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-05	mg/kg	3.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.0E-08	2.4E-11	mg/kg-day	7.0E-10	mg/kg-day	3.4E-02
			Total Ingestion								4.0E-08					3.4E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.7E-05	mg/kg	2.0E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.6E-09	1.6E-12	mg/kg-day	7.0E-10	mg/kg-day	2.2E-03
			Total Dermal								2.6E-09					2.2E-03
		Total Surface Soil Direct Contact									4.3E-08					3.7E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.3E-14	mg/m^3	1.8E-17	mg/m^3	3.8E+04	(mg/m3)-1	7.0E-13	1.4E-15	mg/m^3	4.0E-08	mg/m3	3.6E-08
		Total Dust Inhalation from Surface Soil									7.0E-13					3.6E-08
Total Surface Soil Direct Contact and Dust Inhalation											4.3E-08					3.7E-02
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
3WT Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	3.7E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.8E-08	2.9E-11	mg/kg-day	7.0E-10	mg/kg-day	4.1E-02
			Total Ingestion								4.8E-08					4.1E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	2.4E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.1E-09	1.9E-12	mg/kg-day	7.0E-10	mg/kg-day	2.7E-03
			Total Dermal								3.1E-09					2.7E-03
		Total Surface Soil Direct Contact									5.1E-08					4.4E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.5E-14	mg/m^3	2.2E-17	mg/m^3	3.8E+04	(mg/m3)-1	8.3E-13	1.7E-15	mg/m^3	4.0E-08	mg/m3	4.3E-08
		Total Dust Inhalation from Surface Soil									8.3E-13					4.3E-08
	Total Surface Soil Direct Contact and Dust Inhalation										5.1E-08					4.4E-02
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

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					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Milton Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.5E-02	mg/kg	2.7E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.1E-10	2.1E-08	mg/kg-day	5.0E-03	mg/kg-day	4.2E-06
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	6.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	7.9E-08	4.8E-11	mg/kg-day	7.0E-10	mg/kg-day	6.8E-02
			Total Ingestion								7.9E-08					6.8E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.5E-02	mg/kg	1.5E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.9E-11	1.2E-08	mg/kg-day	5.0E-03	mg/kg-day	2.3E-06
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	4.0E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.2E-09	3.1E-12	mg/kg-day	7.0E-10	mg/kg-day	4.4E-03
			Total Dermal								5.3E-09					4.5E-03
		Total Surface Soil Direct Contact									8.5E-08					7.2E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.1E-11	mg/m^3	1.6E-14	mg/m^3	5.1E-03	(mg/m3)-1	8.2E-17	1.3E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.5E-14	mg/m^3	3.6E-17	mg/m^3	3.8E+04	(mg/m3)-1	1.4E-12	2.8E-15	mg/m^3	4.0E-08	mg/m3	7.1E-08
		Total Dust Inhalation from Surface Soil									1.4E-12					7.1E-08
Total Surface Soil Direct Contact and Dust Inhalation											8.5E-08					7.2E-02

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Soil	Subsurface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
		(>2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.1E-03	mg/kg	2.0E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.2E-12	1.6E-09	mg/kg-day	5.0E-03	mg/kg-day	3.2E-07
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Ingestion								8.2E-12					3.2E-07
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.1E-03	mg/kg	1.1E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.4E-12	8.7E-10	mg/kg-day	5.0E-03	mg/kg-day	1.7E-07
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Dermal								4.4E-12					1.7E-07
		Total Subsurface Soil Direct Contact									1.3E-11					4.9E-07
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Subsurface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(>2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	8.3E-13	mg/m^3	1.2E-15	mg/m^3	5.1E-03	(mg/m3)-1	6.2E-18	9.4E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	--	mg/m^3	--	mg/m^3	3.8E+04	(mg/m3)-1	--	--	mg/m^3	4.0E-08	mg/m3	--
		Total Dust Inhalation from Subsurface Soil									6.2E-18					--
	Total Subsurface Soil Direct Contact and Dust Inhalation										1.3E-11					4.9E-07

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Parcel B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.0E-02	mg/kg	5.4E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.2E-10	4.2E-08	mg/kg-day	5.0E-03	mg/kg-day	8.4E-06
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	1.7E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.2E-06	1.3E-09	mg/kg-day	7.0E-10	mg/kg-day	1.9E+00
			Total Ingestion								2.2E-06					1.9E+00
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.0E-02	mg/kg	2.9E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.2E-10	2.3E-08	mg/kg-day	5.0E-03	mg/kg-day	4.6E-06
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	1.1E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.5E-07	8.8E-11	mg/kg-day	7.0E-10	mg/kg-day	1.3E-01
			Total Dermal								1.5E-07					1.3E-01
		Total Surface Soil Direct Contact									2.4E-06					2.0E+00
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	4.4E-11	mg/m^3	3.2E-14	mg/m^3	5.1E-03	(mg/m3)-1	1.6E-16	2.5E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-12	mg/m^3	1.0E-15	mg/m^3	3.8E+04	(mg/m3)-1	3.9E-11	8.0E-14	mg/m^3	4.0E-08	mg/m3	2.0E-06
		Total Dust Inhalation from Surface Soil									3.9E-11					2.0E-06
	Total Surface Soil Direct Contact and Dust Inhalation										2.4E-06					2.0E+00
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Tract A Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.5E-04	mg/kg	3.2E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.3E-12	2.5E-10	mg/kg-day	5.0E-03	mg/kg-day	4.9E-08
				TEQ (ND=1/2DL)	1.8E-03	mg/kg	1.6E-11	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.1E-06	1.2E-09	mg/kg-day	7.0E-10	mg/kg-day	1.8E+00
			Total Ingestion								2.1E-06					1.8E+00
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.5E-04	mg/kg	1.7E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.9E-13	1.3E-10	mg/kg-day	5.0E-03	mg/kg-day	2.7E-08
				TEQ (ND=1/2DL)	1.8E-03	mg/kg	1.0E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.4E-07	8.2E-11	mg/kg-day	7.0E-10	mg/kg-day	1.2E-01
			Total Dermal								1.4E-07					1.2E-01
		Total Surface Soil Direct Contact									2.2E-06					1.9E+00
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.6E-13	mg/m^3	1.9E-16	mg/m^3	5.1E-03	(mg/m3)-1	9.6E-19	1.5E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.3E-12	mg/m^3	9.5E-16	mg/m^3	3.8E+04	(mg/m3)-1	3.6E-11	7.4E-14	mg/m^3	4.0E-08	mg/m3	1.9E-06
		Total Dust Inhalation from Surface Soil									3.6E-11					1.9E-06
	Total Surface Soil Direct Contact and Dust Inhalation										2.2E-06					1.9E+00
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Robak Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-03	mg/kg	1.7E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.9E-11	1.3E-08	mg/kg-day	5.0E-03	mg/kg-day	2.7E-06
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	6.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	7.9E-08	4.8E-11	mg/kg-day	7.0E-10	mg/kg-day	6.8E-02
			Total Ingestion								7.9E-08					6.8E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-03	mg/kg	9.4E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.8E-11	7.3E-09	mg/kg-day	5.0E-03	mg/kg-day	1.5E-06
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	4.0E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.2E-09	3.1E-12	mg/kg-day	7.0E-10	mg/kg-day	4.4E-03
			Total Dermal								5.2E-09					4.5E-03
		Total Surface Soil Direct Contact									8.5E-08					7.2E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	7.1E-12	mg/m^3	1.0E-14	mg/m^3	5.1E-03	(mg/m3)-1	5.2E-17	8.0E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.5E-14	mg/m^3	3.6E-17	mg/m^3	3.8E+04	(mg/m3)-1	1.4E-12	2.8E-15	mg/m^3	4.0E-08	mg/m3	7.1E-08
		Total Dust Inhalation from Surface Soil									1.4E-12					7.1E-08
	Total Surface Soil Direct Contact and Dust Inhalation										8.5E-08					7.2E-02
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Smith Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.1E-05	mg/kg	3.7E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.9E-08	2.9E-11	mg/kg-day	7.0E-10	mg/kg-day	4.2E-02
			Total Ingestion								4.9E-08					4.2E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.1E-05	mg/kg	2.4E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.2E-09	1.9E-12	mg/kg-day	7.0E-10	mg/kg-day	2.7E-03
			Total Dermal								3.2E-09					2.7E-03
		Total Surface Soil Direct Contact									5.2E-08					4.4E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.5E-14	mg/m^3	2.2E-17	mg/m^3	3.8E+04	(mg/m3)-1	8.4E-13	1.7E-15	mg/m^3	4.0E-08	mg/m3	4.3E-08
		Total Dust Inhalation from Surface Soil									8.4E-13					4.3E-08
	Total Surface Soil Direct Contact and Dust Inhalation										5.2E-08					4.4E-02
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

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REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
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Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Stevenson Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.8E-04	mg/kg	1.2E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.9E-12	9.6E-10	mg/kg-day	5.0E-03	mg/kg-day	1.9E-07
				TEQ (ND=1/2DL)	7.6E-06	mg/kg	1.4E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.8E-08	1.1E-11	mg/kg-day	7.0E-10	mg/kg-day	1.5E-02
			Total Ingestion								1.8E-08					1.5E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.8E-04	mg/kg	6.7E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.7E-12	5.2E-10	mg/kg-day	5.0E-03	mg/kg-day	1.0E-07
				TEQ (ND=1/2DL)	7.6E-06	mg/kg	8.9E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.2E-09	6.9E-13	mg/kg-day	7.0E-10	mg/kg-day	9.9E-04
			Total Dermal								1.2E-09					9.9E-04
		Total Surface Soil Direct Contact									1.9E-08					1.6E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	5.0E-13	mg/m^3	7.3E-16	mg/m^3	5.1E-03	(mg/m3)-1	3.7E-18	5.7E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	5.6E-15	mg/m^3	8.1E-18	mg/m^3	3.8E+04	(mg/m3)-1	3.1E-13	6.3E-16	mg/m^3	4.0E-08	mg/m3	1.6E-08
		Total Dust Inhalation from Surface Soil									3.1E-13					1.6E-08
	Total Surface Soil Direct Contact and Dust Inhalation										1.9E-08					1.6E-02
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Vintage Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	7.2E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	9.3E-09	5.6E-12	mg/kg-day	7.0E-10	mg/kg-day	8.0E-03
			Total Ingestion								9.3E-09					8.0E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	4.7E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.1E-10	3.6E-13	mg/kg-day	7.0E-10	mg/kg-day	5.2E-04
			Total Dermal								6.1E-10					5.2E-04
		Total Surface Soil Direct Contact									9.9E-09					8.5E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.9E-15	mg/m^3	4.2E-18	mg/m^3	3.8E+04	(mg/m3)-1	1.6E-13	3.3E-16	mg/m^3	4.0E-08	mg/m3	8.3E-09
		Total Dust Inhalation from Surface Soil									1.6E-13					8.3E-09
Total Surface Soil Direct Contact and Dust Inhalation											9.9E-09					8.5E-03
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Cemetery Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	5.1E-06	mg/kg	9.3E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.2E-08	7.2E-12	mg/kg-day	7.0E-10	mg/kg-day	1.0E-02
			Total Ingestion								1.2E-08					1.0E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	5.1E-06	mg/kg	6.1E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	7.9E-10	4.7E-13	mg/kg-day	7.0E-10	mg/kg-day	6.7E-04
			Total Dermal								7.9E-10					6.7E-04
		Total Surface Soil Direct Contact									1.3E-08					1.1E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	3.8E-15	mg/m^3	5.5E-18	mg/m^3	3.8E+04	(mg/m3)-1	2.1E-13	4.3E-16	mg/m^3	4.0E-08	mg/m3	1.1E-08
		Total Dust Inhalation from Surface Soil									2.1E-13					1.1E-08
	Total Surface Soil Direct Contact and Dust Inhalation										1.3E-08					1.1E-02
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

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S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
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Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Right-of-Way Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.8E+01	mg/kg	6.8E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.7E-07	5.3E-05	mg/kg-day	5.0E-03	mg/kg-day	1.1E-02
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Ingestion								2.7E-07					1.1E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.8E+01	mg/kg	3.7E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.5E-07	2.9E-05	mg/kg-day	5.0E-03	mg/kg-day	5.8E-03
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Dermal								1.5E-07					5.8E-03
		Total Surface Soil Direct Contact									4.2E-07					1.6E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.8E-08	mg/m^3	4.1E-11	mg/m^3	5.1E-03	(mg/m3)-1	2.1E-13	3.2E-09	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	--	mg/m^3	--	mg/m^3	3.8E+04	(mg/m3)-1	--	--	mg/m^3	4.0E-08	mg/m3	--
		Total Dust Inhalation from Surface Soil									2.1E-13					--
	Total Surface Soil Direct Contact and Dust Inhalation										4.2E-07					1.6E-02
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Rodeo Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	6.2E-07	mg/kg	1.1E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.5E-09	8.7E-13	mg/kg-day	7.0E-10	mg/kg-day	1.2E-03
			Total Ingestion								1.5E-09					1.2E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	6.2E-07	mg/kg	7.3E-16	mg/kg-day	1.3E+05	(mg/kg-day)-1	9.5E-11	5.7E-14	mg/kg-day	7.0E-10	mg/kg-day	8.2E-05
			Total Dermal								9.5E-11					8.2E-05
		Total Surface Soil Direct Contact									1.6E-09					1.3E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	4.6E-16	mg/m^3	6.7E-19	mg/m^3	3.8E+04	(mg/m3)-1	2.5E-14	5.2E-17	mg/m^3	4.0E-08	mg/m3	1.3E-09
		Total Dust Inhalation from Surface Soil									2.5E-14					1.3E-09
	Total Surface Soil Direct Contact and Dust Inhalation										1.6E-09					1.3E-03
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
School Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-04	mg/kg	3.7E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.5E-12	2.9E-10	mg/kg-day	5.0E-03	mg/kg-day	5.8E-08
				TEQ (ND=1/2DL)	1.7E-06	mg/kg	3.0E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.0E-09	2.4E-12	mg/kg-day	7.0E-10	mg/kg-day	3.4E-03
			Total Ingestion								4.0E-09					3.4E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-04	mg/kg	2.0E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.1E-13	1.6E-10	mg/kg-day	5.0E-03	mg/kg-day	3.2E-08
				TEQ (ND=1/2DL)	1.7E-06	mg/kg	2.0E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.6E-10	1.6E-13	mg/kg-day	7.0E-10	mg/kg-day	2.2E-04
			Total Dermal								2.6E-10					2.2E-04
		Total Surface Soil Direct Contact									4.2E-09					3.6E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.5E-13	mg/m^3	2.2E-16	mg/m^3	5.1E-03	(mg/m3)-1	1.1E-18	1.7E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.2E-15	mg/m^3	1.8E-18	mg/m^3	3.8E+04	(mg/m3)-1	6.9E-14	1.4E-16	mg/m^3	4.0E-08	mg/m3	3.5E-09
		Total Dust Inhalation from Surface Soil									6.9E-14					3.5E-09
Total Surface Soil Direct Contact and Dust Inhalation											4.2E-09					3.6E-03

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Soil	Subsurface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
		(>2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-04	mg/kg	3.8E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.5E-12	3.0E-10	mg/kg-day	5.0E-03	mg/kg-day	6.0E-08
				TEQ (ND=1/2DL)	4.4E-07	mg/kg	7.8E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.0E-09	6.1E-13	mg/kg-day	7.0E-10	mg/kg-day	8.7E-04
			Total Ingestion								1.0E-09					8.7E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-04	mg/kg	2.1E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.4E-13	1.6E-10	mg/kg-day	5.0E-03	mg/kg-day	3.3E-08
				TEQ (ND=1/2DL)	4.4E-07	mg/kg	5.1E-16	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.6E-11	4.0E-14	mg/kg-day	7.0E-10	mg/kg-day	5.7E-05
			Total Dermal								6.7E-11					5.7E-05
		Total Subsurface Soil Direct Contact									1.1E-09					9.3E-04

TABLE D7.7 RME

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Subsurface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(>2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.6E-13	mg/m^3	2.3E-16	mg/m^3	5.1E-03	(mg/m3)-1	1.2E-18	1.8E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	3.2E-16	mg/m^3	4.6E-19	mg/m^3	3.8E+04	(mg/m3)-1	1.8E-14	3.6E-17	mg/m^3	4.0E-08	mg/m3	9.1E-10
		Total Dust Inhalation from Subsurface Soil									1.8E-14					9.1E-10
	Total Subsurface Soil Direct Contact and Dust Inhalation										1.1E-09					9.3E-04

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

BaP = benzo(a)pyrene

bgs = below ground surface

CSF = cancer slope factor

CT = central tendency

EPC = exposure point concentration

na = not applicable

nv = no value

RfC = inhalation reference dose

RfD = oral reference dose

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parcel A Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	1.3E+02	mg/kg	1.4E-07	mg/kg-day	nv	na	--	1.1E-05	mg/kg-day	4.0E-02	mg/kg-day	2.8E-04
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	2.0E+00	mg/kg	2.2E-09	mg/kg-day	nv	na	--	1.7E-07	mg/kg-day	1.0E-02	mg/kg-day	1.7E-05
				C9-C10 Aromatics	2.0E+00	mg/kg	2.2E-09	mg/kg-day	nv	na	--	1.7E-07	mg/kg-day	3.0E-02	mg/kg-day	5.7E-06
				Ethylbenzene	5.0E-02	mg/kg	5.5E-11	mg/kg-day	1.1E-02	(mg/kg-day)-1	6.0E-13	4.3E-09	mg/kg-day	1.0E-01	mg/kg-day	4.3E-08
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	3.3E-01	mg/kg	3.6E-10	mg/kg-day	nv	na	--	2.8E-08	mg/kg-day	4.0E-03	mg/kg-day	7.1E-06
				Naphthalene	1.0E-01	mg/kg	1.1E-10	mg/kg-day	nv	na	--	8.6E-09	mg/kg-day	2.0E-02	mg/kg-day	4.3E-07
				BaP equivalents	4.1E-01	mg/kg	4.5E-10	mg/kg-day	7.3E+00	(mg/kg-day)-1	3.3E-09	3.5E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.2E+01	mg/kg	1.3E-08	mg/kg-day	nv	na	--	1.0E-06	mg/kg-day	1.0E-02	mg/kg-day	1.0E-04
				C11-C22 Aromatics	2.6E+02	mg/kg	2.8E-07	mg/kg-day	nv	na	--	2.2E-05	mg/kg-day	3.0E-02	mg/kg-day	7.4E-04
				Pentachlorophenol	4.7E-02	mg/kg	5.2E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.1E-11	4.0E-09	mg/kg-day	5.0E-03	mg/kg-day	8.1E-07
				TEQ (ND=1/2DL)	1.9E-04	mg/kg	2.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.7E-08	1.6E-11	mg/kg-day	7.0E-10	mg/kg-day	2.3E-02
			Total Ingestion								3.0E-08					2.4E-02
			Dermal	C5-C8 Aliphatics	1.3E+02	mg/kg	1.0E-06	mg/kg-day	nv	na	--	8.1E-05	mg/kg-day	4.0E-02	mg/kg-day	2.0E-03
				C9-C12 Aliphatics	2.0E+00	mg/kg	7.9E-09	mg/kg-day	nv	na	--	6.2E-07	mg/kg-day	1.0E-02	mg/kg-day	6.2E-05
				C9-C10 Aromatics	2.0E+00	mg/kg	7.9E-09	mg/kg-day	nv	na	--	6.2E-07	mg/kg-day	3.0E-02	mg/kg-day	2.1E-05
				Ethylbenzene	5.0E-02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	3.3E-01	mg/kg	3.4E-10	mg/kg-day	nv	na	--	2.6E-08	mg/kg-day	4.0E-03	mg/kg-day	6.6E-06
				Naphthalene	1.0E-01	mg/kg	1.0E-10	mg/kg-day	nv	na	--	8.0E-09	mg/kg-day	2.0E-02	mg/kg-day	4.0E-07
				BaP equivalents	4.1E-01	mg/kg	4.2E-10	mg/kg-day	7.3E+00	(mg/kg-day)-1	3.1E-09	3.3E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.2E+01	mg/kg	4.7E-08	mg/kg-day	nv	na	--	3.7E-06	mg/kg-day	1.0E-02	mg/kg-day	3.7E-04
				C11-C22 Aromatics	2.6E+02	mg/kg	2.0E-07	mg/kg-day	nv	na	--	1.6E-05	mg/kg-day	3.0E-02	mg/kg-day	5.3E-04
				Pentachlorophenol	4.7E-02	mg/kg	9.3E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.7E-11	7.3E-09	mg/kg-day	5.0E-03	mg/kg-day	1.5E-06
				TEQ (ND=1/2DL)	1.9E-04	mg/kg	4.5E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.8E-09	3.5E-12	mg/kg-day	7.0E-10	mg/kg-day	5.0E-03
			Total Dermal								9.0E-09					8.0E-03
		Total Surface Soil Direct Contact									3.9E-08					3.2E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	9.7E-08	mg/m^3	2.8E-11	mg/m^3	nv	na	--	2.2E-09	mg/m^3	7.0E-01	mg/m3	3.2E-09
		Surface Soil		C9-C12 Aliphatics	1.5E-09	mg/m^3	4.3E-13	mg/m^3	nv	na	--	3.4E-11	mg/m^3	1.0E-01	mg/m3	3.4E-10
		(0-2 ft bgs)		C9-C10 Aromatics	1.5E-09	mg/m^3	4.3E-13	mg/m^3	nv	na	--	3.4E-11	mg/m^3	1.0E-01	mg/m3	3.4E-10
				Ethylbenzene	3.7E-11	mg/m^3	1.1E-14	mg/m^3	2.5E-03	(mg/m3)-1	2.7E-17	8.4E-13	mg/m^3	1.0E+00	mg/m3	8.4E-13
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	2.4E-10	mg/m^3	7.1E-14	mg/m^3	nv	na	--	5.5E-12	mg/m^3	nv	na	--
				Naphthalene	7.4E-11	mg/m^3	2.2E-14	mg/m^3	3.4E-02	(mg/m3)-1	7.3E-16	1.7E-12	mg/m^3	3.0E-03	mg/m3	5.6E-10
				BaP equivalents	3.0E-10	mg/m^3	8.9E-14	mg/m^3	1.1E+00	(mg/m3)-1	9.8E-14	6.9E-12	mg/m^3	nv	na	--
				C9-C18 Aliphatics	8.8E-09	mg/m^3	2.6E-12	mg/m^3	nv	na	--	2.0E-10	mg/m^3	1.0E-01	mg/m3	2.0E-09
				C11-C22 Aromatics	1.9E-07	mg/m^3	5.6E-11	mg/m^3	nv	na	--	4.3E-09	mg/m^3	1.0E-01	mg/m3	4.3E-08
				Pentachlorophenol	3.5E-11	mg/m^3	1.0E-14	mg/m^3	5.1E-03	(mg/m3)-1	5.2E-17	7.9E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-13	mg/m^3	4.1E-17	mg/m^3	3.8E+04	(mg/m3)-1	1.6E-12	3.2E-15	mg/m^3	4.0E-08	mg/m3	8.0E-08
		Total Dust Inhalation from Surface Soil									1.6E-12					1.3E-07
Total Surface Soil Direct Contact and Dust Inhalation											3.9E-08					3.2E-02
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parcel B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	5.6E+00	mg/kg	6.1E-09	mg/kg-day	nv	na	--	4.8E-07	mg/kg-day	4.0E-02	mg/kg-day	1.2E-05
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	2.4E+02	mg/kg	2.6E-07	mg/kg-day	nv	na	--	2.0E-05	mg/kg-day	1.0E-02	mg/kg-day	2.0E-03
				C9-C10 Aromatics	9.2E+01	mg/kg	1.0E-07	mg/kg-day	nv	na	--	7.9E-06	mg/kg-day	3.0E-02	mg/kg-day	2.6E-04
				Ethylbenzene	4.6E-02	mg/kg	5.0E-11	mg/kg-day	1.1E-02	(mg/kg-day)-1	5.6E-13	3.9E-09	mg/kg-day	1.0E-01	mg/kg-day	3.9E-08
				1-Methylnaphthalene	3.4E+00	mg/kg	3.7E-09	mg/kg-day	2.9E-02	(mg/kg-day)-1	1.1E-10	2.9E-07	mg/kg-day	7.0E-02	mg/kg-day	4.2E-06
				2-Methylnaphthalene	4.8E-01	mg/kg	5.3E-10	mg/kg-day	nv	na	--	4.1E-08	mg/kg-day	4.0E-03	mg/kg-day	1.0E-05
				Naphthalene	9.3E-02	mg/kg	1.0E-10	mg/kg-day	nv	na	--	7.9E-09	mg/kg-day	2.0E-02	mg/kg-day	4.0E-07
				BaP equivalents	3.0E-01	mg/kg	3.2E-10	mg/kg-day	7.3E+00	(mg/kg-day)-1	2.4E-09	2.5E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	6.8E+02	mg/kg	7.5E-07	mg/kg-day	nv	na	--	5.8E-05	mg/kg-day	1.0E-02	mg/kg-day	5.8E-03
				C11-C22 Aromatics	8.3E+02	mg/kg	9.1E-07	mg/kg-day	nv	na	--	7.1E-05	mg/kg-day	3.0E-02	mg/kg-day	2.4E-03
				Pentachlorophenol	5.7E+02	mg/kg	6.3E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.5E-07	4.9E-05	mg/kg-day	5.0E-03	mg/kg-day	9.8E-03
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	1.2E-12	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.6E-07	9.7E-11	mg/kg-day	7.0E-10	mg/kg-day	1.4E-01
			Total Ingestion								4.2E-07					1.6E-01
			Dermal	C5-C8 Aliphatics	5.6E+00	mg/kg	4.4E-08	mg/kg-day	nv	na	--	3.4E-06	mg/kg-day	4.0E-02	mg/kg-day	8.5E-05
				C9-C12 Aliphatics	2.4E+02	mg/kg	9.4E-07	mg/kg-day	nv	na	--	7.3E-05	mg/kg-day	1.0E-02	mg/kg-day	7.3E-03
				C9-C10 Aromatics	9.2E+01	mg/kg	3.6E-07	mg/kg-day	nv	na	--	2.8E-05	mg/kg-day	3.0E-02	mg/kg-day	9.5E-04
				Ethylbenzene	4.6E-02	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	3.4E+00	mg/kg	3.5E-09	mg/kg-day	2.9E-02	(mg/kg-day)-1	1.0E-10	2.7E-07	mg/kg-day	7.0E-02	mg/kg-day	3.9E-06
				2-Methylnaphthalene	4.8E-01	mg/kg	5.0E-10	mg/kg-day	nv	na	--	3.9E-08	mg/kg-day	4.0E-03	mg/kg-day	9.7E-06
				Naphthalene	9.3E-02	mg/kg	9.5E-11	mg/kg-day	nv	na	--	7.4E-09	mg/kg-day	2.0E-02	mg/kg-day	3.7E-07
				BaP equivalents	3.0E-01	mg/kg	3.0E-10	mg/kg-day	7.3E+00	(mg/kg-day)-1	2.2E-09	2.4E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	6.8E+02	mg/kg	2.7E-06	mg/kg-day	nv	na	--	2.1E-04	mg/kg-day	1.0E-02	mg/kg-day	2.1E-02
				C11-C22 Aromatics	8.3E+02	mg/kg	6.6E-07	mg/kg-day	nv	na	--	5.1E-05	mg/kg-day	3.0E-02	mg/kg-day	1.7E-03
				Pentachlorophenol	5.7E+02	mg/kg	1.1E-06	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.5E-07	8.8E-05	mg/kg-day	5.0E-03	mg/kg-day	1.8E-02
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	2.7E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.5E-08	2.1E-11	mg/kg-day	7.0E-10	mg/kg-day	3.0E-02
			Total Dermal								4.9E-07					7.9E-02
		Total Surface Soil Direct Contact									9.1E-07					2.4E-01
Air		Airborne Dust	Inhalation	C5-C8 Aliphatics	4.1E-09	mg/m^3	1.2E-12	mg/m^3	nv	na	--	9.3E-11	mg/m^3	7.0E-01	mg/m3	1.3E-10
		Surface Soil		C9-C12 Aliphatics	1.7E-07	mg/m^3	5.1E-11	mg/m^3	nv	na	--	4.0E-09	mg/m^3	1.0E-01	mg/m3	4.0E-08
		(0-2 ft bgs)		C9-C10 Aromatics	6.8E-08	mg/m^3	2.0E-11	mg/m^3	nv	na	--	1.6E-09	mg/m^3	1.0E-01	mg/m3	1.6E-08
				Ethylbenzene	3.4E-11	mg/m^3	9.9E-15	mg/m^3	2.5E-03	(mg/m3)-1	2.5E-17	7.7E-13	mg/m^3	1.0E+00	mg/m3	7.7E-13
				1-Methylnaphthalene	2.5E-09	mg/m^3	7.3E-13	mg/m^3	nv	na	--	5.7E-11	mg/m^3	nv	na	--
				2-Methylnaphthalene	3.6E-10	mg/m^3	1.0E-13	mg/m^3	nv	na	--	8.1E-12	mg/m^3	nv	na	--
				Naphthalene	6.8E-11	mg/m^3	2.0E-14	mg/m^3	3.4E-02	(mg/m3)-1	6.8E-16	1.6E-12	mg/m^3	3.0E-03	mg/m3	5.2E-10
				BaP equivalents	2.2E-10	mg/m^3	6.4E-14	mg/m^3	1.1E+00	(mg/m3)-1	7.0E-14	5.0E-12	mg/m^3	nv	na	--
				C9-C18 Aliphatics	5.0E-07	mg/m^3	1.5E-10	mg/m^3	nv	na	--	1.1E-08	mg/m^3	1.0E-01	mg/m3	1.1E-07
				C11-C22 Aromatics	6.1E-07	mg/m^3	1.8E-10	mg/m^3	nv	na	--	1.4E-08	mg/m^3	1.0E-01	mg/m3	1.4E-07
				Pentachlorophenol	4.2E-07	mg/m^3	1.2E-10	mg/m^3	5.1E-03	(mg/m3)-1	6.3E-13	9.6E-09	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	8.3E-13	mg/m^3	2.4E-16	mg/m^3	3.8E+04	(mg/m3)-1	9.2E-12	1.9E-14	mg/m^3	4.0E-08	mg/m3	4.7E-07
		Total Dust Inhalation from Surface Soil									9.9E-12					7.8E-07
Total Surface Soil Direct Contact and Dust Inhalation											9.1E-07					2.4E-01

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Soil	Subsurface Soil	Ingestion	C5-C8 Aliphatics	4.8E+00	mg/kg	5.3E-09	mg/kg-day	nv	na	--	4.1E-07	mg/kg-day	4.0E-02	mg/kg-day	1.0E-05
		(>2 ft bgs)		C9-C12 Aliphatics	2.4E+02	mg/kg	2.6E-07	mg/kg-day	nv	na	--	2.1E-05	mg/kg-day	1.0E-02	mg/kg-day	2.1E-03
				C9-C10 Aromatics	4.9E+01	mg/kg	5.4E-08	mg/kg-day	nv	na	--	4.2E-06	mg/kg-day	3.0E-02	mg/kg-day	1.4E-04
				Ethylbenzene	1.0E+01	mg/kg	1.2E-08	mg/kg-day	1.1E-02	(mg/kg-day)-1	1.3E-10	9.0E-07	mg/kg-day	1.0E-01	mg/kg-day	9.0E-06
				1-Methylnaphthalene	2.5E+01	mg/kg	2.8E-08	mg/kg-day	2.9E-02	(mg/kg-day)-1	8.0E-10	2.2E-06	mg/kg-day	7.0E-02	mg/kg-day	3.1E-05
				2-Methylnaphthalene	2.4E+01	mg/kg	2.7E-08	mg/kg-day	nv	na	--	2.1E-06	mg/kg-day	4.0E-03	mg/kg-day	5.2E-04
				Naphthalene	2.6E+00	mg/kg	2.9E-09	mg/kg-day	nv	na	--	2.2E-07	mg/kg-day	2.0E-02	mg/kg-day	1.1E-05
				BaP equivalents	1.6E-01	mg/kg	1.7E-10	mg/kg-day	7.3E+00	(mg/kg-day)-1	1.2E-09	1.3E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.8E+03	mg/kg	2.0E-06	mg/kg-day	nv	na	--	1.5E-04	mg/kg-day	1.0E-02	mg/kg-day	1.5E-02
				C11-C22 Aromatics	8.9E+02	mg/kg	9.8E-07	mg/kg-day	nv	na	--	7.6E-05	mg/kg-day	3.0E-02	mg/kg-day	2.5E-03
				Pentachlorophenol	7.7E+01	mg/kg	8.4E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.4E-08	6.6E-06	mg/kg-day	5.0E-03	mg/kg-day	1.3E-03
				TEQ (ND=1/2DL)	2.8E-04	mg/kg	3.1E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.0E-08	2.4E-11	mg/kg-day	7.0E-10	mg/kg-day	3.4E-02
			Total Ingestion								7.6E-08					5.6E-02
			Dermal	C5-C8 Aliphatics	4.8E+00	mg/kg	3.8E-08	mg/kg-day	nv	na	--	3.0E-06	mg/kg-day	4.0E-02	mg/kg-day	7.4E-05
				C9-C12 Aliphatics	2.4E+02	mg/kg	9.5E-07	mg/kg-day	nv	na	--	7.4E-05	mg/kg-day	1.0E-02	mg/kg-day	7.4E-03
				C9-C10 Aromatics	4.9E+01	mg/kg	1.9E-07	mg/kg-day	nv	na	--	1.5E-05	mg/kg-day	3.0E-02	mg/kg-day	5.0E-04
				Ethylbenzene	1.0E+01	mg/kg	0.0E+00	mg/kg-day	1.1E-02	(mg/kg-day)-1	0.0E+00	0.0E+00	mg/kg-day	1.0E-01	mg/kg-day	0.0E+00
				1-Methylnaphthalene	2.5E+01	mg/kg	2.6E-08	mg/kg-day	2.9E-02	(mg/kg-day)-1	7.5E-10	2.0E-06	mg/kg-day	7.0E-02	mg/kg-day	2.9E-05
				2-Methylnaphthalene	2.4E+01	mg/kg	2.5E-08	mg/kg-day	nv	na	--	1.9E-06	mg/kg-day	4.0E-03	mg/kg-day	4.9E-04
				Naphthalene	2.6E+00	mg/kg	2.7E-09	mg/kg-day	nv	na	--	2.1E-07	mg/kg-day	2.0E-02	mg/kg-day	1.0E-05
				BaP equivalents	1.6E-01	mg/kg	1.6E-10	mg/kg-day	7.3E+00	(mg/kg-day)-1	1.2E-09	1.2E-08	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	1.8E+03	mg/kg	7.1E-06	mg/kg-day	nv	na	--	5.6E-04	mg/kg-day	1.0E-02	mg/kg-day	5.6E-02
				C11-C22 Aromatics	8.9E+02	mg/kg	7.0E-07	mg/kg-day	nv	na	--	5.5E-05	mg/kg-day	3.0E-02	mg/kg-day	1.8E-03
				Pentachlorophenol	7.7E+01	mg/kg	1.5E-07	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.1E-08	1.2E-05	mg/kg-day	5.0E-03	mg/kg-day	2.4E-03
				TEQ (ND=1/2DL)	2.8E-04	mg/kg	6.6E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.6E-09	5.2E-12	mg/kg-day	7.0E-10	mg/kg-day	7.4E-03
			Total Dermal								7.1E-08					7.6E-02
		Total Subsurface Soil Direct Contact									1.5E-07					1.3E-01
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	3.6E-09	mg/m^3	1.0E-12	mg/m^3	nv	na	--	8.1E-11	mg/m^3	7.0E-01	mg/m3	1.2E-10
		Subsurface Soil		C9-C12 Aliphatics	1.8E-07	mg/m^3	5.2E-11	mg/m^3	nv	na	--	4.0E-09	mg/m^3	1.0E-01	mg/m3	4.0E-08
		(>2 ft bgs)		C9-C10 Aromatics	3.6E-08	mg/m^3	1.1E-11	mg/m^3	nv	na	--	8.2E-10	mg/m^3	1.0E-01	mg/m3	8.2E-09
				Ethylbenzene	7.7E-09	mg/m^3	2.3E-12	mg/m^3	2.5E-03	(mg/m3)-1	5.6E-15	1.8E-10	mg/m^3	1.0E+00	mg/m3	1.8E-10
				1-Methylnaphthalene	1.9E-08	mg/m^3	5.4E-12	mg/m^3	nv	na	--	4.2E-10	mg/m^3	nv	na	--
				2-Methylnaphthalene	1.8E-08	mg/m^3	5.2E-12	mg/m^3	nv	na	--	4.1E-10	mg/m^3	nv	na	--
				Naphthalene	1.9E-09	mg/m^3	5.6E-13	mg/m^3	3.4E-02	(mg/m3)-1	1.9E-14	4.4E-11	mg/m^3	3.0E-03	mg/m3	1.5E-08
				BaP equivalents	1.1E-10	mg/m^3	3.3E-14	mg/m^3	1.1E+00	(mg/m3)-1	3.7E-14	2.6E-12	mg/m^3	nv	na	--
				C9-C18 Aliphatics	1.3E-06	mg/m^3	3.9E-10	mg/m^3	nv	na	--	3.0E-08	mg/m^3	1.0E-01	mg/m3	3.0E-07
				C11-C22 Aromatics	6.5E-07	mg/m^3	1.9E-10	mg/m^3	nv	na	--	1.5E-08	mg/m^3	1.0E-01	mg/m3	1.5E-07
				Pentachlorophenol	5.6E-08	mg/m^3	1.7E-11	mg/m^3	5.1E-03	(mg/m3)-1	8.4E-14	1.3E-09	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.1E-13	mg/m^3	6.0E-17	mg/m^3	3.8E+04	(mg/m3)-1	2.3E-12	4.7E-15	mg/m^3	4.0E-08	mg/m3	1.2E-07
		Total Dust Inhalation from Subsurface Soil									2.4E-12					6.3E-07
	Total Subsurface Soil Direct Contact and Dust Inhalation										1.5E-07					1.3E-01

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Spigot Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.1E-02	mg/kg	3.4E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.4E-11	2.7E-09	mg/kg-day	5.0E-03	mg/kg-day	5.4E-07
				TEQ (ND=1/2DL)	5.3E-05	mg/kg	5.8E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	7.5E-09	4.5E-12	mg/kg-day	7.0E-10	mg/kg-day	6.5E-03
			Total Ingestion								7.6E-09					6.5E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.1E-02	mg/kg	6.2E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.5E-11	4.8E-09	mg/kg-day	5.0E-03	mg/kg-day	9.7E-07
				TEQ (ND=1/2DL)	5.3E-05	mg/kg	1.3E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.6E-09	9.8E-13	mg/kg-day	7.0E-10	mg/kg-day	1.4E-03
			Total Dermal								1.7E-09					1.4E-03
		Total Surface Soil Direct Contact									9.2E-09					7.9E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.3E-11	mg/m^3	6.8E-15	mg/m^3	5.1E-03	(mg/m3)-1	3.4E-17	5.3E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	3.9E-14	mg/m^3	1.1E-17	mg/m^3	3.8E+04	(mg/m3)-1	4.3E-13	8.9E-16	mg/m^3	4.0E-08	mg/m3	2.2E-08
		Total Dust Inhalation from Surface Soil									4.3E-13					2.2E-08
	Total Surface Soil Direct Contact and Dust Inhalation										9.2E-09					7.9E-03
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)														
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Cassell Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-01	mg/kg	5.3E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.1E-10	4.1E-08	mg/kg-day	5.0E-03	mg/kg-day	8.2E-06
				TEQ (ND=1/2DL)	6.2E-04	mg/kg	3.4E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.4E-08	2.7E-11	mg/kg-day	7.0E-10	mg/kg-day	3.8E-02
			Total Ingestion								4.4E-08					3.8E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-01	mg/kg	9.5E-10	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.8E-10	7.4E-08	mg/kg-day	5.0E-03	mg/kg-day	1.5E-05
				TEQ (ND=1/2DL)	6.2E-04	mg/kg	7.4E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	9.6E-09	5.7E-12	mg/kg-day	7.0E-10	mg/kg-day	8.2E-03
			Total Dermal								9.9E-09					8.2E-03
	Total Surface Soil Direct Contact										5.4E-08					4.6E-02
Air	Airborne Dust		Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
	Surface Soil			C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
	(0-2 ft bgs)			C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	7.1E-10	mg/m^3	1.0E-13	mg/m^3	5.1E-03	(mg/m3)-1	5.3E-16	8.1E-12	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	4.6E-13	mg/m^3	6.7E-17	mg/m^3	3.8E+04	(mg/m3)-1	2.5E-12	5.2E-15	mg/m^3	4.0E-08	mg/m3	1.3E-07
	Total Dust Inhalation from Surface Soil										2.5E-12					1.3E-07
Total Surface Soil Direct Contact and Dust Inhalation											5.4E-08					4.6E-02

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Soil	Subsurface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
		(>2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.3E-02	mg/kg	6.9E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	2.7E-12	5.4E-10	mg/kg-day	5.0E-03	mg/kg-day	1.1E-07
				TEQ (ND=1/2DL)	3.0E-05	mg/kg	1.7E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.2E-09	1.3E-12	mg/kg-day	7.0E-10	mg/kg-day	1.9E-03
			Total Ingestion								2.2E-09					1.9E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.3E-02	mg/kg	1.2E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.9E-12	9.6E-10	mg/kg-day	5.0E-03	mg/kg-day	1.9E-07
				TEQ (ND=1/2DL)	3.0E-05	mg/kg	3.6E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.7E-10	2.8E-13	mg/kg-day	7.0E-10	mg/kg-day	4.0E-04
			Total Dermal								4.7E-10					4.0E-04
		Total Subsurface Soil Direct Contact									2.6E-09					2.3E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Subsurface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(>2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	9.2E-12	mg/m^3	1.3E-15	mg/m^3	5.1E-03	(mg/m3)-1	6.9E-18	1.0E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.2E-14	mg/m^3	3.3E-18	mg/m^3	3.8E+04	(mg/m3)-1	1.2E-13	2.6E-16	mg/m^3	4.0E-08	mg/m3	6.4E-09
		Total Dust Inhalation from Subsurface Soil									1.2E-13					6.4E-09
	Total Subsurface Soil Direct Contact and Dust Inhalation										2.6E-09					2.3E-03

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Parmenter Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.2E-03	mg/kg	1.8E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.0E-13	1.4E-10	mg/kg-day	5.0E-03	mg/kg-day	2.7E-08
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	5.8E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	7.6E-10	4.5E-13	mg/kg-day	7.0E-10	mg/kg-day	6.5E-04
			Total Ingestion								7.6E-10					6.5E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.2E-03	mg/kg	3.2E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.3E-12	2.5E-10	mg/kg-day	5.0E-03	mg/kg-day	4.9E-08
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	1.3E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.6E-10	9.8E-14	mg/kg-day	7.0E-10	mg/kg-day	1.4E-04
			Total Dermal								1.6E-10					1.4E-04
	Total Surface Soil Direct Contact										9.2E-10					7.9E-04
Air	Airborne Dust		Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
	Surface Soil			C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
	(0-2 ft bgs)			C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.4E-12	mg/m^3	3.4E-16	mg/m^3	5.1E-03	(mg/m3)-1	1.8E-18	2.7E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.8E-15	mg/m^3	1.1E-18	mg/m^3	3.8E+04	(mg/m3)-1	4.3E-14	8.9E-17	mg/m^3	4.0E-08	mg/m3	2.2E-09
	Total Dust Inhalation from Surface Soil										4.3E-14					2.2E-09
Total Surface Soil Direct Contact and Dust Inhalation											9.2E-10					7.9E-04

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Soil	Subsurface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
		(>2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-03	mg/kg	1.2E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.8E-13	9.4E-11	mg/kg-day	5.0E-03	mg/kg-day	1.9E-08
				TEQ (ND=1/2DL)	2.2E-06	mg/kg	1.2E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.6E-10	9.5E-14	mg/kg-day	7.0E-10	mg/kg-day	1.4E-04
			Total Ingestion								1.6E-10					1.4E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-03	mg/kg	2.2E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	8.7E-13	1.7E-10	mg/kg-day	5.0E-03	mg/kg-day	3.4E-08
				TEQ (ND=1/2DL)	2.2E-06	mg/kg	2.6E-16	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.4E-11	2.1E-14	mg/kg-day	7.0E-10	mg/kg-day	2.9E-05
			Total Dermal								3.5E-11					2.9E-05
		Total Subsurface Soil Direct Contact									1.9E-10					1.7E-04
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Subsurface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(>2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.6E-12	mg/m^3	2.4E-16	mg/m^3	5.1E-03	(mg/m3)-1	1.2E-18	1.8E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.6E-15	mg/m^3	2.4E-19	mg/m^3	3.8E+04	(mg/m3)-1	9.1E-15	1.9E-17	mg/m^3	4.0E-08	mg/m3	4.7E-10
		Total Dust Inhalation from Subsurface Soil									9.1E-15					4.7E-10
	Total Subsurface Soil Direct Contact and Dust Inhalation										1.9E-10					1.7E-04

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Skroch Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.5E-02	mg/kg	1.4E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.5E-12	1.1E-09	mg/kg-day	5.0E-03	mg/kg-day	2.1E-07
				TEQ (ND=1/2DL)	9.9E-05	mg/kg	5.4E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	7.1E-09	4.2E-12	mg/kg-day	7.0E-10	mg/kg-day	6.1E-03
			Total Ingestion								7.1E-09					6.1E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.5E-02	mg/kg	2.5E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.9E-12	1.9E-09	mg/kg-day	5.0E-03	mg/kg-day	3.9E-07
				TEQ (ND=1/2DL)	9.9E-05	mg/kg	1.2E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.5E-09	9.2E-13	mg/kg-day	7.0E-10	mg/kg-day	1.3E-03
			Total Dermal								1.5E-09					1.3E-03
		Total Surface Soil Direct Contact									8.6E-09					7.4E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.8E-11	mg/m^3	2.7E-15	mg/m^3	5.1E-03	(mg/m3)-1	1.4E-17	2.1E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.3E-14	mg/m^3	1.1E-17	mg/m^3	3.8E+04	(mg/m3)-1	4.1E-13	8.3E-16	mg/m^3	4.0E-08	mg/m3	2.1E-08
		Total Dust Inhalation from Surface Soil									4.1E-13					2.1E-08
	Total Surface Soil Direct Contact and Dust Inhalation										8.6E-09					7.4E-03
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)														
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Chaney Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-04	mg/kg	2.5E-13	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.8E-14	1.9E-11	mg/kg-day	5.0E-03	mg/kg-day	3.8E-09
				TEQ (ND=1/2DL)	8.6E-06	mg/kg	9.5E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.2E-09	7.4E-13	mg/kg-day	7.0E-10	mg/kg-day	1.1E-03
			Total Ingestion								1.2E-09					1.1E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.2E-04	mg/kg	4.4E-13	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.8E-13	3.4E-11	mg/kg-day	5.0E-03	mg/kg-day	6.9E-09
				TEQ (ND=1/2DL)	8.6E-06	mg/kg	2.0E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.7E-10	1.6E-13	mg/kg-day	7.0E-10	mg/kg-day	2.3E-04
			Total Dermal								2.7E-10					2.3E-04
		Total Surface Soil Direct Contact									1.5E-09					1.3E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.6E-13	mg/m^3	4.8E-17	mg/m^3	5.1E-03	(mg/m3)-1	2.5E-19	3.8E-15	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	6.3E-15	mg/m^3	1.9E-18	mg/m^3	3.8E+04	(mg/m3)-1	7.1E-14	1.4E-16	mg/m^3	4.0E-08	mg/m3	3.6E-09
		Total Dust Inhalation from Surface Soil									7.1E-14					3.6E-09
Total Surface Soil Direct Contact and Dust Inhalation											1.5E-09					1.3E-03
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Tract B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	8.5E-04	mg/kg	4.7E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.1E-08	3.7E-11	mg/kg-day	7.0E-10	mg/kg-day	5.2E-02
			Total Ingestion								6.1E-08					5.2E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	8.5E-04	mg/kg	1.0E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.3E-08	7.9E-12	mg/kg-day	7.0E-10	mg/kg-day	1.1E-02
			Total Dermal								1.3E-08					1.1E-02
		Total Surface Soil Direct Contact									7.4E-08					6.3E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	6.3E-13	mg/m^3	9.2E-17	mg/m^3	3.8E+04	(mg/m3)-1	3.5E-12	7.2E-15	mg/m^3	4.0E-08	mg/m3	1.8E-07
		Total Dust Inhalation from Surface Soil									3.5E-12					1.8E-07
	Total Surface Soil Direct Contact and Dust Inhalation										7.4E-08					6.3E-02
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Renfroe Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	1.2E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.6E-09	9.7E-13	mg/kg-day	7.0E-10	mg/kg-day	1.4E-03
			Total Ingestion								1.6E-09					1.4E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	2.7E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.5E-10	2.1E-13	mg/kg-day	7.0E-10	mg/kg-day	3.0E-04
			Total Dermal								3.5E-10					3.0E-04
		Total Surface Soil Direct Contact									2.0E-09					1.7E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	8.3E-15	mg/m^3	2.4E-18	mg/m^3	3.8E+04	(mg/m3)-1	9.3E-14	1.9E-16	mg/m^3	4.0E-08	mg/m3	4.8E-09
		Total Dust Inhalation from Surface Soil									9.3E-14					4.8E-09
	Total Surface Soil Direct Contact and Dust Inhalation										2.0E-09					1.7E-03
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
3WT Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	2.2E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.9E-09	1.8E-12	mg/kg-day	7.0E-10	mg/kg-day	2.5E-03
			Total Ingestion								2.9E-09					2.5E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	4.9E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.3E-10	3.8E-13	mg/kg-day	7.0E-10	mg/kg-day	5.4E-04
			Total Dermal								6.3E-10					5.4E-04
		Total Surface Soil Direct Contact									3.6E-09					3.0E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.5E-14	mg/m^3	4.4E-18	mg/m^3	3.8E+04	(mg/m3)-1	1.7E-13	3.4E-16	mg/m^3	4.0E-08	mg/m3	8.6E-09
		Total Dust Inhalation from Surface Soil									1.7E-13					8.6E-09
	Total Surface Soil Direct Contact and Dust Inhalation										3.6E-09					3.0E-03
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

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CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
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Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Milton Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	7.6E-03	mg/kg	8.3E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.3E-12	6.5E-10	mg/kg-day	5.0E-03	mg/kg-day	1.3E-07
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	2.1E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.8E-09	1.7E-12	mg/kg-day	7.0E-10	mg/kg-day	2.4E-03
			Total Ingestion								2.8E-09					2.4E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	7.6E-03	mg/kg	1.5E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.0E-12	1.2E-09	mg/kg-day	5.0E-03	mg/kg-day	2.3E-07
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	4.6E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.0E-10	3.6E-13	mg/kg-day	7.0E-10	mg/kg-day	5.1E-04
			Total Dermal								6.0E-10					5.1E-04
	Total Surface Soil Direct Contact										3.4E-09					2.9E-03
Air	Airborne Dust		Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
	Surface Soil			C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
	(0-2 ft bgs)			C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	5.6E-12	mg/m^3	1.6E-15	mg/m^3	5.1E-03	(mg/m3)-1	8.3E-18	1.3E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.4E-14	mg/m^3	4.2E-18	mg/m^3	3.8E+04	(mg/m3)-1	1.6E-13	3.2E-16	mg/m^3	4.0E-08	mg/m3	8.1E-09
	Total Dust Inhalation from Surface Soil										1.6E-13					8.1E-09
Total Surface Soil Direct Contact and Dust Inhalation											3.4E-09					2.9E-03

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Soil	Subsurface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
		(>2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.1E-03	mg/kg	1.2E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.0E-13	9.7E-11	mg/kg-day	5.0E-03	mg/kg-day	1.9E-08
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Ingestion								5.0E-13					1.9E-08
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.1E-03	mg/kg	2.2E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.0E-13	1.7E-10	mg/kg-day	5.0E-03	mg/kg-day	3.5E-08
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Dermal								9.0E-13					3.5E-08
		Total Subsurface Soil Direct Contact									1.4E-12					5.4E-08
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Subsurface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(>2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	8.3E-13	mg/m^3	2.4E-16	mg/m^3	5.1E-03	(mg/m3)-1	1.2E-18	1.9E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	--	mg/m^3	--	mg/m^3	3.8E+04	(mg/m3)-1	--	--	mg/m^3	4.0E-08	mg/m3	--
		Total Dust Inhalation from Subsurface Soil									1.2E-18					--
	Total Subsurface Soil Direct Contact and Dust Inhalation										1.4E-12					5.4E-08

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Parcel B Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.7E-02	mg/kg	9.1E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.6E-12	7.1E-10	mg/kg-day	5.0E-03	mg/kg-day	1.4E-07
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	5.8E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	7.5E-08	4.5E-11	mg/kg-day	7.0E-10	mg/kg-day	6.4E-02
			Total Ingestion								7.5E-08					6.4E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	1.7E-02	mg/kg	1.6E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	6.6E-12	1.3E-09	mg/kg-day	5.0E-03	mg/kg-day	2.6E-07
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	1.2E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.6E-08	9.7E-12	mg/kg-day	7.0E-10	mg/kg-day	1.4E-02
			Total Dermal								1.6E-08					1.4E-02
		Total Surface Soil Direct Contact									9.1E-08					7.8E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.2E-11	mg/m^3	1.8E-15	mg/m^3	5.1E-03	(mg/m3)-1	9.1E-18	1.4E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.7E-13	mg/m^3	1.1E-16	mg/m^3	3.8E+04	(mg/m3)-1	4.3E-12	8.8E-15	mg/m^3	4.0E-08	mg/m3	2.2E-07
		Total Dust Inhalation from Surface Soil									4.3E-12					2.2E-07
Total Surface Soil Direct Contact and Dust Inhalation											9.1E-08					7.8E-02
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Peirano Tract A Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.5E-04	mg/kg	1.9E-13	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.7E-14	1.5E-11	mg/kg-day	5.0E-03	mg/kg-day	3.0E-09
				TEQ (ND=1/2DL)	2.8E-04	mg/kg	1.5E-13	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.0E-08	1.2E-11	mg/kg-day	7.0E-10	mg/kg-day	1.7E-02
			Total Ingestion								2.0E-08					1.7E-02
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.5E-04	mg/kg	3.5E-13	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.4E-13	2.7E-11	mg/kg-day	5.0E-03	mg/kg-day	5.4E-09
				TEQ (ND=1/2DL)	2.8E-04	mg/kg	3.3E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.3E-09	2.6E-12	mg/kg-day	7.0E-10	mg/kg-day	3.7E-03
			Total Dermal								4.3E-09					3.7E-03
		Total Surface Soil Direct Contact									2.4E-08					2.1E-02
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.6E-13	mg/m^3	3.8E-17	mg/m^3	5.1E-03	(mg/m3)-1	1.9E-19	3.0E-15	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.1E-13	mg/m^3	3.0E-17	mg/m^3	3.8E+04	(mg/m3)-1	1.1E-12	2.3E-15	mg/m^3	4.0E-08	mg/m3	5.9E-08
		Total Dust Inhalation from Surface Soil									1.1E-12					5.9E-08
	Total Surface Soil Direct Contact and Dust Inhalation										2.4E-08					2.1E-02
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Robak Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-03	mg/kg	1.1E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	4.2E-12	8.2E-10	mg/kg-day	5.0E-03	mg/kg-day	1.6E-07
				TEQ (ND=1/2DL)	2.2E-05	mg/kg	2.5E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.2E-09	1.9E-12	mg/kg-day	7.0E-10	mg/kg-day	2.7E-03
			Total Ingestion								3.2E-09					2.7E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	9.6E-03	mg/kg	1.9E-11	mg/kg-day	4.0E-01	(mg/kg-day)-1	7.6E-12	1.5E-09	mg/kg-day	5.0E-03	mg/kg-day	3.0E-07
				TEQ (ND=1/2DL)	2.2E-05	mg/kg	5.3E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	6.9E-10	4.2E-13	mg/kg-day	7.0E-10	mg/kg-day	5.9E-04
			Total Dermal								7.0E-10					5.9E-04
		Total Surface Soil Direct Contact									3.9E-09					3.3E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	7.1E-12	mg/m^3	2.1E-15	mg/m^3	5.1E-03	(mg/m3)-1	1.1E-17	1.6E-13	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.7E-14	mg/m^3	4.8E-18	mg/m^3	3.8E+04	(mg/m3)-1	1.8E-13	3.8E-16	mg/m^3	4.0E-08	mg/m3	9.4E-09
		Total Dust Inhalation from Surface Soil									1.8E-13					9.4E-09
	Total Surface Soil Direct Contact and Dust Inhalation										3.9E-09					3.3E-03
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Smith Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.6E-05	mg/kg	1.7E-14	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.3E-09	1.4E-12	mg/kg-day	7.0E-10	mg/kg-day	1.9E-03
			Total Ingestion								2.3E-09					1.9E-03
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	1.6E-05	mg/kg	3.8E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.9E-10	2.9E-13	mg/kg-day	7.0E-10	mg/kg-day	4.2E-04
			Total Dermal								4.9E-10					4.2E-04
		Total Surface Soil Direct Contact									2.8E-09					2.4E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.2E-14	mg/m^3	3.4E-18	mg/m^3	3.8E+04	(mg/m3)-1	1.3E-13	2.7E-16	mg/m^3	4.0E-08	mg/m3	6.7E-09
		Total Dust Inhalation from Surface Soil									1.3E-13					6.7E-09
	Total Surface Soil Direct Contact and Dust Inhalation										2.8E-09					2.4E-03
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

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CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Stevenson Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.8E-04	mg/kg	7.5E-13	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.0E-13	5.8E-11	mg/kg-day	5.0E-03	mg/kg-day	1.2E-08
				TEQ (ND=1/2DL)	1.8E-06	mg/kg	1.9E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	2.5E-10	1.5E-13	mg/kg-day	7.0E-10	mg/kg-day	2.2E-04
			Total Ingestion								2.5E-10					2.2E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	6.8E-04	mg/kg	1.3E-12	mg/kg-day	4.0E-01	(mg/kg-day)-1	5.4E-13	1.1E-10	mg/kg-day	5.0E-03	mg/kg-day	2.1E-08
				TEQ (ND=1/2DL)	1.8E-06	mg/kg	4.2E-16	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.4E-11	3.3E-14	mg/kg-day	7.0E-10	mg/kg-day	4.6E-05
			Total Dermal								5.5E-11					4.6E-05
		Total Surface Soil Direct Contact									3.1E-10					2.6E-04
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	5.0E-13	mg/m^3	1.5E-16	mg/m^3	5.1E-03	(mg/m3)-1	7.5E-19	1.1E-14	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	1.3E-15	mg/m^3	3.8E-19	mg/m^3	3.8E+04	(mg/m3)-1	1.4E-14	3.0E-17	mg/m^3	4.0E-08	mg/m3	7.4E-10
		Total Dust Inhalation from Surface Soil									1.4E-14					7.4E-10
	Total Surface Soil Direct Contact and Dust Inhalation										3.1E-10					2.6E-04
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Vintage Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	4.4E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	5.7E-10	3.4E-13	mg/kg-day	7.0E-10	mg/kg-day	4.9E-04
			Total Ingestion								5.7E-10					4.9E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	9.4E-16	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.2E-10	7.4E-14	mg/kg-day	7.0E-10	mg/kg-day	1.1E-04
			Total Dermal								1.2E-10					1.1E-04
		Total Surface Soil Direct Contact									6.9E-10					5.9E-04
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.9E-15	mg/m^3	8.6E-19	mg/m^3	3.8E+04	(mg/m3)-1	3.3E-14	6.7E-17	mg/m^3	4.0E-08	mg/m3	1.7E-09
		Total Dust Inhalation from Surface Soil									3.3E-14					1.7E-09
	Total Surface Soil Direct Contact and Dust Inhalation										6.9E-10					5.9E-04
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Cemetery Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	5.1E-06	mg/kg	5.7E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	7.3E-10	4.4E-13	mg/kg-day	7.0E-10	mg/kg-day	6.3E-04
			Total Ingestion								7.3E-10					6.3E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	5.1E-06	mg/kg	1.2E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.6E-10	9.5E-14	mg/kg-day	7.0E-10	mg/kg-day	1.4E-04
			Total Dermal								1.6E-10					1.4E-04
		Total Surface Soil Direct Contact									8.9E-10					7.7E-04
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	3.8E-15	mg/m^3	1.1E-18	mg/m^3	3.8E+04	(mg/m3)-1	4.2E-14	8.6E-17	mg/m^3	4.0E-08	mg/m3	2.2E-09
		Total Dust Inhalation from Surface Soil									4.2E-14					2.2E-09
	Total Surface Soil Direct Contact and Dust Inhalation										8.9E-10					7.7E-04
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Right-of-Way Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.8E+01	mg/kg	4.2E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.7E-08	3.3E-06	mg/kg-day	5.0E-03	mg/kg-day	6.5E-04
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Ingestion								1.7E-08					6.5E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	3.8E+01	mg/kg	7.5E-08	mg/kg-day	4.0E-01	(mg/kg-day)-1	3.0E-08	5.9E-06	mg/kg-day	5.0E-03	mg/kg-day	1.2E-03
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day	1.3E+05	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-10	mg/kg-day	--
			Total Dermal								3.0E-08					1.2E-03
		Total Surface Soil Direct Contact									4.7E-08					1.8E-03
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	2.8E-08	mg/m^3	8.2E-12	mg/m^3	5.1E-03	(mg/m3)-1	4.2E-14	6.4E-10	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	--	mg/m^3	--	mg/m^3	3.8E+04	(mg/m3)-1	--	--	mg/m^3	4.0E-08	mg/m3	--
		Total Dust Inhalation from Surface Soil									4.2E-14					--
Total Surface Soil Direct Contact and Dust Inhalation											4.7E-08					1.8E-03
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Rodeo Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	6.2E-07	mg/kg	6.9E-16	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.9E-11	5.3E-14	mg/kg-day	7.0E-10	mg/kg-day	7.6E-05
			Total Ingestion								8.9E-11					7.6E-05
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	--	mg/kg	--	mg/kg-day	4.0E-01	(mg/kg-day)-1	--	--	mg/kg-day	5.0E-03	mg/kg-day	--
				TEQ (ND=1/2DL)	6.2E-07	mg/kg	1.5E-16	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.9E-11	1.2E-14	mg/kg-day	7.0E-10	mg/kg-day	1.6E-05
			Total Dermal								1.9E-11					1.6E-05
		Total Surface Soil Direct Contact									1.1E-10					9.3E-05
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Surface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(0-2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	--	mg/m^3	--	mg/m^3	5.1E-03	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	4.6E-16	mg/m^3	1.3E-19	mg/m^3	3.8E+04	(mg/m3)-1	5.1E-15	1.0E-17	mg/m^3	4.0E-08	mg/m3	2.6E-10
		Total Dust Inhalation from Surface Soil									5.1E-15					2.6E-10
	Total Surface Soil Direct Contact and Dust Inhalation										1.1E-10					9.3E-05
	Soil	Subsurface Soil	Ingestion	No subsurface soil data												
		(>2 ft bgs)	Dermal													
	Air	Airborne Dust	Inhalation	No subsurface soil data												
		Subsurface Soil														
		(>2 ft bgs)														

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
School Soil	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
(non-ditch)		(0-2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-04	mg/kg	2.3E-13	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.1E-14	1.8E-11	mg/kg-day	5.0E-03	mg/kg-day	3.5E-09
				TEQ (ND=1/2DL)	1.1E-06	mg/kg	1.2E-15	mg/kg-day	1.3E+05	(mg/kg-day)-1	1.5E-10	9.1E-14	mg/kg-day	7.0E-10	mg/kg-day	1.3E-04
			Total Ingestion								1.5E-10					1.3E-04
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-04	mg/kg	4.1E-13	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.6E-13	3.2E-11	mg/kg-day	5.0E-03	mg/kg-day	6.4E-09
				TEQ (ND=1/2DL)	1.1E-06	mg/kg	2.5E-16	mg/kg-day	1.3E+05	(mg/kg-day)-1	3.3E-11	2.0E-14	mg/kg-day	7.0E-10	mg/kg-day	2.8E-05
			Total Dermal								3.3E-11					2.8E-05
	Total Surface Soil Direct Contact										1.8E-10					1.6E-04
Air	Airborne Dust		Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
	Surface Soil			C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
	(0-2 ft bgs)			C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.5E-13	mg/m^3	4.5E-17	mg/m^3	5.1E-03	(mg/m3)-1	2.3E-19	3.5E-15	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	7.8E-16	mg/m^3	2.3E-19	mg/m^3	3.8E+04	(mg/m3)-1	8.7E-15	1.8E-17	mg/m^3	4.0E-08	mg/m3	4.5E-10
	Total Dust Inhalation from Surface Soil										8.7E-15					4.5E-10
Total Surface Soil Direct Contact and Dust Inhalation											1.8E-10					1.6E-04

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Soil	Subsurface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
		(>2 ft bgs)		C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-04	mg/kg	2.3E-13	mg/kg-day	4.0E-01	(mg/kg-day)-1	9.4E-14	1.8E-11	mg/kg-day	5.0E-03	mg/kg-day	3.7E-09
				TEQ (ND=1/2DL)	2.9E-07	mg/kg	3.1E-16	mg/kg-day	1.3E+05	(mg/kg-day)-1	4.1E-11	2.5E-14	mg/kg-day	7.0E-10	mg/kg-day	3.5E-05
			Total Ingestion								4.1E-11					3.5E-05
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-02	mg/kg-day	--
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Ethylbenzene	--	mg/kg	--	mg/kg-day	1.1E-02	(mg/kg-day)-1	--	--	mg/kg-day	1.0E-01	mg/kg-day	--
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day	2.9E-02	(mg/kg-day)-1	--	--	mg/kg-day	7.0E-02	mg/kg-day	--
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	4.0E-03	mg/kg-day	--
				Naphthalene	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	2.0E-02	mg/kg-day	--
				BaP equivalents	--	mg/kg	--	mg/kg-day	7.3E+00	(mg/kg-day)-1	--	--	mg/kg-day	nv	na	--
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	1.0E-02	mg/kg-day	--
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day	nv	na	--	--	mg/kg-day	3.0E-02	mg/kg-day	--
				Pentachlorophenol	2.1E-04	mg/kg	4.2E-13	mg/kg-day	4.0E-01	(mg/kg-day)-1	1.7E-13	3.3E-11	mg/kg-day	5.0E-03	mg/kg-day	6.6E-09
				TEQ (ND=1/2DL)	2.9E-07	mg/kg	6.8E-17	mg/kg-day	1.3E+05	(mg/kg-day)-1	8.8E-12	5.3E-15	mg/kg-day	7.0E-10	mg/kg-day	7.6E-06
			Total Dermal								9.0E-12					7.6E-06
		Total Subsurface Soil Direct Contact									5.0E-11					4.3E-05

TABLE D7.7 CT

CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
	Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	7.0E-01	mg/m3	--
		Subsurface Soil		C9-C12 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
		(>2 ft bgs)		C9-C10 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Ethylbenzene	--	mg/m^3	--	mg/m^3	2.5E-03	(mg/m3)-1	--	--	mg/m^3	1.0E+00	mg/m3	--
				1-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				2-Methylnaphthalene	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	nv	na	--
				Naphthalene	--	mg/m^3	--	mg/m^3	3.4E-02	(mg/m3)-1	--	--	mg/m^3	3.0E-03	mg/m3	--
				BaP equivalents	--	mg/m^3	--	mg/m^3	1.1E+00	(mg/m3)-1	--	--	mg/m^3	nv	na	--
				C9-C18 Aliphatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				C11-C22 Aromatics	--	mg/m^3	--	mg/m^3	nv	na	--	--	mg/m^3	1.0E-01	mg/m3	--
				Pentachlorophenol	1.6E-13	mg/m^3	4.6E-17	mg/m^3	5.1E-03	(mg/m3)-1	2.3E-19	3.6E-15	mg/m^3	nv	na	--
				TEQ (ND=1/2DL)	2.1E-16	mg/m^3	6.2E-20	mg/m^3	3.8E+04	(mg/m3)-1	2.3E-15	4.8E-18	mg/m^3	4.0E-08	mg/m3	1.2E-10
		Total Dust Inhalation from Subsurface Soil									2.3E-15					1.2E-10
	Total Subsurface Soil Direct Contact and Dust Inhalation										5.0E-11					4.3E-05

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

BaP = benzo(a)pyrene

bgs = below ground surface

CSF = cancer slope factor

CT = central tendency

EPC = exposure point concentration

na = not applicable

nv = no value

RfC = inhalation reference dose

RfD = oral reference dose

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

SSCL Calculations, Table D7.7

Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	Cancer Risk Calculations								Non-Cancer Hazard Calculations						
								RME $SSCL_c$		CTE $SSCL_c$					RME $SSCL_{nc}$		CTE $SSCL_{nc}$	
				C/NC	TR	CSF/Unit Risk	Units	Value	Units	Value	Units	THQ	RfD/RfC	Units	Value	Units	Value	Units
Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-02	mg/kg-day	1.4E+04	mg/kg	2.3E+05	mg/kg
(non-ditch)			C9-C12 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	1.4E+03	mg/kg	2.3E+04	mg/kg
			C9-C10 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	4.3E+03	mg/kg	7.0E+04	mg/kg
			Ethylbenzene	c	1.7E-06	1.1E-02	(mg/kg-day)-1	8.6E+03	mg/kg	1.4E+05	mg/kg	2.0E-01	1.0E-01	mg/kg-day	1.4E+04	mg/kg	2.3E+05	mg/kg
			1-Methylnaphthalene	c	1.7E-06	2.9E-02	(mg/kg-day)-1	3.3E+03	mg/kg	5.3E+04	mg/kg	5.0E-01	7.0E-02	mg/kg-day	2.5E+04	mg/kg	4.1E+05	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-03	mg/kg-day	1.4E+03	mg/kg	2.3E+04	mg/kg
			Naphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	2.0E-02	mg/kg-day	7.1E+03	mg/kg	1.2E+05	mg/kg
			BaP equivalents	c	1.7E-06	7.3E+00	(mg/kg-day)-1	1.3E+01	mg/kg	2.1E+02	mg/kg	na	nv	na	--	mg/kg	--	mg/kg
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	1.4E+03	mg/kg	2.3E+04	mg/kg
			C11-C22 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	4.3E+03	mg/kg	7.0E+04	mg/kg
			Pentachlorophenol	c	1.7E-06	4.0E-01	(mg/kg-day)-1	2.4E+02	mg/kg	3.9E+03	mg/kg	2.5E-01	5.0E-03	mg/kg-day	8.9E+02	mg/kg	1.5E+04	mg/kg
			TEQ (ND=1/2DL)	c	1.7E-06	1.3E+05	(mg/kg-day)-1	7.3E-04	mg/kg	1.2E-02	mg/kg	1.0E+00	7.0E-10	mg/kg-day	5.0E-04	mg/kg	8.2E-03	mg/kg
		Dermal	C5-C8 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-02	mg/kg-day	6.5E+03	mg/kg	3.2E+04	mg/kg
			C9-C12 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	1.3E+03	mg/kg	6.5E+03	mg/kg
			C9-C10 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	3.9E+03	mg/kg	1.9E+04	mg/kg
			Ethylbenzene	c	1.7E-06	1.1E-02	(mg/kg-day)-1	--	mg/kg	--	mg/kg	2.0E-01	1.0E-01	mg/kg-day	--	mg/kg	--	mg/kg
			1-Methylnaphthalene	c	1.7E-06	2.9E-02	(mg/kg-day)-1	1.2E+04	mg/kg	5.7E+04	mg/kg	5.0E-01	7.0E-02	mg/kg-day	8.8E+04	mg/kg	4.4E+05	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-03	mg/kg-day	5.0E+03	mg/kg	2.5E+04	mg/kg
			Naphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	2.0E-02	mg/kg-day	2.5E+04	mg/kg	1.2E+05	mg/kg
			BaP equivalents	c	1.7E-06	7.3E+00	(mg/kg-day)-1	4.6E+01	mg/kg	2.3E+02	mg/kg	na	nv	na	--	mg/kg	--	mg/kg
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	1.3E+03	mg/kg	6.5E+03	mg/kg
			C11-C22 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	2.0E+04	mg/kg	9.7E+04	mg/kg
			Pentachlorophenol	c	1.7E-06	4.0E-01	(mg/kg-day)-1	4.3E+02	mg/kg	2.2E+03	mg/kg	2.5E-01	5.0E-03	mg/kg-day	1.6E+03	mg/kg	8.1E+03	mg/kg
			TEQ (ND=1/2DL)	c	1.7E-06	1.3E+05	(mg/kg-day)-1	1.1E-02	mg/kg	5.5E-02	mg/kg	1.0E+00	7.0E-10	mg/kg-day	7.6E-03	mg/kg	3.8E-02	mg/kg
Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	1.0E+00	7.0E-01	mg/m3	6.2E+00	mg/m3	3.1E+01	mg/m3
(non-ditch)			C9-C12 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	2.2E-01	mg/m3	1.1E+00	mg/m3
			C9-C10 Aromatics	nc	--	nv	na	--	mg/m3	--	mg/m3	5.0E-01	1.0E-01	mg/m3	4.4E-01	mg/m3	2.2E+00	mg/m3
			Ethylbenzene	c	1.7E-06	2.5E-03	(mg/m3)-1	4.7E-01	mg/m3	2.3E+00	mg/m3	2.5E-01	1.0E+00	mg/m3	2.2E+00	mg/m3	1.1E+01	mg/m3
			1-Methylnaphthalene	nc	--	nv	na	--	mg/m3	--	mg/kg	na	nv	na	--	mg/m3	--	mg/m3
			2-Methylnaphthalene	nc	--	nv	na	--	mg/m3	--	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			Naphthalene	c	1.7E-06	3.4E-02	(mg/m3)-1	3.4E-02	mg/m3	1.7E-01	mg/m3	2.5E-01	3.0E-03	mg/m3	6.6E-03	mg/m3	3.3E-02	mg/m3
			BaP equivalents	c	1.7E-06	1.1E+00	(mg/m3)-1	1.1E-03	mg/m3	5.3E-03	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	2.2E-01	mg/m3	1.1E+00	mg/m3
			C11-C22 Aromatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	2.2E-01	mg/m3	1.1E+00	mg/m3
			Pentachlorophenol	c	1.7E-06	5.1E-03	(mg/m3)-1	2.3E-01	mg/m3	1.1E+00	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			TEQ (ND=1/2DL)	c	1.7E-06	3.8E+04	(mg/m3)-1	3.1E-08	mg/m3	1.5E-07	mg/m3	2.5E-01	4.0E-08	mg/m3	8.8E-08	mg/m3	4.4E-07	mg/m3
Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-02	mg/kg-day	2.9E+04	mg/kg	4.7E+05	mg/kg
(ditch)			C9-C12 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	2.9E+03	mg/kg	4.7E+04	mg/kg
			C9-C10 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	8.6E+03	mg/kg	1.4E+05	mg/kg
			Ethylbenzene	c	1.7E-06	1.1E-02	(mg/kg-day)-1	1.7E+04	mg/kg	2.8E+05	mg/kg	2.0E-01	1.0E-01	mg/kg-day	2.9E+04	mg/kg	4.7E+05	mg/kg
			1-Methylnaphthalene	c	1.7E-06	2.9E-02	(mg/kg-day)-1	6.5E+03	mg/kg	1.1E+05	mg/kg	5.0E-01	7.0E-02	mg/kg-day	5.0E+04	mg/kg	8.2E+05	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-03	mg/kg-day	2.9E+03	mg/kg	4.7E+04	mg/kg
			Naphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	2.0E-02	mg/kg-day	1.4E+04	mg/kg	2.3E+05	mg/kg
			BaP equivalents	c	1.7E-06	7.3E+00	(mg/kg-day)-1	2.6E+01	mg/kg	4.2E+02	mg/kg	na	nv	na	--	mg/kg	--	mg/kg
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	2.9E+03	mg/kg	4.7E+04	mg/kg
			C11-C22 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	8.6E+03	mg/kg	1.4E+05	mg/kg
			Pentachlorophenol	c	1.7E-06	4.0E-01	(mg/kg-day)-1	4.7E+02	mg/kg	7.7E+03	mg/kg	2.5E-01	5.0E-03	mg/kg-day	1.8E+03	mg/kg	2.9E+04	mg/kg
			TEQ (ND=1/2DL)	c	1.7E-06	1.3E+05	(mg/kg-day)-1	1.5E-03	mg/kg	2.4E-02	mg/kg	1.0E+00	7.0E-10	mg/kg-day	1.0E-03	mg/kg	1.6E-02	mg/kg
		Dermal	C5-C8 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-02	mg/kg-day	1.3E+04	mg/kg	6.5E+04	mg/kg
			C9-C12 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	2.6E+03	mg/kg	1.3E+04	mg/kg
			C9-C10 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	7.9E+03	mg/kg	3.9E+04	mg/kg
			Ethylbenzene	c	1.7E-06	1.1E-02	(mg/kg-day)-1	--	mg/kg	--	mg/kg	2.0E-01	1.0E-01	mg/kg-day	--	mg/kg	--	mg/kg
			1-Methylnaphthalene	c	1.7E-06	2.9E-02	(mg/kg-day)-1	2.3E+04	mg/kg	1.1E+05	mg/kg	5.0E-01	7.0E-02	mg/kg-day	1.8E+05	mg/kg	8.7E+05	mg/kg
			2-Methylnaphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	4.0E-03	mg/kg-day	1.0E+04	mg/kg	5.0E+04	mg/kg
			Naphthalene	nc	--	nv	na	--	mg/kg	--	mg/kg	5.0E-01	2.0E-02	mg/kg-day	5.0E+04	mg/kg	2.5E+05	mg/kg
			BaP equivalents	c	1.7E-06	7.3E+00	(mg/kg-day)-1	9.1E+01	mg/kg	4.5E+02	mg/kg	na	nv	na	--	mg/kg	--	mg/kg
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	1.0E-02	mg/kg-day	2.6E+03	mg/kg	1.3E+04	mg/kg
			C11-C22 Aromatics	nc	--	nv	na	--	mg/kg	--	mg/kg	2.0E-01	3.0E-02	mg/kg-day	3.9E+04	mg/kg	1.9E+05	mg/kg
			Pentachlorophenol	c	1.7E-06	4.0E-01	(mg/kg-day)-1	8.7E+02	mg/kg	4.3E+03	mg/kg	2.5E-01	5.0E-03	mg/kg-day	3.3E+03	mg/kg	1.6E+04	mg/kg
			TEQ (ND=1/2DL)	c	1.7E-06	1.3E+05	(mg/kg-day)-1	2.2E-02	mg/kg	1.1E-01	mg/kg	1.0E+00	7.0E-10	mg/kg-day	1.5E-02	mg/kg	7.6E-02	mg/kg

COPC	Total SSCLs		Total SSCLs	
	RME $SSCL_c$	CTE $SSCL_c$	RME $SSCL_{nc}$	CTE $SSCL_{nc}$
Non-ditch Properties				
C5-C8 Aliphatics	nv	nv	4.5E+03	2.9E+04
C9-C12 Aliphatics	nv	nv	6.8E+02	5.1E+03
C9-C10 Aromatics	nv	nv	2.0E+03	1.5E+04
Ethylbenzene	8.6E+03	1.4E+05	1.4E+04	2.3E+05
1-Methylnaphthalene	2.5E+03	2.8E+04	1.9E+04	2.1E+05
2-Methylnaphthalene	nv	nv	1.1E+03	1.2E+04
Naphthalene	4.7E+07	2.3E+08	5.6E+03	6.0E+04
BaP equivalents	1.0E+01	1.1E+02	nv	nv
C9-C18 Aliphatics	nv	nv	6.8E+02	5.1E+03
C11-C22 Aromatics	nv	nv	3.5E+03	4.1E+04
Pentachlorophenol	1.5E+02	1.4E+03	5.8E+02	5.2E+03
TEQ (ND=1/2DL)	6.8E-04	9.8E-03	4.7E-04	6.7E-03
Ditch Properties				
C5-C8 Aliphatics	nv	nv	9.0E+03	5.7E+04
C9-C12 Aliphatics	nv	nv	1.4E+03	1.0E+04
C9-C10 Aromatics	nv	nv	4.1E+03	3.0E+04
Ethylbenzene	1.7E+04	2.8E+05	2.9E+04	4.7E+05
1-Methylnaphthalene	5.1E+03	5.5E+04	3.9E+04	4.2E+05
2-Methylnaphthalene	nv	nv	2.2E+03	2.4E+04
Naphthalene	9.4E+07	4.6E+08	1.1E+04	1.2E+05
BaP equivalents	2.0E+01	2.2E+02	nv	nv
C9-C18 Aliphatics	nv	nv	1.4E+03	1.0E+04
C11-C22 Aromatics	nv	nv	7.0E+03	8.2E+04
Pentachlorophenol	3.1E+02	2.8E+03	1.2E+03	1.0E+04
TEQ (ND=1/2DL)	1.4E-03	2.0E-02	9.4E-04	1.3E-02

SSCL Calculations, Table D7.7

Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	Cancer Risk Calculations								Non-Cancer Hazard Calculations						
				C/NC	TR	CSF/Unit Risk	Units	RME $SSCL_c$ Value	RME $SSCL_c$ Units	CTE $SSCL_c$ Value	CTE $SSCL_c$ Units	THQ	RfD/RfC	Units	RME $SSCL_{nc}$ Value	RME $SSCL_{nc}$ Units	CTE $SSCL_{nc}$ Value	CTE $SSCL_{nc}$ Units
Air	Airborne Dust	Inhalation	C5-C8 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	1.0E+00	7.0E-01	mg/m3	1.2E+01	mg/m3	6.1E+01	mg/m3
(ditch)			C9-C12 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	4.4E-01	mg/m3	2.2E+00	mg/m3
			C9-C10 Aromatics	nc	--	nv	na	--	mg/m3	--	mg/m3	5.0E-01	1.0E-01	mg/m3	8.8E-01	mg/m3	4.4E+00	mg/m3
			Ethylbenzene	c	1.7E-06	2.5E-03	(mg/m3)-1	9.4E-01	mg/m3	4.6E+00	mg/m3	2.5E-01	1.0E+00	mg/m3	4.4E+00	mg/m3	2.2E+01	mg/m3
			1-Methylnaphthalene	nc	--	nv	na	--	mg/m3	--	mg/kg	na	nv	na	--	mg/m3	--	mg/m3
			2-Methylnaphthalene	nc	--	nv	na	--	mg/m3	--	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			Naphthalene	c	1.7E-06	3.4E-02	(mg/m3)-1	6.9E-02	mg/m3	3.4E-01	mg/m3	2.5E-01	3.0E-03	mg/m3	1.3E-02	mg/m3	6.6E-02	mg/m3
			BaP equivalents	c	1.7E-06	1.1E+00	(mg/m3)-1	2.1E-03	mg/m3	1.1E-02	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			C9-C18 Aliphatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	4.4E-01	mg/m3	2.2E+00	mg/m3
			C11-C22 Aromatics	nc	--	nv	na	--	mg/m3	--	mg/m3	2.5E-01	1.0E-01	mg/m3	4.4E-01	mg/m3	2.2E+00	mg/m3
			Pentachlorophenol	c	1.7E-06	5.1E-03	(mg/m3)-1	4.6E-01	mg/m3	2.3E+00	mg/m3	na	nv	na	--	mg/m3	--	mg/m3
			TEQ (ND=1/2DL)	c	1.7E-06	3.8E+04	(mg/m3)-1	6.2E-08	mg/m3	3.1E-07	mg/m3	2.5E-01	4.0E-08	mg/m3	1.8E-07	mg/m3	8.8E-07	mg/m3

COPC	Total SSCLs		Total SSCLs	
	RME $SSCL_c$	CTE $SSCL_c$	RME $SSCL_{nc}$	CTE $SSCL_{nc}$

Notes:

-- = no toxicity value available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene

c = carcinogen

CSF = cancer slope factor

CTE = central tendency exposure

na = not applicable

nc = noncarcinogen

nv = no value

RfC = inhalation reference concentration

RfD = oral reference dose

RME = reasonable maximum exposure

SSCL = site-specific cleanup level

TEQ = 2,3,7,8-TCDD toxicity equivalents

THQ = target hazard quotient

TR = target risk

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel A Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	3.3E-02	--	1.7E-02	4.9E-02
			C9-C12 Aliphatics	Liver, kidney, blood	2.0E-03	--	5.1E-04	2.5E-03
			C9-C10 Aromatics	Kidney	6.6E-04	--	1.7E-04	8.3E-04
			Ethylbenzene	Liver and kidney	4.9E-06	--	0.0E+00	4.9E-06
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	8.1E-04	--	5.5E-05	8.7E-04
			Naphthalene	Decreased body weight	4.9E-05	--	3.3E-06	5.3E-05
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	1.2E-02	--	3.1E-03	1.5E-02
			C11-C22 Aromatics	Kidney	8.5E-02	--	4.4E-03	9.0E-02
			Pentachlorophenol	Liver	4.5E-04	--	5.9E-05	5.1E-04
			TEQ (ND=1/2DL)	Reproductive, developmental	2.6E+01	--	4.1E-01	2.6E+01
			Chemical Total		2.6E+01	--	4.3E-01	2.7E+01
		Total Soil Direct Contact						2.7E+01
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	1.0E-07	--	1.0E-07
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	1.1E-08	--	1.1E-08
			C9-C10 Aromatics	Body weight	--	1.1E-08	--	1.1E-08
			Ethylbenzene	Developmental	--	2.7E-11	--	2.7E-11
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	1.8E-08	--	1.8E-08
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	6.5E-08	--	6.5E-08
			C11-C22 Aromatics	Body weight	--	1.4E-06	--	1.4E-06
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.5E-05	--	2.5E-05
			Chemical Total		--	2.7E-05	--	2.7E-05
		Total Dust Inhalation						2.7E-05
	Total Soil Direct Contact and Dust Inhalation							2.7E+01

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	4.4E-04	--	--	4.4E-04
			TEQ (ND=1/2DL)	Reproductive, developmental	1.7E+00	--	--	1.7E+00
			Chemical Total		1.7E+00	--	--	1.7E+00
	Total Produce Ingestion							1.7E+00

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel B Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	1.9E-03	--	1.0E-03	2.9E-03
			C9-C12 Aliphatics	Liver, kidney, blood	9.0E-01	--	2.3E-01	1.1E+00
			C9-C10 Aromatics	Kidney	1.2E-01	--	3.2E-02	1.5E-01
			Ethylbenzene	Liver and kidney	4.5E-06	--	0.0E+00	4.5E-06
			1-Methylnaphthalene	Respiratory	4.8E-04	--	3.2E-05	5.1E-04
			2-Methylnaphthalene	Lungs	5.0E-03	--	3.4E-04	5.3E-03
			Naphthalene	Decreased body weight	2.4E-04	--	1.6E-05	2.6E-04
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	1.8E+00	--	4.7E-01	2.3E+00
			C11-C22 Aromatics	Kidney	2.0E+00	--	1.0E-01	2.1E+00
			Pentachlorophenol	Liver	6.7E+00	--	8.6E-01	7.5E+00
			TEQ (ND=1/2DL)	Reproductive, developmental	5.3E+01	--	8.3E-01	5.4E+01
			Chemical Total		6.5E+01	--	2.5E+00	6.7E+01
		Total Soil Direct Contact						6.7E+01
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	6.1E-09	--	6.1E-09
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	4.9E-06	--	4.9E-06
			C9-C10 Aromatics	Body weight	--	2.0E-06	--	2.0E-06
			Ethylbenzene	Developmental	--	2.5E-11	--	2.5E-11
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	8.9E-08	--	8.9E-08
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	9.9E-06	--	9.9E-06
			C11-C22 Aromatics	Body weight	--	3.3E-05	--	3.3E-05
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	5.1E-05	--	5.1E-05
			Chemical Total		--	1.0E-04	--	1.0E-04
		Total Dust Inhalation						1.0E-04
	Total Soil Direct Contact and Dust Inhalation							6.7E+01

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	6.5E+00	--	--	6.5E+00
			TEQ (ND=1/2DL)	Reproductive, developmental	3.5E+00	--	--	3.5E+00
			Chemical Total		1.0E+01	--	--	1.0E+01
	Total Produce Ingestion							1.0E+01

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Spigot Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.0E-04	--	1.3E-05	1.1E-04
			TEQ (ND=1/2DL)	Reproductive, developmental	1.4E+00	--	2.2E-02	1.4E+00
			Chemical Total		1.4E+00	--	2.2E-02	1.4E+00
		Total Soil Direct Contact						1.4E+00
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.4E-06	--	1.4E-06
			Chemical Total		--	1.4E-06	--	1.4E-06
		Total Dust Inhalation						1.4E-06
	Total Soil Direct Contact and Dust Inhalation							1.4E+00

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	9.9E-05	--	--	9.9E-05
			TEQ (ND=1/2DL)	Reproductive, developmental	9.3E-02	--	--	9.3E-02
			Chemical Total		9.4E-02	--	--	9.4E-02
	Total Produce Ingestion							9.4E-02

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Cassell Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	6.7E-04	--	8.7E-05	7.6E-04
			TEQ (ND=1/2DL)	Reproductive, developmental	3.1E+00	--	4.8E-02	3.2E+00
			Chemical Total		3.1E+00	--	4.8E-02	3.2E+00
		Total Soil Direct Contact						3.2E+00
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.0E-06	--	3.0E-06
			Chemical Total		--	3.0E-06	--	3.0E-06
		Total Dust Inhalation						3.0E-06
	Total Soil Direct Contact and Dust Inhalation							3.2E+00

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	4.4E-03	--	--	4.4E-03
			TEQ (ND=1/2DL)	Reproductive, developmental	1.4E+00	--	--	1.4E+00
			Chemical Total		1.4E+00	--	--	1.4E+00
	Total Produce Ingestion							1.4E+00

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parmenter Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.3E-06	--	1.7E-07	1.5E-06
			TEQ (ND=1/2DL)	Reproductive, developmental	3.9E-02	--	6.0E-04	3.9E-02
			Chemical Total		3.9E-02	--	6.0E-04	3.9E-02
		Total Soil Direct Contact						3.9E-02
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.7E-08	--	3.7E-08
			Chemical Total		--	3.7E-08	--	3.7E-08
		Total Dust Inhalation						3.7E-08
	Total Soil Direct Contact and Dust Inhalation							3.9E-02

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	8.5E-06	--	--	8.5E-06
			TEQ (ND=1/2DL)	Reproductive, developmental	1.7E-02	--	--	1.7E-02
			Chemical Total		1.7E-02	--	--	1.7E-02
	Total Produce Ingestion							1.7E-02

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Skroch Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	3.5E-05	--	4.5E-06	4.0E-05
			TEQ (ND=1/2DL)	Reproductive, developmental	6.3E-01	--	9.7E-03	6.4E-01
			Chemical Total		6.3E-01	--	9.7E-03	6.4E-01
		Total Soil Direct Contact						6.4E-01
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.0E-07	--	6.0E-07
			Chemical Total		--	6.0E-07	--	6.0E-07
		Total Dust Inhalation						6.0E-07
	Total Soil Direct Contact and Dust Inhalation							6.4E-01

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	2.3E-04	--	--	2.3E-04
			TEQ (ND=1/2DL)	Reproductive, developmental	2.8E-01	--	--	2.8E-01
			Chemical Total		2.8E-01	--	--	2.8E-01
	Total Produce Ingestion							2.8E-01

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Chaney Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	4.4E-07	--	5.7E-08	5.0E-07
			TEQ (ND=1/2DL)	Reproductive, developmental	1.4E-01	--	2.2E-03	1.4E-01
			Chemical Total		1.4E-01	--	2.2E-03	1.4E-01
		Total Soil Direct Contact						1.4E-01
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.4E-07	--	1.4E-07
			Chemical Total		--	1.4E-07	--	1.4E-07
		Total Dust Inhalation						1.4E-07
	Total Soil Direct Contact and Dust Inhalation							1.4E-01

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	4.3E-07	--	--	4.3E-07
			TEQ (ND=1/2DL)	Reproductive, developmental	9.3E-03	--	--	9.3E-03
			Chemical Total		9.3E-03	--	--	9.3E-03
	Total Produce Ingestion							9.3E-03

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract B Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	3.5E+00	--	5.4E-02	3.5E+00
			Chemical Total		3.5E+00	--	5.4E-02	3.5E+00
		Total Soil Direct Contact						3.5E+00
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.4E-06	--	3.4E-06
			Chemical Total		--	3.4E-06	--	3.4E-06
		Total Dust Inhalation						3.4E-06
	Total Soil Direct Contact and Dust Inhalation							3.5E+00

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	1.6E+00	--	--	1.6E+00
			Chemical Total		1.6E+00	--	--	1.6E+00
	Total Produce Ingestion							1.6E+00

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Renfroe Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	2.4E-01	--	3.8E-03	2.5E-01
			Chemical Total		2.4E-01	--	3.8E-03	2.5E-01
		Total Soil Direct Contact						2.5E-01
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.3E-07	--	2.3E-07
			Chemical Total		--	2.3E-07	--	2.3E-07
		Total Dust Inhalation						2.3E-07
	Total Soil Direct Contact and Dust Inhalation							2.5E-01

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	1.6E-02	--	--	1.6E-02
			Chemical Total		1.6E-02	--	--	1.6E-02
	Total Produce Ingestion							1.6E-02

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
3WT Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	2.9E-01	--	4.5E-03	2.9E-01
			Chemical Total		2.9E-01	--	4.5E-03	2.9E-01
		Total Soil Direct Contact						2.9E-01
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.8E-07	--	2.8E-07
			Chemical Total		--	2.8E-07	--	2.8E-07
		Total Dust Inhalation						2.8E-07
	Total Soil Direct Contact and Dust Inhalation							2.9E-01

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	1.9E-02	--	--	1.9E-02
			Chemical Total		1.9E-02	--	--	1.9E-02
	Total Produce Ingestion							1.9E-02

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Milton Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	3.0E-05	--	3.9E-06	3.4E-05
			TEQ (ND=1/2DL)	Reproductive, developmental	4.8E-01	--	7.4E-03	4.9E-01
			Chemical Total		4.8E-01	--	7.4E-03	4.9E-01
		Total Soil Direct Contact						4.9E-01
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.6E-07	--	4.6E-07
			Chemical Total		--	4.6E-07	--	4.6E-07
		Total Dust Inhalation						4.6E-07
	Total Soil Direct Contact and Dust Inhalation							4.9E-01

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	2.9E-05	--	--	2.9E-05
			TEQ (ND=1/2DL)	Reproductive, developmental	3.2E-02	--	--	3.2E-02
			Chemical Total		3.2E-02	--	--	3.2E-02
	Total Produce Ingestion							3.2E-02

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Parcel B Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.8E-05	--	2.3E-06	2.0E-05
			TEQ (ND=1/2DL)	Reproductive, developmental	4.0E+00	--	6.2E-02	4.1E+00
			Chemical Total		4.0E+00	--	6.2E-02	4.1E+00
		Total Soil Direct Contact						4.1E+00
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.9E-06	--	3.9E-06
			Chemical Total		--	3.9E-06	--	3.9E-06
		Total Dust Inhalation						3.9E-06
	Total Soil Direct Contact and Dust Inhalation							4.1E+00

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.2E-04	--	--	1.2E-04
			TEQ (ND=1/2DL)	Reproductive, developmental	1.8E+00	--	--	1.8E+00
			Chemical Total		1.8E+00	--	--	1.8E+00
	Total Produce Ingestion							1.8E+00

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract A Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.0E-07	--	1.3E-08	1.2E-07
			TEQ (ND=1/2DL)	Reproductive, developmental	3.7E+00	--	5.8E-02	3.8E+00
			Chemical Total		3.7E+00	--	5.8E-02	3.8E+00
		Total Soil Direct Contact						3.8E+00
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.6E-06	--	3.6E-06
			Chemical Total		--	3.6E-06	--	3.6E-06
		Total Dust Inhalation						3.6E-06
	Total Soil Direct Contact and Dust Inhalation							3.8E+00

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	6.8E-07	--	--	6.8E-07
			TEQ (ND=1/2DL)	Reproductive, developmental	1.7E+00	--	--	1.7E+00
			Chemical Total		1.7E+00	--	--	1.7E+00
	Total Produce Ingestion							1.7E+00

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Robak Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.9E-05	--	2.5E-06	2.1E-05
			TEQ (ND=1/2DL)	Reproductive, developmental	4.8E-01	--	7.4E-03	4.9E-01
			Chemical Total		4.8E-01	--	7.4E-03	4.9E-01
		Total Soil Direct Contact						4.9E-01
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.6E-07	--	4.6E-07
			Chemical Total		--	4.6E-07	--	4.6E-07
		Total Dust Inhalation						4.6E-07
	Total Soil Direct Contact and Dust Inhalation							4.9E-01

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.9E-05	--	--	1.9E-05
			TEQ (ND=1/2DL)	Reproductive, developmental	3.2E-02	--	--	3.2E-02
			Chemical Total		3.2E-02	--	--	3.2E-02
	Total Produce Ingestion							3.2E-02

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Smith Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	2.9E-01	--	4.6E-03	3.0E-01
			Chemical Total		2.9E-01	--	4.6E-03	3.0E-01
		Total Soil Direct Contact						3.0E-01
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.8E-07	--	2.8E-07
			Chemical Total		--	2.8E-07	--	2.8E-07
		Total Dust Inhalation						2.8E-07
	Total Soil Direct Contact and Dust Inhalation							3.0E-01

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	1.9E-02	--	--	1.9E-02
			Chemical Total		1.9E-02	--	--	1.9E-02
	Total Produce Ingestion							1.9E-02

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Stevenson Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.3E-06	--	1.7E-07	1.5E-06
			TEQ (ND=1/2DL)	Reproductive, developmental	1.1E-01	--	1.7E-03	1.1E-01
			Chemical Total		1.1E-01	--	1.7E-03	1.1E-01
		Total Soil Direct Contact						1.1E-01
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.0E-07	--	1.0E-07
			Chemical Total		--	1.0E-07	--	1.0E-07
		Total Dust Inhalation						1.0E-07
	Total Soil Direct Contact and Dust Inhalation							1.1E-01

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.3E-06	--	--	1.3E-06
			TEQ (ND=1/2DL)	Reproductive, developmental	7.1E-03	--	--	7.1E-03
			Chemical Total		7.1E-03	--	--	7.1E-03
	Total Produce Ingestion							7.1E-03

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Vintage Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	5.6E-02	--	8.7E-04	5.7E-02
			Chemical Total		5.6E-02	--	8.7E-04	5.7E-02
		Total Soil Direct Contact						5.7E-02
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	5.4E-08	--	5.4E-08
			Chemical Total		--	5.4E-08	--	5.4E-08
		Total Dust Inhalation						5.4E-08
	Total Soil Direct Contact and Dust Inhalation							5.7E-02

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	3.7E-03	--	--	3.7E-03
			Chemical Total		3.7E-03	--	--	3.7E-03
	Total Produce Ingestion							3.7E-03

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Right-of-Way Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	7.5E-02	--	9.7E-03	8.5E-02
			TEQ (ND=1/2DL)	Reproductive, developmental	--	--	--	--
			Chemical Total		7.5E-02	--	9.7E-03	8.5E-02
		Total Soil Direct Contact						8.5E-02
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	--	--	--
			Chemical Total		--	--	--	--
		Total Dust Inhalation						--
	Total Soil Direct Contact and Dust Inhalation							8.5E-02

TABLE D9.1 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	7.3E-02	--	--	7.3E-02
			TEQ (ND=1/2DL)	Reproductive, developmental	--	--	--	--
			Chemical Total		7.3E-02	--	--	7.3E-02
	Total Produce Ingestion							7.3E-02

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene

CT = central tendency

na = not applicble

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

TABLE D9.1 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel A Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	4.5E-03	--	9.4E-03	1.4E-02
			C9-C12 Aliphatics	Liver, kidney, blood	2.7E-04	--	2.8E-04	5.6E-04
			C9-C10 Aromatics	Kidney	9.1E-05	--	9.5E-05	1.9E-04
			Ethylbenzene	Liver and kidney	6.8E-07	--	0.0E+00	6.8E-07
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	1.1E-04	--	3.0E-05	1.4E-04
			Naphthalene	Decreased body weight	6.8E-06	--	1.8E-06	8.7E-06
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	1.6E-03	--	1.7E-03	3.3E-03
			C11-C22 Aromatics	Kidney	1.2E-02	--	2.5E-03	1.4E-02
			Pentachlorophenol	Liver	1.3E-05	--	6.7E-06	2.0E-05
			TEQ (ND=1/2DL)	Reproductive, developmental	3.7E-01	--	2.3E-02	3.9E-01
			Chemical Total		3.9E-01	--	3.7E-02	4.3E-01
		Total Soil Direct Contact						4.3E-01
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	5.7E-08	--	5.7E-08
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	6.0E-09	--	6.0E-09
			C9-C10 Aromatics	Body weight	--	6.0E-09	--	6.0E-09
			Ethylbenzene	Developmental	--	1.5E-11	--	1.5E-11
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	1.0E-08	--	1.0E-08
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	3.6E-08	--	3.6E-08
			C11-C22 Aromatics	Body weight	--	7.8E-07	--	7.8E-07
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.4E-06	--	1.4E-06
			Chemical Total		--	2.3E-06	--	2.3E-06
		Total Dust Inhalation						2.3E-06
	Total Soil Direct Contact and Dust Inhalation							4.3E-01

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	2.2E-05	--	--	2.2E-05
			TEQ (ND=1/2DL)	Reproductive, developmental	4.3E-02	--	--	4.3E-02
			Chemical Total		4.3E-02	--	--	4.3E-02
	Total Produce Ingestion							4.3E-02

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel B Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	1.9E-04	--	3.9E-04	5.8E-04
			C9-C12 Aliphatics	Liver, kidney, blood	3.2E-02	--	3.4E-02	6.6E-02
			C9-C10 Aromatics	Kidney	4.2E-03	--	4.4E-03	8.6E-03
			Ethylbenzene	Liver and kidney	6.3E-07	--	0.0E+00	6.3E-07
			1-Methylnaphthalene	Respiratory	6.7E-05	--	1.8E-05	8.4E-05
			2-Methylnaphthalene	Lungs	1.7E-04	--	4.5E-05	2.1E-04
			Naphthalene	Decreased body weight	6.3E-06	--	1.7E-06	8.1E-06
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	9.3E-02	--	9.7E-02	1.9E-01
			C11-C22 Aromatics	Kidney	3.8E-02	--	7.9E-03	4.6E-02
			Pentachlorophenol	Liver	1.6E-01	--	8.2E-02	2.4E-01
			TEQ (ND=1/2DL)	Reproductive, developmental	2.2E+00	--	1.4E-01	2.3E+00
			Chemical Total		2.5E+00	--	3.6E-01	2.9E+00
		Total Soil Direct Contact						2.9E+00
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	2.4E-09	--	2.4E-09
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	7.2E-07	--	7.2E-07
			C9-C10 Aromatics	Body weight	--	2.8E-07	--	2.8E-07
			Ethylbenzene	Developmental	--	1.4E-11	--	1.4E-11
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	9.3E-09	--	9.3E-09
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	2.1E-06	--	2.1E-06
			C11-C22 Aromatics	Body weight	--	2.5E-06	--	2.5E-06
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	8.5E-06	--	8.5E-06
			Chemical Total		--	1.4E-05	--	1.4E-05
		Total Dust Inhalation						1.4E-05
	Total Soil Direct Contact and Dust Inhalation							2.9E+00

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	2.7E-01	--	--	2.7E-01
			TEQ (ND=1/2DL)	Reproductive, developmental	2.6E-01	--	--	2.6E-01
			Chemical Total		5.3E-01	--	--	5.3E-01
	Total Produce Ingestion							5.3E-01

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Spigot Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	8.6E-06	--	4.5E-06	1.3E-05
			TEQ (ND=1/2DL)	Reproductive, developmental	1.0E-01	--	6.4E-03	1.1E-01
			Chemical Total		1.0E-01	--	6.4E-03	1.1E-01
		Total Soil Direct Contact						1.1E-01
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.0E-07	--	4.0E-07
			Chemical Total		--	4.0E-07	--	4.0E-07
		Total Dust Inhalation						4.0E-07
	Total Soil Direct Contact and Dust Inhalation							1.1E-01

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.5E-05	--	--	1.5E-05
			TEQ (ND=1/2DL)	Reproductive, developmental	1.2E-02	--	--	1.2E-02
			Chemical Total		1.2E-02	--	--	1.2E-02
	Total Produce Ingestion							1.2E-02

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Cassell Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	3.5E-05	--	1.8E-05	5.3E-05
			TEQ (ND=1/2DL)	Reproductive, developmental	1.6E-01	--	1.0E-02	1.7E-01
			Chemical Total		1.6E-01	--	1.0E-02	1.7E-01
		Total Soil Direct Contact						1.7E-01
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.2E-07	--	6.2E-07
			Chemical Total		--	6.2E-07	--	6.2E-07
		Total Dust Inhalation						6.2E-07
	Total Soil Direct Contact and Dust Inhalation							1.7E-01

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	4.5E-04	--	--	4.5E-04
			TEQ (ND=1/2DL)	Reproductive, developmental	1.4E-01	--	--	1.4E-01
			Chemical Total		1.4E-01	--	--	1.4E-01
	Total Produce Ingestion							1.4E-01

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parmenter Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.2E-07	--	6.1E-08	1.8E-07
			TEQ (ND=1/2DL)	Reproductive, developmental	2.8E-03	--	1.7E-04	2.9E-03
			Chemical Total		2.8E-03	--	1.7E-04	2.9E-03
		Total Soil Direct Contact						2.9E-03
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.1E-08	--	1.1E-08
			Chemical Total		--	1.1E-08	--	1.1E-08
		Total Dust Inhalation						1.1E-08
	Total Soil Direct Contact and Dust Inhalation							2.9E-03

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.5E-06	--	--	1.5E-06
			TEQ (ND=1/2DL)	Reproductive, developmental	2.4E-03	--	--	2.4E-03
			Chemical Total		2.4E-03	--	--	2.4E-03
	Total Produce Ingestion							2.4E-03

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Skroch Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	9.1E-07	--	4.7E-07	1.4E-06
			TEQ (ND=1/2DL)	Reproductive, developmental	2.6E-02	--	1.6E-03	2.7E-02
			Chemical Total		2.6E-02	--	1.6E-03	2.7E-02
		Total Soil Direct Contact						2.7E-02
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.0E-07	--	1.0E-07
			Chemical Total		--	1.0E-07	--	1.0E-07
		Total Dust Inhalation						1.0E-07
	Total Soil Direct Contact and Dust Inhalation							2.7E-02

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.2E-05	--	--	1.2E-05
			TEQ (ND=1/2DL)	Reproductive, developmental	2.3E-02	--	--	2.3E-02
			Chemical Total		2.3E-02	--	--	2.3E-02
	Total Produce Ingestion							2.3E-02

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Chaney Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	6.1E-08	--	3.2E-08	9.3E-08
			TEQ (ND=1/2DL)	Reproductive, developmental	1.7E-02	--	1.1E-03	1.8E-02
			Chemical Total		1.7E-02	--	1.1E-03	1.8E-02
		Total Soil Direct Contact						1.8E-02
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.5E-08	--	6.5E-08
			Chemical Total		--	6.5E-08	--	6.5E-08
		Total Dust Inhalation						6.5E-08
	Total Soil Direct Contact and Dust Inhalation							1.8E-02

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.1E-07	--	--	1.1E-07
			TEQ (ND=1/2DL)	Reproductive, developmental	2.0E-03	--	--	2.0E-03
			Chemical Total		2.0E-03	--	--	2.0E-03
	Total Produce Ingestion							2.0E-03

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract B Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	2.2E-01	--	1.4E-02	2.4E-01
			Chemical Total		2.2E-01	--	1.4E-02	2.4E-01
		Total Soil Direct Contact						2.4E-01
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	8.6E-07	--	8.6E-07
			Chemical Total		--	8.6E-07	--	8.6E-07
		Total Dust Inhalation						8.6E-07
	Total Soil Direct Contact and Dust Inhalation							2.4E-01

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	1.9E-01	--	--	1.9E-01
			Chemical Total		1.9E-01	--	--	1.9E-01
	Total Produce Ingestion							1.9E-01

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Renfroe Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	2.2E-02	--	1.4E-03	2.4E-02
			Chemical Total		2.2E-02	--	1.4E-03	2.4E-02
		Total Soil Direct Contact						2.4E-02
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	8.6E-08	--	8.6E-08
			Chemical Total		--	8.6E-08	--	8.6E-08
		Total Dust Inhalation						8.6E-08
	Total Soil Direct Contact and Dust Inhalation							2.4E-02

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	2.6E-03	--	--	2.6E-03
			Chemical Total		2.6E-03	--	--	2.6E-03
	Total Produce Ingestion							2.6E-03

TABLE D9.1 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
3WT Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	4.0E-02	--	2.5E-03	4.3E-02
			Chemical Total		4.0E-02	--	2.5E-03	4.3E-02
		Total Soil Direct Contact						4.3E-02
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.5E-07	--	1.5E-07
			Chemical Total		--	1.5E-07	--	1.5E-07
		Total Dust Inhalation						1.5E-07
	Total Soil Direct Contact and Dust Inhalation							4.3E-02

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	4.7E-03	--	--	4.7E-03
			Chemical Total		4.7E-03	--	--	4.7E-03
	Total Produce Ingestion							4.7E-03

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Milton Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	2.1E-06	--	1.1E-06	3.2E-06
			TEQ (ND=1/2DL)	Reproductive, developmental	3.8E-02	--	2.4E-03	4.0E-02
			Chemical Total		3.8E-02	--	2.4E-03	4.0E-02
		Total Soil Direct Contact						4.0E-02
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.5E-07	--	1.5E-07
			Chemical Total		--	1.5E-07	--	1.5E-07
		Total Dust Inhalation						1.5E-07
	Total Soil Direct Contact and Dust Inhalation							4.0E-02

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	3.6E-06	--	--	3.6E-06
			TEQ (ND=1/2DL)	Reproductive, developmental	4.4E-03	--	--	4.4E-03
			Chemical Total		4.4E-03	--	--	4.4E-03
	Total Produce Ingestion							4.4E-03

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Parcel B Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	6.1E-07	--	3.1E-07	9.2E-07
			TEQ (ND=1/2DL)	Reproductive, developmental	2.7E-01	--	1.7E-02	2.9E-01
			Chemical Total		2.7E-01	--	1.7E-02	2.9E-01
		Total Soil Direct Contact						2.9E-01
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.1E-06	--	1.1E-06
			Chemical Total		--	1.1E-06	--	1.1E-06
		Total Dust Inhalation						1.1E-06
	Total Soil Direct Contact and Dust Inhalation							2.9E-01

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	7.8E-06	--	--	7.8E-06
			TEQ (ND=1/2DL)	Reproductive, developmental	2.4E-01	--	--	2.4E-01
			Chemical Total		2.4E-01	--	--	2.4E-01
	Total Produce Ingestion							2.4E-01

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract A Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.3E-08	--	6.7E-09	2.0E-08
			TEQ (ND=1/2DL)	Reproductive, developmental	7.3E-02	--	4.5E-03	7.7E-02
			Chemical Total		7.3E-02	--	4.5E-03	7.7E-02
		Total Soil Direct Contact						7.7E-02
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.8E-07	--	2.8E-07
			Chemical Total		--	2.8E-07	--	2.8E-07
		Total Dust Inhalation						2.8E-07
	Total Soil Direct Contact and Dust Inhalation							7.7E-02

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.7E-07	--	--	1.7E-07
			TEQ (ND=1/2DL)	Reproductive, developmental	6.4E-02	--	--	6.4E-02
			Chemical Total		6.4E-02	--	--	6.4E-02
	Total Produce Ingestion							6.4E-02

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Robak Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	2.6E-06	--	1.4E-06	4.0E-06
			TEQ (ND=1/2DL)	Reproductive, developmental	4.4E-02	--	2.7E-03	4.7E-02
			Chemical Total		4.4E-02	--	2.7E-03	4.7E-02
		Total Soil Direct Contact						4.7E-02
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.7E-07	--	1.7E-07
			Chemical Total		--	1.7E-07	--	1.7E-07
		Total Dust Inhalation						1.7E-07
	Total Soil Direct Contact and Dust Inhalation							4.7E-02

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	4.5E-06	--	--	4.5E-06
			TEQ (ND=1/2DL)	Reproductive, developmental	5.1E-03	--	--	5.1E-03
			Chemical Total		5.1E-03	--	--	5.1E-03
	Total Produce Ingestion							5.1E-03

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Smith Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	3.1E-02	--	1.9E-03	3.3E-02
			Chemical Total		3.1E-02	--	1.9E-03	3.3E-02
		Total Soil Direct Contact						3.3E-02
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.2E-07	--	1.2E-07
			Chemical Total		--	1.2E-07	--	1.2E-07
		Total Dust Inhalation						1.2E-07
	Total Soil Direct Contact and Dust Inhalation							3.3E-02

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	3.6E-03	--	--	3.6E-03
			Chemical Total		3.6E-03	--	--	3.6E-03
	Total Produce Ingestion							3.6E-03

TABLE D9.1 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Stevenson Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.9E-07	--	9.7E-08	2.8E-07
			TEQ (ND=1/2DL)	Reproductive, developmental	3.4E-03	--	2.1E-04	3.7E-03
			Chemical Total		3.4E-03	--	2.1E-04	3.7E-03
		Total Soil Direct Contact						3.7E-03
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.3E-08	--	1.3E-08
			Chemical Total		--	1.3E-08	--	1.3E-08
		Total Dust Inhalation						1.3E-08
	Total Soil Direct Contact and Dust Inhalation							3.7E-03

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	3.2E-07	--	--	3.2E-07
			TEQ (ND=1/2DL)	Reproductive, developmental	4.0E-04	--	--	4.0E-04
			Chemical Total		4.0E-04	--	--	4.0E-04
	Total Produce Ingestion							4.0E-04

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Vintage Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	7.8E-03	--	4.8E-04	8.3E-03
			Chemical Total		7.8E-03	--	4.8E-04	8.3E-03
		Total Soil Direct Contact						8.3E-03
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.0E-08	--	3.0E-08
			Chemical Total		--	3.0E-08	--	3.0E-08
		Total Dust Inhalation						3.0E-08
	Total Soil Direct Contact and Dust Inhalation							8.3E-03

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	--	--	--	--
			TEQ (ND=1/2DL)	Reproductive, developmental	9.1E-04	--	--	9.1E-04
			Chemical Total		9.1E-04	--	--	9.1E-04
	Total Produce Ingestion							9.1E-04

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Right-of-Way Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.0E-02	--	5.4E-03	1.6E-02
			TEQ (ND=1/2DL)	Reproductive, developmental	--	--	--	--
			Chemical Total		1.0E-02	--	5.4E-03	1.6E-02
		Total Soil Direct Contact						1.6E-02
	Air	Airborne Dust	C5-C8 Aliphatics	Nervous system	--	--	--	--
			C9-C12 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	Body weight	--	--	--	--
			Ethylbenzene	Developmental	--	--	--	--
			1-Methylnaphthalene	na	--	--	--	--
			2-Methylnaphthalene	na	--	--	--	--
			Naphthalene	Nasal epithelium	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	Body weight	--	--	--	--
			Pentachlorophenol	na	--	--	--	--
			TEQ (ND=1/2DL)	Liver, reproductive, developmental, endocrine, respiratory, blood	--	--	--	--
			Chemical Total		--	--	--	--
		Total Dust Inhalation						--
	Total Soil Direct Contact and Dust Inhalation							1.6E-02

TABLE D9.1 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Non-Carcinogenic Hazard Quotient				
				Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	Kidney	--	--	--	--
			Ethylbenzene	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	Respiratory	--	--	--	--
			2-Methylnaphthalene	Lungs	--	--	--	--
			Naphthalene	Decreased body weight	--	--	--	--
			BaP equivalents	na	--	--	--	--
			C9-C18 Aliphatics	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	Kidney	--	--	--	--
			Pentachlorophenol	Liver	1.8E-02	--	--	1.8E-02
			TEQ (ND=1/2DL)	Reproductive, developmental	--	--	--	--
			Chemical Total		1.8E-02	--	--	1.8E-02
	Total Produce Ingestion							1.8E-02

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene

CT = central tendency

na = not applicble

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel A Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	5.0E-10	--	0.0E+00	5.0E-10
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	1.3E-05	--	2.2E-06	1.5E-05
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	8.3E-08	--	5.2E-08	1.3E-07
			TEQ (ND=1/2DL)	2.2E-04	--	1.6E-05	2.3E-04
			Chemical Total	2.3E-04	--	1.8E-05	2.5E-04
		Total Soil Direct Contact					2.5E-04
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	2.6E-14	--	2.6E-14
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	7.1E-13	--	7.1E-13
			BaP equivalents	--	2.4E-10	--	2.4E-10
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	2.5E-13	--	2.5E-13
			TEQ (ND=1/2DL)	--	1.5E-08	--	1.5E-08
			Chemical Total	--	1.5E-08	--	1.5E-08
		Total Dust Inhalation					1.5E-08
	Total Soil Direct Contact and Dust Inhalation						2.5E-04

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	1.5E-06	--	--	1.5E-06
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	2.0E-07	--	--	2.0E-07
			TEQ (ND=1/2DL)	3.5E-05	--	--	3.5E-05
			Chemical Total	3.6E-05	--	--	3.6E-05
	Total Produce Ingestion						3.6E-05

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel B Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	4.6E-10	--	0.0E+00	4.6E-10
			1-Methylnaphthalene	8.9E-08	--	2.9E-08	1.2E-07
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	1.9E-05	--	3.2E-06	2.2E-05
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.2E-03	--	7.6E-04	2.0E-03
			TEQ (ND=1/2DL)	4.4E-04	--	3.3E-05	4.8E-04
			Chemical Total	1.7E-03	--	8.0E-04	2.5E-03
		Total Soil Direct Contact					2.5E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	2.4E-14	--	2.4E-14
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	3.5E-12	--	3.5E-12
			BaP equivalents	--	3.6E-10	--	3.6E-10
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	3.6E-09	--	3.6E-09
			TEQ (ND=1/2DL)	--	3.0E-08	--	3.0E-08
			Chemical Total	--	3.4E-08	--	3.4E-08
		Total Dust Inhalation					3.4E-08
	Total Soil Direct Contact and Dust Inhalation						2.5E-03

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	2.2E-06	--	--	2.2E-06
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	2.9E-03	--	--	2.9E-03
			TEQ (ND=1/2DL)	7.1E-05	--	--	7.1E-05
			Chemical Total	2.9E-03	--	--	2.9E-03
	Total Produce Ingestion						2.9E-03

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Spigot Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.8E-08	--	1.2E-08	3.0E-08
			TEQ (ND=1/2DL)	1.2E-05	--	8.8E-07	1.3E-05
			Chemical Total	1.2E-05	--	8.9E-07	1.3E-05
		Total Soil Direct Contact					1.3E-05
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	5.5E-14	--	5.5E-14
			TEQ (ND=1/2DL)	--	8.0E-10	--	8.0E-10
			Chemical Total	--	8.0E-10	--	8.0E-10
		Total Dust Inhalation					8.0E-10
	Total Soil Direct Contact and Dust Inhalation						1.3E-05

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	4.3E-08	--	--	4.3E-08
			TEQ (ND=1/2DL)	1.9E-06	--	--	1.9E-06
			Chemical Total	1.9E-06	--	--	1.9E-06
	Total Produce Ingestion						1.9E-06

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Cassell Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.2E-07	--	7.7E-08	2.0E-07
			TEQ (ND=1/2DL)	2.6E-05	--	1.9E-06	2.8E-05
			Chemical Total	2.6E-05	--	2.0E-06	2.8E-05
		Total Soil Direct Contact					2.8E-05
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	3.6E-13	--	3.6E-13
			TEQ (ND=1/2DL)	--	1.8E-09	--	1.8E-09
			Chemical Total	--	1.8E-09	--	1.8E-09
		Total Dust Inhalation					1.8E-09
	Total Soil Direct Contact and Dust Inhalation						2.8E-05

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	2.0E-06	--	--	2.0E-06
			TEQ (ND=1/2DL)	2.8E-05	--	--	2.8E-05
			Chemical Total	3.0E-05	--	--	3.0E-05
	Total Produce Ingestion						3.0E-05

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Parmenter Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	2.3E-10	--	1.5E-10	3.8E-10
			TEQ (ND=1/2DL)	3.2E-07	--	2.4E-08	3.5E-07
			Chemical Total	3.2E-07	--	2.4E-08	3.5E-07
		Total Soil Direct Contact					3.5E-07
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	7.0E-16	--	7.0E-16
			TEQ (ND=1/2DL)	--	2.2E-11	--	2.2E-11
			Chemical Total	--	2.2E-11	--	2.2E-11
		Total Dust Inhalation					2.2E-11
	Total Soil Direct Contact and Dust Inhalation						3.5E-07

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	3.7E-09	--	--	3.7E-09
			TEQ (ND=1/2DL)	3.5E-07	--	--	3.5E-07
			Chemical Total	3.5E-07	--	--	3.5E-07
	Total Produce Ingestion						3.5E-07

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Skroch Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	6.4E-09	--	4.0E-09	1.0E-08
			TEQ (ND=1/2DL)	5.2E-06	--	3.9E-07	5.6E-06
			Chemical Total	5.2E-06	--	3.9E-07	5.6E-06
		Total Soil Direct Contact					5.6E-06
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	1.9E-14	--	1.9E-14
			TEQ (ND=1/2DL)	--	3.5E-10	--	3.5E-10
			Chemical Total	--	3.5E-10	--	3.5E-10
		Total Dust Inhalation					3.5E-10
	Total Soil Direct Contact and Dust Inhalation						5.6E-06

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.0E-07	--	--	1.0E-07
			TEQ (ND=1/2DL)	5.6E-06	--	--	5.6E-06
			Chemical Total	5.7E-06	--	--	5.7E-06
	Total Produce Ingestion						5.7E-06

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Chaney Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	8.1E-11	--	5.0E-11	1.3E-10
			TEQ (ND=1/2DL)	1.2E-06	--	8.8E-08	1.3E-06
			Chemical Total	1.2E-06	--	8.8E-08	1.3E-06
		Total Soil Direct Contact					1.3E-06
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	2.4E-16	--	2.4E-16
			TEQ (ND=1/2DL)	--	7.9E-11	--	7.9E-11
			Chemical Total	--	7.9E-11	--	7.9E-11
		Total Dust Inhalation					7.9E-11
	Total Soil Direct Contact and Dust Inhalation						1.3E-06

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.9E-10	--	--	1.9E-10
			TEQ (ND=1/2DL)	1.9E-07	--	--	1.9E-07
			Chemical Total	1.9E-07	--	--	1.9E-07
	Total Produce Ingestion						1.9E-07

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract B Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	2.9E-05	--	2.2E-06	3.1E-05
			Chemical Total	2.9E-05	--	2.2E-06	3.1E-05
		Total Soil Direct Contact					3.1E-05
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	--	2.0E-09	--	2.0E-09
			Chemical Total	--	2.0E-09	--	2.0E-09
		Total Dust Inhalation					2.0E-09
	Total Soil Direct Contact and Dust Inhalation						3.1E-05

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	3.1E-05	--	--	3.1E-05
			Chemical Total	3.1E-05	--	--	3.1E-05
	Total Produce Ingestion						3.1E-05

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Renfroe Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	2.0E-06	--	1.5E-07	2.2E-06
			Chemical Total	2.0E-06	--	1.5E-07	2.2E-06
		Total Soil Direct Contact					2.2E-06
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	--	1.4E-10	--	1.4E-10
			Chemical Total	--	1.4E-10	--	1.4E-10
		Total Dust Inhalation					1.4E-10
	Total Soil Direct Contact and Dust Inhalation						2.2E-06

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	3.2E-07	--	--	3.2E-07
			Chemical Total	3.2E-07	--	--	3.2E-07
	Total Produce Ingestion						3.2E-07

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
3WT Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	2.4E-06	--	1.8E-07	2.6E-06
			Chemical Total	2.4E-06	--	1.8E-07	2.6E-06
		Total Soil Direct Contact					2.6E-06
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	--	1.6E-10	--	1.6E-10
			Chemical Total	--	1.6E-10	--	1.6E-10
		Total Dust Inhalation					1.6E-10
	Total Soil Direct Contact and Dust Inhalation						2.6E-06

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	3.8E-07	--	--	3.8E-07
			Chemical Total	3.8E-07	--	--	3.8E-07
	Total Produce Ingestion						3.8E-07

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Milton Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	5.5E-09	--	3.4E-09	8.9E-09
			TEQ (ND=1/2DL)	4.0E-06	--	3.0E-07	4.3E-06
			Chemical Total	4.0E-06	--	3.0E-07	4.3E-06
		Total Soil Direct Contact					4.3E-06
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	1.6E-14	--	1.6E-14
			TEQ (ND=1/2DL)	--	2.7E-10	--	2.7E-10
			Chemical Total	--	2.7E-10	--	2.7E-10
		Total Dust Inhalation					2.7E-10
	Total Soil Direct Contact and Dust Inhalation						4.3E-06

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.3E-08	--	--	1.3E-08
			TEQ (ND=1/2DL)	6.4E-07	--	--	6.4E-07
			Chemical Total	6.5E-07	--	--	6.5E-07
	Total Produce Ingestion						6.5E-07

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Parcel B Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	3.2E-09	--	2.0E-09	5.2E-09
			TEQ (ND=1/2DL)	3.3E-05	--	2.5E-06	3.6E-05
			Chemical Total	3.3E-05	--	2.5E-06	3.6E-05
		Total Soil Direct Contact					3.6E-05
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	9.5E-15	--	9.5E-15
			TEQ (ND=1/2DL)	--	2.3E-09	--	2.3E-09
			Chemical Total	--	2.3E-09	--	2.3E-09
		Total Dust Inhalation					2.3E-09
	Total Soil Direct Contact and Dust Inhalation						3.6E-05

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	5.1E-08	--	--	5.1E-08
			TEQ (ND=1/2DL)	3.6E-05	--	--	3.6E-05
			Chemical Total	3.6E-05	--	--	3.6E-05
	Total Produce Ingestion						3.6E-05

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract A Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.9E-11	--	1.2E-11	3.1E-11
			TEQ (ND=1/2DL)	3.1E-05	--	2.3E-06	3.3E-05
			Chemical Total	3.1E-05	--	2.3E-06	3.3E-05
		Total Soil Direct Contact					3.3E-05
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	5.6E-17	--	5.6E-17
			TEQ (ND=1/2DL)	--	2.1E-09	--	2.1E-09
			Chemical Total	--	2.1E-09	--	2.1E-09
		Total Dust Inhalation					2.1E-09
	Total Soil Direct Contact and Dust Inhalation						3.3E-05

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	3.0E-10	--	--	3.0E-10
			TEQ (ND=1/2DL)	3.3E-05	--	--	3.3E-05
			Chemical Total	3.3E-05	--	--	3.3E-05
	Total Produce Ingestion						3.3E-05

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Robak Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	3.5E-09	--	2.2E-09	5.6E-09
			TEQ (ND=1/2DL)	4.0E-06	--	3.0E-07	4.3E-06
			Chemical Total	4.0E-06	--	3.0E-07	4.3E-06
		Total Soil Direct Contact					4.3E-06
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	1.0E-14	--	1.0E-14
			TEQ (ND=1/2DL)	--	2.7E-10	--	2.7E-10
			Chemical Total	--	2.7E-10	--	2.7E-10
		Total Dust Inhalation					2.7E-10
	Total Soil Direct Contact and Dust Inhalation						4.3E-06

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	8.2E-09	--	--	8.2E-09
			TEQ (ND=1/2DL)	6.4E-07	--	--	6.4E-07
			Chemical Total	6.4E-07	--	--	6.4E-07
	Total Produce Ingestion						6.4E-07

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Smith Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	2.4E-06	--	1.8E-07	2.6E-06
			Chemical Total	2.4E-06	--	1.8E-07	2.6E-06
		Total Soil Direct Contact					2.6E-06
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	--	1.7E-10	--	1.7E-10
			Chemical Total	--	1.7E-10	--	1.7E-10
		Total Dust Inhalation					1.7E-10
	Total Soil Direct Contact and Dust Inhalation						2.6E-06

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	3.9E-07	--	--	3.9E-07
			Chemical Total	3.9E-07	--	--	3.9E-07
	Total Produce Ingestion						3.9E-07

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Stevenson Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	2.5E-10	--	1.5E-10	4.0E-10
			TEQ (ND=1/2DL)	8.9E-07	--	6.6E-08	9.5E-07
			Chemical Total	8.9E-07	--	6.7E-08	9.5E-07
		Total Soil Direct Contact					9.5E-07
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	7.3E-16	--	7.3E-16
			TEQ (ND=1/2DL)	--	6.0E-11	--	6.0E-11
			Chemical Total	--	6.0E-11	--	6.0E-11
		Total Dust Inhalation					6.0E-11
	Total Soil Direct Contact and Dust Inhalation						9.5E-07

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	5.8E-10	--	--	5.8E-10
			TEQ (ND=1/2DL)	1.4E-07	--	--	1.4E-07
			Chemical Total	1.4E-07	--	--	1.4E-07
	Total Produce Ingestion						1.4E-07

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Vintage Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	4.7E-07	--	3.5E-08	5.0E-07
			Chemical Total	4.7E-07	--	3.5E-08	5.0E-07
		Total Soil Direct Contact					5.0E-07
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	--	3.2E-11	--	3.2E-11
			Chemical Total	--	3.2E-11	--	3.2E-11
		Total Dust Inhalation					3.2E-11
	Total Soil Direct Contact and Dust Inhalation						5.0E-07

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	7.5E-08	--	--	7.5E-08
			Chemical Total	7.5E-08	--	--	7.5E-08
	Total Produce Ingestion						7.5E-08

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Right-of-Way Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.4E-05	--	8.6E-06	2.2E-05
			TEQ (ND=1/2DL)	--	--	--	--
			Chemical Total	1.4E-05	--	8.6E-06	2.2E-05
		Total Soil Direct Contact					2.2E-05
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	4.1E-11	--	4.1E-11
			TEQ (ND=1/2DL)	--	--	--	--
			Chemical Total	--	4.1E-11	--	4.1E-11
		Total Dust Inhalation					4.1E-11
	Total Soil Direct Contact and Dust Inhalation						2.2E-05

TABLE D9.2. RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	3.2E-05	--	--	3.2E-05
			TEQ (ND=1/2DL)	--	--	--	--
			Chemical Total	3.2E-05	--	--	3.2E-05
	Total Produce Ingestion						3.2E-05

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

-- = not applicable.

BaP = benzo(a)pyrene

CT = central tendency

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel A Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	6.7E-11	--	0.0E+00	6.7E-11
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	1.8E-06	--	1.0E-06	2.8E-06
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	2.3E-09	--	3.5E-09	5.7E-09
			TEQ (ND=1/2DL)	3.0E-06	--	5.4E-07	3.5E-06
			Chemical Total	4.8E-06	--	1.5E-06	6.4E-06
		Total Soil Direct Contact					6.4E-06
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	8.7E-15	--	8.7E-15
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	2.4E-13	--	2.4E-13
			BaP equivalents	--	1.1E-10	--	1.1E-10
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	1.7E-14	--	1.7E-14
			TEQ (ND=1/2DL)	--	5.0E-10	--	5.0E-10
			Chemical Total	--	6.2E-10	--	6.2E-10
		Total Dust Inhalation					6.2E-10
	Total Soil Direct Contact and Dust Inhalation						6.4E-06

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	3.5E-07	--	--	3.5E-07
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	7.1E-09	--	--	7.1E-09
			TEQ (ND=1/2DL)	6.3E-07	--	--	6.3E-07
			Chemical Total	9.9E-07	--	--	9.9E-07
	Total Produce Ingestion						9.9E-07

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel B Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	6.1E-11	--	0.0E+00	6.1E-11
			1-Methylnaphthalene	1.2E-08	--	9.4E-09	2.1E-08
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	1.3E-06	--	7.1E-07	2.0E-06
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	2.8E-05	--	4.2E-05	7.0E-05
			TEQ (ND=1/2DL)	1.8E-05	--	3.2E-06	2.1E-05
			Chemical Total	4.7E-05	--	4.6E-05	9.3E-05
		Total Soil Direct Contact					9.3E-05
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	8.0E-15	--	8.0E-15
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	2.2E-13	--	2.2E-13
			BaP equivalents	--	8.1E-11	--	8.1E-11
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	2.0E-10	--	2.0E-10
			TEQ (ND=1/2DL)	--	3.0E-09	--	3.0E-09
			Chemical Total	--	3.3E-09	--	3.3E-09
		Total Dust Inhalation					3.3E-09
	Total Soil Direct Contact and Dust Inhalation						9.3E-05

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	2.5E-07	--	--	2.5E-07
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	8.7E-05	--	--	8.7E-05
			TEQ (ND=1/2DL)	3.8E-06	--	--	3.8E-06
			Chemical Total	9.1E-05	--	--	9.1E-05
	Total Produce Ingestion						9.1E-05

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Spigot Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.5E-09	--	2.3E-09	3.8E-09
			TEQ (ND=1/2DL)	8.3E-07	--	1.5E-07	9.8E-07
			Chemical Total	8.3E-07	--	1.5E-07	9.9E-07
		Total Soil Direct Contact					9.9E-07
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	1.1E-14	--	1.1E-14
			TEQ (ND=1/2DL)	--	1.4E-10	--	1.4E-10
			Chemical Total	--	1.4E-10	--	1.4E-10
		Total Dust Inhalation					1.4E-10
	Total Soil Direct Contact and Dust Inhalation						9.9E-07

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	4.8E-09	--	--	4.8E-09
			TEQ (ND=1/2DL)	1.8E-07	--	--	1.8E-07
			Chemical Total	1.8E-07	--	--	1.8E-07
	Total Produce Ingestion						1.8E-07

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Cassell Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	6.2E-09	--	9.4E-09	1.6E-08
			TEQ (ND=1/2DL)	1.3E-06	--	2.4E-07	1.5E-06
			Chemical Total	1.3E-06	--	2.5E-07	1.6E-06
		Total Soil Direct Contact					1.6E-06
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	4.6E-14	--	4.6E-14
			TEQ (ND=1/2DL)	--	2.2E-10	--	2.2E-10
			Chemical Total	--	2.2E-10	--	2.2E-10
		Total Dust Inhalation					2.2E-10
	Total Soil Direct Contact and Dust Inhalation						1.6E-06

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.5E-07	--	--	1.5E-07
			TEQ (ND=1/2DL)	2.1E-06	--	--	2.1E-06
			Chemical Total	2.2E-06	--	--	2.2E-06
	Total Produce Ingestion						2.2E-06

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Parmenter Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	2.1E-11	--	3.1E-11	5.2E-11
			TEQ (ND=1/2DL)	2.2E-08	--	4.0E-09	2.6E-08
			Chemical Total	2.2E-08	--	4.1E-09	2.6E-08
		Total Soil Direct Contact					2.6E-08
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	1.5E-16	--	1.5E-16
			TEQ (ND=1/2DL)	--	3.7E-12	--	3.7E-12
			Chemical Total	--	3.7E-12	--	3.7E-12
		Total Dust Inhalation					3.7E-12
	Total Soil Direct Contact and Dust Inhalation						2.6E-08

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	4.9E-10	--	--	4.9E-10
			TEQ (ND=1/2DL)	3.5E-08	--	--	3.5E-08
			Chemical Total	3.6E-08	--	--	3.6E-08
	Total Produce Ingestion						3.6E-08

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Skroch Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.6E-10	--	2.4E-10	4.1E-10
			TEQ (ND=1/2DL)	2.1E-07	--	3.8E-08	2.5E-07
			Chemical Total	2.1E-07	--	3.8E-08	2.5E-07
		Total Soil Direct Contact					2.5E-07
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	1.2E-15	--	1.2E-15
			TEQ (ND=1/2DL)	--	3.5E-11	--	3.5E-11
			Chemical Total	--	3.5E-11	--	3.5E-11
		Total Dust Inhalation					3.5E-11
	Total Soil Direct Contact and Dust Inhalation						2.5E-07

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	3.8E-09	--	--	3.8E-09
			TEQ (ND=1/2DL)	3.3E-07	--	--	3.3E-07
			Chemical Total	3.3E-07	--	--	3.3E-07
	Total Produce Ingestion						3.3E-07

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Chaney Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.1E-11	--	1.6E-11	2.7E-11
			TEQ (ND=1/2DL)	1.4E-07	--	2.5E-08	1.6E-07
			Chemical Total	1.4E-07	--	2.5E-08	1.6E-07
		Total Soil Direct Contact					1.6E-07
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	7.9E-17	--	7.9E-17
			TEQ (ND=1/2DL)	--	2.3E-11	--	2.3E-11
			Chemical Total	--	2.3E-11	--	2.3E-11
		Total Dust Inhalation					2.3E-11
	Total Soil Direct Contact and Dust Inhalation						1.6E-07

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	3.4E-11	--	--	3.4E-11
			TEQ (ND=1/2DL)	2.9E-08	--	--	2.9E-08
			Chemical Total	2.9E-08	--	--	2.9E-08
	Total Produce Ingestion						2.9E-08

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract B Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	1.8E-06	--	3.3E-07	2.1E-06
			Chemical Total	1.8E-06	--	3.3E-07	2.1E-06
		Total Soil Direct Contact					2.1E-06
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	--	3.0E-10	--	3.0E-10
			Chemical Total	--	3.0E-10	--	3.0E-10
		Total Dust Inhalation					3.0E-10
	Total Soil Direct Contact and Dust Inhalation						2.1E-06

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	2.9E-06	--	--	2.9E-06
			Chemical Total	2.9E-06	--	--	2.9E-06
	Total Produce Ingestion						2.9E-06

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Renfroe Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	1.8E-07	--	3.3E-08	2.1E-07
			Chemical Total	1.8E-07	--	3.3E-08	2.1E-07
		Total Soil Direct Contact					2.1E-07
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	--	3.0E-11	--	3.0E-11
			Chemical Total	--	3.0E-11	--	3.0E-11
		Total Dust Inhalation					3.0E-11
	Total Soil Direct Contact and Dust Inhalation						2.1E-07

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	3.8E-08	--	--	3.8E-08
			Chemical Total	3.8E-08	--	--	3.8E-08
	Total Produce Ingestion						3.8E-08

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
3WT Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	3.2E-07	--	5.9E-08	3.8E-07
			Chemical Total	3.2E-07	--	5.9E-08	3.8E-07
		Total Soil Direct Contact					3.8E-07
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	--	5.4E-11	--	5.4E-11
			Chemical Total	--	5.4E-11	--	5.4E-11
		Total Dust Inhalation					5.4E-11
	Total Soil Direct Contact and Dust Inhalation						3.8E-07

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	6.8E-08	--	--	6.8E-08
			Chemical Total	6.8E-08	--	--	6.8E-08
	Total Produce Ingestion						6.8E-08

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Milton Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	3.7E-10	--	5.6E-10	9.3E-10
			TEQ (ND=1/2DL)	3.0E-07	--	5.5E-08	3.6E-07
			Chemical Total	3.1E-07	--	5.6E-08	3.6E-07
		Total Soil Direct Contact					3.6E-07
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	2.7E-15	--	2.7E-15
			TEQ (ND=1/2DL)	--	5.1E-11	--	5.1E-11
			Chemical Total	--	5.1E-11	--	5.1E-11
		Total Dust Inhalation					5.1E-11
	Total Soil Direct Contact and Dust Inhalation						3.6E-07

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.2E-09	--	--	1.2E-09
			TEQ (ND=1/2DL)	6.5E-08	--	--	6.5E-08
			Chemical Total	6.6E-08	--	--	6.6E-08
	Total Produce Ingestion						6.6E-08

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Parcel B Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.1E-10	--	1.6E-10	2.7E-10
			TEQ (ND=1/2DL)	2.2E-06	--	4.0E-07	2.6E-06
			Chemical Total	2.2E-06	--	4.0E-07	2.6E-06
		Total Soil Direct Contact					2.6E-06
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	7.9E-16	--	7.9E-16
			TEQ (ND=1/2DL)	--	3.7E-10	--	3.7E-10
			Chemical Total	--	3.7E-10	--	3.7E-10
		Total Dust Inhalation					3.7E-10
	Total Soil Direct Contact and Dust Inhalation						2.6E-06

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	2.5E-09	--	--	2.5E-09
			TEQ (ND=1/2DL)	3.5E-06	--	--	3.5E-06
			Chemical Total	3.5E-06	--	--	3.5E-06
	Total Produce Ingestion						3.5E-06

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract A Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	2.3E-12	--	3.4E-12	5.7E-12
			TEQ (ND=1/2DL)	5.9E-07	--	1.1E-07	6.9E-07
			Chemical Total	5.9E-07	--	1.1E-07	6.9E-07
		Total Soil Direct Contact					6.9E-07
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	1.7E-17	--	1.7E-17
			TEQ (ND=1/2DL)	--	9.9E-11	--	9.9E-11
			Chemical Total	--	9.9E-11	--	9.9E-11
		Total Dust Inhalation					9.9E-11
	Total Soil Direct Contact and Dust Inhalation						6.9E-07

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	5.3E-11	--	--	5.3E-11
			TEQ (ND=1/2DL)	9.3E-07	--	--	9.3E-07
			Chemical Total	9.3E-07	--	--	9.3E-07
	Total Produce Ingestion						9.3E-07

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Robak Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	4.7E-10	--	7.1E-10	1.2E-09
			TEQ (ND=1/2DL)	3.5E-07	--	6.4E-08	4.2E-07
			Chemical Total	3.5E-07	--	6.5E-08	4.2E-07
		Total Soil Direct Contact					4.2E-07
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	3.4E-15	--	3.4E-15
			TEQ (ND=1/2DL)	--	6.0E-11	--	6.0E-11
			Chemical Total	--	6.0E-11	--	6.0E-11
		Total Dust Inhalation					6.0E-11
	Total Soil Direct Contact and Dust Inhalation						4.2E-07

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.5E-09	--	--	1.5E-09
			TEQ (ND=1/2DL)	7.5E-08	--	--	7.5E-08
			Chemical Total	7.7E-08	--	--	7.7E-08
	Total Produce Ingestion						7.7E-08

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Smith Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	2.5E-07	--	4.6E-08	3.0E-07
			Chemical Total	2.5E-07	--	4.6E-08	3.0E-07
		Total Soil Direct Contact					3.0E-07
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	--	4.2E-11	--	4.2E-11
			Chemical Total	--	4.2E-11	--	4.2E-11
		Total Dust Inhalation					4.2E-11
	Total Soil Direct Contact and Dust Inhalation						3.0E-07

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	5.3E-08	--	--	5.3E-08
			Chemical Total	5.3E-08	--	--	5.3E-08
	Total Produce Ingestion						5.3E-08

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Stevenson Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	3.3E-11	--	5.0E-11	8.3E-11
			TEQ (ND=1/2DL)	2.8E-08	--	5.0E-09	3.3E-08
			Chemical Total	2.8E-08	--	5.1E-09	3.3E-08
		Total Soil Direct Contact					3.3E-08
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	2.4E-16	--	2.4E-16
			TEQ (ND=1/2DL)	--	4.7E-12	--	4.7E-12
			Chemical Total	--	4.7E-12	--	4.7E-12
		Total Dust Inhalation					4.7E-12
	Total Soil Direct Contact and Dust Inhalation						3.3E-08

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.0E-10	--	--	1.0E-10
			TEQ (ND=1/2DL)	5.9E-09	--	--	5.9E-09
			Chemical Total	6.0E-09	--	--	6.0E-09
	Total Produce Ingestion						6.0E-09

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Vintage Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	6.3E-08	--	1.1E-08	7.4E-08
			Chemical Total	6.3E-08	--	1.1E-08	7.4E-08
		Total Soil Direct Contact					7.4E-08
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	--	1.1E-11	--	1.1E-11
			Chemical Total	--	1.1E-11	--	1.1E-11
		Total Dust Inhalation					1.1E-11
	Total Soil Direct Contact and Dust Inhalation						7.4E-08

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	--	--	--
			TEQ (ND=1/2DL)	1.3E-08	--	--	1.3E-08
			Chemical Total	1.3E-08	--	--	1.3E-08
	Total Produce Ingestion						1.3E-08

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Right-of-Way Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	1.8E-06	--	2.8E-06	4.6E-06
			TEQ (ND=1/2DL)	--	--	--	--
			Chemical Total	1.8E-06	--	2.8E-06	4.6E-06
		Total Soil Direct Contact					4.6E-06
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	--	1.4E-11	--	1.4E-11
			TEQ (ND=1/2DL)	--	--	--	--
			Chemical Total	--	1.4E-11	--	1.4E-11
		Total Dust Inhalation					1.4E-11
	Total Soil Direct Contact and Dust Inhalation						4.6E-06

TABLE D9.2. CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
	Plant Tissue	Homegrown Produce	C5-C8 Aliphatics	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--
			C9-C10 Aromatics	--	--	--	--
			Ethylbenzene	--	--	--	--
			1-Methylnaphthalene	--	--	--	--
			2-Methylnaphthalene	--	--	--	--
			Naphthalene	--	--	--	--
			BaP equivalents	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--
			C11-C22 Aromatics	--	--	--	--
			Pentachlorophenol	5.8E-06	--	--	5.8E-06
			TEQ (ND=1/2DL)	--	--	--	--
			Chemical Total	5.8E-06	--	--	5.8E-06
	Total Produce Ingestion						5.8E-06

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

-- = not applicable.

BaP = benzo(a)pyrene

CT = central tendency

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

TABLE D9.3 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel A Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	8.9E-07	--	--	8.9E-07	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.2E-09	--	--	1.2E-09	Liver	4.5E-05	--	--	4.5E-05
			TEQ (ND=1/2DL)	2.9E-06	--	--	2.9E-06	Reproductive, developmental	2.5E+00	--	--	2.5E+00
			Chemical Total	3.8E-06	--	--	3.8E-06		2.5E+00	--	--	2.5E+00
	Total Breast Milk Ingestion						3.8E-06					2.5E+00
Parcel B Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	1.3E-06	--	--	1.3E-06	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.7E-05	--	--	1.7E-05	Liver	6.6E-01	--	--	6.6E-01
			TEQ (ND=1/2DL)	6.0E-06	--	--	6.0E-06	Reproductive, developmental	5.1E+00	--	--	5.1E+00
			Chemical Total	2.4E-05	--	--	2.4E-05		5.8E+00	--	--	5.8E+00
	Total Breast Milk Ingestion						2.4E-05					5.8E+00

TABLE D9.3 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Spigot Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.6E-10	--	--	2.6E-10	Liver	1.0E-05	--	--	1.0E-05
			TEQ (ND=1/2DL)	1.6E-07	--	--	1.6E-07	Reproductive, developmental	1.4E-01	--	--	1.4E-01
			Chemical Total	1.6E-07	--	--	1.6E-07		1.4E-01	--	--	1.4E-01
	Total Breast Milk Ingestion						1.6E-07					1.4E-01
Cassell Soil (ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.7E-09	--	--	1.7E-09	Liver	6.7E-05	--	--	6.7E-05
			TEQ (ND=1/2DL)	3.5E-07	--	--	3.5E-07	Reproductive, developmental	3.0E-01	--	--	3.0E-01
			Chemical Total	3.5E-07	--	--	3.5E-07		3.0E-01	--	--	3.0E-01
	Total Breast Milk Ingestion						3.5E-07					3.0E-01

TABLE D9.3 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parmenter Soil (ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	3.3E-12	--	--	3.3E-12	Liver	1.3E-07	--	--	1.3E-07
			TEQ (ND=1/2DL)	4.4E-09	--	--	4.4E-09	Reproductive, developmental	3.7E-03	--	--	3.7E-03
			Chemical Total	4.4E-09	--	--	4.4E-09		3.7E-03	--	--	3.7E-03
	Total Breast Milk Ingestion						4.4E-09					3.7E-03
Skroch Soil (ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	8.9E-11	--	--	8.9E-11	Liver	3.5E-06	--	--	3.5E-06
			TEQ (ND=1/2DL)	7.1E-08	--	--	7.1E-08	Reproductive, developmental	6.0E-02	--	--	6.0E-02
			Chemical Total	7.1E-08	--	--	7.1E-08		6.0E-02	--	--	6.0E-02
	Total Breast Milk Ingestion						7.1E-08					6.0E-02

TABLE D9.3 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Chaney Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.1E-12	--	--	1.1E-12	Liver	4.4E-08	--	--	4.4E-08
			TEQ (ND=1/2DL)	1.6E-08	--	--	1.6E-08	Reproductive, developmental	1.4E-02	--	--	1.4E-02
			Chemical Total	1.6E-08	--	--	1.6E-08		1.4E-02	--	--	1.4E-02
	Total Breast Milk Ingestion						1.6E-08					1.4E-02
Peirano Tract B Soil (ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	3.9E-07	--	--	3.9E-07	Reproductive, developmental	3.4E-01	--	--	3.4E-01
			Chemical Total	3.9E-07	--	--	3.9E-07		3.4E-01	--	--	3.4E-01
	Total Breast Milk Ingestion						3.9E-07					3.4E-01

TABLE D9.3 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Renfroe Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	2.7E-08	--	--	2.7E-08	Reproductive, developmental	2.3E-02	--	--	2.3E-02
			Chemical Total	2.7E-08	--	--	2.7E-08		2.3E-02	--	--	2.3E-02
	Total Breast Milk Ingestion						2.7E-08					2.3E-02
3WT Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	3.2E-08	--	--	3.2E-08	Reproductive, developmental	2.8E-02	--	--	2.8E-02
			Chemical Total	3.2E-08	--	--	3.2E-08		2.8E-02	--	--	2.8E-02
	Total Breast Milk Ingestion						3.2E-08					2.8E-02

TABLE D9.3 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Milton Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	7.6E-11	--	--	7.6E-11	Liver	3.0E-06	--	--	3.0E-06
			TEQ (ND=1/2DL)	5.4E-08	--	--	5.4E-08	Reproductive, developmental	4.6E-02	--	--	4.6E-02
			Chemical Total	5.4E-08	--	--	5.4E-08		4.6E-02	--	--	4.6E-02
	Total Breast Milk Ingestion						5.4E-08					4.6E-02
Peirano Parcel B Soil (ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	4.5E-11	--	--	4.5E-11	Liver	1.7E-06	--	--	1.7E-06
			TEQ (ND=1/2DL)	4.5E-07	--	--	4.5E-07	Reproductive, developmental	3.9E-01	--	--	3.9E-01
			Chemical Total	4.5E-07	--	--	4.5E-07		3.9E-01	--	--	3.9E-01
	Total Breast Milk Ingestion						4.5E-07					3.9E-01

TABLE D9.3 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract A Soil (ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.6E-13	--	--	2.6E-13	Liver	1.0E-08	--	--	1.0E-08
			TEQ (ND=1/2DL)	4.2E-07	--	--	4.2E-07	Reproductive, developmental	3.6E-01	--	--	3.6E-01
			Chemical Total	4.2E-07	--	--	4.2E-07		3.6E-01	--	--	3.6E-01
	Total Breast Milk Ingestion						4.2E-07					3.6E-01
Robak Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	4.8E-11	--	--	4.8E-11	Liver	1.9E-06	--	--	1.9E-06
			TEQ (ND=1/2DL)	5.4E-08	--	--	5.4E-08	Reproductive, developmental	4.6E-02	--	--	4.6E-02
			Chemical Total	5.4E-08	--	--	5.4E-08		4.6E-02	--	--	4.6E-02
	Total Breast Milk Ingestion						5.4E-08					4.6E-02

TABLE D9.3 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Smith Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	3.3E-08	--	--	3.3E-08	Reproductive, developmental	2.8E-02	--	--	2.8E-02
			Chemical Total	3.3E-08	--	--	3.3E-08		2.8E-02	--	--	2.8E-02
	Total Breast Milk Ingestion						3.3E-08					2.8E-02
Stevenson Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	3.4E-12	--	--	3.4E-12	Liver	1.3E-07	--	--	1.3E-07
			TEQ (ND=1/2DL)	1.2E-08	--	--	1.2E-08	Reproductive, developmental	1.0E-02	--	--	1.0E-02
			Chemical Total	1.2E-08	--	--	1.2E-08		1.0E-02	--	--	1.0E-02
	Total Breast Milk Ingestion						1.2E-08					1.0E-02

TABLE D9.3 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Vintage Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	6.3E-09	--	--	6.3E-09	Reproductive, developmental	5.4E-03	--	--	5.4E-03
			Chemical Total	6.3E-09	--	--	6.3E-09		5.4E-03	--	--	5.4E-03
	Total Breast Milk Ingestion						6.3E-09					5.4E-03
Right-of-Way Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.9E-07	--	--	1.9E-07	Liver	7.5E-03	--	--	7.5E-03
			TEQ (ND=1/2DL)	--	--	--	--	Reproductive, developmental	--	--	--	--
			Chemical Total	1.9E-07	--	--	1.9E-07		7.5E-03	--	--	7.5E-03
	Total Breast Milk Ingestion						1.9E-07					7.5E-03

Notes:

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene

RME = reasonable maximum exposure

CT = central tendency

TEQ = 2,3,7,8-TCDD toxicity equivalents

na = not applicable

TABLE D9.3 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel A Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	2.2E-07	--	--	2.2E-07	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	6.3E-11	--	--	6.3E-11	Liver	2.5E-06	--	--	2.5E-06
			TEQ (ND=1/2DL)	5.6E-08	--	--	5.6E-08	Reproductive, developmental	4.8E-02	--	--	4.8E-02
			Chemical Total	2.7E-07	--	--	2.7E-07		4.8E-02	--	--	4.8E-02
	Total Breast Milk Ingestion						2.7E-07					4.8E-02
Parcel B Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	1.5E-07	--	--	1.5E-07	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	7.7E-07	--	--	7.7E-07	Liver	3.0E-02	--	--	3.0E-02
			TEQ (ND=1/2DL)	3.4E-07	--	--	3.4E-07	Reproductive, developmental	2.9E-01	--	--	2.9E-01
			Chemical Total	1.3E-06	--	--	1.3E-06		3.2E-01	--	--	3.2E-01
	Total Breast Milk Ingestion						1.3E-06					3.2E-01

TABLE D9.3 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Spigot Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	4.2E-11	--	--	4.2E-11	Liver	1.6E-06	--	--	1.6E-06
			TEQ (ND=1/2DL)	1.6E-08	--	--	1.6E-08	Reproductive, developmental	1.3E-02	--	--	1.3E-02
			Chemical Total	1.6E-08	--	--	1.6E-08		1.3E-02	--	--	1.3E-02
	Total Breast Milk Ingestion						1.6E-08					1.3E-02
Cassell Soil (ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.7E-10	--	--	1.7E-10	Liver	6.7E-06	--	--	6.7E-06
			TEQ (ND=1/2DL)	2.5E-08	--	--	2.5E-08	Reproductive, developmental	2.1E-02	--	--	2.1E-02
			Chemical Total	2.5E-08	--	--	2.5E-08		2.1E-02	--	--	2.1E-02
	Total Breast Milk Ingestion						2.5E-08					2.1E-02

TABLE D9.3 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parmenter Soil (ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	5.7E-13	--	--	5.7E-13	Liver	2.2E-08	--	--	2.2E-08
			TEQ (ND=1/2DL)	4.2E-10	--	--	4.2E-10	Reproductive, developmental	3.6E-04	--	--	3.6E-04
			Chemical Total	4.2E-10	--	--	4.2E-10		3.6E-04	--	--	3.6E-04
	Total Breast Milk Ingestion						4.2E-10					3.6E-04
Skroch Soil (ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	4.5E-12	--	--	4.5E-12	Liver	1.7E-07	--	--	1.7E-07
			TEQ (ND=1/2DL)	3.9E-09	--	--	3.9E-09	Reproductive, developmental	3.4E-03	--	--	3.4E-03
			Chemical Total	3.9E-09	--	--	3.9E-09		3.4E-03	--	--	3.4E-03
	Total Breast Milk Ingestion						3.9E-09					3.4E-03

TABLE D9.3 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Chaney Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	3.0E-13	--	--	3.0E-13	Liver	1.2E-08	--	--	1.2E-08
			TEQ (ND=1/2DL)	2.6E-09	--	--	2.6E-09	Reproductive, developmental	2.2E-03	--	--	2.2E-03
			Chemical Total	2.6E-09	--	--	2.6E-09		2.2E-03	--	--	2.2E-03
	Total Breast Milk Ingestion						2.6E-09					2.2E-03
Peirano Tract B Soil (ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	3.4E-08	--	--	3.4E-08	Reproductive, developmental	2.9E-02	--	--	2.9E-02
			Chemical Total	3.4E-08	--	--	3.4E-08		2.9E-02	--	--	2.9E-02
	Total Breast Milk Ingestion						3.4E-08					2.9E-02

TABLE D9.3 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Renfroe Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	3.4E-09	--	--	3.4E-09	Reproductive, developmental	2.9E-03	--	--	2.9E-03
			Chemical Total	3.4E-09	--	--	3.4E-09		2.9E-03	--	--	2.9E-03
	Total Breast Milk Ingestion						3.4E-09					2.9E-03
3WT Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	6.1E-09	--	--	6.1E-09	Reproductive, developmental	5.2E-03	--	--	5.2E-03
			Chemical Total	6.1E-09	--	--	6.1E-09		5.2E-03	--	--	5.2E-03
	Total Breast Milk Ingestion						6.1E-09					5.2E-03

TABLE D9.3 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Milton Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.0E-11	--	--	1.0E-11	Liver	4.0E-07	--	--	4.0E-07
			TEQ (ND=1/2DL)	5.7E-09	--	--	5.7E-09	Reproductive, developmental	4.9E-03	--	--	4.9E-03
			Chemical Total	5.8E-09	--	--	5.8E-09		4.9E-03	--	--	4.9E-03
	Total Breast Milk Ingestion						5.8E-09					4.9E-03
Peirano Parcel B Soil (ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	3.0E-12	--	--	3.0E-12	Liver	1.2E-07	--	--	1.2E-07
			TEQ (ND=1/2DL)	4.2E-08	--	--	4.2E-08	Reproductive, developmental	3.6E-02	--	--	3.6E-02
			Chemical Total	4.2E-08	--	--	4.2E-08		3.6E-02	--	--	3.6E-02
	Total Breast Milk Ingestion						4.2E-08					3.6E-02

TABLE D9.3 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract A Soil (ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	6.3E-14	--	--	6.3E-14	Liver	2.5E-09	--	--	2.5E-09
			TEQ (ND=1/2DL)	1.1E-08	--	--	1.1E-08	Reproductive, developmental	9.5E-03	--	--	9.5E-03
			Chemical Total	1.1E-08	--	--	1.1E-08		9.5E-03	--	--	9.5E-03
	Total Breast Milk Ingestion						1.1E-08					9.5E-03
Robak Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.3E-11	--	--	1.3E-11	Liver	5.0E-07	--	--	5.0E-07
			TEQ (ND=1/2DL)	6.7E-09	--	--	6.7E-09	Reproductive, developmental	5.7E-03	--	--	5.7E-03
			Chemical Total	6.7E-09	--	--	6.7E-09		5.7E-03	--	--	5.7E-03
	Total Breast Milk Ingestion						6.7E-09					5.7E-03

TABLE D9.3 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe: Current/Future
Receptor Population: Resident
Receptor Age: Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Smith Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	4.7E-09	--	--	4.7E-09	Reproductive, developmental	4.1E-03	--	--	4.1E-03
			Chemical Total	4.7E-09	--	--	4.7E-09		4.1E-03	--	--	4.1E-03
	Total Breast Milk Ingestion						4.7E-09					4.1E-03
Stevenson Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	9.2E-13	--	--	9.2E-13	Liver	3.6E-08	--	--	3.6E-08
			TEQ (ND=1/2DL)	5.2E-10	--	--	5.2E-10	Reproductive, developmental	4.5E-04	--	--	4.5E-04
			Chemical Total	5.2E-10	--	--	5.2E-10		4.5E-04	--	--	4.5E-04
	Total Breast Milk Ingestion						5.2E-10					4.5E-04

TABLE D9.3 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Resident
Receptor Age:	Infant (0-1 year)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Vintage Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	1.2E-09	--	--	1.2E-09	Reproductive, developmental	1.0E-03	--	--	1.0E-03
			Chemical Total	1.2E-09	--	--	1.2E-09		1.0E-03	--	--	1.0E-03
	Total Breast Milk Ingestion						1.2E-09					1.0E-03
Right-of-Way Soil (non-ditch)	Breast Milk	Breast Milk	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	5.1E-08	--	--	5.1E-08	Liver	2.0E-03	--	--	2.0E-03
			TEQ (ND=1/2DL)	--	--	--	--	Reproductive, developmental	--	--	--	--
			Chemical Total	5.1E-08	--	--	5.1E-08		2.0E-03	--	--	2.0E-03
	Total Breast Milk Ingestion						5.1E-08					2.0E-03

Notes:

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene

RME = reasonable maximum exposure

CT = central tendency

TEQ = 2,3,7,8-TCDD toxicity equivalents

na = not applicable

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel A Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	1.1E-03	--	7.1E-03	8.1E-03
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	6.4E-05	--	2.1E-04	2.8E-04
			C9-C10 Aromatics	--	--	--	--	Kidney	2.1E-05	--	7.1E-05	9.3E-05
			Ethylbenzene	5.6E-11	--	0.0E+00	5.6E-11	Liver and kidney	1.6E-07	--	0.0E+00	1.6E-07
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	2.6E-05	--	2.3E-05	4.9E-05
			Naphthalene	--	--	--	--	Decreased body weight	1.6E-06	--	1.4E-06	3.0E-06
			BaP equivalents	3.1E-07	--	2.7E-07	5.8E-07	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	3.8E-04	--	1.3E-03	1.7E-03
			C11-C22 Aromatics	--	--	--	--	Kidney	2.8E-03	--	1.8E-03	4.6E-03
			Pentachlorophenol	9.4E-09	--	1.6E-08	2.5E-08	Liver	1.5E-05	--	2.5E-05	3.9E-05
			TEQ (ND=1/2DL)	2.5E-05	--	5.0E-06	3.0E-05	Reproductive, developmental	8.5E-01	--	1.7E-01	1.0E+00
			Chemical Total	2.5E-05	--	5.2E-06	3.0E-05		8.5E-01	--	1.8E-01	1.0E+00
		Total Soil Direct Contact					3.0E-05					1.0E+00
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	2.4E-08	--	2.4E-08
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	2.5E-09	--	2.5E-09
			C9-C10 Aromatics	--	--	--	--	Body weight	--	2.5E-09	--	2.5E-09
			Ethylbenzene	--	5.0E-15	--	5.0E-15	Developmental	--	6.3E-12	--	6.3E-12
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	1.4E-13	--	1.4E-13	Nasal epithelium	--	4.2E-09	--	4.2E-09
			BaP equivalents	--	1.8E-11	--	1.8E-11	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	1.5E-08	--	1.5E-08
			C11-C22 Aromatics	--	--	--	--	Body weight	--	3.3E-07	--	3.3E-07
			Pentachlorophenol	--	4.7E-14	--	4.7E-14	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.8E-09	--	2.8E-09	Liver, reproductive, developmental, endocrine, respiratory, blood	--	5.8E-06	--	5.8E-06
			Chemical Total	--	2.8E-09	--	2.8E-09		--	6.2E-06	--	6.2E-06
		Total Dust Inhalation					2.8E-09					6.2E-06
	Total Soil Direct Contact and Dust Inhalation						3.0E-05					1.0E+00

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel B Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	6.3E-05	--	4.2E-04	4.8E-04
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	2.9E-02	--	9.7E-02	1.3E-01
			C9-C10 Aromatics	--	--	--	--	Kidney	4.0E-03	--	1.3E-02	1.7E-02
			Ethylbenzene	5.2E-11	--	0.0E+00	5.2E-11	Liver and kidney	1.5E-07	--	0.0E+00	1.5E-07
			1-Methylnaphthalene	1.0E-08	--	8.8E-09	1.9E-08	Respiratory	1.6E-05	--	1.4E-05	2.9E-05
			2-Methylnaphthalene	--	--	--	--	Lungs	1.6E-04	--	1.4E-04	3.0E-04
			Naphthalene	--	--	--	--	Decreased body weight	7.8E-06	--	6.8E-06	1.5E-05
			BaP equivalents	4.6E-07	--	4.0E-07	8.6E-07	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	5.8E-02	--	1.9E-01	2.5E-01
			C11-C22 Aromatics	--	--	--	--	Kidney	6.6E-02	--	4.4E-02	1.1E-01
			Pentachlorophenol	1.4E-04	--	2.3E-04	3.7E-04	Liver	2.2E-01	--	3.6E-01	5.8E-01
			TEQ (ND=1/2DL)	5.0E-05	--	1.0E-05	6.1E-05	Reproductive, developmental	1.7E+00	--	3.5E-01	2.1E+00
			Chemical Total	1.9E-04	--	2.4E-04	4.3E-04		2.1E+00	--	1.1E+00	3.2E+00
		Total Soil Direct Contact					4.3E-04					3.2E+00
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	1.4E-09	--	1.4E-09
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	1.1E-06	--	1.1E-06
			C9-C10 Aromatics	--	--	--	--	Body weight	--	4.7E-07	--	4.7E-07
			Ethylbenzene	--	4.6E-15	--	4.6E-15	Developmental	--	5.8E-12	--	5.8E-12
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	6.7E-13	--	6.7E-13	Nasal epithelium	--	2.1E-08	--	2.1E-08
			BaP equivalents	--	2.7E-11	--	2.7E-11	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	2.3E-06	--	2.3E-06
			C11-C22 Aromatics	--	--	--	--	Body weight	--	7.7E-06	--	7.7E-06
			Pentachlorophenol	--	6.9E-10	--	6.9E-10	na	--	--	--	--
			TEQ (ND=1/2DL)	--	5.8E-09	--	5.8E-09	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.2E-05	--	1.2E-05
			Chemical Total	--	6.5E-09	--	6.5E-09		--	2.3E-05	--	2.3E-05
		Total Dust Inhalation					6.5E-09					2.3E-05
	Total Soil Direct Contact and Dust Inhalation						4.3E-04					3.2E+00

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Spigot Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.1E-09	--	3.5E-09	5.6E-09	Liver	3.3E-06	--	5.5E-06	8.7E-06
			TEQ (ND=1/2DL)	1.3E-06	--	2.7E-07	1.6E-06	Reproductive, developmental	4.6E-02	--	9.2E-03	5.5E-02
			Chemical Total	1.3E-06	--	2.7E-07	1.6E-06		4.6E-02	--	9.2E-03	5.5E-02
		Total Soil Direct Contact					1.6E-06					5.5E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.0E-14	--	1.0E-14	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.5E-10	--	1.5E-10	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.1E-07	--	3.1E-07
			Chemical Total	--	1.5E-10	--	1.5E-10		--	3.1E-07	--	3.1E-07
		Total Dust Inhalation					1.5E-10					3.1E-07
	Total Soil Direct Contact and Dust Inhalation						1.6E-06					5.5E-02

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Cassell Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	4.7E-08	--	7.9E-08	1.3E-07	Liver	7.4E-05	--	1.2E-04	2.0E-04
			TEQ (ND=1/2DL)	1.0E-05	--	2.0E-06	1.2E-05	Reproductive, developmental	3.4E-01	--	6.9E-02	4.1E-01
			Chemical Total	1.0E-05	--	2.1E-06	1.2E-05		3.4E-01	--	6.9E-02	4.1E-01
		Total Soil Direct Contact					1.2E-05					4.1E-01
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	2.4E-13	--	2.4E-13	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.1E-09	--	1.1E-09	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.3E-06	--	2.3E-06
			Chemical Total	--	1.1E-09	--	1.1E-09		--	2.3E-06	--	2.3E-06
		Total Dust Inhalation					1.1E-09					2.3E-06
	Total Soil Direct Contact and Dust Inhalation						1.2E-05					4.1E-01

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parmenter Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	9.1E-11	--	1.5E-10	2.4E-10	Liver	1.4E-07	--	2.4E-07	3.8E-07
			TEQ (ND=1/2DL)	1.2E-07	--	2.5E-08	1.5E-07	Reproductive, developmental	4.3E-03	--	8.6E-04	5.1E-03
			Chemical Total	1.2E-07	--	2.5E-08	1.5E-07		4.3E-03	--	8.6E-04	5.1E-03
		Total Soil Direct Contact					1.5E-07					5.1E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	4.5E-16	--	4.5E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.4E-11	--	1.4E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.9E-08	--	2.9E-08
			Chemical Total	--	1.4E-11	--	1.4E-11		--	2.9E-08	--	2.9E-08
		Total Dust Inhalation					1.4E-11					2.9E-08
	Total Soil Direct Contact and Dust Inhalation						1.5E-07					5.1E-03

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Skroch Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.5E-09	--	4.1E-09	6.6E-09	Liver	3.9E-06	--	6.5E-06	1.0E-05
			TEQ (ND=1/2DL)	2.0E-06	--	4.0E-07	2.4E-06	Reproductive, developmental	6.9E-02	--	1.4E-02	8.3E-02
			Chemical Total	2.0E-06	--	4.1E-07	2.4E-06		6.9E-02	--	1.4E-02	8.3E-02
		Total Soil Direct Contact					2.4E-06					8.3E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.2E-14	--	1.2E-14	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.3E-10	--	2.3E-10	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.7E-07	--	4.7E-07
			Chemical Total	--	2.3E-10	--	2.3E-10		--	4.7E-07	--	4.7E-07
		Total Dust Inhalation					2.3E-10					4.7E-07
	Total Soil Direct Contact and Dust Inhalation						2.4E-06					8.3E-02

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Chaney Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	9.2E-12	--	1.5E-11	2.5E-11	Liver	1.4E-08	--	2.4E-08	3.8E-08
			TEQ (ND=1/2DL)	1.3E-07	--	2.7E-08	1.6E-07	Reproductive, developmental	4.6E-03	--	9.2E-04	5.5E-03
			Chemical Total	1.3E-07	--	2.7E-08	1.6E-07		4.6E-03	--	9.2E-04	5.5E-03
		Total Soil Direct Contact					1.6E-07					5.5E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	4.6E-17	--	4.6E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.5E-11	--	1.5E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.1E-08	--	3.1E-08
			Chemical Total	--	1.5E-11	--	1.5E-11		--	3.1E-08	--	3.1E-08
		Total Dust Inhalation					1.5E-11					3.1E-08
	Total Soil Direct Contact and Dust Inhalation						1.6E-07					5.5E-03

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract B Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	1.1E-05	--	2.3E-06	1.3E-05	Reproductive, developmental	3.8E-01	--	7.7E-02	4.6E-01
			Chemical Total	1.1E-05	--	2.3E-06	1.3E-05		3.8E-01	--	7.7E-02	4.6E-01
		Total Soil Direct Contact					1.3E-05					4.6E-01
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.3E-09	--	1.3E-09	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.6E-06	--	2.6E-06
			Chemical Total	--	1.3E-09	--	1.3E-09		--	2.6E-06	--	2.6E-06
		Total Dust Inhalation					1.3E-09					2.6E-06
	Total Soil Direct Contact and Dust Inhalation						1.3E-05					4.6E-01

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Renfroe Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	2.3E-07	--	4.6E-08	2.7E-07	Reproductive, developmental	7.8E-03	--	1.6E-03	9.4E-03
			Chemical Total	2.3E-07	--	4.6E-08	2.7E-07		7.8E-03	--	1.6E-03	9.4E-03
		Total Soil Direct Contact					2.7E-07					9.4E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.6E-11	--	2.6E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	5.4E-08	--	5.4E-08
			Chemical Total	--	2.6E-11	--	2.6E-11		--	5.4E-08	--	5.4E-08
		Total Dust Inhalation					2.6E-11					5.4E-08
	Total Soil Direct Contact and Dust Inhalation						2.7E-07					9.4E-03

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
3WT Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	2.7E-07	--	5.5E-08	3.3E-07	Reproductive, developmental	9.4E-03	--	1.9E-03	1.1E-02
			Chemical Total	2.7E-07	--	5.5E-08	3.3E-07		9.4E-03	--	1.9E-03	1.1E-02
		Total Soil Direct Contact					3.3E-07					1.1E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.1E-11	--	3.1E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.4E-08	--	6.4E-08
			Chemical Total	--	3.1E-11	--	3.1E-11		--	6.4E-08	--	6.4E-08
		Total Dust Inhalation					3.1E-11					6.4E-08
	Total Soil Direct Contact and Dust Inhalation						3.3E-07					1.1E-02

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Milton Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	6.2E-10	--	1.0E-09	1.7E-09	Liver	9.7E-07	--	1.6E-06	2.6E-06
			TEQ (ND=1/2DL)	4.5E-07	--	9.1E-08	5.4E-07	Reproductive, developmental	1.6E-02	--	3.1E-03	1.9E-02
			Chemical Total	4.5E-07	--	9.2E-08	5.5E-07		1.6E-02	--	3.1E-03	1.9E-02
		Total Soil Direct Contact					5.5E-07					1.9E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	3.1E-15	--	3.1E-15	na	--	--	--	--
			TEQ (ND=1/2DL)	--	5.2E-11	--	5.2E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.1E-07	--	1.1E-07
			Chemical Total	--	5.2E-11	--	5.2E-11		--	1.1E-07	--	1.1E-07
		Total Dust Inhalation					5.2E-11					1.1E-07
	Total Soil Direct Contact and Dust Inhalation						5.5E-07					1.9E-02

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SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
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Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Parcel B Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.2E-09	--	2.1E-09	3.3E-09	Liver	1.9E-06	--	3.2E-06	5.2E-06
			TEQ (ND=1/2DL)	1.3E-05	--	2.6E-06	1.5E-05	Reproductive, developmental	4.4E-01	--	8.9E-02	5.3E-01
			Chemical Total	1.3E-05	--	2.6E-06	1.5E-05		4.4E-01	--	8.9E-02	5.3E-01
		Total Soil Direct Contact					1.5E-05					5.3E-01
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	6.2E-15	--	6.2E-15	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.5E-09	--	1.5E-09	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.0E-06	--	3.0E-06
			Chemical Total	--	1.5E-09	--	1.5E-09		--	3.0E-06	--	3.0E-06
		Total Dust Inhalation					1.5E-09					3.0E-06
	Total Soil Direct Contact and Dust Inhalation						1.5E-05					5.3E-01

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract A Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	7.3E-12	--	1.2E-11	1.9E-11	Liver	1.1E-08	--	1.9E-08	3.0E-08
			TEQ (ND=1/2DL)	1.2E-05	--	2.4E-06	1.4E-05	Reproductive, developmental	4.1E-01	--	8.2E-02	4.9E-01
			Chemical Total	1.2E-05	--	2.4E-06	1.4E-05		4.1E-01	--	8.2E-02	4.9E-01
		Total Soil Direct Contact					1.4E-05					4.9E-01
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	3.6E-17	--	3.6E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.4E-09	--	1.4E-09	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.8E-06	--	2.8E-06
			Chemical Total	--	1.4E-09	--	1.4E-09		--	2.8E-06	--	2.8E-06
		Total Dust Inhalation					1.4E-09					2.8E-06
	Total Soil Direct Contact and Dust Inhalation						1.4E-05					4.9E-01

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Robak Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	3.9E-10	--	6.6E-10	1.1E-09	Liver	6.2E-07	--	1.0E-06	1.6E-06
			TEQ (ND=1/2DL)	4.5E-07	--	9.1E-08	5.4E-07	Reproductive, developmental	1.6E-02	--	3.1E-03	1.9E-02
			Chemical Total	4.5E-07	--	9.2E-08	5.5E-07		1.6E-02	--	3.1E-03	1.9E-02
		Total Soil Direct Contact					5.5E-07					1.9E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	2.0E-15	--	2.0E-15	na	--	--	--	--
			TEQ (ND=1/2DL)	--	5.2E-11	--	5.2E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.1E-07	--	1.1E-07
			Chemical Total	--	5.2E-11	--	5.2E-11		--	1.1E-07	--	1.1E-07
		Total Dust Inhalation					5.2E-11					1.1E-07
	Total Soil Direct Contact and Dust Inhalation						5.5E-07					1.9E-02

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Smith Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	2.8E-07	--	5.6E-08	3.3E-07	Reproductive, developmental	9.5E-03	--	1.9E-03	1.1E-02
			Chemical Total	2.8E-07	--	5.6E-08	3.3E-07		9.5E-03	--	1.9E-03	1.1E-02
		Total Soil Direct Contact					3.3E-07					1.1E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.2E-11	--	3.2E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.5E-08	--	6.5E-08
			Chemical Total	--	3.2E-11	--	3.2E-11		--	6.5E-08	--	6.5E-08
		Total Dust Inhalation					3.2E-11					6.5E-08
	Total Soil Direct Contact and Dust Inhalation						3.3E-07					1.1E-02

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Stevenson Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.8E-11	--	4.7E-11	7.5E-11	Liver	4.4E-08	--	7.3E-08	1.2E-07
			TEQ (ND=1/2DL)	1.0E-07	--	2.0E-08	1.2E-07	Reproductive, developmental	3.5E-03	--	6.9E-04	4.2E-03
			Chemical Total	1.0E-07	--	2.0E-08	1.2E-07		3.5E-03	--	6.9E-04	4.2E-03
		Total Soil Direct Contact					1.2E-07					4.2E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.4E-16	--	1.4E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.2E-11	--	1.2E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.4E-08	--	2.4E-08
			Chemical Total	--	1.2E-11	--	1.2E-11		--	2.4E-08	--	2.4E-08
		Total Dust Inhalation					1.2E-11					2.4E-08
	Total Soil Direct Contact and Dust Inhalation						1.2E-07					4.2E-03

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Vintage Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	5.3E-08	--	1.1E-08	6.4E-08	Reproductive, developmental	1.8E-03	--	3.7E-04	2.2E-03
			Chemical Total	5.3E-08	--	1.1E-08	6.4E-08		1.8E-03	--	3.7E-04	2.2E-03
		Total Soil Direct Contact					6.4E-08					2.2E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	6.1E-12	--	6.1E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.2E-08	--	1.2E-08
			Chemical Total	--	6.1E-12	--	6.1E-12		--	1.2E-08	--	1.2E-08
		Total Dust Inhalation					6.1E-12					1.2E-08
	Total Soil Direct Contact and Dust Inhalation						6.4E-08					2.2E-03

TABLE D9.4 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Right-of-Way Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.6E-06	--	2.6E-06	4.2E-06	Liver	2.4E-03	--	4.1E-03	6.5E-03
			TEQ (ND=1/2DL)	--	--	--	--	Reproductive, developmental	--	--	--	--
			Chemical Total	1.6E-06	--	2.6E-06	4.2E-06		2.4E-03	--	4.1E-03	6.5E-03
		Total Soil Direct Contact					4.2E-06					6.5E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	7.8E-12	--	7.8E-12	na	--	--	--	--
			TEQ (ND=1/2DL)	--	--	--	--	Liver, reproductive, developmental, endocrine, respiratory, blood	--	--	--	--
			Chemical Total	--	7.8E-12	--	7.8E-12		--	--	--	--
		Total Dust Inhalation					7.8E-12					--
	Total Soil Direct Contact and Dust Inhalation						4.2E-06					6.5E-03

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene
CT = central tendency
na = not applicable
MDEQ = Montana Department of Environmental Quality
RME = reasonable maximum exposure
TEQ = 2,3,7,8-TCDD toxicity equivalents

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel A Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	4.2E-04	--	7.1E-03	7.5E-03
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	2.6E-05	--	2.1E-04	2.4E-04
			C9-C10 Aromatics	--	--	--	--	Kidney	8.5E-06	--	7.1E-05	8.0E-05
			Ethylbenzene	6.5E-12	--	0.0E+00	6.5E-12	Liver and kidney	6.4E-08	--	0.0E+00	6.4E-08
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	1.1E-05	--	2.3E-05	3.4E-05
			Naphthalene	--	--	--	--	Decreased body weight	6.4E-07	--	1.4E-06	2.0E-06
			BaP equivalents	3.6E-08	--	7.8E-08	1.1E-07	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	1.5E-04	--	1.3E-03	1.4E-03
			C11-C22 Aromatics	--	--	--	--	Kidney	1.1E-03	--	1.8E-03	3.0E-03
			Pentachlorophenol	2.2E-10	--	9.3E-10	1.2E-09	Liver	1.2E-06	--	5.0E-06	6.3E-06
			TEQ (ND=1/2DL)	2.9E-07	--	1.5E-07	4.4E-07	Reproductive, developmental	3.5E-02	--	1.7E-02	5.2E-02
			Chemical Total	3.3E-07	--	2.2E-07	5.5E-07		3.6E-02	--	2.8E-02	6.4E-02
		Total Soil Direct Contact					5.5E-07					6.4E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	2.4E-08	--	2.4E-08
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	2.5E-09	--	2.5E-09
			C9-C10 Aromatics	--	--	--	--	Body weight	--	2.5E-09	--	2.5E-09
			Ethylbenzene	--	1.4E-15	--	1.4E-15	Developmental	--	6.3E-12	--	6.3E-12
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	3.9E-14	--	3.9E-14	Nasal epithelium	--	4.2E-09	--	4.2E-09
			BaP equivalents	--	5.3E-12	--	5.3E-12	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	1.5E-08	--	1.5E-08
			C11-C22 Aromatics	--	--	--	--	Body weight	--	3.3E-07	--	3.3E-07
			Pentachlorophenol	--	2.8E-15	--	2.8E-15	na	--	--	--	--
			TEQ (ND=1/2DL)	--	8.3E-11	--	8.3E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.0E-07	--	6.0E-07
			Chemical Total	--	8.9E-11	--	8.9E-11		--	9.7E-07	--	9.7E-07
		Total Dust Inhalation					8.9E-11					9.7E-07
	Total Soil Direct Contact and Dust Inhalation						5.5E-07					6.4E-02

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel B Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	1.8E-05	--	3.0E-04	3.2E-04
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	3.0E-03	--	2.5E-02	2.8E-02
			C9-C10 Aromatics	--	--	--	--	Kidney	3.9E-04	--	3.3E-03	3.7E-03
			Ethylbenzene	6.0E-12	--	0.0E+00	6.0E-12	Liver and kidney	5.9E-08	--	0.0E+00	5.9E-08
			1-Methylnaphthalene	1.2E-09	--	2.5E-09	3.7E-09	Respiratory	6.2E-06	--	1.4E-05	2.0E-05
			2-Methylnaphthalene	--	--	--	--	Lungs	1.5E-05	--	3.4E-05	4.9E-05
			Naphthalene	--	--	--	--	Decreased body weight	5.9E-07	--	1.3E-06	1.9E-06
			BaP equivalents	2.6E-08	--	5.6E-08	8.1E-08	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	8.7E-03	--	7.3E-02	8.2E-02
			C11-C22 Aromatics	--	--	--	--	Kidney	3.5E-03	--	5.9E-03	9.5E-03
			Pentachlorophenol	2.7E-06	--	1.1E-05	1.4E-05	Liver	1.5E-02	--	6.1E-02	7.6E-02
			TEQ (ND=1/2DL)	1.7E-06	--	8.7E-07	2.6E-06	Reproductive, developmental	2.1E-01	--	1.0E-01	3.1E-01
			Chemical Total	4.5E-06	--	1.2E-05	1.7E-05		2.4E-01	--	2.7E-01	5.1E-01
		Total Soil Direct Contact					1.7E-05					5.1E-01
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	1.0E-09	--	1.0E-09
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	3.0E-07	--	3.0E-07
			C9-C10 Aromatics	--	--	--	--	Body weight	--	1.2E-07	--	1.2E-07
			Ethylbenzene	--	1.3E-15	--	1.3E-15	Developmental	--	5.8E-12	--	5.8E-12
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	3.6E-14	--	3.6E-14	Nasal epithelium	--	3.9E-09	--	3.9E-09
			BaP equivalents	--	3.8E-12	--	3.8E-12	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	8.5E-07	--	8.5E-07
			C11-C22 Aromatics	--	--	--	--	Body weight	--	1.0E-06	--	1.0E-06
			Pentachlorophenol	--	3.4E-11	--	3.4E-11	na	--	--	--	--
			TEQ (ND=1/2DL)	--	5.0E-10	--	5.0E-10	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.5E-06	--	3.5E-06
			Chemical Total	--	5.4E-10	--	5.4E-10		--	5.9E-06	--	5.9E-06
		Total Dust Inhalation					5.4E-10					5.9E-06
	Total Soil Direct Contact and Dust Inhalation						1.7E-05					5.1E-01

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Spigot Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.5E-10	--	6.2E-10	7.7E-10	Liver	8.0E-07	--	3.4E-06	4.2E-06
			TEQ (ND=1/2DL)	8.1E-08	--	4.1E-08	1.2E-07	Reproductive, developmental	9.7E-03	--	4.9E-03	1.5E-02
			Chemical Total	8.1E-08	--	4.1E-08	1.2E-07		9.7E-03	--	4.9E-03	1.5E-02
		Total Soil Direct Contact					1.2E-07					1.5E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.9E-15	--	1.9E-15	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.3E-11	--	2.3E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.7E-07	--	1.7E-07
			Chemical Total	--	2.3E-11	--	2.3E-11		--	1.7E-07	--	1.7E-07
		Total Dust Inhalation					2.3E-11					1.7E-07
	Total Soil Direct Contact and Dust Inhalation						1.2E-07					1.5E-02

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Cassell Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.3E-09	--	9.6E-09	1.2E-08	Liver	1.2E-05	--	5.2E-05	6.4E-05
			TEQ (ND=1/2DL)	4.8E-07	--	2.4E-07	7.2E-07	Reproductive, developmental	5.7E-02	--	2.9E-02	8.6E-02
			Chemical Total	4.8E-07	--	2.5E-07	7.3E-07		5.7E-02	--	2.9E-02	8.6E-02
		Total Soil Direct Contact					7.3E-07					8.6E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	2.9E-14	--	2.9E-14	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.4E-10	--	1.4E-10	Liver, reproductive, developmental, endocrine, respiratory, blood	--	9.8E-07	--	9.8E-07
			Chemical Total	--	1.4E-10	--	1.4E-10		--	9.8E-07	--	9.8E-07
		Total Dust Inhalation					1.4E-10					9.8E-07
	Total Soil Direct Contact and Dust Inhalation						7.3E-07					8.6E-02

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parmenter Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	7.6E-12	--	3.2E-11	3.9E-11	Liver	4.1E-08	--	1.7E-07	2.1E-07
			TEQ (ND=1/2DL)	8.2E-09	--	4.1E-09	1.2E-08	Reproductive, developmental	9.7E-04	--	4.9E-04	1.5E-03
			Chemical Total	8.2E-09	--	4.1E-09	1.2E-08		9.7E-04	--	4.9E-04	1.5E-03
		Total Soil Direct Contact					1.2E-08					1.5E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	9.5E-17	--	9.5E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.3E-12	--	2.3E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.7E-08	--	1.7E-08
			Chemical Total	--	2.3E-12	--	2.3E-12		--	1.7E-08	--	1.7E-08
		Total Dust Inhalation					2.3E-12					1.7E-08
	Total Soil Direct Contact and Dust Inhalation						1.2E-08					1.5E-03

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Skroch Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	5.9E-11	--	2.5E-10	3.1E-10	Liver	3.2E-07	--	1.3E-06	1.7E-06
			TEQ (ND=1/2DL)	7.7E-08	--	3.8E-08	1.2E-07	Reproductive, developmental	9.1E-03	--	4.6E-03	1.4E-02
			Chemical Total	7.7E-08	--	3.9E-08	1.2E-07		9.1E-03	--	4.6E-03	1.4E-02
		Total Soil Direct Contact					1.2E-07					1.4E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	7.4E-16	--	7.4E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.2E-11	--	2.2E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.6E-07	--	1.6E-07
			Chemical Total	--	2.2E-11	--	2.2E-11		--	1.6E-07	--	1.6E-07
		Total Dust Inhalation					2.2E-11					1.6E-07
	Total Soil Direct Contact and Dust Inhalation						1.2E-07					1.4E-02

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Chaney Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.1E-12	--	4.4E-12	5.5E-12	Liver	5.7E-09	--	2.4E-08	3.0E-08
			TEQ (ND=1/2DL)	1.3E-08	--	6.7E-09	2.0E-08	Reproductive, developmental	1.6E-03	--	7.9E-04	2.4E-03
			Chemical Total	1.3E-08	--	6.7E-09	2.0E-08		1.6E-03	--	7.9E-04	2.4E-03
		Total Soil Direct Contact					2.0E-08					2.4E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.3E-17	--	1.3E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.8E-12	--	3.8E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.7E-08	--	2.7E-08
			Chemical Total	--	3.8E-12	--	3.8E-12		--	2.7E-08	--	2.7E-08
		Total Dust Inhalation					3.8E-12					2.7E-08
	Total Soil Direct Contact and Dust Inhalation						2.0E-08					2.4E-03

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract B Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	6.6E-07	--	3.3E-07	9.9E-07	Reproductive, developmental	7.9E-02	--	3.9E-02	1.2E-01
			Chemical Total	6.6E-07	--	3.3E-07	9.9E-07		7.9E-02	--	3.9E-02	1.2E-01
		Total Soil Direct Contact					9.9E-07					1.2E-01
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.9E-10	--	1.9E-10	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.3E-06	--	1.3E-06
			Chemical Total	--	1.9E-10	--	1.9E-10		--	1.3E-06	--	1.3E-06
		Total Dust Inhalation					1.9E-10					1.3E-06
	Total Soil Direct Contact and Dust Inhalation						9.9E-07					1.2E-01

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Renfroe Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	1.7E-08	--	8.8E-09	2.6E-08	Reproductive, developmental	2.1E-03	--	1.0E-03	3.1E-03
			Chemical Total	1.7E-08	--	8.8E-09	2.6E-08		2.1E-03	--	1.0E-03	3.1E-03
		Total Soil Direct Contact					2.6E-08					3.1E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	5.0E-12	--	5.0E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.6E-08	--	3.6E-08
			Chemical Total	--	5.0E-12	--	5.0E-12		--	3.6E-08	--	3.6E-08
		Total Dust Inhalation					5.0E-12					3.6E-08
	Total Soil Direct Contact and Dust Inhalation						2.6E-08					3.1E-03

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
3WT Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	3.1E-08	--	1.6E-08	4.7E-08	Reproductive, developmental	3.7E-03	--	1.9E-03	5.6E-03
			Chemical Total	3.1E-08	--	1.6E-08	4.7E-08		3.7E-03	--	1.9E-03	5.6E-03
		Total Soil Direct Contact					4.7E-08					5.6E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	9.0E-12	--	9.0E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.4E-08	--	6.4E-08
			Chemical Total	--	9.0E-12	--	9.0E-12		--	6.4E-08	--	6.4E-08
		Total Dust Inhalation					9.0E-12					6.4E-08
	Total Soil Direct Contact and Dust Inhalation						4.7E-08					5.6E-03

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Milton Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	3.6E-11	--	1.5E-10	1.9E-10	Liver	1.9E-07	--	8.1E-07	1.0E-06
			TEQ (ND=1/2DL)	3.0E-08	--	1.5E-08	4.5E-08	Reproductive, developmental	3.5E-03	--	1.8E-03	5.3E-03
			Chemical Total	3.0E-08	--	1.5E-08	4.5E-08		3.5E-03	--	1.8E-03	5.3E-03
		Total Soil Direct Contact					4.5E-08					5.3E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	4.5E-16	--	4.5E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	8.5E-12	--	8.5E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.1E-08	--	6.1E-08
			Chemical Total	--	8.5E-12	--	8.5E-12		--	6.1E-08	--	6.1E-08
		Total Dust Inhalation					8.5E-12					6.1E-08
	Total Soil Direct Contact and Dust Inhalation						4.5E-08					5.3E-03

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Parcel B Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	3.9E-11	--	1.7E-10	2.0E-10	Liver	2.1E-07	--	8.9E-07	1.1E-06
			TEQ (ND=1/2DL)	8.1E-07	--	4.1E-07	1.2E-06	Reproductive, developmental	9.7E-02	--	4.8E-02	1.5E-01
			Chemical Total	8.1E-07	--	4.1E-07	1.2E-06		9.7E-02	--	4.8E-02	1.5E-01
		Total Soil Direct Contact					1.2E-06					1.5E-01
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	4.9E-16	--	4.9E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.3E-10	--	2.3E-10	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.7E-06	--	1.7E-06
			Chemical Total	--	2.3E-10	--	2.3E-10		--	1.7E-06	--	1.7E-06
		Total Dust Inhalation					2.3E-10					1.7E-06
	Total Soil Direct Contact and Dust Inhalation						1.2E-06					1.5E-01

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract A Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	8.4E-13	--	3.5E-12	4.3E-12	Liver	4.5E-09	--	1.9E-08	2.3E-08
			TEQ (ND=1/2DL)	2.2E-07	--	1.1E-07	3.2E-07	Reproductive, developmental	2.6E-02	--	1.3E-02	3.9E-02
			Chemical Total	2.2E-07	--	1.1E-07	3.2E-07		2.6E-02	--	1.3E-02	3.9E-02
		Total Soil Direct Contact					3.2E-07					3.9E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.0E-17	--	1.0E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	6.2E-11	--	6.2E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.4E-07	--	4.4E-07
			Chemical Total	--	6.2E-11	--	6.2E-11		--	4.4E-07	--	4.4E-07
		Total Dust Inhalation					6.2E-11					4.4E-07
	Total Soil Direct Contact and Dust Inhalation						3.2E-07					3.9E-02

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Robak Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	4.5E-11	--	1.9E-10	2.4E-10	Liver	2.5E-07	--	1.0E-06	1.3E-06
			TEQ (ND=1/2DL)	3.5E-08	--	1.7E-08	5.2E-08	Reproductive, developmental	4.1E-03	--	2.1E-03	6.2E-03
			Chemical Total	3.5E-08	--	1.8E-08	5.2E-08		4.1E-03	--	2.1E-03	6.2E-03
		Total Soil Direct Contact					5.2E-08					6.2E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	5.7E-16	--	5.7E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	9.9E-12	--	9.9E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	7.1E-08	--	7.1E-08
			Chemical Total	--	9.9E-12	--	9.9E-12		--	7.1E-08	--	7.1E-08
		Total Dust Inhalation					9.9E-12					7.1E-08
	Total Soil Direct Contact and Dust Inhalation						5.2E-08					6.2E-03

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Smith Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	2.4E-08	--	1.2E-08	3.7E-08	Reproductive, developmental	2.9E-03	--	1.5E-03	4.4E-03
			Chemical Total	2.4E-08	--	1.2E-08	3.7E-08		2.9E-03	--	1.5E-03	4.4E-03
		Total Soil Direct Contact					3.7E-08					4.4E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	7.0E-12	--	7.0E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	5.0E-08	--	5.0E-08
			Chemical Total	--	7.0E-12	--	7.0E-12		--	5.0E-08	--	5.0E-08
		Total Dust Inhalation					7.0E-12					5.0E-08
	Total Soil Direct Contact and Dust Inhalation						3.7E-08					4.4E-03

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Stevenson Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	3.2E-12	--	1.4E-11	1.7E-11	Liver	1.7E-08	--	7.3E-08	9.1E-08
			TEQ (ND=1/2DL)	2.7E-09	--	1.4E-09	4.1E-09	Reproductive, developmental	3.2E-04	--	1.6E-04	4.8E-04
			Chemical Total	2.7E-09	--	1.4E-09	4.1E-09		3.2E-04	--	1.6E-04	4.8E-04
		Total Soil Direct Contact					4.1E-09					4.8E-04
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	4.0E-17	--	4.0E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	7.7E-13	--	7.7E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	5.5E-09	--	5.5E-09
			Chemical Total	--	7.7E-13	--	7.7E-13		--	5.5E-09	--	5.5E-09
		Total Dust Inhalation					7.7E-13					5.5E-09
	Total Soil Direct Contact and Dust Inhalation						4.1E-09					4.8E-04

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Vintage Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	6.1E-09	--	3.1E-09	9.2E-09	Reproductive, developmental	7.3E-04	--	3.7E-04	1.1E-03
			Chemical Total	6.1E-09	--	3.1E-09	9.2E-09		7.3E-04	--	3.7E-04	1.1E-03
		Total Soil Direct Contact					9.2E-09					1.1E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.8E-12	--	1.8E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.2E-08	--	1.2E-08
			Chemical Total	--	1.8E-12	--	1.8E-12		--	1.2E-08	--	1.2E-08
		Total Dust Inhalation					1.8E-12					1.2E-08
	Total Soil Direct Contact and Dust Inhalation						9.2E-09					1.1E-03

TABLE D9.4 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Standard)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Right-of-Way Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.8E-07	--	7.5E-07	9.3E-07	Liver	9.7E-04	--	4.1E-03	5.0E-03
			TEQ (ND=1/2DL)	--	--	--	--	Reproductive, developmental	--	--	--	--
			Chemical Total	1.8E-07	--	7.5E-07	9.3E-07		9.7E-04	--	4.1E-03	5.0E-03
		Total Soil Direct Contact					9.3E-07					5.0E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	2.2E-12	--	2.2E-12	na	--	--	--	--
			TEQ (ND=1/2DL)	--	--	--	--	Liver, reproductive, developmental, endocrine, respiratory, blood	--	--	--	--
			Chemical Total	--	2.2E-12	--	2.2E-12		--	--	--	--
		Total Dust Inhalation					2.2E-12					--
	Total Soil Direct Contact and Dust Inhalation						9.3E-07					5.0E-03

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene
CT = central tendency
na = not applicable
MDEQ = Montana Department of Environmental Quality
RME = reasonable maximum exposure
TEQ = 2,3,7,8-TCDD toxicity equivalents

TABLE D9.5 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Cassell Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	4.5E-08	--	7.6E-08	1.2E-07	Liver	7.1E-05	--	1.2E-04	1.9E-04
			TEQ (ND=1/2DL)	9.6E-06	--	1.9E-06	1.1E-05	Reproductive, developmental	3.3E-01	--	6.6E-02	3.9E-01
			Chemical Total	9.6E-06	--	2.0E-06	1.2E-05		3.3E-01	--	6.6E-02	3.9E-01
		Total Soil Direct Contact					1.2E-05					3.9E-01
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	2.3E-13	--	2.3E-13	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.1E-09	--	1.1E-09	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.2E-06	--	2.2E-06
			Chemical Total	--	1.1E-09	--	1.1E-09		--	2.2E-06	--	2.2E-06
		Total Dust Inhalation					1.1E-09					2.2E-06
	Total Soil Direct Contact and Dust Inhalation						1.2E-05					3.9E-01

TABLE D9.5 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parmenter Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	8.7E-11	--	1.5E-10	2.3E-10	Liver	1.4E-07	--	2.3E-07	3.6E-07
			TEQ (ND=1/2DL)	1.2E-07	--	2.4E-08	1.4E-07	Reproductive, developmental	4.1E-03	--	8.2E-04	4.9E-03
			Chemical Total	1.2E-07	--	2.4E-08	1.4E-07		4.1E-03	--	8.2E-04	4.9E-03
		Total Soil Direct Contact					1.4E-07					4.9E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	4.3E-16	--	4.3E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.4E-11	--	1.4E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.8E-08	--	2.8E-08
			Chemical Total	--	1.4E-11	--	1.4E-11		--	2.8E-08	--	2.8E-08
		Total Dust Inhalation					1.4E-11					2.8E-08
	Total Soil Direct Contact and Dust Inhalation						1.4E-07					4.9E-03

TABLE D9.5 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Skroch Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.4E-09	--	4.0E-09	6.3E-09	Liver	3.7E-06	--	6.2E-06	9.9E-06
			TEQ (ND=1/2DL)	1.9E-06	--	3.9E-07	2.3E-06	Reproductive, developmental	6.6E-02	--	1.3E-02	7.9E-02
			Chemical Total	1.9E-06	--	3.9E-07	2.3E-06		6.6E-02	--	1.3E-02	7.9E-02
		Total Soil Direct Contact					2.3E-06					7.9E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.2E-14	--	1.2E-14	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.2E-10	--	2.2E-10	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.5E-07	--	4.5E-07
			Chemical Total	--	2.2E-10	--	2.2E-10		--	4.5E-07	--	4.5E-07
		Total Dust Inhalation					2.2E-10					4.5E-07
	Total Soil Direct Contact and Dust Inhalation						2.3E-06					7.9E-02

TABLE D9.5 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Cemetery Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	3.3E-08	--	6.6E-09	4.0E-08	Reproductive, developmental	1.1E-03	--	2.3E-04	1.4E-03
			Chemical Total	3.3E-08	--	6.6E-09	4.0E-08		1.1E-03	--	2.3E-04	1.4E-03
		Total Soil Direct Contact					4.0E-08					1.4E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.8E-12	--	3.8E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	7.8E-09	--	7.8E-09
			Chemical Total	--	3.8E-12	--	3.8E-12		--	7.8E-09	--	7.8E-09
		Total Dust Inhalation					3.8E-12					7.8E-09
	Total Soil Direct Contact and Dust Inhalation						4.0E-08					1.4E-03

TABLE D9.5 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Rodeo Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	4.0E-09	--	8.0E-10	4.8E-09	Reproductive, developmental	1.4E-04	--	2.8E-05	1.7E-04
			Chemical Total	4.0E-09	--	8.0E-10	4.8E-09		1.4E-04	--	2.8E-05	1.7E-04
		Total Soil Direct Contact					4.8E-09					1.7E-04
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	4.6E-13	--	4.6E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	9.4E-10	--	9.4E-10
			Chemical Total	--	4.6E-13	--	4.6E-13		--	9.4E-10	--	9.4E-10
		Total Dust Inhalation					4.6E-13					9.4E-10
	Total Soil Direct Contact and Dust Inhalation						4.8E-09					1.7E-04

TABLE D9.5 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
School Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	4.1E-12	--	6.8E-12	1.1E-11	Liver	6.4E-09	--	1.1E-08	1.7E-08
			TEQ (ND=1/2DL)	1.1E-08	--	2.2E-09	1.3E-08	Reproductive, developmental	3.7E-04	--	7.5E-05	4.5E-04
			Chemical Total	1.1E-08	--	2.2E-09	1.3E-08		3.7E-04	--	7.5E-05	4.5E-04
		Total Soil Direct Contact					1.3E-08					4.5E-04

TABLE D9.5 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	2.0E-17	--	2.0E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.2E-12	--	1.2E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.6E-09	--	2.6E-09
			Chemical Total	--	1.2E-12	--	1.2E-12		--	2.6E-09	--	2.6E-09
		Total Dust Inhalation					1.2E-12					2.6E-09
	Total Soil Direct Contact and Dust Inhalation						1.3E-08					4.5E-04

Notes:

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene

CT = central tendency

na = not applicable

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

TABLE D9.5 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Cassell Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.1E-09	--	4.6E-09	5.7E-09	Liver	5.9E-06	--	2.5E-05	3.1E-05
			TEQ (ND=1/2DL)	2.3E-07	--	1.2E-07	3.4E-07	Reproductive, developmental	2.7E-02	--	1.4E-02	4.1E-02
			Chemical Total	2.3E-07	--	1.2E-07	3.5E-07		2.7E-02	--	1.4E-02	4.1E-02
		Total Soil Direct Contact					3.5E-07					4.1E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.4E-14	--	1.4E-14	na	--	--	--	--
			TEQ (ND=1/2DL)	--	6.6E-11	--	6.6E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.7E-07	--	4.7E-07
			Chemical Total	--	6.6E-11	--	6.6E-11		--	4.7E-07	--	4.7E-07
		Total Dust Inhalation					6.6E-11					4.7E-07
	Total Soil Direct Contact and Dust Inhalation						3.5E-07					4.1E-02

TABLE D9.5 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parmenter Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	3.6E-12	--	1.5E-11	1.9E-11	Liver	2.0E-08	--	8.3E-08	1.0E-07
			TEQ (ND=1/2DL)	3.9E-09	--	2.0E-09	5.9E-09	Reproductive, developmental	4.7E-04	--	2.3E-04	7.0E-04
			Chemical Total	3.9E-09	--	2.0E-09	5.9E-09		4.7E-04	--	2.3E-04	7.0E-04
		Total Soil Direct Contact					5.9E-09					7.0E-04
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	4.6E-17	--	4.6E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.1E-12	--	1.1E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	8.0E-09	--	8.0E-09
			Chemical Total	--	1.1E-12	--	1.1E-12		--	8.0E-09	--	8.0E-09
		Total Dust Inhalation					1.1E-12					8.0E-09
	Total Soil Direct Contact and Dust Inhalation						5.9E-09					7.0E-04

TABLE D9.5 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Skroch Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.8E-11	--	1.2E-10	1.5E-10	Liver	1.5E-07	--	6.4E-07	8.0E-07
			TEQ (ND=1/2DL)	3.7E-08	--	1.8E-08	5.5E-08	Reproductive, developmental	4.4E-03	--	2.2E-03	6.6E-03
			Chemical Total	3.7E-08	--	1.9E-08	5.5E-08		4.4E-03	--	2.2E-03	6.6E-03
		Total Soil Direct Contact					5.5E-08					6.6E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	3.6E-16	--	3.6E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.1E-11	--	1.1E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	7.5E-08	--	7.5E-08
			Chemical Total	--	1.1E-11	--	1.1E-11		--	7.5E-08	--	7.5E-08
		Total Dust Inhalation					1.1E-11					7.5E-08
	Total Soil Direct Contact and Dust Inhalation						5.5E-08					6.6E-03

TABLE D9.5 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Cemetery Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	1.9E-09	--	9.6E-10	2.9E-09	Reproductive, developmental	2.3E-04	--	1.1E-04	3.4E-04
			Chemical Total	1.9E-09	--	9.6E-10	2.9E-09		2.3E-04	--	1.1E-04	3.4E-04
		Total Soil Direct Contact					2.9E-09					3.4E-04
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	5.5E-13	--	5.5E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.9E-09	--	3.9E-09
			Chemical Total	--	5.5E-13	--	5.5E-13		--	3.9E-09	--	3.9E-09
		Total Dust Inhalation					5.5E-13					3.9E-09
	Total Soil Direct Contact and Dust Inhalation						2.9E-09					3.4E-04

TABLE D9.5 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Rodeo Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	2.3E-10	--	1.2E-10	3.5E-10	Reproductive, developmental	2.7E-05	--	1.4E-05	4.1E-05
			Chemical Total	2.3E-10	--	1.2E-10	3.5E-10		2.7E-05	--	1.4E-05	4.1E-05
		Total Soil Direct Contact					3.5E-10					4.1E-05
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	6.6E-14	--	6.6E-14	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.7E-10	--	4.7E-10
			Chemical Total	--	6.6E-14	--	6.6E-14		--	4.7E-10	--	4.7E-10
		Total Dust Inhalation					6.6E-14					4.7E-10
	Total Soil Direct Contact and Dust Inhalation						3.5E-10					4.1E-05

TABLE D9.5 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
School Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.4E-13	--	9.9E-13	1.2E-12	Liver	1.3E-09	--	5.3E-09	6.6E-09
			TEQ (ND=1/2DL)	3.9E-10	--	2.0E-10	5.9E-10	Reproductive, developmental	4.7E-05	--	2.4E-05	7.0E-05
			Chemical Total	3.9E-10	--	2.0E-10	5.9E-10		4.7E-05	--	2.4E-05	7.0E-05
		Total Soil Direct Contact					5.9E-10					7.0E-05

TABLE D9.5 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Commercial/Industrial (Infrequent)
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	2.9E-18	--	2.9E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.1E-13	--	1.1E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	8.0E-10	--	8.0E-10
			Chemical Total	--	1.1E-13	--	1.1E-13		--	8.0E-10	--	8.0E-10
		Total Dust Inhalation					1.1E-13					8.0E-10
	Total Soil Direct Contact and Dust Inhalation						5.9E-10					7.0E-05

Notes:

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene

CT = central tendency

na = not applicable

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel A Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	1.3E-03	--	2.3E-03	3.6E-03
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	8.1E-05	--	7.0E-05	1.5E-04
			C9-C10 Aromatics	--	--	--	--	Kidney	2.7E-05	--	2.3E-05	5.0E-05
			Ethylbenzene	3.7E-11	--	0.0E+00	3.7E-11	Liver and kidney	2.0E-07	--	0.0E+00	2.0E-07
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	3.3E-05	--	7.5E-06	4.1E-05
			Naphthalene	--	--	--	--	Decreased body weight	2.0E-06	--	4.5E-07	2.5E-06
			BaP equivalents	5.5E-07	--	1.2E-07	6.7E-07	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	4.8E-04	--	4.2E-04	9.0E-04
			C11-C22 Aromatics	--	--	--	--	Kidney	3.5E-03	--	6.0E-04	4.1E-03
			Pentachlorophenol	6.2E-09	--	2.7E-09	8.8E-09	Liver	1.9E-05	--	8.0E-06	2.7E-05
			TEQ (ND=1/2DL)	1.6E-05	--	8.4E-07	1.7E-05	Reproductive, developmental	1.1E+00	--	5.5E-02	1.1E+00
			Chemical Total	1.7E-05	--	9.6E-07	1.8E-05		1.1E+00	--	5.9E-02	1.1E+00
		Total Soil Direct Contact					1.8E-05					1.1E+00
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	2.4E-09	--	2.4E-09
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	2.5E-10	--	2.5E-10
			C9-C10 Aromatics	--	--	--	--	Body weight	--	2.5E-10	--	2.5E-10
			Ethylbenzene	--	2.6E-16	--	2.6E-16	Developmental	--	6.3E-13	--	6.3E-13
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	7.1E-15	--	7.1E-15	Nasal epithelium	--	4.2E-10	--	4.2E-10
			BaP equivalents	--	2.6E-12	--	2.6E-12	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	1.5E-09	--	1.5E-09
			C11-C22 Aromatics	--	--	--	--	Body weight	--	3.3E-08	--	3.3E-08
			Pentachlorophenol	--	2.5E-15	--	2.5E-15	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.5E-10	--	1.5E-10	Liver, reproductive, developmental, endocrine, respiratory, blood	--	5.8E-07	--	5.8E-07
			Chemical Total	--	1.5E-10	--	1.5E-10		--	6.2E-07	--	6.2E-07
		Total Dust Inhalation					1.5E-10					6.2E-07
	Total Soil Direct Contact and Dust Inhalation						1.8E-05					1.1E+00

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel B Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	7.9E-05	--	1.4E-04	2.2E-04
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	3.7E-02	--	3.2E-02	6.8E-02
			C9-C10 Aromatics	--	--	--	--	Kidney	5.0E-03	--	4.3E-03	9.3E-03
			Ethylbenzene	3.4E-11	--	0.0E+00	3.4E-11	Liver and kidney	1.9E-07	--	0.0E+00	1.9E-07
			1-Methylnaphthalene	6.6E-09	--	1.5E-09	8.1E-09	Respiratory	2.0E-05	--	4.4E-06	2.4E-05
			2-Methylnaphthalene	--	--	--	--	Lungs	2.0E-04	--	4.6E-05	2.5E-04
			Naphthalene	--	--	--	--	Decreased body weight	9.9E-06	--	2.2E-06	1.2E-05
			BaP equivalents	8.1E-07	--	1.8E-07	9.9E-07	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	7.3E-02	--	6.3E-02	1.4E-01
			C11-C22 Aromatics	--	--	--	--	Kidney	8.3E-02	--	1.4E-02	9.7E-02
			Pentachlorophenol	9.1E-05	--	3.9E-05	1.3E-04	Liver	2.7E-01	--	1.2E-01	3.9E-01
			TEQ (ND=1/2DL)	3.3E-05	--	1.7E-06	3.5E-05	Reproductive, developmental	2.2E+00	--	1.1E-01	2.3E+00
			Chemical Total	1.2E-04	--	4.1E-05	1.7E-04		2.6E+00	--	3.4E-01	3.0E+00
		Total Soil Direct Contact					1.7E-04					3.0E+00
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	1.4E-10	--	1.4E-10
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	1.1E-07	--	1.1E-07
			C9-C10 Aromatics	--	--	--	--	Body weight	--	4.7E-08	--	4.7E-08
			Ethylbenzene	--	2.4E-16	--	2.4E-16	Developmental	--	5.8E-13	--	5.8E-13
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	3.5E-14	--	3.5E-14	Nasal epithelium	--	2.1E-09	--	2.1E-09
			BaP equivalents	--	3.8E-12	--	3.8E-12	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	2.3E-07	--	2.3E-07
			C11-C22 Aromatics	--	--	--	--	Body weight	--	7.7E-07	--	7.7E-07
			Pentachlorophenol	--	3.6E-11	--	3.6E-11	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.0E-10	--	3.0E-10	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.2E-06	--	1.2E-06
			Chemical Total	--	3.4E-10	--	3.4E-10		--	2.4E-06	--	2.4E-06
		Total Dust Inhalation					3.4E-10					2.4E-06
	Total Soil Direct Contact and Dust Inhalation						1.7E-04					3.0E+00

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Spigot Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.4E-09	--	5.9E-10	2.0E-09	Liver	4.1E-06	--	1.8E-06	5.9E-06
			TEQ (ND=1/2DL)	8.7E-07	--	4.5E-08	9.2E-07	Reproductive, developmental	5.8E-02	--	3.0E-03	6.1E-02
			Chemical Total	8.8E-07	--	4.6E-08	9.2E-07		5.8E-02	--	3.0E-03	6.1E-02
		Total Soil Direct Contact					9.2E-07					6.1E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	5.5E-16	--	5.5E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	8.0E-12	--	8.0E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.2E-08	--	3.2E-08
			Chemical Total	--	8.0E-12	--	8.0E-12		--	3.2E-08	--	3.2E-08
		Total Dust Inhalation					8.0E-12					3.2E-08
	Total Soil Direct Contact and Dust Inhalation						9.2E-07					6.1E-02

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Cassell Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	9.1E-09	--	3.9E-09	1.3E-08	Liver	2.7E-05	--	1.2E-05	3.9E-05
			TEQ (ND=1/2DL)	1.9E-06	--	9.9E-08	2.0E-06	Reproductive, developmental	1.3E-01	--	6.5E-03	1.3E-01
			Chemical Total	1.9E-06	--	1.0E-07	2.0E-06		1.3E-01	--	6.5E-03	1.3E-01
		Total Soil Direct Contact					2.0E-06					1.3E-01
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	3.6E-15	--	3.6E-15	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.7E-11	--	1.7E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.9E-08	--	6.9E-08
			Chemical Total	--	1.7E-11	--	1.7E-11		--	6.9E-08	--	6.9E-08
		Total Dust Inhalation					1.7E-11					6.9E-08
	Total Soil Direct Contact and Dust Inhalation						2.0E-06					1.3E-01

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parmenter Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.7E-11	--	7.5E-12	2.5E-11	Liver	5.2E-08	--	2.2E-08	7.4E-08
			TEQ (ND=1/2DL)	2.4E-08	--	1.2E-09	2.5E-08	Reproductive, developmental	1.6E-03	--	8.1E-05	1.6E-03
			Chemical Total	2.4E-08	--	1.2E-09	2.5E-08		1.6E-03	--	8.1E-05	1.6E-03
		Total Soil Direct Contact					2.5E-08					1.6E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	6.9E-18	--	6.9E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.2E-13	--	2.2E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	8.6E-10	--	8.6E-10
			Chemical Total	--	2.2E-13	--	2.2E-13		--	8.6E-10	--	8.6E-10
		Total Dust Inhalation					2.2E-13					8.6E-10
	Total Soil Direct Contact and Dust Inhalation						2.5E-08					1.6E-03

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Skroch Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	4.7E-10	--	2.0E-10	6.8E-10	Liver	1.4E-06	--	6.1E-07	2.0E-06
			TEQ (ND=1/2DL)	3.8E-07	--	2.0E-08	4.0E-07	Reproductive, developmental	2.5E-02	--	1.3E-03	2.7E-02
			Chemical Total	3.8E-07	--	2.0E-08	4.0E-07		2.5E-02	--	1.3E-03	2.7E-02
		Total Soil Direct Contact					4.0E-07					2.7E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.9E-16	--	1.9E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.5E-12	--	3.5E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.4E-08	--	1.4E-08
			Chemical Total	--	3.5E-12	--	3.5E-12		--	1.4E-08	--	1.4E-08
		Total Dust Inhalation					3.5E-12					1.4E-08
	Total Soil Direct Contact and Dust Inhalation						4.0E-07					2.7E-02

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Chaney Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	6.0E-12	--	2.6E-12	8.6E-12	Liver	1.8E-08	--	7.8E-09	2.6E-08
			TEQ (ND=1/2DL)	8.7E-08	--	4.5E-09	9.2E-08	Reproductive, developmental	5.7E-03	--	3.0E-04	6.0E-03
			Chemical Total	8.7E-08	--	4.5E-09	9.2E-08		5.7E-03	--	3.0E-04	6.0E-03
		Total Soil Direct Contact					9.2E-08					6.0E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	2.4E-18	--	2.4E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	8.0E-13	--	8.0E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.1E-09	--	3.1E-09
			Chemical Total	--	8.0E-13	--	8.0E-13		--	3.1E-09	--	3.1E-09
		Total Dust Inhalation					8.0E-13					3.1E-09
	Total Soil Direct Contact and Dust Inhalation						9.2E-08					6.0E-03

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract B Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	2.1E-06	--	1.1E-07	2.3E-06	Reproductive, developmental	1.4E-01	--	7.3E-03	1.5E-01
			Chemical Total	2.1E-06	--	1.1E-07	2.3E-06		1.4E-01	--	7.3E-03	1.5E-01
		Total Soil Direct Contact					2.3E-06					1.5E-01
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.0E-11	--	2.0E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	7.7E-08	--	7.7E-08
			Chemical Total	--	2.0E-11	--	2.0E-11		--	7.7E-08	--	7.7E-08
		Total Dust Inhalation					2.0E-11					7.7E-08
	Total Soil Direct Contact and Dust Inhalation						2.3E-06					1.5E-01

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Renfroe Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	1.5E-07	--	7.8E-09	1.6E-07	Reproductive, developmental	9.9E-03	--	5.1E-04	1.0E-02
			Chemical Total	1.5E-07	--	7.8E-09	1.6E-07		9.9E-03	--	5.1E-04	1.0E-02
		Total Soil Direct Contact					1.6E-07					1.0E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.4E-12	--	1.4E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	5.4E-09	--	5.4E-09
			Chemical Total	--	1.4E-12	--	1.4E-12		--	5.4E-09	--	5.4E-09
		Total Dust Inhalation					1.4E-12					5.4E-09
	Total Soil Direct Contact and Dust Inhalation						1.6E-07					1.0E-02

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
3WT Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	1.8E-07	--	9.3E-09	1.9E-07	Reproductive, developmental	1.2E-02	--	6.1E-04	1.2E-02
			Chemical Total	1.8E-07	--	9.3E-09	1.9E-07		1.2E-02	--	6.1E-04	1.2E-02
		Total Soil Direct Contact					1.9E-07					1.2E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.6E-12	--	1.6E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.4E-09	--	6.4E-09
			Chemical Total	--	1.6E-12	--	1.6E-12		--	6.4E-09	--	6.4E-09
		Total Dust Inhalation					1.6E-12					6.4E-09
	Total Soil Direct Contact and Dust Inhalation						1.9E-07					1.2E-02

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Milton Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	4.1E-10	--	1.8E-10	5.8E-10	Liver	1.2E-06	--	5.3E-07	1.7E-06
			TEQ (ND=1/2DL)	3.0E-07	--	1.5E-08	3.1E-07	Reproductive, developmental	2.0E-02	--	1.0E-03	2.1E-02
			Chemical Total	3.0E-07	--	1.6E-08	3.1E-07		2.0E-02	--	1.0E-03	2.1E-02
		Total Soil Direct Contact					3.1E-07					2.1E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.6E-16	--	1.6E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.7E-12	--	2.7E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.1E-08	--	1.1E-08
			Chemical Total	--	2.7E-12	--	2.7E-12		--	1.1E-08	--	1.1E-08
		Total Dust Inhalation					2.7E-12					1.1E-08
	Total Soil Direct Contact and Dust Inhalation						3.1E-07					2.1E-02

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Parcel B Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.4E-10	--	1.0E-10	3.4E-10	Liver	7.1E-07	--	3.1E-07	1.0E-06
			TEQ (ND=1/2DL)	2.5E-06	--	1.3E-07	2.6E-06	Reproductive, developmental	1.6E-01	--	8.4E-03	1.7E-01
			Chemical Total	2.5E-06	--	1.3E-07	2.6E-06		1.6E-01	--	8.4E-03	1.7E-01
		Total Soil Direct Contact					2.6E-06					1.7E-01
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	9.4E-17	--	9.4E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.2E-11	--	2.2E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	8.9E-08	--	8.9E-08
			Chemical Total	--	2.2E-11	--	2.2E-11		--	8.9E-08	--	8.9E-08
		Total Dust Inhalation					2.2E-11					8.9E-08
	Total Soil Direct Contact and Dust Inhalation						2.6E-06					1.7E-01

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract A Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.4E-12	--	6.0E-13	2.0E-12	Liver	4.2E-09	--	1.8E-09	6.0E-09
			TEQ (ND=1/2DL)	2.3E-06	--	1.2E-07	2.4E-06	Reproductive, developmental	1.5E-01	--	7.8E-03	1.6E-01
			Chemical Total	2.3E-06	--	1.2E-07	2.4E-06		1.5E-01	--	7.8E-03	1.6E-01
		Total Soil Direct Contact					2.4E-06					1.6E-01
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	5.5E-19	--	5.5E-19	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.1E-11	--	2.1E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	8.2E-08	--	8.2E-08
			Chemical Total	--	2.1E-11	--	2.1E-11		--	8.2E-08	--	8.2E-08
		Total Dust Inhalation					2.1E-11					8.2E-08
	Total Soil Direct Contact and Dust Inhalation						2.4E-06					1.6E-01

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Robak Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.6E-10	--	1.1E-10	3.7E-10	Liver	7.7E-07	--	3.3E-07	1.1E-06
			TEQ (ND=1/2DL)	3.0E-07	--	1.5E-08	3.1E-07	Reproductive, developmental	2.0E-02	--	1.0E-03	2.1E-02
			Chemical Total	3.0E-07	--	1.5E-08	3.1E-07		2.0E-02	--	1.0E-03	2.1E-02
		Total Soil Direct Contact					3.1E-07					2.1E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.0E-16	--	1.0E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.7E-12	--	2.7E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.1E-08	--	1.1E-08
			Chemical Total	--	2.7E-12	--	2.7E-12		--	1.1E-08	--	1.1E-08
		Total Dust Inhalation					2.7E-12					1.1E-08
	Total Soil Direct Contact and Dust Inhalation						3.1E-07					2.1E-02

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Smith Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	1.8E-07	--	9.4E-09	1.9E-07	Reproductive, developmental	1.2E-02	--	6.2E-04	1.3E-02
			Chemical Total	1.8E-07	--	9.4E-09	1.9E-07		1.2E-02	--	6.2E-04	1.3E-02
		Total Soil Direct Contact					1.9E-07					1.3E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.7E-12	--	1.7E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.6E-09	--	6.6E-09
			Chemical Total	--	1.7E-12	--	1.7E-12		--	6.6E-09	--	6.6E-09
		Total Dust Inhalation					1.7E-12					6.6E-09
	Total Soil Direct Contact and Dust Inhalation						1.9E-07					1.3E-02

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Stevenson Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.8E-11	--	7.9E-12	2.6E-11	Liver	5.5E-08	--	2.4E-08	7.9E-08
			TEQ (ND=1/2DL)	6.6E-08	--	3.4E-09	6.9E-08	Reproductive, developmental	4.4E-03	--	2.3E-04	4.6E-03
			Chemical Total	6.6E-08	--	3.4E-09	6.9E-08		4.4E-03	--	2.3E-04	4.6E-03
		Total Soil Direct Contact					6.9E-08					4.6E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	7.3E-18	--	7.3E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	6.0E-13	--	6.0E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.4E-09	--	2.4E-09
			Chemical Total	--	6.0E-13	--	6.0E-13		--	2.4E-09	--	2.4E-09
		Total Dust Inhalation					6.0E-13					2.4E-09
	Total Soil Direct Contact and Dust Inhalation						6.9E-08					4.6E-03

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Vintage Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	3.5E-08	--	1.8E-09	3.7E-08	Reproductive, developmental	2.3E-03	--	1.2E-04	2.4E-03
			Chemical Total	3.5E-08	--	1.8E-09	3.7E-08		2.3E-03	--	1.2E-04	2.4E-03
		Total Soil Direct Contact					3.7E-08					2.4E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.2E-13	--	3.2E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.3E-09	--	1.3E-09
			Chemical Total	--	3.2E-13	--	3.2E-13		--	1.3E-09	--	1.3E-09
		Total Dust Inhalation					3.2E-13					1.3E-09
	Total Soil Direct Contact and Dust Inhalation						3.7E-08					2.4E-03

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Cemetery Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	4.5E-08	--	2.3E-09	4.7E-08	Reproductive, developmental	3.0E-03	--	1.5E-04	3.1E-03
			Chemical Total	4.5E-08	--	2.3E-09	4.7E-08		3.0E-03	--	1.5E-04	3.1E-03
		Total Soil Direct Contact					4.7E-08					3.1E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	4.1E-13	--	4.1E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.6E-09	--	1.6E-09
			Chemical Total	--	4.1E-13	--	4.1E-13		--	1.6E-09	--	1.6E-09
		Total Dust Inhalation					4.1E-13					1.6E-09
	Total Soil Direct Contact and Dust Inhalation						4.7E-08					3.1E-03

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Right-of-Way Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.0E-06	--	4.4E-07	1.5E-06	Liver	3.1E-03	--	1.3E-03	4.4E-03
			TEQ (ND=1/2DL)	--	--	--	--	Reproductive, developmental	--	--	--	--
			Chemical Total	1.0E-06	--	4.4E-07	1.5E-06		3.1E-03	--	1.3E-03	4.4E-03
		Total Soil Direct Contact					1.5E-06					4.4E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	4.1E-13	--	4.1E-13	na	--	--	--	--
			TEQ (ND=1/2DL)	--	--	--	--	Liver, reproductive, developmental, endocrine, respiratory, blood	--	--	--	--
			Chemical Total	--	4.1E-13	--	4.1E-13		--	--	--	--
		Total Dust Inhalation					4.1E-13					--
	Total Soil Direct Contact and Dust Inhalation						1.5E-06					4.4E-03

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Rodeo Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	5.4E-09	--	2.8E-10	5.7E-09	Reproductive, developmental	3.6E-04	--	1.9E-05	3.8E-04
			Chemical Total	5.4E-09	--	2.8E-10	5.7E-09		3.6E-04	--	1.9E-05	3.8E-04
		Total Soil Direct Contact					5.7E-09					3.8E-04
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	5.0E-14	--	5.0E-14	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.0E-10	--	2.0E-10
			Chemical Total	--	5.0E-14	--	5.0E-14		--	2.0E-10	--	2.0E-10
		Total Dust Inhalation					5.0E-14					2.0E-10
	Total Soil Direct Contact and Dust Inhalation						5.7E-09					3.8E-04

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
School Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	5.6E-12	--	2.4E-12	8.0E-12	Liver	1.7E-08	--	7.2E-09	2.4E-08
			TEQ (ND=1/2DL)	1.5E-08	--	7.7E-10	1.6E-08	Reproductive, developmental	9.7E-04	--	5.0E-05	1.0E-03
			Chemical Total	1.5E-08	--	7.7E-10	1.6E-08		9.7E-04	--	5.1E-05	1.0E-03
		Total Soil Direct Contact					1.6E-08					1.0E-03

TABLE D9.6 RME

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	2.2E-18	--	2.2E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.3E-13	--	1.3E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	5.3E-10	--	5.3E-10
			Chemical Total	--	1.3E-13	--	1.3E-13		--	5.3E-10	--	5.3E-10
		Total Dust Inhalation					1.3E-13					5.3E-10
	Total Soil Direct Contact and Dust Inhalation						1.6E-08					1.0E-03

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene

CT = central tendency

na = not applicable

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel A Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	6.6E-04	--	2.3E-03	3.0E-03
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	4.0E-05	--	7.0E-05	1.1E-04
			C9-C10 Aromatics	--	--	--	--	Kidney	1.3E-05	--	2.3E-05	3.7E-05
			Ethylbenzene	8.5E-12	--	0.0E+00	8.5E-12	Liver and kidney	1.0E-07	--	0.0E+00	1.0E-07
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	1.7E-05	--	7.5E-06	2.4E-05
			Naphthalene	--	--	--	--	Decreased body weight	1.0E-06	--	4.5E-07	1.5E-06
			BaP equivalents	1.4E-07	--	6.3E-08	2.0E-07	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	2.4E-04	--	4.2E-04	6.6E-04
			C11-C22 Aromatics	--	--	--	--	Kidney	1.7E-03	--	6.0E-04	2.3E-03
			Pentachlorophenol	2.9E-10	--	2.5E-10	5.4E-10	Liver	1.9E-06	--	1.6E-06	3.5E-06
			TEQ (ND=1/2DL)	3.8E-07	--	4.0E-08	4.2E-07	Reproductive, developmental	5.5E-02	--	5.7E-03	6.0E-02
			Chemical Total	5.2E-07	--	1.0E-07	6.3E-07		5.7E-02	--	9.1E-03	6.6E-02
		Total Soil Direct Contact					6.3E-07					6.6E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	2.4E-09	--	2.4E-09
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	2.5E-10	--	2.5E-10
			C9-C10 Aromatics	--	--	--	--	Body weight	--	2.5E-10	--	2.5E-10
			Ethylbenzene	--	1.2E-16	--	1.2E-16	Developmental	--	6.3E-13	--	6.3E-13
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	3.3E-15	--	3.3E-15	Nasal epithelium	--	4.2E-10	--	4.2E-10
			BaP equivalents	--	1.3E-12	--	1.3E-12	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	1.5E-09	--	1.5E-09
			C11-C22 Aromatics	--	--	--	--	Body weight	--	3.3E-08	--	3.3E-08
			Pentachlorophenol	--	2.3E-16	--	2.3E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	7.0E-12	--	7.0E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.0E-08	--	6.0E-08
			Chemical Total	--	8.3E-12	--	8.3E-12		--	9.7E-08	--	9.7E-08
		Total Dust Inhalation					8.3E-12					9.7E-08
	Total Soil Direct Contact and Dust Inhalation						6.3E-07					6.6E-02

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel B Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	2.8E-05	--	9.7E-05	1.2E-04
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	4.8E-03	--	8.3E-03	1.3E-02
			C9-C10 Aromatics	--	--	--	--	Kidney	6.2E-04	--	1.1E-03	1.7E-03
			Ethylbenzene	7.8E-12	--	0.0E+00	7.8E-12	Liver and kidney	9.3E-08	--	0.0E+00	9.3E-08
			1-Methylnaphthalene	1.5E-09	--	6.9E-10	2.2E-09	Respiratory	9.8E-06	--	4.4E-06	1.4E-05
			2-Methylnaphthalene	--	--	--	--	Lungs	2.4E-05	--	1.1E-05	3.5E-05
			Naphthalene	--	--	--	--	Decreased body weight	9.3E-07	--	4.2E-07	1.4E-06
			BaP equivalents	1.0E-07	--	4.5E-08	1.5E-07	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	1.4E-02	--	2.4E-02	3.7E-02
			C11-C22 Aromatics	--	--	--	--	Kidney	5.6E-03	--	1.9E-03	7.5E-03
			Pentachlorophenol	3.6E-06	--	3.1E-06	6.6E-06	Liver	2.3E-02	--	2.0E-02	4.3E-02
			TEQ (ND=1/2DL)	2.3E-06	--	2.4E-07	2.5E-06	Reproductive, developmental	3.3E-01	--	3.4E-02	3.6E-01
			Chemical Total	5.9E-06	--	3.4E-06	9.3E-06		3.7E-01	--	8.9E-02	4.6E-01
		Total Soil Direct Contact					9.3E-06					4.6E-01
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	1.0E-10	--	1.0E-10
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	3.0E-08	--	3.0E-08
			C9-C10 Aromatics	--	--	--	--	Body weight	--	1.2E-08	--	1.2E-08
			Ethylbenzene	--	1.1E-16	--	1.1E-16	Developmental	--	5.8E-13	--	5.8E-13
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	3.0E-15	--	3.0E-15	Nasal epithelium	--	3.9E-10	--	3.9E-10
			BaP equivalents	--	9.5E-13	--	9.5E-13	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	8.6E-08	--	8.6E-08
			C11-C22 Aromatics	--	--	--	--	Body weight	--	1.0E-07	--	1.0E-07
			Pentachlorophenol	--	2.8E-12	--	2.8E-12	na	--	--	--	--
			TEQ (ND=1/2DL)	--	4.2E-11	--	4.2E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.6E-07	--	3.6E-07
			Chemical Total	--	4.5E-11	--	4.5E-11		--	5.9E-07	--	5.9E-07
		Total Dust Inhalation					4.5E-11					5.9E-07
	Total Soil Direct Contact and Dust Inhalation						9.3E-06					4.6E-01

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Spigot Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.9E-10	--	1.7E-10	3.6E-10	Liver	1.3E-06	--	1.1E-06	2.4E-06
			TEQ (ND=1/2DL)	1.1E-07	--	1.1E-08	1.2E-07	Reproductive, developmental	1.5E-02	--	1.6E-03	1.7E-02
			Chemical Total	1.1E-07	--	1.1E-08	1.2E-07		1.5E-02	--	1.6E-03	1.7E-02
		Total Soil Direct Contact					1.2E-07					1.7E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.6E-16	--	1.6E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.9E-12	--	1.9E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.7E-08	--	1.7E-08
			Chemical Total	--	1.9E-12	--	1.9E-12		--	1.7E-08	--	1.7E-08
		Total Dust Inhalation					1.9E-12					1.7E-08
	Total Soil Direct Contact and Dust Inhalation						1.2E-07					1.7E-02

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Cassell Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	8.7E-10	--	7.6E-10	1.6E-09	Liver	5.7E-06	--	4.9E-06	1.1E-05
			TEQ (ND=1/2DL)	1.8E-07	--	1.9E-08	2.0E-07	Reproductive, developmental	2.6E-02	--	2.7E-03	2.9E-02
			Chemical Total	1.8E-07	--	2.0E-08	2.0E-07		2.6E-02	--	2.7E-03	2.9E-02
		Total Soil Direct Contact					2.0E-07					2.9E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	7.0E-16	--	7.0E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.3E-12	--	3.3E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.9E-08	--	2.9E-08
			Chemical Total	--	3.3E-12	--	3.3E-12		--	2.9E-08	--	2.9E-08
		Total Dust Inhalation					3.3E-12					2.9E-08
	Total Soil Direct Contact and Dust Inhalation						2.0E-07					2.9E-02

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parmenter Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.9E-12	--	2.5E-12	5.4E-12	Liver	1.9E-08	--	1.6E-08	3.5E-08
			TEQ (ND=1/2DL)	3.1E-09	--	3.2E-10	3.5E-09	Reproductive, developmental	4.5E-04	--	4.6E-05	4.9E-04
			Chemical Total	3.1E-09	--	3.3E-10	3.5E-09		4.5E-04	--	4.6E-05	4.9E-04
		Total Soil Direct Contact					3.5E-09					4.9E-04
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	2.3E-18	--	2.3E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	5.7E-14	--	5.7E-14	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.9E-10	--	4.9E-10
			Chemical Total	--	5.7E-14	--	5.7E-14		--	4.9E-10	--	4.9E-10
		Total Dust Inhalation					5.7E-14					4.9E-10
	Total Soil Direct Contact and Dust Inhalation						3.5E-09					4.9E-04

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Skroch Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.3E-11	--	2.0E-11	4.2E-11	Liver	1.5E-07	--	1.3E-07	2.8E-07
			TEQ (ND=1/2DL)	2.9E-08	--	3.0E-09	3.2E-08	Reproductive, developmental	4.2E-03	--	4.3E-04	4.6E-03
			Chemical Total	2.9E-08	--	3.1E-09	3.2E-08		4.2E-03	--	4.3E-04	4.6E-03
		Total Soil Direct Contact					3.2E-08					4.6E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.8E-17	--	1.8E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	5.4E-13	--	5.4E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.6E-09	--	4.6E-09
			Chemical Total	--	5.4E-13	--	5.4E-13		--	4.6E-09	--	4.6E-09
		Total Dust Inhalation					5.4E-13					4.6E-09
	Total Soil Direct Contact and Dust Inhalation						3.2E-08					4.6E-03

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Chaney Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.4E-12	--	1.2E-12	2.6E-12	Liver	9.0E-09	--	7.8E-09	1.7E-08
			TEQ (ND=1/2DL)	1.7E-08	--	1.8E-09	1.9E-08	Reproductive, developmental	2.5E-03	--	2.6E-04	2.7E-03
			Chemical Total	1.7E-08	--	1.8E-09	1.9E-08		2.5E-03	--	2.6E-04	2.7E-03
		Total Soil Direct Contact					1.9E-08					2.7E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.1E-18	--	1.1E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.2E-13	--	3.2E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.7E-09	--	2.7E-09
			Chemical Total	--	3.2E-13	--	3.2E-13		--	2.7E-09	--	2.7E-09
		Total Dust Inhalation					3.2E-13					2.7E-09
	Total Soil Direct Contact and Dust Inhalation						1.9E-08					2.7E-03

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract B Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	2.5E-07	--	2.6E-08	2.8E-07	Reproductive, developmental	3.6E-02	--	3.7E-03	4.0E-02
			Chemical Total	2.5E-07	--	2.6E-08	2.8E-07		3.6E-02	--	3.7E-03	4.0E-02
		Total Soil Direct Contact					2.8E-07					4.0E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	4.6E-12	--	4.6E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.9E-08	--	3.9E-08
			Chemical Total	--	4.6E-12	--	4.6E-12		--	3.9E-08	--	3.9E-08
		Total Dust Inhalation					4.6E-12					3.9E-08
	Total Soil Direct Contact and Dust Inhalation						2.8E-07					4.0E-02

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Renfroe Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	2.3E-08	--	2.4E-09	2.5E-08	Reproductive, developmental	3.3E-03	--	3.4E-04	3.6E-03
			Chemical Total	2.3E-08	--	2.4E-09	2.5E-08		3.3E-03	--	3.4E-04	3.6E-03
		Total Soil Direct Contact					2.5E-08					3.6E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	4.2E-13	--	4.2E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.6E-09	--	3.6E-09
			Chemical Total	--	4.2E-13	--	4.2E-13		--	3.6E-09	--	3.6E-09
		Total Dust Inhalation					4.2E-13					3.6E-09
	Total Soil Direct Contact and Dust Inhalation						2.5E-08					3.6E-03

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
3WT Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	4.1E-08	--	4.3E-09	4.6E-08	Reproductive, developmental	5.9E-03	--	6.1E-04	6.5E-03
			Chemical Total	4.1E-08	--	4.3E-09	4.6E-08		5.9E-03	--	6.1E-04	6.5E-03
		Total Soil Direct Contact					4.6E-08					6.5E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	7.5E-13	--	7.5E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.4E-09	--	6.4E-09
			Chemical Total	--	7.5E-13	--	7.5E-13		--	6.4E-09	--	6.4E-09
		Total Dust Inhalation					7.5E-13					6.4E-09
	Total Soil Direct Contact and Dust Inhalation						4.6E-08					6.5E-03

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Milton Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	4.7E-11	--	4.1E-11	8.8E-11	Liver	3.1E-07	--	2.6E-07	5.7E-07
			TEQ (ND=1/2DL)	3.9E-08	--	4.0E-09	4.3E-08	Reproductive, developmental	5.6E-03	--	5.8E-04	6.1E-03
			Chemical Total	3.9E-08	--	4.1E-09	4.3E-08		5.6E-03	--	5.8E-04	6.1E-03
		Total Soil Direct Contact					4.3E-08					6.1E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	3.8E-17	--	3.8E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	7.1E-13	--	7.1E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.1E-09	--	6.1E-09
			Chemical Total	--	7.1E-13	--	7.1E-13		--	6.1E-09	--	6.1E-09
		Total Dust Inhalation					7.1E-13					6.1E-09
	Total Soil Direct Contact and Dust Inhalation						4.3E-08					6.1E-03

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Parcel B Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.5E-11	--	1.3E-11	2.8E-11	Liver	9.8E-08	--	8.5E-08	1.8E-07
			TEQ (ND=1/2DL)	3.1E-07	--	3.2E-08	3.4E-07	Reproductive, developmental	4.4E-02	--	4.6E-03	4.9E-02
			Chemical Total	3.1E-07	--	3.2E-08	3.4E-07		4.4E-02	--	4.6E-03	4.9E-02
		Total Soil Direct Contact					3.4E-07					4.9E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.2E-17	--	1.2E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	5.7E-12	--	5.7E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.8E-08	--	4.8E-08
			Chemical Total	--	5.7E-12	--	5.7E-12		--	4.8E-08	--	4.8E-08
		Total Dust Inhalation					5.7E-12					4.8E-08
	Total Soil Direct Contact and Dust Inhalation						3.4E-07					4.9E-02

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract A Soil (ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	3.2E-13	--	2.8E-13	6.0E-13	Liver	2.1E-09	--	1.8E-09	3.9E-09
			TEQ (ND=1/2DL)	8.2E-08	--	8.6E-09	9.1E-08	Reproductive, developmental	1.2E-02	--	1.2E-03	1.3E-02
			Chemical Total	8.2E-08	--	8.6E-09	9.1E-08		1.2E-02	--	1.2E-03	1.3E-02
		Total Soil Direct Contact					9.1E-08					1.3E-02
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	2.5E-19	--	2.5E-19	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.5E-12	--	1.5E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.3E-08	--	1.3E-08
			Chemical Total	--	1.5E-12	--	1.5E-12		--	1.3E-08	--	1.3E-08
		Total Dust Inhalation					1.5E-12					1.3E-08
	Total Soil Direct Contact and Dust Inhalation						9.1E-08					1.3E-02

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Robak Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	6.0E-11	--	5.1E-11	1.1E-10	Liver	3.9E-07	--	3.3E-07	7.2E-07
			TEQ (ND=1/2DL)	4.5E-08	--	4.7E-09	5.0E-08	Reproductive, developmental	6.5E-03	--	6.7E-04	7.1E-03
			Chemical Total	4.5E-08	--	4.7E-09	5.0E-08		6.5E-03	--	6.7E-04	7.1E-03
		Total Soil Direct Contact					5.0E-08					7.1E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	4.7E-17	--	4.7E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	8.3E-13	--	8.3E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	7.1E-09	--	7.1E-09
			Chemical Total	--	8.3E-13	--	8.3E-13		--	7.1E-09	--	7.1E-09
		Total Dust Inhalation					8.3E-13					7.1E-09
	Total Soil Direct Contact and Dust Inhalation						5.0E-08					7.1E-03

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Smith Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	3.2E-08	--	3.3E-09	3.5E-08	Reproductive, developmental	4.6E-03	--	4.7E-04	5.0E-03
			Chemical Total	3.2E-08	--	3.3E-09	3.5E-08		4.6E-03	--	4.7E-04	5.0E-03
		Total Soil Direct Contact					3.5E-08					5.0E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	5.8E-13	--	5.8E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	5.0E-09	--	5.0E-09
			Chemical Total	--	5.8E-13	--	5.8E-13		--	5.0E-09	--	5.0E-09
		Total Dust Inhalation					5.8E-13					5.0E-09
	Total Soil Direct Contact and Dust Inhalation						3.5E-08					5.0E-03

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Stevenson Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	4.2E-12	--	3.7E-12	7.9E-12	Liver	2.8E-08	--	2.4E-08	5.1E-08
			TEQ (ND=1/2DL)	3.5E-09	--	3.7E-10	3.9E-09	Reproductive, developmental	5.1E-04	--	5.3E-05	5.6E-04
			Chemical Total	3.5E-09	--	3.7E-10	3.9E-09		5.1E-04	--	5.3E-05	5.6E-04
		Total Soil Direct Contact					3.9E-09					5.6E-04
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	3.4E-18	--	3.4E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	6.5E-14	--	6.5E-14	Liver, reproductive, developmental, endocrine, respiratory, blood	--	5.5E-10	--	5.5E-10
			Chemical Total	--	6.5E-14	--	6.5E-14		--	5.5E-10	--	5.5E-10
		Total Dust Inhalation					6.5E-14					5.5E-10
	Total Soil Direct Contact and Dust Inhalation						3.9E-09					5.6E-04

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Vintage Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	8.0E-09	--	8.3E-10	8.8E-09	Reproductive, developmental	1.1E-03	--	1.2E-04	1.3E-03
			Chemical Total	8.0E-09	--	8.3E-10	8.8E-09		1.1E-03	--	1.2E-04	1.3E-03
		Total Soil Direct Contact					8.8E-09					1.3E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.5E-13	--	1.5E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.3E-09	--	1.3E-09
			Chemical Total	--	1.5E-13	--	1.5E-13		--	1.3E-09	--	1.3E-09
		Total Dust Inhalation					1.5E-13					1.3E-09
	Total Soil Direct Contact and Dust Inhalation						8.9E-09					1.3E-03

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Cemetery Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	1.0E-08	--	1.1E-09	1.1E-08	Reproductive, developmental	1.5E-03	--	1.5E-04	1.6E-03
			Chemical Total	1.0E-08	--	1.1E-09	1.1E-08		1.5E-03	--	1.5E-04	1.6E-03
		Total Soil Direct Contact					1.1E-08					1.6E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.9E-13	--	1.9E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.6E-09	--	1.6E-09
			Chemical Total	--	1.9E-13	--	1.9E-13		--	1.6E-09	--	1.6E-09
		Total Dust Inhalation					1.9E-13					1.6E-09
	Total Soil Direct Contact and Dust Inhalation						1.1E-08					1.6E-03

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Right-of-Way Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.4E-07	--	2.0E-07	4.4E-07	Liver	1.5E-03	--	1.3E-03	2.9E-03
			TEQ (ND=1/2DL)	--	--	--	--	Reproductive, developmental	--	--	--	--
			Chemical Total	2.4E-07	--	2.0E-07	4.4E-07		1.5E-03	--	1.3E-03	2.9E-03
		Total Soil Direct Contact					4.4E-07					2.9E-03
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.9E-13	--	1.9E-13	na	--	--	--	--
			TEQ (ND=1/2DL)	--	--	--	--	Liver, reproductive, developmental, endocrine, respiratory, blood	--	--	--	--
			Chemical Total	--	1.9E-13	--	1.9E-13		--	--	--	--
		Total Dust Inhalation					1.9E-13					--
	Total Soil Direct Contact and Dust Inhalation						4.4E-07					2.9E-03

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Rodeo Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	1.3E-09	--	1.3E-10	1.4E-09	Reproductive, developmental	1.8E-04	--	1.9E-05	2.0E-04
			Chemical Total	1.3E-09	--	1.3E-10	1.4E-09		1.8E-04	--	1.9E-05	2.0E-04
		Total Soil Direct Contact					1.4E-09					2.0E-04
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.3E-14	--	2.3E-14	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.0E-10	--	2.0E-10
			Chemical Total	--	2.3E-14	--	2.3E-14		--	2.0E-10	--	2.0E-10
		Total Dust Inhalation					2.3E-14					2.0E-10
	Total Soil Direct Contact and Dust Inhalation						1.4E-09					2.0E-04

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
School Soil (non-ditch)	Soil	Surface Soil	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.3E-12	--	1.1E-12	2.4E-12	Liver	8.3E-09	--	7.2E-09	1.6E-08
			TEQ (ND=1/2DL)	2.1E-09	--	2.2E-10	2.4E-09	Reproductive, developmental	3.1E-04	--	3.2E-05	3.4E-04
			Chemical Total	2.1E-09	--	2.2E-10	2.4E-09		3.1E-04	--	3.2E-05	3.4E-04
		Total Soil Direct Contact					2.4E-09					3.4E-04

TABLE D9.6 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Recreator/Trespasser
Receptor Age:	Adolescent (6-18 years)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Air	Airborne Dust	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.0E-18	--	1.0E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.9E-14	--	3.9E-14	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.4E-10	--	3.4E-10
			Chemical Total	--	3.9E-14	--	3.9E-14		--	3.4E-10	--	3.4E-10
		Total Dust Inhalation					3.9E-14					3.4E-10
	Total Soil Direct Contact and Dust Inhalation						2.4E-09					3.4E-04

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene

CT = central tendency

na = not applicable

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel A Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	4.6E-03	--	1.0E-02	1.5E-02
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	2.8E-04	--	3.1E-04	5.9E-04
			C9-C10 Aromatics	--	--	--	--	Kidney	9.3E-05	--	1.0E-04	2.0E-04
			Ethylbenzene	9.9E-12	--	0.0E+00	9.9E-12	Liver and kidney	7.0E-07	--	0.0E+00	7.0E-07
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	1.2E-04	--	3.3E-05	1.5E-04
			Naphthalene	--	--	--	--	Decreased body weight	7.0E-06	--	2.0E-06	9.0E-06
			BaP equivalents	5.4E-08	--	1.5E-08	7.0E-08	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	1.7E-03	--	1.8E-03	3.5E-03
			C11-C22 Aromatics	--	--	--	--	Kidney	1.2E-02	--	2.6E-03	1.5E-02
			Pentachlorophenol	1.7E-09	--	9.0E-10	2.6E-09	Liver	6.4E-05	--	3.5E-05	1.0E-04
			TEQ (ND=1/2DL)	4.3E-06	--	2.8E-07	4.6E-06	Reproductive, developmental	3.7E+00	--	2.4E-01	3.9E+00
			Chemical Total	4.4E-06	--	3.0E-07	4.7E-06		3.7E+00	--	2.6E-01	4.0E+00
		Total Surface Soil Direct Contact					4.7E-06					4.0E+00
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	1.6E-08	--	1.6E-08
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	1.7E-09	--	1.7E-09
			C9-C10 Aromatics	--	--	--	--	Body weight	--	1.7E-09	--	1.7E-09
			Ethylbenzene	--	1.3E-16	--	1.3E-16	Developmental	--	4.2E-12	--	4.2E-12
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	3.6E-15	--	3.6E-15	Nasal epithelium	--	2.8E-09	--	2.8E-09
			BaP equivalents	--	4.9E-13	--	4.9E-13	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	1.0E-08	--	1.0E-08
			C11-C22 Aromatics	--	--	--	--	Body weight	--	2.2E-07	--	2.2E-07
			Pentachlorophenol	--	1.3E-15	--	1.3E-15	na	--	--	--	--
			TEQ (ND=1/2DL)	--	7.5E-11	--	7.5E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.9E-06	--	3.9E-06
			Chemical Total	--	7.6E-11	--	7.6E-11		--	4.1E-06	--	4.1E-06
		Total Dust Inhalation from Surface Soil					7.6E-11					4.1E-06
	Total Surface Soil Direct Contact and Dust Inhalation						4.7E-06					4.0E+00
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel B Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	2.8E-04	--	6.0E-04	8.8E-04
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	1.3E-01	--	1.4E-01	2.7E-01
			C9-C10 Aromatics	--	--	--	--	Kidney	1.7E-02	--	1.9E-02	3.6E-02
			Ethylbenzene	9.1E-12	--	0.0E+00	9.1E-12	Liver and kidney	6.4E-07	--	0.0E+00	6.4E-07
			1-Methylnaphthalene	1.8E-09	--	5.0E-10	2.3E-09	Respiratory	6.8E-05	--	1.9E-05	8.7E-05
			2-Methylnaphthalene	--	--	--	--	Lungs	7.1E-04	--	2.0E-04	9.1E-04
			Naphthalene	--	--	--	--	Decreased body weight	3.4E-05	--	9.7E-06	4.4E-05
			BaP equivalents	8.0E-08	--	2.3E-08	1.0E-07	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	2.5E-01	--	2.8E-01	5.3E-01
			C11-C22 Aromatics	--	--	--	--	Kidney	2.9E-01	--	6.3E-02	3.5E-01
			Pentachlorophenol	2.4E-05	--	1.3E-05	3.7E-05	Liver	9.5E-01	--	5.2E-01	1.5E+00
			TEQ (ND=1/2DL)	8.8E-06	--	5.8E-07	9.4E-06	Reproductive, developmental	7.6E+00	--	5.0E-01	8.1E+00
			Chemical Total	3.3E-05	--	1.4E-05	4.7E-05		9.2E+00	--	1.5E+00	1.1E+01
		Total Surface Soil Direct Contact					4.7E-05					1.1E+01
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	9.3E-10	--	9.3E-10
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	7.6E-07	--	7.6E-07
			C9-C10 Aromatics	--	--	--	--	Body weight	--	3.1E-07	--	3.1E-07
			Ethylbenzene	--	1.2E-16	--	1.2E-16	Developmental	--	3.8E-12	--	3.8E-12
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	1.8E-14	--	1.8E-14	Nasal epithelium	--	1.4E-08	--	1.4E-08
			BaP equivalents	--	7.2E-13	--	7.2E-13	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	1.5E-06	--	1.5E-06
			C11-C22 Aromatics	--	--	--	--	Body weight	--	5.1E-06	--	5.1E-06
			Pentachlorophenol	--	1.8E-11	--	1.8E-11	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.5E-10	--	1.5E-10	Liver, reproductive, developmental, endocrine, respiratory, blood	--	7.9E-06	--	7.9E-06
			Chemical Total	--	1.7E-10	--	1.7E-10		--	1.6E-05	--	1.6E-05
		Total Dust Inhalation from Surface Soil					1.7E-10					1.6E-05
	Total Surface Soil Direct Contact and Dust Inhalation						4.7E-05					1.1E+01

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Soil	Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	3.4E-04	--	7.4E-04	1.1E-03
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	1.1E-01	--	1.2E-01	2.3E-01
			C9-C10 Aromatics	--	--	--	--	Kidney	3.9E-03	--	4.3E-03	8.2E-03
			Ethylbenzene	3.0E-08	--	0.0E+00	3.0E-08	Liver and kidney	2.1E-03	--	0.0E+00	2.1E-03
			1-Methylnaphthalene	8.5E-08	--	2.4E-08	1.1E-07	Respiratory	3.3E-03	--	9.3E-04	4.2E-03
			2-Methylnaphthalene	--	--	--	--	Lungs	2.5E-02	--	7.1E-03	3.2E-02
			Naphthalene	--	--	--	--	Decreased body weight	8.0E-04	--	2.3E-04	1.0E-03
			BaP equivalents	4.1E-08	--	1.1E-08	5.2E-08	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	1.1E+00	--	1.2E+00	2.3E+00
			C11-C22 Aromatics	--	--	--	--	Kidney	1.4E-01	--	3.1E-02	1.7E-01
			Pentachlorophenol	8.3E-07	--	4.5E-07	1.3E-06	Liver	3.2E-02	--	1.8E-02	5.0E-02
			TEQ (ND=1/2DL)	3.6E-06	--	2.4E-07	3.9E-06	Reproductive, developmental	3.1E+00	--	2.0E-01	3.3E+00
			Chemical Total	4.6E-06	--	7.2E-07	5.3E-06		4.5E+00	--	1.6E+00	6.1E+00
		Total Subsurface Soil Direct Contact					5.3E-06					6.1E+00
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	1.2E-09	--	1.2E-09
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	6.5E-07	--	6.5E-07
			C9-C10 Aromatics	--	--	--	--	Body weight	--	7.0E-08	--	7.0E-08
			Ethylbenzene	--	4.1E-13	--	4.1E-13	Developmental	--	1.3E-08	--	1.3E-08
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	4.1E-13	--	4.1E-13	Nasal epithelium	--	3.2E-07	--	3.2E-07
			BaP equivalents	--	3.6E-13	--	3.6E-13	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	6.6E-06	--	6.6E-06
			C11-C22 Aromatics	--	--	--	--	Body weight	--	2.5E-06	--	2.5E-06
			Pentachlorophenol	--	6.3E-13	--	6.3E-13	na	--	--	--	--
			TEQ (ND=1/2DL)	--	6.3E-11	--	6.3E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.2E-06	--	3.2E-06
			Chemical Total	--	6.5E-11	--	6.5E-11		--	1.3E-05	--	1.3E-05
		Total Dust Inhalation from Subsurface Soil					6.5E-11					1.3E-05
	Total Subsurface Soil Direct Contact and Dust Inhalation						5.3E-06					6.1E+00

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Spigot Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	3.7E-10	--	2.0E-10	5.7E-10	Liver	1.4E-05	--	7.8E-06	2.2E-05
			TEQ (ND=1/2DL)	2.3E-07	--	1.5E-08	2.5E-07	Reproductive, developmental	2.0E-01	--	1.3E-02	2.1E-01
			Chemical Total	2.3E-07	--	1.5E-08	2.5E-07		2.0E-01	--	1.3E-02	2.1E-01
		Total Surface Soil Direct Contact					2.5E-07					2.1E-01
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	2.8E-16	--	2.8E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	4.1E-12	--	4.1E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.1E-07	--	2.1E-07
			Chemical Total	--	4.1E-12	--	4.1E-12		--	2.1E-07	--	2.1E-07
		Total Dust Inhalation from Surface Soil					4.1E-12					2.1E-07
	Total Surface Soil Direct Contact and Dust Inhalation						2.5E-07					2.1E-01
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Cassell Soil (ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	8.3E-09	--	4.5E-09	1.3E-08	Liver	3.2E-04	--	1.8E-04	5.0E-04
			TEQ (ND=1/2DL)	1.7E-06	--	1.1E-07	1.9E-06	Reproductive, developmental	1.5E+00	--	9.7E-02	1.6E+00
			Chemical Total	1.7E-06	--	1.2E-07	1.9E-06		1.5E+00	--	9.8E-02	1.6E+00
		Total Surface Soil Direct Contact					1.9E-06					1.6E+00
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	6.3E-15	--	6.3E-15	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.0E-11	--	3.0E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.5E-06	--	1.5E-06
			Chemical Total	--	3.0E-11	--	3.0E-11		--	1.5E-06	--	1.5E-06
		Total Dust Inhalation from Surface Soil					3.0E-11					1.5E-06
	Total Surface Soil Direct Contact and Dust Inhalation						1.9E-06					1.6E+00

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Soil	Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	9.3E-11	--	5.1E-11	1.4E-10	Liver	3.6E-06	--	2.0E-06	5.6E-06
			TEQ (ND=1/2DL)	3.6E-08	--	2.3E-09	3.8E-08	Reproductive, developmental	3.0E-02	--	2.0E-03	3.2E-02
			Chemical Total	3.6E-08	--	2.4E-09	3.8E-08		3.0E-02	--	2.0E-03	3.2E-02
		Total Subsurface Soil Direct Contact					3.8E-08					3.2E-02
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	7.1E-17	--	7.1E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	6.2E-13	--	6.2E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.2E-08	--	3.2E-08
			Chemical Total	--	6.2E-13	--	6.2E-13		--	3.2E-08	--	3.2E-08
		Total Dust Inhalation from Subsurface Soil					6.2E-13					3.2E-08
	Total Subsurface Soil Direct Contact and Dust Inhalation						3.8E-08					3.2E-02

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parmenter Soil (ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.6E-11	--	8.6E-12	2.4E-11	Liver	6.2E-07	--	3.4E-07	9.5E-07
			TEQ (ND=1/2DL)	2.2E-08	--	1.4E-09	2.3E-08	Reproductive, developmental	1.9E-02	--	1.2E-03	2.0E-02
			Chemical Total	2.2E-08	--	1.4E-09	2.3E-08		1.9E-02	--	1.2E-03	2.0E-02
		Total Surface Soil Direct Contact					2.3E-08					2.0E-02
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.2E-17	--	1.2E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.8E-13	--	3.8E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.9E-08	--	1.9E-08
			Chemical Total	--	3.8E-13	--	3.8E-13		--	1.9E-08	--	1.9E-08
		Total Dust Inhalation from Surface Soil					3.8E-13					1.9E-08
	Total Surface Soil Direct Contact and Dust Inhalation						2.3E-08					2.0E-02

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Soil	Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	7.9E-12	--	4.3E-12	1.2E-11	Liver	3.1E-07	--	1.7E-07	4.8E-07
			TEQ (ND=1/2DL)	6.8E-09	--	4.5E-10	7.3E-09	Reproductive, developmental	5.8E-03	--	3.8E-04	6.2E-03
			Chemical Total	6.8E-09	--	4.5E-10	7.3E-09		5.8E-03	--	3.8E-04	6.2E-03
		Total Subsurface Soil Direct Contact					7.3E-09					6.2E-03
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	6.0E-18	--	6.0E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.2E-13	--	1.2E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.1E-09	--	6.1E-09
			Chemical Total	--	1.2E-13	--	1.2E-13		--	6.1E-09	--	6.1E-09
		Total Dust Inhalation from Subsurface Soil					1.2E-13					6.1E-09
	Total Subsurface Soil Direct Contact and Dust Inhalation						7.3E-09					6.2E-03

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Skroch Soil (ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	4.3E-10	--	2.4E-10	6.7E-10	Liver	1.7E-05	--	9.2E-06	2.6E-05
			TEQ (ND=1/2DL)	3.5E-07	--	2.3E-08	3.7E-07	Reproductive, developmental	3.0E-01	--	2.0E-02	3.2E-01
			Chemical Total	3.5E-07	--	2.3E-08	3.7E-07		3.0E-01	--	2.0E-02	3.2E-01
		Total Surface Soil Direct Contact					3.7E-07					3.2E-01
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	3.3E-16	--	3.3E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	6.1E-12	--	6.1E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.1E-07	--	3.1E-07
			Chemical Total	--	6.1E-12	--	6.1E-12		--	3.1E-07	--	3.1E-07
		Total Dust Inhalation from Surface Soil					6.1E-12					3.1E-07
	Total Surface Soil Direct Contact and Dust Inhalation						3.7E-07					3.2E-01
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Chaney Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.6E-12	--	8.8E-13	2.5E-12	Liver	6.3E-08	--	3.4E-08	9.7E-08
			TEQ (ND=1/2DL)	2.3E-08	--	1.5E-09	2.5E-08	Reproductive, developmental	2.0E-02	--	1.3E-03	2.1E-02
			Chemical Total	2.3E-08	--	1.5E-09	2.5E-08		2.0E-02	--	1.3E-03	2.1E-02
		Total Surface Soil Direct Contact					2.5E-08					2.1E-02
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.2E-18	--	1.2E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	4.1E-13	--	4.1E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.1E-08	--	2.1E-08
			Chemical Total	--	4.1E-13	--	4.1E-13		--	2.1E-08	--	2.1E-08
		Total Dust Inhalation from Surface Soil					4.1E-13					2.1E-08
	Total Surface Soil Direct Contact and Dust Inhalation						2.5E-08					2.1E-02
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract B Soil (ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	2.0E-06	--	1.3E-07	2.1E-06	Reproductive, developmental	1.7E+00	--	1.1E-01	1.8E+00
			Chemical Total	2.0E-06	--	1.3E-07	2.1E-06		1.7E+00	--	1.1E-01	1.8E+00
		Total Surface Soil Direct Contact					2.1E-06					1.8E+00
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.4E-11	--	3.4E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.7E-06	--	1.7E-06
			Chemical Total	--	3.4E-11	--	3.4E-11		--	1.7E-06	--	1.7E-06
		Total Dust Inhalation from Surface Soil					3.4E-11					1.7E-06
	Total Surface Soil Direct Contact and Dust Inhalation						2.1E-06					1.8E+00
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Renfroe Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	4.0E-08	--	2.6E-09	4.3E-08	Reproductive, developmental	3.4E-02	--	2.2E-03	3.7E-02
			Chemical Total	4.0E-08	--	2.6E-09	4.3E-08		3.4E-02	--	2.2E-03	3.7E-02
		Total Surface Soil Direct Contact					4.3E-08					3.7E-02
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	7.0E-13	--	7.0E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.6E-08	--	3.6E-08
			Chemical Total	--	7.0E-13	--	7.0E-13		--	3.6E-08	--	3.6E-08
		Total Dust Inhalation from Surface Soil					7.0E-13					3.6E-08
	Total Surface Soil Direct Contact and Dust Inhalation						4.3E-08					3.7E-02
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
3WT Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	4.8E-08	--	3.1E-09	5.1E-08	Reproductive, developmental	4.1E-02	--	2.7E-03	4.4E-02
			Chemical Total	4.8E-08	--	3.1E-09	5.1E-08		4.1E-02	--	2.7E-03	4.4E-02
		Total Surface Soil Direct Contact					5.1E-08					4.4E-02
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	8.3E-13	--	8.3E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.3E-08	--	4.3E-08
			Chemical Total	--	8.3E-13	--	8.3E-13		--	4.3E-08	--	4.3E-08
		Total Dust Inhalation from Surface Soil					8.3E-13					4.3E-08
	Total Surface Soil Direct Contact and Dust Inhalation						5.1E-08					4.4E-02
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Milton Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.1E-10	--	5.9E-11	1.7E-10	Liver	4.2E-06	--	2.3E-06	6.6E-06
			TEQ (ND=1/2DL)	7.9E-08	--	5.2E-09	8.5E-08	Reproductive, developmental	6.8E-02	--	4.4E-03	7.2E-02
			Chemical Total	7.9E-08	--	5.3E-09	8.5E-08		6.8E-02	--	4.5E-03	7.2E-02
		Total Surface Soil Direct Contact					8.5E-08					7.2E-02
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	8.2E-17	--	8.2E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.4E-12	--	1.4E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	7.1E-08	--	7.1E-08
			Chemical Total	--	1.4E-12	--	1.4E-12		--	7.1E-08	--	7.1E-08
		Total Dust Inhalation from Surface Soil					1.4E-12					7.1E-08
	Total Surface Soil Direct Contact and Dust Inhalation						8.5E-08					7.2E-02

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Soil	Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	8.2E-12	--	4.4E-12	1.3E-11	Liver	3.2E-07	--	1.7E-07	4.9E-07
			TEQ (ND=1/2DL)	--	--	--	--	Reproductive, developmental	--	--	--	--
			Chemical Total	8.2E-12	--	4.4E-12	1.3E-11		3.2E-07	--	1.7E-07	4.9E-07
		Total Subsurface Soil Direct Contact					1.3E-11					4.9E-07
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	6.2E-18	--	6.2E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	--	--	--	Liver, reproductive, developmental, endocrine, respiratory, blood	--	--	--	--
			Chemical Total	--	6.2E-18	--	6.2E-18		--	--	--	--
		Total Dust Inhalation from Subsurface Soil					6.2E-18					--
	Total Subsurface Soil Direct Contact and Dust Inhalation						1.3E-11					4.9E-07

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Parcel B Soil (ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.2E-10	--	1.2E-10	3.3E-10	Liver	8.4E-06	--	4.6E-06	1.3E-05
			TEQ (ND=1/2DL)	2.2E-06	--	1.5E-07	2.4E-06	Reproductive, developmental	1.9E+00	--	1.3E-01	2.0E+00
			Chemical Total	2.2E-06	--	1.5E-07	2.4E-06		1.9E+00	--	1.3E-01	2.0E+00
		Total Surface Soil Direct Contact					2.4E-06					2.0E+00
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.6E-16	--	1.6E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.9E-11	--	3.9E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.0E-06	--	2.0E-06
			Chemical Total	--	3.9E-11	--	3.9E-11		--	2.0E-06	--	2.0E-06
		Total Dust Inhalation from Surface Soil					3.9E-11					2.0E-06
	Total Surface Soil Direct Contact and Dust Inhalation						2.4E-06					2.0E+00
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract A Soil (ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.3E-12	--	6.9E-13	2.0E-12	Liver	4.9E-08	--	2.7E-08	7.6E-08
			TEQ (ND=1/2DL)	2.1E-06	--	1.4E-07	2.2E-06	Reproductive, developmental	1.8E+00	--	1.2E-01	1.9E+00
			Chemical Total	2.1E-06	--	1.4E-07	2.2E-06		1.8E+00	--	1.2E-01	1.9E+00
		Total Surface Soil Direct Contact					2.2E-06					1.9E+00
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	9.6E-19	--	9.6E-19	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.6E-11	--	3.6E-11	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.9E-06	--	1.9E-06
			Chemical Total	--	3.6E-11	--	3.6E-11		--	1.9E-06	--	1.9E-06
		Total Dust Inhalation from Surface Soil					3.6E-11					1.9E-06
	Total Surface Soil Direct Contact and Dust Inhalation						2.2E-06					1.9E+00
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Robak Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	6.9E-11	--	3.8E-11	1.1E-10	Liver	2.7E-06	--	1.5E-06	4.2E-06
			TEQ (ND=1/2DL)	7.9E-08	--	5.2E-09	8.5E-08	Reproductive, developmental	6.8E-02	--	4.4E-03	7.2E-02
			Chemical Total	7.9E-08	--	5.2E-09	8.5E-08		6.8E-02	--	4.5E-03	7.2E-02
		Total Surface Soil Direct Contact					8.5E-08					7.2E-02
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	5.2E-17	--	5.2E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.4E-12	--	1.4E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	7.1E-08	--	7.1E-08
			Chemical Total	--	1.4E-12	--	1.4E-12		--	7.1E-08	--	7.1E-08
		Total Dust Inhalation from Surface Soil					1.4E-12					7.1E-08
	Total Surface Soil Direct Contact and Dust Inhalation						8.5E-08					7.2E-02
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Smith Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	4.9E-08	--	3.2E-09	5.2E-08	Reproductive, developmental	4.2E-02	--	2.7E-03	4.4E-02
			Chemical Total	4.9E-08	--	3.2E-09	5.2E-08		4.2E-02	--	2.7E-03	4.4E-02
		Total Surface Soil Direct Contact					5.2E-08					4.4E-02
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	8.4E-13	--	8.4E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.3E-08	--	4.3E-08
			Chemical Total	--	8.4E-13	--	8.4E-13		--	4.3E-08	--	4.3E-08
		Total Dust Inhalation from Surface Soil					8.4E-13					4.3E-08
	Total Surface Soil Direct Contact and Dust Inhalation						5.2E-08					4.4E-02
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Stevenson Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	4.9E-12	--	2.7E-12	7.6E-12	Liver	1.9E-07	--	1.0E-07	3.0E-07
			TEQ (ND=1/2DL)	1.8E-08	--	1.2E-09	1.9E-08	Reproductive, developmental	1.5E-02	--	9.9E-04	1.6E-02
			Chemical Total	1.8E-08	--	1.2E-09	1.9E-08		1.5E-02	--	9.9E-04	1.6E-02
		Total Surface Soil Direct Contact					1.9E-08					1.6E-02
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	3.7E-18	--	3.7E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.1E-13	--	3.1E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.6E-08	--	1.6E-08
			Chemical Total	--	3.1E-13	--	3.1E-13		--	1.6E-08	--	1.6E-08
		Total Dust Inhalation from Surface Soil					3.1E-13					1.6E-08
	Total Surface Soil Direct Contact and Dust Inhalation						1.9E-08					1.6E-02
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Vintage Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	9.3E-09	--	6.1E-10	9.9E-09	Reproductive, developmental	8.0E-03	--	5.2E-04	8.5E-03
			Chemical Total	9.3E-09	--	6.1E-10	9.9E-09		8.0E-03	--	5.2E-04	8.5E-03
		Total Surface Soil Direct Contact					9.9E-09					8.5E-03
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.6E-13	--	1.6E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	8.3E-09	--	8.3E-09
			Chemical Total	--	1.6E-13	--	1.6E-13		--	8.3E-09	--	8.3E-09
		Total Dust Inhalation from Surface Soil					1.6E-13					8.3E-09
	Total Surface Soil Direct Contact and Dust Inhalation						9.9E-09					8.5E-03
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Cemetery Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	1.2E-08	--	7.9E-10	1.3E-08	Reproductive, developmental	1.0E-02	--	6.7E-04	1.1E-02
			Chemical Total	1.2E-08	--	7.9E-10	1.3E-08		1.0E-02	--	6.7E-04	1.1E-02
		Total Surface Soil Direct Contact					1.3E-08					1.1E-02
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.1E-13	--	2.1E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.1E-08	--	1.1E-08
			Chemical Total	--	2.1E-13	--	2.1E-13		--	1.1E-08	--	1.1E-08
		Total Dust Inhalation from Surface Soil					2.1E-13					1.1E-08
	Total Surface Soil Direct Contact and Dust Inhalation						1.3E-08					1.1E-02
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Right-of-Way Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.7E-07	--	1.5E-07	4.2E-07	Liver	1.1E-02	--	5.8E-03	1.6E-02
			TEQ (ND=1/2DL)	--	--	--	--	Reproductive, developmental	--	--	--	--
			Chemical Total	2.7E-07	--	1.5E-07	4.2E-07		1.1E-02	--	5.8E-03	1.6E-02
		Total Surface Soil Direct Contact					4.2E-07					1.6E-02
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	2.1E-13	--	2.1E-13	na	--	--	--	--
			TEQ (ND=1/2DL)	--	--	--	--	Liver, reproductive, developmental, endocrine, respiratory, blood	--	--	--	--
			Chemical Total	--	2.1E-13	--	2.1E-13		--	--	--	--
		Total Dust Inhalation from Surface Soil					2.1E-13					--
	Total Surface Soil Direct Contact and Dust Inhalation						4.2E-07					1.6E-02
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Rodeo Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	1.5E-09	--	9.5E-11	1.6E-09	Reproductive, developmental	1.2E-03	--	8.2E-05	1.3E-03
			Chemical Total	1.5E-09	--	9.5E-11	1.6E-09		1.2E-03	--	8.2E-05	1.3E-03
		Total Surface Soil Direct Contact					1.6E-09					1.3E-03
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.5E-14	--	2.5E-14	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.3E-09	--	1.3E-09
			Chemical Total	--	2.5E-14	--	2.5E-14		--	1.3E-09	--	1.3E-09
		Total Dust Inhalation from Surface Soil					2.5E-14					1.3E-09
	Total Surface Soil Direct Contact and Dust Inhalation						1.6E-09					1.3E-03
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
School Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.5E-12	--	8.1E-13	2.3E-12	Liver	5.8E-08	--	3.2E-08	9.0E-08
			TEQ (ND=1/2DL)	4.0E-09	--	2.6E-10	4.2E-09	Reproductive, developmental	3.4E-03	--	2.2E-04	3.6E-03
			Chemical Total	4.0E-09	--	2.6E-10	4.2E-09		3.4E-03	--	2.2E-04	3.6E-03
		Total Surface Soil Direct Contact					4.2E-09					3.6E-03
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.1E-18	--	1.1E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	6.9E-14	--	6.9E-14	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.5E-09	--	3.5E-09
			Chemical Total	--	6.9E-14	--	6.9E-14		--	3.5E-09	--	3.5E-09
		Total Dust Inhalation from Surface Soil					6.9E-14					3.5E-09
	Total Surface Soil Direct Contact and Dust Inhalation						4.2E-09					3.6E-03

TABLE D9.7 RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Soil	Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.5E-12	--	8.4E-13	2.4E-12	Liver	6.0E-08	--	3.3E-08	9.2E-08
			TEQ (ND=1/2DL)	1.0E-09	--	6.6E-11	1.1E-09	Reproductive, developmental	8.7E-04	--	5.7E-05	9.3E-04
			Chemical Total	1.0E-09	--	6.7E-11	1.1E-09		8.7E-04	--	5.7E-05	9.3E-04
		Total Subsurface Soil Direct Contact					1.1E-09					9.3E-04
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.2E-18	--	1.2E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.8E-14	--	1.8E-14	Liver, reproductive, developmental, endocrine, respiratory, blood	--	9.1E-10	--	9.1E-10
			Chemical Total	--	1.8E-14	--	1.8E-14		--	9.1E-10	--	9.1E-10
		Total Dust Inhalation from Subsurface Soil					1.8E-14					9.1E-10
	Total Subsurface Soil Direct Contact and Dust Inhalation						1.1E-09					9.3E-04

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene
na = not applicable
bgs = below ground surface
RME = reasonable maximum exposure
CT = central tendency
TEQ = 2,3,7,8-TCDD toxicity equivalents

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel A Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	2.8E-04	--	2.0E-03	2.3E-03
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	1.7E-05	--	6.2E-05	7.9E-05
			C9-C10 Aromatics	--	--	--	--	Kidney	5.7E-06	--	2.1E-05	2.6E-05
			Ethylbenzene	6.0E-13	--	0.0E+00	6.0E-13	Liver and kidney	4.3E-08	--	0.0E+00	4.3E-08
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	7.1E-06	--	6.6E-06	1.4E-05
			Naphthalene	--	--	--	--	Decreased body weight	4.3E-07	--	4.0E-07	8.3E-07
			BaP equivalents	3.3E-09	--	3.1E-09	6.4E-09	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	1.0E-04	--	3.7E-04	4.7E-04
			C11-C22 Aromatics	--	--	--	--	Kidney	7.4E-04	--	5.3E-04	1.3E-03
			Pentachlorophenol	2.1E-11	--	3.7E-11	5.8E-11	Liver	8.1E-07	--	1.5E-06	2.3E-06
			TEQ (ND=1/2DL)	2.7E-08	--	5.8E-09	3.3E-08	Reproductive, developmental	2.3E-02	--	5.0E-03	2.8E-02
			Chemical Total	3.0E-08	--	9.0E-09	3.9E-08		2.4E-02	--	8.0E-03	3.2E-02
		Total Surface Soil Direct Contact					3.9E-08					3.2E-02
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	3.2E-09	--	3.2E-09
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	3.4E-10	--	3.4E-10
			C9-C10 Aromatics	--	--	--	--	Body weight	--	3.4E-10	--	3.4E-10
			Ethylbenzene	--	2.7E-17	--	2.7E-17	Developmental	--	8.4E-13	--	8.4E-13
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	7.3E-16	--	7.3E-16	Nasal epithelium	--	5.6E-10	--	5.6E-10
			BaP equivalents	--	9.8E-14	--	9.8E-14	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	2.0E-09	--	2.0E-09
			C11-C22 Aromatics	--	--	--	--	Body weight	--	4.3E-08	--	4.3E-08
			Pentachlorophenol	--	5.2E-17	--	5.2E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.6E-12	--	1.6E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	8.0E-08	--	8.0E-08
			Chemical Total	--	1.6E-12	--	1.6E-12		--	1.3E-07	--	1.3E-07
		Total Dust Inhalation from Surface Soil					1.6E-12					1.3E-07
	Total Surface Soil Direct Contact and Dust Inhalation						3.9E-08					3.2E-02
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parcel B Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	1.2E-05	--	8.5E-05	9.7E-05
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	2.0E-03	--	7.3E-03	9.3E-03
			C9-C10 Aromatics	--	--	--	--	Kidney	2.6E-04	--	9.5E-04	1.2E-03
			Ethylbenzene	5.6E-13	--	0.0E+00	5.6E-13	Liver and kidney	3.9E-08	--	0.0E+00	3.9E-08
			1-Methylnaphthalene	1.1E-10	--	1.0E-10	2.1E-10	Respiratory	4.2E-06	--	3.9E-06	8.0E-06
			2-Methylnaphthalene	--	--	--	--	Lungs	1.0E-05	--	9.7E-06	2.0E-05
			Naphthalene	--	--	--	--	Decreased body weight	4.0E-07	--	3.7E-07	7.7E-07
			BaP equivalents	2.4E-09	--	2.2E-09	4.6E-09	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	5.8E-03	--	2.1E-02	2.7E-02
			C11-C22 Aromatics	--	--	--	--	Kidney	2.4E-03	--	1.7E-03	4.1E-03
			Pentachlorophenol	2.5E-07	--	4.5E-07	7.1E-07	Liver	9.8E-03	--	1.8E-02	2.8E-02
			TEQ (ND=1/2DL)	1.6E-07	--	3.5E-08	2.0E-07	Reproductive, developmental	1.4E-01	--	3.0E-02	1.7E-01
			Chemical Total	4.2E-07	--	4.9E-07	9.1E-07		1.6E-01	--	7.9E-02	2.4E-01
		Total Surface Soil Direct Contact					9.1E-07					2.4E-01
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	1.3E-10	--	1.3E-10
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	4.0E-08	--	4.0E-08
			C9-C10 Aromatics	--	--	--	--	Body weight	--	1.6E-08	--	1.6E-08
			Ethylbenzene	--	2.5E-17	--	2.5E-17	Developmental	--	7.7E-13	--	7.7E-13
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	6.8E-16	--	6.8E-16	Nasal epithelium	--	5.2E-10	--	5.2E-10
			BaP equivalents	--	7.0E-14	--	7.0E-14	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	1.1E-07	--	1.1E-07
			C11-C22 Aromatics	--	--	--	--	Body weight	--	1.4E-07	--	1.4E-07
			Pentachlorophenol	--	6.3E-13	--	6.3E-13	na	--	--	--	--
			TEQ (ND=1/2DL)	--	9.2E-12	--	9.2E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.7E-07	--	4.7E-07
			Chemical Total	--	9.9E-12	--	9.9E-12		--	7.8E-07	--	7.8E-07
		Total Dust Inhalation from Surface Soil					9.9E-12					7.8E-07
	Total Surface Soil Direct Contact and Dust Inhalation						9.1E-07					2.4E-01

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Soil	Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	1.0E-05	--	7.4E-05	8.5E-05
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	2.1E-03	--	7.4E-03	9.5E-03
			C9-C10 Aromatics	--	--	--	--	Kidney	1.4E-04	--	5.0E-04	6.4E-04
			Ethylbenzene	1.3E-10	--	0.0E+00	1.3E-10	Liver and kidney	9.0E-06	--	0.0E+00	9.0E-06
			1-Methylnaphthalene	8.0E-10	--	7.5E-10	1.6E-09	Respiratory	3.1E-05	--	2.9E-05	6.0E-05
			2-Methylnaphthalene	--	--	--	--	Lungs	5.2E-04	--	4.9E-04	1.0E-03
			Naphthalene	--	--	--	--	Decreased body weight	1.1E-05	--	1.0E-05	2.2E-05
			BaP equivalents	1.2E-09	--	1.2E-09	2.4E-09	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	1.5E-02	--	5.6E-02	7.1E-02
			C11-C22 Aromatics	--	--	--	--	Kidney	2.5E-03	--	1.8E-03	4.4E-03
			Pentachlorophenol	3.4E-08	--	6.1E-08	9.4E-08	Liver	1.3E-03	--	2.4E-03	3.7E-03
			TEQ (ND=1/2DL)	4.0E-08	--	8.6E-09	4.9E-08	Reproductive, developmental	3.4E-02	--	7.4E-03	4.2E-02
			Chemical Total	7.6E-08	--	7.1E-08	1.5E-07		5.6E-02	--	7.6E-02	1.3E-01
		Total Subsurface Soil Direct Contact					1.5E-07					1.3E-01
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	1.2E-10	--	1.2E-10
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	4.0E-08	--	4.0E-08
			C9-C10 Aromatics	--	--	--	--	Body weight	--	8.2E-09	--	8.2E-09
			Ethylbenzene	--	5.6E-15	--	5.6E-15	Developmental	--	1.8E-10	--	1.8E-10
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	1.9E-14	--	1.9E-14	Nasal epithelium	--	1.5E-08	--	1.5E-08
			BaP equivalents	--	3.7E-14	--	3.7E-14	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	3.0E-07	--	3.0E-07
			C11-C22 Aromatics	--	--	--	--	Body weight	--	1.5E-07	--	1.5E-07
			Pentachlorophenol	--	8.4E-14	--	8.4E-14	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.3E-12	--	2.3E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.2E-07	--	1.2E-07
			Chemical Total	--	2.4E-12	--	2.4E-12		--	6.3E-07	--	6.3E-07
		Total Dust Inhalation from Subsurface Soil					2.4E-12					6.3E-07
	Total Subsurface Soil Direct Contact and Dust Inhalation						1.5E-07					1.3E-01

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Spigot Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.4E-11	--	2.5E-11	3.9E-11	Liver	5.4E-07	--	9.7E-07	1.5E-06
			TEQ (ND=1/2DL)	7.5E-09	--	1.6E-09	9.2E-09	Reproductive, developmental	6.5E-03	--	1.4E-03	7.9E-03
			Chemical Total	7.6E-09	--	1.7E-09	9.2E-09		6.5E-03	--	1.4E-03	7.9E-03
		Total Surface Soil Direct Contact					9.2E-09					7.9E-03
	Air	Airborne Dust Surface Soil	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
		(0-2 ft bgs)	Pentachlorophenol	--	3.4E-17	--	3.4E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	4.3E-13	--	4.3E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.2E-08	--	2.2E-08
			Chemical Total	--	4.3E-13	--	4.3E-13		--	2.2E-08	--	2.2E-08
		Total Dust Inhalation from Surface Soil					4.3E-13					2.2E-08
	Total Surface Soil Direct Contact and Dust Inhalation						9.2E-09					7.9E-03
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Cassell Soil (ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.1E-10	--	3.8E-10	5.9E-10	Liver	8.2E-06	--	1.5E-05	2.3E-05
			TEQ (ND=1/2DL)	4.4E-08	--	9.6E-09	5.4E-08	Reproductive, developmental	3.8E-02	--	8.2E-03	4.6E-02
			Chemical Total	4.4E-08	--	9.9E-09	5.4E-08		3.8E-02	--	8.2E-03	4.6E-02
		Total Surface Soil Direct Contact					5.4E-08					4.6E-02
	Air	Airborne Dust Surface Soil	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
		(0-2 ft bgs)	Pentachlorophenol	--	5.3E-16	--	5.3E-16	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.5E-12	--	2.5E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.3E-07	--	1.3E-07
			Chemical Total	--	2.5E-12	--	2.5E-12		--	1.3E-07	--	1.3E-07
		Total Dust Inhalation from Surface Soil					2.5E-12					1.3E-07
	Total Surface Soil Direct Contact and Dust Inhalation						5.4E-08					4.6E-02

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Soil	Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	2.7E-12	--	4.9E-12	7.7E-12	Liver	1.1E-07	--	1.9E-07	3.0E-07
			TEQ (ND=1/2DL)	2.2E-09	--	4.7E-10	2.6E-09	Reproductive, developmental	1.9E-03	--	4.0E-04	2.3E-03
			Chemical Total	2.2E-09	--	4.7E-10	2.6E-09		1.9E-03	--	4.0E-04	2.3E-03
		Total Subsurface Soil Direct Contact					2.6E-09					2.3E-03
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	6.9E-18	--	6.9E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.2E-13	--	1.2E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.4E-09	--	6.4E-09
			Chemical Total	--	1.2E-13	--	1.2E-13		--	6.4E-09	--	6.4E-09
		Total Dust Inhalation from Subsurface Soil					1.2E-13					6.4E-09
	Total Subsurface Soil Direct Contact and Dust Inhalation						2.6E-09					2.3E-03

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Parmenter Soil (ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	7.0E-13	--	1.3E-12	2.0E-12	Liver	2.7E-08	--	4.9E-08	7.7E-08
			TEQ (ND=1/2DL)	7.6E-10	--	1.6E-10	9.2E-10	Reproductive, developmental	6.5E-04	--	1.4E-04	7.9E-04
			Chemical Total	7.6E-10	--	1.6E-10	9.2E-10		6.5E-04	--	1.4E-04	7.9E-04
		Total Surface Soil Direct Contact					9.2E-10					7.9E-04
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.8E-18	--	1.8E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	4.3E-14	--	4.3E-14	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.2E-09	--	2.2E-09
			Chemical Total	--	4.3E-14	--	4.3E-14		--	2.2E-09	--	2.2E-09
		Total Dust Inhalation from Surface Soil					4.3E-14					2.2E-09
	Total Surface Soil Direct Contact and Dust Inhalation						9.2E-10					7.9E-04

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Soil	Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	4.8E-13	--	8.7E-13	1.4E-12	Liver	1.9E-08	--	3.4E-08	5.3E-08
			TEQ (ND=1/2DL)	1.6E-10	--	3.4E-11	1.9E-10	Reproductive, developmental	1.4E-04	--	2.9E-05	1.7E-04
			Chemical Total	1.6E-10	--	3.5E-11	1.9E-10		1.4E-04	--	2.9E-05	1.7E-04
		Total Subsurface Soil Direct Contact					1.9E-10					1.7E-04
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.2E-18	--	1.2E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	9.1E-15	--	9.1E-15	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.7E-10	--	4.7E-10
			Chemical Total	--	9.1E-15	--	9.1E-15		--	4.7E-10	--	4.7E-10
		Total Dust Inhalation from Subsurface Soil					9.1E-15					4.7E-10
	Total Subsurface Soil Direct Contact and Dust Inhalation						1.9E-10					1.7E-04

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Skroch Soil (ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	5.5E-12	--	9.9E-12	1.5E-11	Liver	2.1E-07	--	3.9E-07	6.0E-07
			TEQ (ND=1/2DL)	7.1E-09	--	1.5E-09	8.6E-09	Reproductive, developmental	6.1E-03	--	1.3E-03	7.4E-03
			Chemical Total	7.1E-09	--	1.5E-09	8.6E-09		6.1E-03	--	1.3E-03	7.4E-03
		Total Surface Soil Direct Contact					8.6E-09					7.4E-03
	Air	Airborne Dust Surface Soil	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
		(0-2 ft bgs)	Pentachlorophenol	--	1.4E-17	--	1.4E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	4.1E-13	--	4.1E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.1E-08	--	2.1E-08
			Chemical Total	--	4.1E-13	--	4.1E-13		--	2.1E-08	--	2.1E-08
		Total Dust Inhalation from Surface Soil					4.1E-13					2.1E-08
	Total Surface Soil Direct Contact and Dust Inhalation						8.6E-09					7.4E-03
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Chaney Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	9.8E-14	--	1.8E-13	2.7E-13	Liver	3.8E-09	--	6.9E-09	1.1E-08
			TEQ (ND=1/2DL)	1.2E-09	--	2.7E-10	1.5E-09	Reproductive, developmental	1.1E-03	--	2.3E-04	1.3E-03
			Chemical Total	1.2E-09	--	2.7E-10	1.5E-09		1.1E-03	--	2.3E-04	1.3E-03
		Total Surface Soil Direct Contact					1.5E-09					1.3E-03
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	2.5E-19	--	2.5E-19	na	--	--	--	--
			TEQ (ND=1/2DL)	--	7.1E-14	--	7.1E-14	Liver, reproductive, developmental, endocrine, respiratory, blood	--	3.6E-09	--	3.6E-09
			Chemical Total	--	7.1E-14	--	7.1E-14		--	3.6E-09	--	3.6E-09
		Total Dust Inhalation from Surface Soil					7.1E-14					3.6E-09
	Total Surface Soil Direct Contact and Dust Inhalation						1.5E-09					1.3E-03
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract B Soil (ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	6.1E-08	--	1.3E-08	7.4E-08	Reproductive, developmental	5.2E-02	--	1.1E-02	6.3E-02
			Chemical Total	6.1E-08	--	1.3E-08	7.4E-08		5.2E-02	--	1.1E-02	6.3E-02
		Total Surface Soil Direct Contact					7.4E-08					6.3E-02
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.5E-12	--	3.5E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.8E-07	--	1.8E-07
			Chemical Total	--	3.5E-12	--	3.5E-12		--	1.8E-07	--	1.8E-07
		Total Dust Inhalation from Surface Soil					3.5E-12					1.8E-07
	Total Surface Soil Direct Contact and Dust Inhalation						7.4E-08					6.3E-02
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Renfroe Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	1.6E-09	--	3.5E-10	2.0E-09	Reproductive, developmental	1.4E-03	--	3.0E-04	1.7E-03
			Chemical Total	1.6E-09	--	3.5E-10	2.0E-09		1.4E-03	--	3.0E-04	1.7E-03
		Total Surface Soil Direct Contact					2.0E-09					1.7E-03
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	9.3E-14	--	9.3E-14	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.8E-09	--	4.8E-09
			Chemical Total	--	9.3E-14	--	9.3E-14		--	4.8E-09	--	4.8E-09
		Total Dust Inhalation from Surface Soil					9.3E-14					4.8E-09
	Total Surface Soil Direct Contact and Dust Inhalation						2.0E-09					1.7E-03
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
3WT Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	2.9E-09	--	6.3E-10	3.6E-09	Reproductive, developmental	2.5E-03	--	5.4E-04	3.0E-03
			Chemical Total	2.9E-09	--	6.3E-10	3.6E-09		2.5E-03	--	5.4E-04	3.0E-03
		Total Surface Soil Direct Contact					3.6E-09					3.0E-03
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.7E-13	--	1.7E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	8.6E-09	--	8.6E-09
			Chemical Total	--	1.7E-13	--	1.7E-13		--	8.6E-09	--	8.6E-09
		Total Dust Inhalation from Surface Soil					1.7E-13					8.6E-09
	Total Surface Soil Direct Contact and Dust Inhalation						3.6E-09					3.0E-03
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Milton Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	3.3E-12	--	6.0E-12	9.3E-12	Liver	1.3E-07	--	2.3E-07	3.6E-07
			TEQ (ND=1/2DL)	2.8E-09	--	6.0E-10	3.4E-09	Reproductive, developmental	2.4E-03	--	5.1E-04	2.9E-03
			Chemical Total	2.8E-09	--	6.0E-10	3.4E-09		2.4E-03	--	5.1E-04	2.9E-03
		Total Surface Soil Direct Contact					3.4E-09					2.9E-03
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	8.3E-18	--	8.3E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.6E-13	--	1.6E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	8.1E-09	--	8.1E-09
			Chemical Total	--	1.6E-13	--	1.6E-13		--	8.1E-09	--	8.1E-09
		Total Dust Inhalation from Surface Soil					1.6E-13					8.1E-09
	Total Surface Soil Direct Contact and Dust Inhalation						3.4E-09					2.9E-03

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Soil	Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	5.0E-13	--	9.0E-13	1.4E-12	Liver	1.9E-08	--	3.5E-08	5.4E-08
			TEQ (ND=1/2DL)	--	--	--	--	Reproductive, developmental	--	--	--	--
			Chemical Total	5.0E-13	--	9.0E-13	1.4E-12		1.9E-08	--	3.5E-08	5.4E-08
		Total Subsurface Soil Direct Contact					1.4E-12					5.4E-08
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.2E-18	--	1.2E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	--	--	--	Liver, reproductive, developmental, endocrine, respiratory, blood	--	--	--	--
			Chemical Total	--	1.2E-18	--	1.2E-18		--	--	--	--
		Total Dust Inhalation from Subsurface Soil					1.2E-18					--
	Total Subsurface Soil Direct Contact and Dust Inhalation						1.4E-12					5.4E-08

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Parcel B Soil (ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	3.6E-12	--	6.6E-12	1.0E-11	Liver	1.4E-07	--	2.6E-07	4.0E-07
			TEQ (ND=1/2DL)	7.5E-08	--	1.6E-08	9.1E-08	Reproductive, developmental	6.4E-02	--	1.4E-02	7.8E-02
			Chemical Total	7.5E-08	--	1.6E-08	9.1E-08		6.4E-02	--	1.4E-02	7.8E-02
		Total Surface Soil Direct Contact					9.1E-08					7.8E-02
	Air	Airborne Dust Surface Soil	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
		(0-2 ft bgs)	Pentachlorophenol	--	9.1E-18	--	9.1E-18	na	--	--	--	--
			TEQ (ND=1/2DL)	--	4.3E-12	--	4.3E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.2E-07	--	2.2E-07
			Chemical Total	--	4.3E-12	--	4.3E-12		--	2.2E-07	--	2.2E-07
		Total Dust Inhalation from Surface Soil					4.3E-12					2.2E-07
	Total Surface Soil Direct Contact and Dust Inhalation						9.1E-08					7.8E-02
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Peirano Tract A Soil (ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	7.7E-14	--	1.4E-13	2.2E-13	Liver	3.0E-09	--	5.4E-09	8.4E-09
			TEQ (ND=1/2DL)	2.0E-08	--	4.3E-09	2.4E-08	Reproductive, developmental	1.7E-02	--	3.7E-03	2.1E-02
			Chemical Total	2.0E-08	--	4.3E-09	2.4E-08		1.7E-02	--	3.7E-03	2.1E-02
		Total Surface Soil Direct Contact					2.4E-08					2.1E-02
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	1.9E-19	--	1.9E-19	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.1E-12	--	1.1E-12	Liver, reproductive, developmental, endocrine, respiratory, blood	--	5.9E-08	--	5.9E-08
			Chemical Total	--	1.1E-12	--	1.1E-12		--	5.9E-08	--	5.9E-08
		Total Dust Inhalation from Surface Soil					1.1E-12					5.9E-08
	Total Surface Soil Direct Contact and Dust Inhalation						2.4E-08					2.1E-02
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Robak Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	4.2E-12	--	7.6E-12	1.2E-11	Liver	1.6E-07	--	3.0E-07	4.6E-07
			TEQ (ND=1/2DL)	3.2E-09	--	6.9E-10	3.9E-09	Reproductive, developmental	2.7E-03	--	5.9E-04	3.3E-03
			Chemical Total	3.2E-09	--	7.0E-10	3.9E-09		2.7E-03	--	5.9E-04	3.3E-03
		Total Surface Soil Direct Contact					3.9E-09					3.3E-03
	Air	Airborne Dust Surface Soil	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
		(0-2 ft bgs)	Pentachlorophenol	--	1.1E-17	--	1.1E-17	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.8E-13	--	1.8E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	9.4E-09	--	9.4E-09
			Chemical Total	--	1.8E-13	--	1.8E-13		--	9.4E-09	--	9.4E-09
		Total Dust Inhalation from Surface Soil					1.8E-13					9.4E-09
	Total Surface Soil Direct Contact and Dust Inhalation						3.9E-09					3.3E-03
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Smith Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	2.3E-09	--	4.9E-10	2.8E-09	Reproductive, developmental	1.9E-03	--	4.2E-04	2.4E-03
			Chemical Total	2.3E-09	--	4.9E-10	2.8E-09		1.9E-03	--	4.2E-04	2.4E-03
		Total Surface Soil Direct Contact					2.8E-09					2.4E-03
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.3E-13	--	1.3E-13	Liver, reproductive, developmental, endocrine, respiratory, blood	--	6.7E-09	--	6.7E-09
			Chemical Total	--	1.3E-13	--	1.3E-13		--	6.7E-09	--	6.7E-09
		Total Dust Inhalation from Surface Soil					1.3E-13					6.7E-09
	Total Surface Soil Direct Contact and Dust Inhalation						2.8E-09					2.4E-03
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Stevenson Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	3.0E-13	--	5.4E-13	8.4E-13	Liver	1.2E-08	--	2.1E-08	3.3E-08
			TEQ (ND=1/2DL)	2.5E-10	--	5.4E-11	3.1E-10	Reproductive, developmental	2.2E-04	--	4.6E-05	2.6E-04
			Chemical Total	2.5E-10	--	5.5E-11	3.1E-10		2.2E-04	--	4.6E-05	2.6E-04
		Total Surface Soil Direct Contact					3.1E-10					2.6E-04
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	7.5E-19	--	7.5E-19	na	--	--	--	--
			TEQ (ND=1/2DL)	--	1.4E-14	--	1.4E-14	Liver, reproductive, developmental, endocrine, respiratory, blood	--	7.4E-10	--	7.4E-10
			Chemical Total	--	1.4E-14	--	1.4E-14		--	7.4E-10	--	7.4E-10
		Total Dust Inhalation from Surface Soil					1.4E-14					7.4E-10
	Total Surface Soil Direct Contact and Dust Inhalation						3.1E-10					2.6E-04
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Vintage Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	5.7E-10	--	1.2E-10	6.9E-10	Reproductive, developmental	4.9E-04	--	1.1E-04	5.9E-04
			Chemical Total	5.7E-10	--	1.2E-10	6.9E-10		4.9E-04	--	1.1E-04	5.9E-04
		Total Surface Soil Direct Contact					6.9E-10					5.9E-04
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	3.3E-14	--	3.3E-14	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.7E-09	--	1.7E-09
			Chemical Total	--	3.3E-14	--	3.3E-14		--	1.7E-09	--	1.7E-09
		Total Dust Inhalation from Surface Soil					3.3E-14					1.7E-09
	Total Surface Soil Direct Contact and Dust Inhalation						6.9E-10					5.9E-04
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Cemetery Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	7.3E-10	--	1.6E-10	8.9E-10	Reproductive, developmental	6.3E-04	--	1.4E-04	7.7E-04
			Chemical Total	7.3E-10	--	1.6E-10	8.9E-10		6.3E-04	--	1.4E-04	7.7E-04
		Total Surface Soil Direct Contact					8.9E-10					7.7E-04
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	4.2E-14	--	4.2E-14	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.2E-09	--	2.2E-09
			Chemical Total	--	4.2E-14	--	4.2E-14		--	2.2E-09	--	2.2E-09
		Total Dust Inhalation from Surface Soil					4.2E-14					2.2E-09
	Total Surface Soil Direct Contact and Dust Inhalation						8.9E-10					7.7E-04
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Right-of-Way Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	1.7E-08	--	3.0E-08	4.7E-08	Liver	6.5E-04	--	1.2E-03	1.8E-03
			TEQ (ND=1/2DL)	--	--	--	--	Reproductive, developmental	--	--	--	--
			Chemical Total	1.7E-08	--	3.0E-08	4.7E-08		6.5E-04	--	1.2E-03	1.8E-03
		Total Surface Soil Direct Contact					4.7E-08					1.8E-03
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	4.2E-14	--	4.2E-14	na	--	--	--	--
			TEQ (ND=1/2DL)	--	--	--	--	Liver, reproductive, developmental, endocrine, respiratory, blood	--	--	--	--
			Chemical Total	--	4.2E-14	--	4.2E-14		--	--	--	--
		Total Dust Inhalation from Surface Soil					4.2E-14					--
	Total Surface Soil Direct Contact and Dust Inhalation						4.7E-08					1.8E-03
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Rodeo Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	--	--	--	--	Liver	--	--	--	--
			TEQ (ND=1/2DL)	8.9E-11	--	1.9E-11	1.1E-10	Reproductive, developmental	7.6E-05	--	1.6E-05	9.3E-05
			Chemical Total	8.9E-11	--	1.9E-11	1.1E-10		7.6E-05	--	1.6E-05	9.3E-05
		Total Surface Soil Direct Contact					1.1E-10					9.3E-05
	Air	Airborne Dust Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	--	--	--	na	--	--	--	--
			TEQ (ND=1/2DL)	--	5.1E-15	--	5.1E-15	Liver, reproductive, developmental, endocrine, respiratory, blood	--	2.6E-10	--	2.6E-10
			Chemical Total	--	5.1E-15	--	5.1E-15		--	2.6E-10	--	2.6E-10
		Total Dust Inhalation from Surface Soil					5.1E-15					2.6E-10
	Total Surface Soil Direct Contact and Dust Inhalation						1.1E-10					9.3E-05
	Soil	Subsurface Soil (>2 ft bgs)	No subsurface soil data available									
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	No subsurface soil data available									

TABLE D9.7 CT
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
School Soil (non-ditch)	Soil	Surface Soil (0-2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	9.1E-14	--	1.6E-13	2.5E-13	Liver	3.5E-09	--	6.4E-09	9.9E-09
			TEQ (ND=1/2DL)	1.5E-10	--	3.3E-11	1.8E-10	Reproductive, developmental	1.3E-04	--	2.8E-05	1.6E-04
			Chemical Total	1.5E-10	--	3.3E-11	1.8E-10		1.3E-04	--	2.8E-05	1.6E-04
		Total Surface Soil Direct Contact					1.8E-10					1.6E-04
	Air	Airborne Dust Surface Soil	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
		(0-2 ft bgs)	Pentachlorophenol	--	2.3E-19	--	2.3E-19	na	--	--	--	--
			TEQ (ND=1/2DL)	--	8.7E-15	--	8.7E-15	Liver, reproductive, developmental, endocrine, respiratory, blood	--	4.5E-10	--	4.5E-10
			Chemical Total	--	8.7E-15	--	8.7E-15		--	4.5E-10	--	4.5E-10
		Total Dust Inhalation from Surface Soil					8.7E-15					4.5E-10
	Total Surface Soil Direct Contact and Dust Inhalation						1.8E-10					1.6E-04

TABLE D9.7 CT

SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Construction Worker
Receptor Age:	Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk				Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
	Soil	Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Body weight, nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Ethylbenzene	--	--	--	--	Liver and kidney	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	Respiratory	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	Lungs	--	--	--	--
			Naphthalene	--	--	--	--	Decreased body weight	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Liver, kidney, blood	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Kidney	--	--	--	--
			Pentachlorophenol	9.4E-14	--	1.7E-13	2.6E-13	Liver	3.7E-09	--	6.6E-09	1.0E-08
			TEQ (ND=1/2DL)	4.1E-11	--	8.8E-12	5.0E-11	Reproductive, developmental	3.5E-05	--	7.6E-06	4.3E-05
			Chemical Total	4.1E-11	--	9.0E-12	5.0E-11		3.5E-05	--	7.6E-06	4.3E-05
		Total Subsurface Soil Direct Contact					5.0E-11					4.3E-05
	Air	Airborne Dust Subsurface Soil (>2 ft bgs)	C5-C8 Aliphatics	--	--	--	--	Nervous system	--	--	--	--
			C9-C12 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C9-C10 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Ethylbenzene	--	--	--	--	Developmental	--	--	--	--
			1-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			2-Methylnaphthalene	--	--	--	--	na	--	--	--	--
			Naphthalene	--	--	--	--	Nasal epithelium	--	--	--	--
			BaP equivalents	--	--	--	--	na	--	--	--	--
			C9-C18 Aliphatics	--	--	--	--	Nasal epithelium, adrenal	--	--	--	--
			C11-C22 Aromatics	--	--	--	--	Body weight	--	--	--	--
			Pentachlorophenol	--	2.3E-19	--	2.3E-19	na	--	--	--	--
			TEQ (ND=1/2DL)	--	2.3E-15	--	2.3E-15	Liver, reproductive, developmental, endocrine, respiratory, blood	--	1.2E-10	--	1.2E-10
			Chemical Total	--	2.3E-15	--	2.3E-15		--	1.2E-10	--	1.2E-10
		Total Dust Inhalation from Subsurface Soil					2.3E-15					1.2E-10
	Total Subsurface Soil Direct Contact and Dust Inhalation						5.0E-11					4.3E-05

Notes:

Intake, risk, and hazard results of 0.0E+00 occur for calculations evaluating dermal contact with ethylbenzene in soil. This value appears as a result of the dermal absorption factor for ethylbenzene being 0. (Table 4.5; MDEQ 2009)

'-- = Insufficient sample and/or toxicity data available; hazard and risk calculations are not applicable.

BaP = benzo(a)pyrene

bgs = below ground surface

CT = central tendency

na = not applicable

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents

TABLE D10. RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil Vapor
Exposure Medium:	Indoor Air/Trench Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Inhalation	Resident (Adult/Child)	Resident (Adult/Child)	Indoor Air	SSCL	Site-specific cleanup level for indoor air (residential)		mg/m^3		
				ET	Exposure time	24	hours/day	MDEQ's (2012) frequently asked questions	Site-Specific Cleanup Level for Indoor Air ($SSCL_{IA}$; mg/m^3) =
				EF	Exposure frequency	350	days/year	MDEQ's (2012) frequently asked questions	For Carcinogens:
				ED	Exposure duration for adult/child (cancer risk only)	30	years	MDEQ's (2012) frequently asked questions	(AT-c x Target Risk)/ (IUR x ED x EF x ET)
					Exposure duration for child (hazard quotient only)	6	years	MDEQ's (2012) frequently asked questions	For Noncarcinogens:
				AT-n	Averaging time (noncancer endpoint)	52,560	hours	Number of hours in a 6 yr exposure period (HQ only)	(AT-n x THQ x RfC)/ (ED x EF x ET)
				AT-c	Averaging time (cancer endpoint)	683,280	hours	Number of hours in 78 yr lifetime	
				TR	Target risk for carcinogens	3.3E-06	unitless	MDEQ's (2012) frequently asked questions	
				THQ	Target hazard quotient for noncarcinogens	chemical-specific	unitless	MDEQ's (2012) frequently asked questions	
	Commercial/ Industrial Worker	Adult	Indoor Air	SSCL	Site-specific cleanup level for indoor air (commercial/industrial)		mg/m^3		
				ET	Exposure time	8	hours/day	MDEQ's (2012) frequently asked questions	Site-Specific Cleanup Level for Indoor Air ($SSCL_{IA}$; mg/m^3) =
				EF	Exposure frequency	187	days/year	MDEQ's (2012) frequently asked questions	For Carcinogens:
				ED	Exposure duration	25	years	MDEQ's (2012) frequently asked questions	(AT-c x Target Risk)/ (IUR x ED x EF x ET)
				AT-n	Averaging time (noncancer endpoint)	219,000	hours	Number of hours in a 25 yr exposure period	For Noncarcinogens:
				AT-c	Averaging time (cancer endpoint)	683,280	hours	Number of hours in 78 yr lifetime	(AT-n x THQ x RfC)/ (ED x EF x ET)
				TR	Target risk for carcinogens	3.3E-06	unitless	MDEQ's (2012) frequently asked questions	
				THQ	Target hazard quotient for noncarcinogens	chemical-specific	unitless	MDEQ's (2012) frequently asked questions	

TABLE D10. RME
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil Vapor
Exposure Medium:	Indoor Air/Trench Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
	Construction Worker	Adult	Trench Air	$SSCL_{TA}$	Site-specific cleanup level for trench air		mg/m^3		
				ET	Exposure time	8	hours/day	MDEQ's (2012) frequently asked questions	Site-Specific Cleanup Level for Trench Air ($SSCL_{IA}$; mg/m^3) =
				EF	Exposure frequency	124	days/year	MDEQ's (2012) frequently asked questions	For Carcinogens:
				ED	Exposure duration	1	years	Standard approach	(AT-c x Target Risk)/ (IUR x ED x EF x ET)
				AT-c	Averaging time (cancer endpoint)	683,280	hours	Number of hours in 78 yr lifetime	For Noncarcinogens:
				AT-n	Averaging time (noncancer endpoint)	8,760	hours	Number of hours in exposure period	(AT-n x THQ x RfC)/ (ED x EF x ET)
				TR	Target risk for carcinogens	3.3E-06	unitless	MDEQ's (2012) frequently asked questions	
				THQ	Target hazard quotient for noncarcinogens	chemical-specific	unitless	MDEQ's (2012) frequently asked questions	

Notes:
(1) SSCL equations provided by MDEQ.

CT = central tendency
MDEQ = Montana Department of Environmental Quality
RME = reasonable maximum exposure

TABLE D10. CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe	Current/Future
Medium:	Soil Vapor
Exposure Medium:	Indoor Air/Trench Air

Exposure Route	Receptor Population	Receptor Age	Exposure Poin	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Inhalation	Resident (Adult/Child)	Resident (Adult/Child)	Indoor Air	SSCL	Site-specific cleanup level for indoor air (residential)		mg/m^3		
				ET	Exposure time	19 (HQ only) 17 (Cancer Risk)	hours/day	19 hours/day for child Weighted average of 19 hours for child and 16 hours for adult (for 18 year ED)	Site-Specific Cleanup Level for Indoor Air ($SSCL_{IA}$; mg/m^3) =
				EF	Exposure frequency	350	days/year	MDEQ's (2012) frequently asked questions	For Carcinogens:
				ED	Exposure duration for adult/child (cancer risk only)	18	years	MDEQ's (2012) frequently asked questions	(AT-c x Target Risk)/ (IUR x ED x EF x ET)
					Exposure duration for child (hazard quotient only)	6	years	MDEQ's (2012) frequently asked questions	For Noncarcinogens:
				AT-n	Averaging time (noncancer endpoint)	52,560	hours	Number of hours in a 6 yr exposure period (HQ only)	(AT-n x THQ x RfC)/ (ED x EF x ET)
				AT-c	Averaging time (cancer endpoint)	683,280	hours	Number of hours in 78 yr lifetime	
				TR	Target risk for carcinogens	3.30E-06	unitless	MDEQ's (2012) frequently asked questions	
				THQ	Target hazard quotient for noncarcinogens	chemical-specific	unitless	MDEQ's (2012) frequently asked questions	
	Commercial/ Industrial Worker	Adult	Indoor Air	SSCL	Site-specific cleanup level for indoor air (commercial/industrial)		mg/m^3		
				ET	Exposure time	8	hours/day	MDEQ's (2012) frequently asked questions	Site-Specific Cleanup Level for Indoor Air ($SSCL_{IA}$; mg/m^3) =
				EF	Exposure frequency	187	days/year	MDEQ's (2012) frequently asked questions	For Carcinogens:
				ED	Exposure duration	7.2	years	MDEQ's (2012) frequently asked questions	(AT-c x Target Risk)/ (IUR x ED x EF x ET)
				AT-n	Averaging time (noncancer endpoint)	63,072	hours	Number of hours in a 7.2 yr exposure period	For Noncarcinogens:
				AT-c	Averaging time (cancer endpoint)	683,280	hours	Number of hours in 78 yr lifetime	(AT-n x THQ x RfC)/ (ED x EF x ET)
				TR	Target risk for carcinogens	3.3E-06	unitless	MDEQ's (2012) frequently asked questions	
				THQ	Target hazard quotient for noncarcinogens	chemical-specific	unitless	MDEQ's (2012) frequently asked questions	

TABLE D10. CT
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe	Current/Future
Medium:	Soil Vapor
Exposure Medium:	Indoor Air/Trench Air

Exposure Route	Receptor Population	Receptor Age	Exposure Poin	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
	Construction Worker	Adult	Trench Air	$SSCL_{TA}$	Site-specific cleanup level for trench air		mg/m^3		
				ET	Exposure time	8	hours/day	MDEQ's (2012) frequently asked questions	Site-Specific Cleanup Level for Trench Air ($SSCL_{IA}$; mg/m^3) =
				EF	Exposure frequency	10	days/year	Professional judgment	For Carcinogens:
				ED	Exposure duration	1	years	Standard approach	(AT-c x Target Risk)/ (IUR x ED x EF x ET)
				AT-c	Averaging time (cancer endpoint)	683,280	hours	Number of hours in 78 yr lifetime	For Noncarcinogens:
				AT-n	Averaging time (noncancer endpoint)	8,760	hours	Number of hours in exposure period	(AT-n x THQ x RfC)/ (ED x EF x ET)
				TR	Target risk for carcinogens	3.3E-06	unitless	MDEQ's (2012) frequently asked questions	
				THQ	Target hazard quotient for noncarcinogens	chemical-specific	unitless	MDEQ's (2012) frequently asked questions	

Notes:
(1) SSCL equations provided by MDEQ.

CT = central tendency
MDEQ = Montana Department of Environmental Quality
RME = reasonable maximum exposure

Table D11. Site-Specific Cleanup Levels for Indoor and Trench Air

SSCL calculations - Trench Air (Construction Worker)

Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	Cancer Risk Calculations								Non-Cancer Hazard Calculations						
								RME $SSCL_c$		CTE $SSCL_c$					RME $SSCL_{nc}$		CTE $SSCL_{nc}$	
				C/NC	TR	CSF/Unit Risk	Units	Value	Units	Value	Units	THQ	RfD/RfC	Units	Value	Units	Value	Units
Soil Vapor	Trench Air	Inhalation	Benzene	c	3.3E-06	7.8E-03	(mg/m3)-1	2.9E-01	mg/m3	3.6E+00	mg/m3	1.0E+00	3.0E-02	mg/m3	2.6E-01	mg/m3	3.3E+00	mg/m3
			C5-C8 Aliphatics	nc	--	--	--	--	mg/m3	--	mg/m3	3.3E-01	7.0E-01	mg/m3	2.0E+00	mg/m3	7.7E+01	mg/m3
			C9-C12 Aliphatics	nc	--	--	--	--	mg/m3	--	mg/m3	5.0E-01	1.0E-01	mg/m3	4.4E-01	mg/m3	1.1E+01	mg/m3
			C9-C10 Aromatics	nc	--	--	--	--	mg/m3	--	mg/m3	1.0E+00	1.0E-01	mg/m3	8.8E-01	mg/m3	1.1E+01	mg/m3
			Ethylbenzene	c	3.3E-06	2.5E-03	(mg/m3)-1	9.2E-01	mg/m3	1.1E+01	mg/m3	1.0E+00	1.0E+00	mg/m3	8.8E+00	mg/m3	1.1E+02	mg/m3
			m,p-Xylenes	nc	--	--	--	--	mg/m3	--	mg/m3	3.3E-01	1.0E-01	mg/m3	2.9E-01	mg/m3	1.1E+01	mg/m3
			o-Xylenes	nc	--	--	--	--	mg/m3	--	mg/m3	3.3E-01	1.0E-01	mg/m3	2.9E-01	mg/m3	1.1E+01	mg/m3
			Naphthalene	c	3.3E-06	3.4E-02	(mg/m3)-1	6.7E-02	mg/m3	8.4E-01	mg/m3	5.0E-01	3.0E-03	mg/m3	1.3E-02	mg/m3	3.3E-01	mg/m3

Notes:

-- = no toxicity value available; hazard and risk calculations are not applicable.
c = carcinogen
CSF = carcinogenic slope factor
CTE = central tendency exposure
nc = not cardinogenic
RME = reasonable maximum exposure
SSCL = site-specific cleanup level
TR = target risk

SSCL calculations - Indoor Air (Commercial/Industrial Worker)

Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	Cancer Risk Calculations								Non-Cancer Hazard Calculations						
								RME $SSCL_c$		CTE $SSCL_c$					RME $SSCL_{nc}$		CTE $SSCL_{nc}$	
				C/NC	TR	CSF/Unit Risk	Units	Value	Units	Value	Units	THQ	RfD/RfC	Units	Value	Units	Value	Units
Soil Vapor	Indoor Air	Inhalation	Benzene	c	3.3E-06	7.8E-03	(mg/m3)-1	7.8E-03	mg/m3	2.7E-02	mg/m3	1.0E+00	3.0E-02	mg/m3	1.8E-01	mg/m3	1.8E-01	mg/m3
			C5-C8 Aliphatics	nc	--	--	--	--	mg/m3	--	mg/m3	3.3E-01	7.0E-01	mg/m3	1.4E+00	mg/m3	4.1E+00	mg/m3
			C9-C12 Aliphatics	nc	--	--	--	--	mg/m3	--	mg/m3	5.0E-01	1.0E-01	mg/m3	2.9E-01	mg/m3	5.9E-01	mg/m3
			C9-C10 Aromatics	nc	--	--	--	--	mg/m3	--	mg/m3	1.0E+00	1.0E-01	mg/m3	5.9E-01	mg/m3	5.9E-01	mg/m3
			Ethylbenzene	c	3.3E-06	2.5E-03	(mg/m3)-1	2.4E-02	mg/m3	8.4E-02	mg/m3	1.0E+00	1.0E+00	mg/m3	5.9E+00	mg/m3	5.9E+00	mg/m3
			m,p-Xylenes	nc	--	--	--	--	mg/m3	--	mg/m3	3.3E-01	1.0E-01	mg/m3	1.9E-01	mg/m3	5.9E-01	mg/m3
			o-Xylenes	nc	--	--	--	--	mg/m3	--	mg/m3	3.3E-01	1.0E-01	mg/m3	1.9E-01	mg/m3	5.9E-01	mg/m3
			Naphthalene	c	3.3E-06	3.4E-02	(mg/m3)-1	1.8E-03	mg/m3	6.2E-03	mg/m3	5.0E-01	3.0E-03	mg/m3	8.8E-03	mg/m3	1.8E-02	mg/m3

Notes:

-- = no toxicity value available; hazard and risk calculations are not applicable.
c = carcinogen
CSF = carcinogenic slope factor
CTE = central tendency exposure
nc = not cardinogenic
RME = reasonable maximum exposure
SSCL = site-specific cleanup level
TR = target risk

Table D11. Site-Specific Cleanup Levels for Indoor and Trench Air

SSCL calculations - Indoor Air (Resident)

Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	Cancer Risk Calculations								Non-Cancer Hazard Calculations						
								RME $SSCL_c$		CTE $SSCL_c$					RME $SSCL_{nc}$		CTE $SSCL_{nc}$	
				C/NC	TR	CSF/Unit Risk	Units	Value	Units	Value	Units	THQ	RfD/RfC	Units	Value	Units	Value	Units
Soil Vapor	Indoor Air	Inhalation	Benzene	c	3.3E-06	7.8E-03	(mg/m3)-1	1.2E-03	mg/m3	2.7E-03	mg/m3	1.0E+00	3.0E-02	mg/m3	3.1E-02	mg/m3	4.0E-02	mg/m3
			C5-C8 Aliphatics	nc	--	--	--	--	mg/m3	--	mg/m3	3.3E-01	7.0E-01	mg/m3	2.4E-01	mg/m3	3.0E-01	mg/m3
			C9-C12 Aliphatics	nc	--	--	--	--	mg/m3	--	mg/m3	5.0E-01	1.0E-01	mg/m3	5.2E-02	mg/m3	6.6E-02	mg/m3
			C9-C10 Aromatics	nc	--	--	--	--	mg/m3	--	mg/m3	1.0E+00	1.0E-01	mg/m3	1.0E-01	mg/m3	1.3E-01	mg/m3
			Ethylbenzene	c	3.3E-06	2.5E-03	(mg/m3)-1	3.6E-03	mg/m3	8.5E-03	mg/m3	1.0E+00	1.0E+00	mg/m3	1.0E+00	mg/m3	1.3E+00	mg/m3
			m,p-Xylenes	nc	--	--	--	--	mg/m3	--	mg/m3	3.3E-01	1.0E-01	mg/m3	3.4E-02	mg/m3	4.3E-02	mg/m3
			o-Xylenes	nc	--	--	--	--	mg/m3	--	mg/m3	3.3E-01	1.0E-01	mg/m3	3.4E-02	mg/m3	4.3E-02	mg/m3
			Naphthalene	c	3.3E-06	3.4E-02	(mg/m3)-1	2.7E-04	mg/m3	6.2E-04	mg/m3	5.0E-01	3.0E-03	mg/m3	1.6E-03	mg/m3	2.0E-03	mg/m3

Notes:

-- = no toxicity value available; hazard and risk calculations are not applicable.
c = carcinogen
CSF = carcinogenic slope factor
CTE = central tendency exposure
nc = not cardinogenic
RME = reasonable maximum exposure
SSCL = site-specific cleanup level
TR = target risk

$$SSCL_{CR} = \frac{0.00001 * ATC}{URF * EF * ED * ET}$$

$$SSCL_{HQ} = \frac{1 * ATN * RfC}{EF * ED * ET}$$

APPENDIX E

SUMMARY STATISTICS FOR EXPOSURE POINT CONCENTRATIONS

SURFACE SOIL DATA UCL STATISTICS

General UCL Statistics for Data Sets with Non-Detects

User Selected Options

From File	C898_SurfSoilData_ProUCLinput.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

SurfConc_DL (3wt_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	1	Number of Distinct Observations	1

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (3wt_teq (nd=1/2dl)) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (cassell_pentachlorophenol)

General Statistics

Number of Valid Data	7	Number of Detected Data	6
Number of Distinct Detected Data	6	Number of Non-Detect Data	1
		Percent Non-Detects	14.29%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.026	Minimum Detected	-3.649
Maximum Detected	2.3	Maximum Detected	0.833
Mean of Detected	1.118	Mean of Detected	-0.495
SD of Detected	0.897	SD of Detected	1.643
Minimum Non-Detect	0.0006337	Minimum Non-Detect	-7.364
Maximum Non-Detect	0.0006337	Maximum Non-Detect	-7.364

Warning: There are only 6 Detected Values in this data

Note: It should be noted that even though bootstrap may be performed on this data set

the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.905	Shapiro Wilk Test Statistic	0.79
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	0.958
SD	0.922
95% DL/2 (t) UCL	1.635

Maximum Likelihood Estimate(MLE) Method	
Mean	0.883
SD	0.966
95% MLE (t) UCL	1.593
95% MLE (Tiku) UCL	1.595

Data appear Lognormal at 5% Significance Level

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	-1.575
SD	3.228
95% H-Stat (DL/2) UCL	48980216

Log ROS Method	
Mean in Log Scale	-1.007
SD in Log Scale	2.021
Mean in Original Scale	0.96
SD in Original Scale	0.919
95% t UCL	1.635
95% Percentile Bootstrap UCL	1.492
95% BCA Bootstrap UCL	1.547
95% H UCL	775.7

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.59
Theta Star	1.895
nu star	7.078
A-D Test Statistic	0.422
5% A-D Critical Value	0.716
K-S Test Statistic	0.716
5% K-S Critical Value	0.341

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	2.3
Mean	0.958
Median	0.67
SD	0.922
k star	0.263
Theta star	3.641
Nu star	3.684
AppChi2	0.601
95% Gamma Approximate UCL (Use when n >= 40)	5.873
95% Adjusted Gamma UCL (Use when n < 40)	10.91

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Normal at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	0.962
SD	0.849
SE of Mean	0.352
95% KM (t) UCL	1.645
95% KM (z) UCL	1.54
95% KM (jackknife) UCL	1.639
95% KM (bootstrap t) UCL	2.096
95% KM (BCA) UCL	1.648
95% KM (Percentile Bootstrap) UCL	1.563
95% KM (Chebyshev) UCL	2.494
97.5% KM (Chebyshev) UCL	3.157
99% KM (Chebyshev) UCL	4.46

Potential UCLs to Use

95% KM (t) UCL	1.645
95% KM (Percentile Bootstrap) UCL	1.563

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SurfConc_DL (cassell_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	4	Number of Distinct Observations	4

Warning: This data set only has 4 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable SurfConc_DL (cassell_teq (nd=1/2dl)) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (cemetery_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	1	Number of Distinct Observations	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable SurfConc_DL (cemetery_teq (nd=1/2dl)) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (chaney_pentachlorophenol)

General Statistics

Number of Valid Data	2	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	2
		Percent Non-Detects	100.00%

Warning: This data set only has 2 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable SurfConc_DL (chaney_pentachlorophenol) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (chaney_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	2	Number of Distinct Observations	2

Warning: This data set only has 2 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (chaney_teq (nd=1/2dl)) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (milton_pentachlorophenol)

General Statistics

Number of Valid Observations	5	Number of Distinct Observations	5

Raw Statistics		Log-transformed Statistics	
Minimum	0.00348	Minimum of Log Data	-5.66
Maximum	0.0151	Maximum of Log Data	-4.191
Mean	0.0076	Mean of log Data	-5.043
Geometric Mean	0.00645	SD of log Data	0.637
Median	0.00622		
SD	0.0049		
Std. Error of Mean	0.00219		
Coefficient of Variation	0.645		
Skewness	1.054		

Warning: A sample size of 'n' = 5 may not adequate enough to compute meaningful and reliable test statistics and estimates!

It is suggested to collect at least 8 to 10 observations using these statistical methods!

If possible compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

Warning: There are only 5 Values in this data

Note: It should be noted that even though bootstrap methods may be performed on this data set,

the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.882	Shapiro Wilk Test Statistic	0.912
Shapiro Wilk Critical Value	0.762	Shapiro Wilk Critical Value	0.762
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.0123	95% H-UCL	0.0235
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.0168
95% Adjusted-CLT UCL (Chen-1995)	0.0123	97.5% Chebyshev (MVUE) UCL	0.0208
95% Modified-t UCL (Johnson-1978)	0.0124	99% Chebyshev (MVUE) UCL	0.0287

Gamma Distribution Test

k star (bias corrected)	1.419
Theta Star	0.00535
MLE of Mean	0.0076
MLE of Standard Deviation	0.00638
nu star	14.19
Approximate Chi Square Value (.05)	6.703
Adjusted Level of Significance	0.0086
Adjusted Chi Square Value	4.632
Anderson-Darling Test Statistic	0.331
Anderson-Darling 5% Critical Value	0.682
Kolmogorov-Smirnov Test Statistic	0.245
Kolmogorov-Smirnov 5% Critical Value	0.359

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

95% Approximate Gamma UCL (Use when n >= 40)	0.0161
95% Adjusted Gamma UCL (Use when n < 40)	0.0233

Data Distribution

Data appear Normal at 5% Significance Level

Nonparametric Statistics

95% CLT UCL	0.0112
95% Jackknife UCL	0.0123
95% Standard Bootstrap UCL	0.0108
95% Bootstrap-t UCL	0.0175
95% Hall's Bootstrap UCL	0.03
95% Percentile Bootstrap UCL	0.011
95% BCA Bootstrap UCL	0.0111
95% Chebyshev(Mean, Sd) UCL	0.0172
97.5% Chebyshev(Mean, Sd) UCL	0.0213
99% Chebyshev(Mean, Sd) UCL	0.0294

Potential UCL to Use

Use 95% Student's-t UCL 0.0123

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

SurfConc_DL (milton_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	4	Number of Distinct Observations	4

Warning: This data set only has 4 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable SurfConc_DL (milton_teq (nd=1/2dl)) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (parcel a_2-methylnaphthalene)

General Statistics

Number of Valid Data	1	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	1
		Percent Non-Detects	100.00%

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (parcel a_2-methylnaphthalene) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (parcel a_bap equivalents)

General Statistics

Number of Valid Observations	1	Number of Distinct Observations	1

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (parcel a_bap equivalents) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (parcel a_c11 to c22 aromatics)

General Statistics

Number of Valid Observations	1	Number of Distinct Observations	1

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (parcel a_c11 to c22 aromatics) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (parcel a_c5 to c8 aliphatics)

General Statistics

Number of Valid Observations	1	Number of Distinct Observations	1

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (parcel a_c5 to c8 aliphatics) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (parcel a_c9 to c10 aromatics)

General Statistics

Number of Valid Data	1	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	1
		Percent Non-Detects	100.00%

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (parcel a_c9 to c10 aromatics) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (parcel a_c9 to c12 aliphatics)

General Statistics

Number of Valid Data	1	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	1
		Percent Non-Detects	100.00%

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (parcel a_c9 to c12 aliphatics) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (parcel a_c9 to c18 aliphatics)

General Statistics

Number of Valid Observations	1	Number of Distinct Observations	1

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (parcel a_c9 to c18 aliphatics) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (parcel a_ethylbenzene)

General Statistics

Number of Valid Data	1	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	1
		Percent Non-Detects	100.00%

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (parcel a_ethylbenzene) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (parcel a_naphthalene)

General Statistics

Number of Valid Data	1	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	1
		Percent Non-Detects	100.00%

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (parcel a_naphthalene) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (parcel a_pentachlorophenol)

General Statistics

Number of Valid Data	11	Number of Detected Data	10
Number of Distinct Detected Data	10	Number of Non-Detect Data	1
		Percent Non-Detects	9.09%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00506	Minimum Detected	-5.287
Maximum Detected	0.309	Maximum Detected	-1.176
Mean of Detected	0.0514	Mean of Detected	-4.302
SD of Detected	0.101	SD of Detected	1.487
Minimum Non-Detect	0.0006512	Minimum Non-Detect	-7.337
Maximum Non-Detect	0.0006512	Maximum Non-Detect	-7.337

UCL Statistics

Normal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.544
5% Shapiro Wilk Critical Value	0.842

Data not Normal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	0.0467
SD	0.0968
95% DL/2 (t) UCL	0.0996
Maximum Likelihood Estimate(MLE) Method	
Mean	0.0408
SD	0.0983
95% MLE (t) UCL	0.0945
95% MLE (Tiku) UCL	0.0906

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.664
5% Shapiro Wilk Critical Value	0.842

Data not Lognormal at 5% Significance Level

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	-4.64
SD	1.804
95% H-Stat (DL/2) UCL	0.72
Log ROS Method	
Mean in Log Scale	-4.584
SD in Log Scale	1.694
Mean in Original Scale	0.0467
SD in Original Scale	0.0968
95% t UCL	0.0996
95% Percentile Bootstrap UCL	0.101
95% BCA Bootstrap UCL	0.127
95% H UCL	0.467

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.402
Theta Star	0.128
nu star	8.05
A-D Test Statistic	1.978
5% A-D Critical Value	0.781
K-S Test Statistic	0.781
5% K-S Critical Value	0.282

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	0.309
Mean	0.0467
Median	0.00674
SD	0.0968
k star	0.296
Theta star	0.158
Nu star	6.517
AppChi2	1.909
95% Gamma Approximate UCL (Use when n >= 40)	0.159
95% Adjusted Gamma UCL (Use when n < 40)	0.199

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data do not follow a Discernable Distribution (0.05)

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	0.0471
SD	0.0921
SE of Mean	0.0293
95% KM (t) UCL	0.1
95% KM (z) UCL	0.0953
95% KM (jackknife) UCL	0.0999
95% KM (bootstrap t) UCL	1.781
95% KM (BCA) UCL	0.0908
95% KM (Percentile Bootstrap) UCL	0.1
95% KM (Chebyshev) UCL	0.175
97.5% KM (Chebyshev) UCL	0.23
99% KM (Chebyshev) UCL	0.338

Potential UCLs to Use

97.5% KM (Chebyshev) UCL	0.23

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SurfConc_DL (parcel a_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	12	Number of Distinct Observations	12

Raw Statistics		Log-transformed Statistics	
Minimum	1.31E-07	Minimum of Log Data	-15.85
Maximum	0.00202	Maximum of Log Data	-6.205
Mean	0.0001896	Mean of log Data	-12.14
Geometric Mean	5.329E-06	SD of log Data	2.603
Median	3.905E-06		
SD	0.0005798		
Std. Error of Mean	0.0001674		
Coefficient of Variation	3.059		
Skewness	3.397		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.378	Shapiro Wilk Test Statistic	0.891
Shapiro Wilk Critical Value	0.859	Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		**Data appear Lognormal at 5% Significance Level**	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.0004901	95% H-UCL	0.022
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.000315
95% Adjusted-CLT UCL (Chen-1995)	0.0006402	97.5% Chebyshev (MVUE) UCL	0.00042
95% Modified-t UCL (Johnson-1978)	0.0005175	99% Chebyshev (MVUE) UCL	0.0006262

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.209	**Data appear Lognormal at 5% Significance Level**
Theta Star	0.0009049	
MLE of Mean	0.0001896	
MLE of Standard Deviation	0.0004142	
nu star	5.027	
Approximate Chi Square Value (.05)	1.165	**Nonparametric Statistics**
Adjusted Level of Significance	0.029	95% CLT UCL 0.0004649
Adjusted Chi Square Value	0.909	95% Jackknife UCL 0.0004901
		95% Standard Bootstrap UCL 0.0004552
Anderson-Darling Test Statistic	1.868	95% Bootstrap-t UCL 0.042
Anderson-Darling 5% Critical Value	0.863	95% Hall's Bootstrap UCL 0.0134
Kolmogorov-Smirnov Test Statistic	0.414	95% Percentile Bootstrap UCL 0.0005084
Kolmogorov-Smirnov 5% Critical Value	0.271	95% BCA Bootstrap UCL 0.000711
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 0.0009191
		97.5% Chebyshev(Mean, Sd) UCL 0.00123
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 0.00185
95% Approximate Gamma UCL (Use when n >= 40)	0.0008181	
95% Adjusted Gamma UCL (Use when n < 40)	0.00105	

Potential UCL to Use	Use 99% Chebyshev (Mean, Sd) UCL 0.00185

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

SurfConc_DL (parcel b_1-methylnaphthalene)

General Statistics

Number of Valid Data	4	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	2
		Percent Non-Detects	50.00%

Warning: This data set only has 4 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable SurfConc_DL (parcel b_1-methylnaphthalene) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (parcel b_2-methylnaphthalene)

General Statistics

Number of Valid Data	10	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	6
		Percent Non-Detects	60.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.024	Minimum Detected	-3.73
Maximum Detected	2.5	Maximum Detected	0.916
Mean of Detected	1.166	Mean of Detected	-0.9
SD of Detected	1.222	SD of Detected	2.157
Minimum Non-Detect	0.0651	Minimum Non-Detect	-2.732
Maximum Non-Detect	0.33	Maximum Non-Detect	-1.109

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	2
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	80.00%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.875
5% Shapiro Wilk Critical Value	0.748

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	0.5
SD	0.91
95% DL/2 (t) UCL	1.027
Maximum Likelihood Estimate(MLE) Method	N/A

MLE method failed to converge properly

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.897
5% Shapiro Wilk Critical Value	0.748

Data appear Lognormal at 5% Significance Level

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	-2.229
SD	1.758
95% H-Stat (DL/2) UCL	8.472
Log ROS Method	
Mean in Log Scale	-2.592
SD in Log Scale	1.92
Mean in Original Scale	0.481
SD in Original Scale	0.919
95% t UCL	1.014
95% Percentile Bootstrap UCL	0.954
95% BCA Bootstrap UCL	1.163
95% H-UCL	13.23

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.314
Theta Star	3.716
nu star	2.51
A-D Test Statistic	0.351
5% A-D Critical Value	0.677
K-S Test Statistic	0.677
5% K-S Critical Value	0.408

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	2.5
Mean	0.466
Median	0.000001
SD	0.928
k star	0.139
Theta star	3.367
Nu star	2.77
AppChi2	0.308
95% Gamma Approximate UCL (Use when n >= 40)	4.198
95% Adjusted Gamma UCL (Use when n < 40)	N/A

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Normal at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	0.484
SD	0.871
SE of Mean	0.318
95% KM (t) UCL	1.067
95% KM (z) UCL	1.007
95% KM (jackknife) UCL	0.975
95% KM (bootstrap t) UCL	0.883
95% KM (BCA) UCL	2.2
95% KM (Percentile Bootstrap) UCL	2.02
95% KM (Chebyshev) UCL	1.871
97.5% KM (Chebyshev) UCL	2.471
99% KM (Chebyshev) UCL	3.65

Potential UCLs to Use

95% KM (t) UCL	1.067
95% KM (Percentile Bootstrap) UCL	2.02

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SurfConc_DL (parcel b_bap equivalents)

General Statistics

Number of Valid Data	10	Number of Detected Data	6
Number of Distinct Detected Data	6	Number of Non-Detect Data	4
		Percent Non-Detects	40.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0503	Minimum Detected	-2.989
Maximum Detected	1.616	Maximum Detected	0.48
Mean of Detected	0.409	Mean of Detected	-1.725
SD of Detected	0.611	SD of Detected	1.368
Minimum Non-Detect	0.107	Minimum Non-Detect	-2.235
Maximum Non-Detect	3.3	Maximum Non-Detect	1.194

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	10
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 6 Detected Values in this data

Note: It should be noted that even though bootstrap may be performed on this data set

the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.683	Shapiro Wilk Test Statistic	0.889
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788
Data not Normal at 5% Significance Level		**Data appear Lognormal at 5% Significance Level**	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.438	Mean	-1.749
SD	0.642	SD	1.381
95% DL/2 (t) UCL	0.81	95% H-Stat (DL/2) UCL	2.757
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.04
		SD in Log Scale	1.112
		Mean in Original Scale	0.279
		SD in Original Scale	0.486
		95% t UCL	0.561
		95% Percentile Bootstrap UCL	0.551
		95% BCA Bootstrap UCL	0.726
		95% H-UCL	0.83

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.473
Theta Star	0.865
nu star	5.676
A-D Test Statistic	0.532
5% A-D Critical Value	0.723
K-S Test Statistic	0.723
5% K-S Critical Value	0.344

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	1.616
Mean	0.265
Median	0.0659
SD	0.494
k star	0.233
Theta star	1.135
Nu star	4.667
AppChi2	1.002
95% Gamma Approximate UCL (Use when n >= 40)	1.234
95% Adjusted Gamma UCL (Use when n < 40)	1.664

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Gamma Distributed at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	0.296
SD	0.483
SE of Mean	0.177
95% KM (t) UCL	0.619
95% KM (z) UCL	0.586
95% KM (jackknife) UCL	0.611
95% KM (bootstrap t) UCL	2.175
95% KM (BCA) UCL	0.611
95% KM (Percentile Bootstrap) UCL	0.619
95% KM (Chebyshev) UCL	1.065
97.5% KM (Chebyshev) UCL	1.399
99% KM (Chebyshev) UCL	2.053

Potential UCLs to Use

95% KM (BCA) UCL	0.611

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SurfConc_DL (parcel b_c11 to c22 aromatics)

General Statistics

Number of Valid Data	12	Number of Detected Data	11
Number of Distinct Detected Data	11	Number of Non-Detect Data	1
		Percent Non-Detects	8.33%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	10	Minimum Detected	2.303
Maximum Detected	6417	Maximum Detected	8.767
Mean of Detected	905.2	Mean of Detected	5.029
SD of Detected	1914	SD of Detected	1.993
Minimum Non-Detect	10	Minimum Non-Detect	2.303
Maximum Non-Detect	10	Maximum Non-Detect	2.303

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.539	Shapiro Wilk Test Statistic	0.949

5% Shapiro Wilk Critical Value	0.85

Data not Normal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	830.2
SD	1843
95% DL/2 (t) UCL	1786
Maximum Likelihood Estimate(MLE) Method	
Mean	725.7
SD	1868
95% MLE (t) UCL	1694
95% MLE (Tiku) UCL	1617

5% Shapiro Wilk Critical Value	0.85

Data appear Lognormal at 5% Significance Level

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	4.744
SD	2.142
95% H-Stat (DL/2) UCL	34284
Log ROS Method	
Mean in Log Scale	4.621
SD in Log Scale	2.369
Mean in Original Scale	829.8
SD in Original Scale	1843
95% t UCL	1785
95% Percentile Bootstrap UCL	1828
95% BCA Bootstrap UCL	2348
95% H UCL	104088

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.333
Theta Star	2722
nu star	7.317
A-D Test Statistic	0.814
5% A-D Critical Value	0.806
K-S Test Statistic	0.806
5% K-S Critical Value	0.273

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	6417
Mean	829.8
Median	94.5
SD	1843
k star	0.222
Theta star	3738
Nu star	5.328
AppChi2	1.307
95% Gamma Approximate UCL (Use when n >= 40)	3383
95% Adjusted Gamma UCL (Use when n < 40)	4291

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Lognormal at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	830.6
SD	1764
SE of Mean	534.2
95% KM (t) UCL	1790
95% KM (z) UCL	1709
95% KM (jackknife) UCL	1785
95% KM (bootstrap t) UCL	4940
95% KM (BCA) UCL	1942
95% KM (Percentile Bootstrap) UCL	1809
95% KM (Chebyshev) UCL	3159
97.5% KM (Chebyshev) UCL	4167
99% KM (Chebyshev) UCL	6146

Potential UCLs to Use

99% KM (Chebyshev) UCL	6146

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SurfConc_DL (parcel b_c5 to c8 aliphatics)

General Statistics

Number of Valid Data	12	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	10
		Percent Non-Detects	83.33%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	4.6	Minimum Detected	1.526
Maximum Detected	16	Maximum Detected	2.773
Mean of Detected	10.3	Mean of Detected	2.149
SD of Detected	8.061	SD of Detected	0.881
Minimum Non-Detect	0.214	Minimum Non-Detect	-1.542
Maximum Non-Detect	4	Maximum Non-Detect	1.386

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	10
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	2
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	83.33%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		**Data not Lognormal at 5% Significance Level**	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	2.104	Mean	-0.807
SD	4.57	SD	1.717
95% DL/2 (t) UCL	4.473	95% H-Stat (DL/2) UCL	18.52
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		Mean in Original Scale	N/A
		SD in Original Scale	N/A

95% t UCL	N/A
95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A
95% H-UCL	N/A

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	N/A
Theta Star	N/A
nu star	N/A
A-D Test Statistic	N/A
5% A-D Critical Value	N/A
K-S Test Statistic	N/A
5% K-S Critical Value	N/A

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data

Minimum	N/A
Maximum	N/A
Mean	N/A
Median	N/A
SD	N/A
k star	N/A
Theta star	N/A
Nu star	N/A
AppChi2	N/A
95% Gamma Approximate UCL (Use when n >= 40)	N/A
95% Adjusted Gamma UCL (Use when n < 40)	N/A

Data Distribution Test with Detected Values Only

Data do not follow a Discernable Distribution (0.05)

Nonparametric Statistics

Kaplan-Meier (KM) Method

Mean	5.55
SD	3.151
SE of Mean	1.286
95% KM (t) UCL	7.86
95% KM (z) UCL	7.666
95% KM (jackknife) UCL	13.35
95% KM (bootstrap t) UCL	N/A
95% KM (BCA) UCL	16
95% KM (Percentile Bootstrap) UCL	N/A
95% KM (Chebyshev) UCL	11.16
97.5% KM (Chebyshev) UCL	13.58
99% KM (Chebyshev) UCL	18.35

Potential UCLs to Use

95% KM (t) UCL	7.86
95% KM (% Bootstrap) UCL	N/A

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SurfConc_DL (parcel b_c9 to c10 aromatics)

General Statistics

Number of Valid Data	12	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	10
		Percent Non-Detects	83.33%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	67	Minimum Detected	4.205
Maximum Detected	372	Maximum Detected	5.919
Mean of Detected	219.5	Mean of Detected	5.062
SD of Detected	215.7	SD of Detected	1.212
Minimum Non-Detect	0.0484	Minimum Non-Detect	-3.028
Maximum Non-Detect	2	Maximum Non-Detect	0.693

Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	10
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	83.33%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A

Data not Normal at 5% Significance Level

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A

Data not Lognormal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	36.71
SD	107.3
95% DL/2 (t) UCL	92.35
Maximum Likelihood Estimate(MLE) Method	N/A

MLE method failed to converge properly

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	-1.694
SD	3.382
95% H-Stat (DL/2) UCL	207146
Log ROS Method	
Mean in Log Scale	N/A
SD in Log Scale	N/A
Mean in Original Scale	N/A
SD in Original Scale	N/A
95% t UCL	N/A
95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A
95% H-UCL	N/A

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	N/A
Theta Star	N/A
nu star	N/A
A-D Test Statistic	N/A
5% A-D Critical Value	N/A
K-S Test Statistic	N/A
5% K-S Critical Value	N/A

Data Distribution Test with Detected Values Only

Data do not follow a Discernable Distribution (0.05)

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	92.42
SD	84.3

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	N/A
Maximum	N/A
Mean	N/A
Median	N/A
SD	N/A
k star	N/A
Theta star	N/A
Nu star	N/A
AppChi2	N/A
95% Gamma Approximate UCL (Use when n >= 40)	N/A
95% Adjusted Gamma UCL (Use when n < 40)	N/A

SE of Mean	34.41
95% KM (t) UCL	154.2
95% KM (z) UCL	149
95% KM (jackknife) UCL	301.1
95% KM (bootstrap t) UCL	N/A
95% KM (BCA) UCL	372
95% KM (Percentile Bootstrap) UCL	372
95% KM (Chebyshev) UCL	242.4
97.5% KM (Chebyshev) UCL	307.3
99% KM (Chebyshev) UCL	434.8

Potential UCLs to Use

95% KM (BCA) UCL	372

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SurfConc_DL (parcel b_c9 to c12 aliphatics)

General Statistics

Number of Valid Data	12	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	10
		Percent Non-Detects	83.33%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	176	Minimum Detected	5.17
Maximum Detected	909	Maximum Detected	6.812
Mean of Detected	542.5	Mean of Detected	5.991
SD of Detected	518.3	SD of Detected	1.161
Minimum Non-Detect	0.267	Minimum Non-Detect	-1.321
Maximum Non-Detect	2	Maximum Non-Detect	0.693

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	10
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	2
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	83.33%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.

However, results obtained using 4 to 9 distinct values may not be reliable.

It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A

Data not Normal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	90.75
SD	262.6
95% DL/2 (t) UCL	226.9
Maximum Likelihood Estimate(MLE) Method	N/A

MLE method failed to converge properly

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A

Data not Lognormal at 5% Significance Level

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	-0.107
SD	2.986
95% H-Stat (DL/2) UCL	48757
Log ROS Method	
Mean in Log Scale	N/A
SD in Log Scale	N/A
Mean in Original Scale	N/A
SD in Original Scale	N/A
95% t UCL	N/A
95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A
95% H-UCL	N/A

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	N/A
Theta Star	N/A
nu star	N/A
A-D Test Statistic	N/A
5% A-D Critical Value	N/A
K-S Test Statistic	N/A
5% K-S Critical Value	N/A

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	N/A
Maximum	N/A
Mean	N/A
Median	N/A
SD	N/A
k star	N/A
Theta star	N/A
Nu star	N/A
AppChi2	N/A
95% Gamma Approximate UCL (Use when n >= 40)	N/A

Data Distribution Test with Detected Values Only

Data do not follow a Discernable Distribution (0.05)

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	237.1
SD	202.6
SE of Mean	82.71
95% KM (t) UCL	385.6
95% KM (z) UCL	373.1
95% KM (jackknife) UCL	738.6
95% KM (bootstrap t) UCL	237.1
95% KM (BCA) UCL	N/A
95% KM (Percentile Bootstrap) UCL	N/A
95% KM (Chebyshev) UCL	597.6
97.5% KM (Chebyshev) UCL	753.6
99% KM (Chebyshev) UCL	1060

Potential UCLs to Use

95% KM (BCA) UCL	N/A

95% Adjusted Gamma UCL (Use when n < 40)	N/A

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SurfConc_DL (parcel b_c9 to c18 aliphatics)

General Statistics

Number of Valid Data	12	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	8
		Percent Non-Detects	66.67%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	12	Minimum Detected	2.485
Maximum Detected	6912	Maximum Detected	8.841
Mean of Detected	2018	Mean of Detected	5.614
SD of Detected	3300	SD of Detected	2.844
Minimum Non-Detect	1.53	Minimum Non-Detect	0.425
Maximum Non-Detect	10	Maximum Non-Detect	2.303

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	4
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	66.67%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		**Lognormal Distribution Test with Detected Values Only**	
Shapiro Wilk Test Statistic	0.739	Shapiro Wilk Test Statistic	0.968
5% Shapiro Wilk Critical Value	0.748	5% Shapiro Wilk Critical Value	0.748
Data not Normal at 5% Significance Level		**Data appear Lognormal at 5% Significance Level**	

Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	673.8	Mean	2.037
SD	1989	SD	3.104
95% DL/2 (t) UCL	1705	95% H-Stat (DL/2) UCL	990043
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.579
		SD in Log Scale	5.604
		Mean in Original Scale	672.6

SD in Original Scale	1989
95% t UCL	1704
95% Percentile Bootstrap UCL	1745
95% BCA Bootstrap UCL	2485
95% H-UCL	6.233E+15

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.251
Theta Star	8027
nu star	2.011
A-D Test Statistic	0.275
5% A-D Critical Value	0.7
K-S Test Statistic	0.7
5% K-S Critical Value	0.417

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	6912
Mean	672.6
Median	0.000001
SD	1989
k star	0.102
Theta star	6595
Nu star	2.448
AppChi2	0.23
95% Gamma Approximate UCL (Use when n >= 40)	7172
95% Adjusted Gamma UCL (Use when n < 40)	N/A

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Gamma Distributed at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	680.6
SD	1902
SE of Mean	633.9
95% KM (t) UCL	1819
95% KM (z) UCL	1723
95% KM (jackknife) UCL	1685
95% KM (bootstrap t) UCL	4539
95% KM (BCA) UCL	6912
95% KM (Percentile Bootstrap) UCL	2055
95% KM (Chebyshev) UCL	3444
97.5% KM (Chebyshev) UCL	4639
99% KM (Chebyshev) UCL	6988

Potential UCLs to Use

95% KM (t) UCL	1819

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SurfConc_DL (parcel b_ethylbenzene)

General Statistics

Number of Valid Data	12	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	11
		Percent Non-Detects	91.67%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable SurfConc_DL (parcel b_ethylbenzene) was not processed!

SurfConc_DL (parcel b_naphthalene)

General Statistics

Number of Valid Data	12	Number of Detected Data	1
Number of Distinct Detected Data	1	Number of Non-Detect Data	11
		Percent Non-Detects	91.67%

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable SurfConc_DL (parcel b_naphthalene) was not processed!

SurfConc_DL (parcel b_pentachlorophenol)

General Statistics

Number of Valid Data	120	Number of Detected Data	90
Number of Distinct Detected Data	85	Number of Non-Detect Data	30
		Percent Non-Detects	25.00%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	0.00254	Minimum Detected	-5.977
Maximum Detected	53451	Maximum Detected	10.89
Mean of Detected	765.2	Mean of Detected	-1.083
SD of Detected	5661	SD of Detected	3.565
Minimum Non-Detect	0.0005779	Minimum Non-Detect	-7.456
Maximum Non-Detect	2.7	Maximum Non-Detect	0.993

Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	101
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	19
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	84.17%

UCL Statistics

Normal Distribution Test with Detected Values Only		**Lognormal Distribution Test with Detected Values Only**	
Lilliefors Test Statistic	0.461	Lilliefors Test Statistic	0.196
5% Lilliefors Critical Value	0.0934	5% Lilliefors Critical Value	0.0934
Data not Normal at 5% Significance Level		**Data not Lognormal at 5% Significance Level**	

Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	574	Mean	-1.897
SD	4907	SD	3.912
95% DL/2 (t) UCL	1317	95% H-Stat (DL/2) UCL	2599
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-2.409
		SD in Log Scale	4.119
		Mean in Original Scale	573.9

SD in Original Scale	4907
95% t UCL	1316
95% Percentile Bootstrap UCL	1458
95% BCA Bootstrap UCL	2318
95% H-UCL	4449

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.108
Theta Star	7053
nu star	19.53
A-D Test Statistic	17.81
5% A-D Critical Value	1.007
K-S Test Statistic	1.007
5% K-S Critical Value	0.108

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	53451
Mean	573.9
Median	0.0574
SD	4907
k star	0.0823
Theta star	6974
Nu star	19.75
AppChi2	10.67
95% Gamma Approximate UCL (Use when n >= 40)	1063
95% Adjusted Gamma UCL (Use when n < 40)	1071

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data do not follow a Discernable Distribution (0.05)

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	573.9
SD	4886
SE of Mean	448.6
95% KM (t) UCL	1317
95% KM (z) UCL	1312
95% KM (jackknife) UCL	1316
95% KM (bootstrap t) UCL	6741
95% KM (BCA) UCL	1488
95% KM (Percentile Bootstrap) UCL	1435
95% KM (Chebyshev) UCL	2529
97.5% KM (Chebyshev) UCL	3375
99% KM (Chebyshev) UCL	5037

Potential UCLs to Use

97.5% KM (Chebyshev) UCL	3375

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SurfConc_DL (parcel b_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	87	Number of Distinct Observations	87

Raw Statistics

Minimum	1.305E-07
Maximum	0.0482
Mean	0.00113
Geometric Mean	4.344E-05
Median	0.0000586
SD	0.00567
Std. Error of Mean	0.0006077

Log-transformed Statistics

Minimum of Log Data	-15.85
Maximum of Log Data	-3.033
Mean of log Data	-10.04
SD of log Data	2.659

Coefficient of Variation	4.995
Skewness	7.262

Relevant UCL Statistics

Normal Distribution Test

Lilliefors Test Statistic	0.452
Lilliefors Critical Value	0.095

Data not Normal at 5% Significance Level

Lognormal Distribution Test

Lilliefors Test Statistic	0.0923
Lilliefors Critical Value	0.095

Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL	0.00215

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL (Chen-1995)	0.00264
95% Modified-t UCL (Johnson-1978)	0.00222

Assuming Lognormal Distribution

95% H-UCL	0.00502
95% Chebyshev (MVUE) UCL	0.00399
97.5% Chebyshev (MVUE) UCL	0.00517
99% Chebyshev (MVUE) UCL	0.0075

Gamma Distribution Test

k star (bias corrected)	0.222
Theta Star	0.00511
MLE of Mean	0.00113
MLE of Standard Deviation	0.00241
nu star	38.61
Approximate Chi Square Value (.05)	25.38
Adjusted Level of Significance	0.0472
Adjusted Chi Square Value	25.2
Anderson-Darling Test Statistic	7.526
Anderson-Darling 5% Critical Value	0.901
Kolmogorov-Smirnov Test Statistic	0.246
Kolmogorov-Smirnov 5% Critical Value	0.106

Data not Gamma Distributed at 5% Significance Level

Data Distribution

Data appear Lognormal at 5% Significance Level

Nonparametric Statistics

95% CLT UCL	0.00213
95% Jackknife UCL	0.00215
95% Standard Bootstrap UCL	0.00214
95% Bootstrap-t UCL	0.00464
95% Hall's Bootstrap UCL	0.00543
95% Percentile Bootstrap UCL	0.00225
95% BCA Bootstrap UCL	0.00272
95% Chebyshev(Mean, Sd) UCL	0.00378
97.5% Chebyshev(Mean, Sd) UCL	0.00493
99% Chebyshev(Mean, Sd) UCL	0.00718

Assuming Gamma Distribution

95% Approximate Gamma UCL (Use when n >= 40)	0.00173
95% Adjusted Gamma UCL (Use when n < 40)	0.00174

Potential UCL to Use

Use 95% Chebyshev (Mean, Sd) UCL	0.00378

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

SurfConc_DL (parmenter_pentachlorophenol)

General Statistics

Number of Valid Data	11	Number of Detected Data	5
Number of Distinct Detected Data	5	Number of Non-Detect Data	6
		Percent Non-Detects	54.55%

Raw Statistics

Log-transformed Statistics

Minimum Detected	0.00239	Minimum Detected	-6.038
Maximum Detected	0.00647	Maximum Detected	-5.04
Mean of Detected	0.00418	Mean of Detected	-5.551
SD of Detected	0.0018	SD of Detected	0.434
Minimum Non-Detect	0.0003757	Minimum Non-Detect	-7.887
Maximum Non-Detect	0.0024	Maximum Non-Detect	-6.032

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	7
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	4
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	63.64%

Warning: There are only 5 Detected Values in this data

Note: It should be noted that even though bootstrap may be performed on this data set

the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.895
5% Shapiro Wilk Critical Value	0.762

Data appear Normal at 5% Significance Level

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.92
5% Shapiro Wilk Critical Value	0.762

Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	0.00218
SD	0.00226
95% DL/2 (t) UCL	0.00341
Maximum Likelihood Estimate(MLE) Method	
Mean	0.00139
SD	0.00308
95% MLE (t) UCL	0.00307
95% MLE (Tiku) UCL	0.00392

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	-6.871
SD	1.445
95% H-Stat (DL/2) UCL	0.0176
Log ROS Method	
Mean in Log Scale	-6.233
SD in Log Scale	0.709
Mean in Original Scale	0.00251
SD in Original Scale	0.00197
95% t UCL	0.00358
95% Percentile Bootstrap UCL	0.00342
95% BCA Bootstrap UCL	0.00358
95% H UCL	0.0044

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	2.864
Theta Star	0.00146
nu star	28.64
A-D Test Statistic	0.346
5% A-D Critical Value	0.68
K-S Test Statistic	0.68
5% K-S Critical Value	0.358

Data appear Gamma Distributed at 5% Significance Level

Data Distribution Test with Detected Values Only

Data appear Normal at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	0.0032
SD	0.00141
SE of Mean	0.0004742

95% KM (t) UCL	0.00406
95% KM (z) UCL	0.00398
95% KM (jackknife) UCL	0.00395
95% KM (bootstrap t) UCL	0.0049
95% KM (BCA) UCL	0.00568
95% KM (Percentile Bootstrap) UCL	0.0044
95% KM (Chebyshev) UCL	0.00527
97.5% KM (Chebyshev) UCL	0.00616
99% KM (Chebyshev) UCL	0.00792

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data

Minimum	0.000001
Maximum	0.00647
Mean	0.0019
Median	0.000001
SD	0.00246
k star	0.202
Theta star	0.00941
Nu star	4.449
AppChi2	0.907
95% Gamma Approximate UCL (Use when n >= 40)	0.00933
95% Adjusted Gamma UCL (Use when n < 40)	0.0125

Potential UCLs to Use

95% KM (t) UCL	0.00406
95% KM (Percentile Bootstrap) UCL	0.0044

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SurfConc_DL (parmenter_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	16	Number of Distinct Observations	16

Raw Statistics

Minimum	5.06E-07
Maximum	0.0000509
Mean	0.0000106
Geometric Mean	5.282E-06
Median	5.285E-06
SD	1.346E-05
Std. Error of Mean	3.366E-06
Coefficient of Variation	N/A
Skewness	2.127

Log-transformed Statistics

Minimum of Log Data	-14.5
Maximum of Log Data	-9.886
Mean of log Data	-12.15
SD of log Data	1.304

Relevant UCL Statistics

Normal Distribution Test

Shapiro Wilk Test Statistic	0.705
Shapiro Wilk Critical Value	0.887

Data not Normal at 5% Significance Level

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.934
Shapiro Wilk Critical Value	0.887

Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL	0.0000165

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL (Chen-1995)	1.805E-05
95% Modified-t UCL (Johnson-1978)	1.68E-05

Assuming Lognormal Distribution

95% H-UCL	3.633E-05
95% Chebyshev (MVUE) UCL	2.964E-05
97.5% Chebyshev (MVUE) UCL	3.756E-05
99% Chebyshev (MVUE) UCL	5.311E-05

Gamma Distribution Test

Data Distribution

k star (bias corrected)	0.729
Theta Star	1.454E-05
MLE of Mean	0.0000106
MLE of Standard Deviation	1.242E-05
nu star	23.33
Approximate Chi Square Value (.05)	13.34
Adjusted Level of Significance	0.0335
Adjusted Chi Square Value	12.48
Anderson-Darling Test Statistic	0.661
Anderson-Darling 5% Critical Value	0.77
Kolmogorov-Smirnov Test Statistic	0.223
Kolmogorov-Smirnov 5% Critical Value	0.222

Data follow Appr. Gamma Distribution at 5% Significance Level

Data Follow Appr. Gamma Distribution at 5% Significance Level

Assuming Gamma Distribution

95% Approximate Gamma UCL (Use when n >= 40)	1.854E-05
95% Adjusted Gamma UCL (Use when n < 40)	1.981E-05

Nonparametric Statistics

95% CLT UCL	1.614E-05
95% Jackknife UCL	0.0000165
95% Standard Bootstrap UCL	1.584E-05
95% Bootstrap-t UCL	2.084E-05
95% Hall's Bootstrap UCL	1.884E-05
95% Percentile Bootstrap UCL	1.622E-05
95% BCA Bootstrap UCL	1.782E-05
95% Chebyshev(Mean, Sd) UCL	2.527E-05
97.5% Chebyshev(Mean, Sd) UCL	3.162E-05
99% Chebyshev(Mean, Sd) UCL	4.409E-05

Potential UCL to Use

Use 95% Approximate Gamma UCL 1.854E-05

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

SurfConc_DL (peirano parcel b_pentachlorophenol)

General Statistics

Number of Valid Data	6	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	2
		Percent Non-Detects	33.33%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00256	Minimum Detected	-5.966
Maximum Detected	0.06	Maximum Detected	-2.813
Mean of Detected	0.0236	Mean of Detected	-4.547
SD of Detected	0.0273	SD of Detected	1.612
Minimum Non-Detect	0.0003432	Minimum Non-Detect	-7.977
Maximum Non-Detect	0.0003757	Maximum Non-Detect	-7.887

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	2
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	4
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	33.33%

Warning: There are only 4 Distinct Detected Values in this data

Note: It should be noted that even though bootstrap may be performed on this data set the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.864
5% Shapiro Wilk Critical Value	0.748

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	0.0158
SD	0.0243
95% DL/2 (t) UCL	0.0358
Maximum Likelihood Estimate(MLE) Method	
Mean	0.00883
SD	0.03
95% MLE (t) UCL	0.0335
95% MLE (Tiku) UCL	0.0353

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.84
5% Shapiro Wilk Critical Value	0.748

Data appear Lognormal at 5% Significance Level

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	-5.906
SD	2.448
95% H-Stat (DL/2) UCL	1533
Log ROS Method	
Mean in Log Scale	-5.975
SD in Log Scale	2.541
Mean in Original Scale	0.0158
SD in Original Scale	0.0244
95% t UCL	0.0358
95% Percentile Bootstrap UCL	0.0309
95% BCA Bootstrap UCL	0.0353
95% H UCL	3917

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.354
Theta Star	0.0668
nu star	2.828
A-D Test Statistic	0.445
5% A-D Critical Value	0.67
K-S Test Statistic	0.67
5% K-S Critical Value	0.405

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	0.06
Mean	0.0158
Median	0.00269
SD	0.0244
k star	0.216
Theta star	0.0729
Nu star	2.591
AppChi2	0.262
95% Gamma Approximate UCL (Use when n >= 40)	0.156
95% Adjusted Gamma UCL (Use when n < 40)	N/A

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Normal at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	0.0166
SD	0.0217
SE of Mean	0.0102
95% KM (t) UCL	0.0372
95% KM (z) UCL	0.0334
95% KM (jackknife) UCL	0.0361
95% KM (bootstrap t) UCL	0.0383
95% KM (BCA) UCL	0.0394
95% KM (Percentile Bootstrap) UCL	0.0394
95% KM (Chebyshev) UCL	0.0612
97.5% KM (Chebyshev) UCL	0.0804
99% KM (Chebyshev) UCL	0.118

Potential UCLs to Use

95% KM (t) UCL	0.0372
95% KM (Percentile Bootstrap) UCL	0.0394

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SurfConc_DL (peirano parcel b_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	10	Number of Distinct Observations	10

Raw Statistics		Log-transformed Statistics	
Minimum	0.0000022	Minimum of Log Data	-13.03
Maximum	0.00514	Maximum of Log Data	-5.271
Mean	0.00105	Mean of log Data	-10.41
Geometric Mean	3.015E-05	SD of log Data	3.268
Median	5.745E-06		
SD	0.00182		
Std. Error of Mean	0.0005744		
Coefficient of Variation	1.727		
Skewness	1.597		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.657	Shapiro Wilk Test Statistic	0.702
Shapiro Wilk Critical Value	0.842	Shapiro Wilk Critical Value	0.842
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	0.00211	95% H-UCL	68.37
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.00574
95% Adjusted-CLT UCL (Chen-1995)	0.00231	97.5% Chebyshev (MVUE) UCL	0.00771
95% Modified-t UCL (Johnson-1978)	0.00215	99% Chebyshev (MVUE) UCL	0.0116

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.211	Data do not follow a Discernable Distribution (0.05)
Theta Star	0.00499	
MLE of Mean	0.00105	
MLE of Standard Deviation	0.00229	
nu star	4.22	
Approximate Chi Square Value (.05)	0.81	**Nonparametric Statistics**
Adjusted Level of Significance	0.0267	95% CLT UCL 0.002
Adjusted Chi Square Value	0.589	95% Jackknife UCL 0.00211
		95% Standard Bootstrap UCL 0.00195
Anderson-Darling Test Statistic	1.626	95% Bootstrap-t UCL 0.00286
Anderson-Darling 5% Critical Value	0.851	95% Hall's Bootstrap UCL 0.00192
Kolmogorov-Smirnov Test Statistic	0.423	95% Percentile Bootstrap UCL 0.00205
Kolmogorov-Smirnov 5% Critical Value	0.294	95% BCA Bootstrap UCL 0.00233
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 0.00356
		97.5% Chebyshev(Mean, Sd) UCL 0.00464
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 0.00677

95% Approximate Gamma UCL (Use when n >= 40)	0.00548
95% Adjusted Gamma UCL (Use when n < 40)	0.00754

Potential UCL to Use Use 95% Hall's Bootstrap UCL 0.00192

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

SurfConc_DL (peirano tract a_pentachlorophenol)

General Statistics

Number of Valid Data	3	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	3
		Percent Non-Detects	100.00%

Warning: This data set only has 3 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable SurfConc_DL (peirano tract a_pentachlorophenol) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (peirano tract a_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	7	Number of Distinct Observations	6

Raw Statistics		**Log-transformed Statistics**	
Minimum	1.55E-06	Minimum of Log Data	-13.38
Maximum	0.00178	Maximum of Log Data	-6.329
Mean	0.000279	Mean of log Data	-10.62
Geometric Mean	2.448E-05	SD of log Data	2.424
Median	0.0000432		
SD	0.0006637		
Std. Error of Mean	0.0002509		
Coefficient of Variation	2.379		
Skewness	2.637		

Warning: A sample size of 'n' = 7 may not adequate enough to compute meaningful and reliable test statistics and estimates!

It is suggested to collect at least 8 to 10 observations using these statistical methods!
If possible compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

Warning: There are only 7 Values in this data

Note: It should be noted that even though bootstrap methods may be performed on this data set, the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics

Normal Distribution Test

Shapiro Wilk Test Statistic	0.488
Shapiro Wilk Critical Value	0.803

Data not Normal at 5% Significance Level

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.904
Shapiro Wilk Critical Value	0.803

Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL	0.0007665

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL (Chen-1995)	0.0009588
95% Modified-t UCL (Johnson-1978)	0.0008081

Assuming Lognormal Distribution

95% H-UCL	1.396
95% Chebyshev (MVUE) UCL	0.0008225
97.5% Chebyshev (MVUE) UCL	0.0011
99% Chebyshev (MVUE) UCL	0.00164

Gamma Distribution Test

k star (bias corrected)	0.258
Theta Star	0.00108
MLE of Mean	0.000279
MLE of Standard Deviation	0.0005487
nu star	3.619
Approximate Chi Square Value (.05)	0.577
Adjusted Level of Significance	0.0158
Adjusted Chi Square Value	0.309
Anderson-Darling Test Statistic	0.801
Anderson-Darling 5% Critical Value	0.789
Kolmogorov-Smirnov Test Statistic	0.355
Kolmogorov-Smirnov 5% Critical Value	0.336

Data not Gamma Distributed at 5% Significance Level

Data Distribution

Data appear Lognormal at 5% Significance Level

Nonparametric Statistics

95% CLT UCL	0.0006916
95% Jackknife UCL	0.0007665
95% Standard Bootstrap UCL	0.000652
95% Bootstrap-t UCL	0.00794
95% Hall's Bootstrap UCL	0.0056
95% Percentile Bootstrap UCL	0.0007745
95% BCA Bootstrap UCL	0.0007892
95% Chebyshev(Mean, Sd) UCL	0.00137
97.5% Chebyshev(Mean, Sd) UCL	0.00185
99% Chebyshev(Mean, Sd) UCL	0.00278

Assuming Gamma Distribution

95% Approximate Gamma UCL (Use when n >= 40)	0.00175
95% Adjusted Gamma UCL (Use when n < 40)	0.00327

Potential UCL to Use

Use 99% Chebyshev (Mean, Sd) UCL	0.00278

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

SurfConc_DL (peirano tract b_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	2	Number of Distinct Observations	2

Warning: This data set only has 2 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (peirano tract b_teq (nd=1/2dl)) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (renfroe_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	2	Number of Distinct Observations	2

Warning: This data set only has 2 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (renfroe_teq (nd=1/2dl)) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (right-of-way_pentachlorophenol)

General Statistics

Number of Valid Observations	1	Number of Distinct Observations	1

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (right-of-way_pentachlorophenol) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (robak_pentachlorophenol)

General Statistics

Number of Valid Observations	1	Number of Distinct Observations	1

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (robak_pentachlorophenol) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (robak_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	2	Number of Distinct Observations	2

Warning: This data set only has 2 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (robak_teq (nd=1/2dl)) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (rodeo_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	1	Number of Distinct Observations	1

Warning: This data set only has 1 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (rodeo_teq (nd=1/2dl)) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (school_pentachlorophenol)

General Statistics

Number of Valid Data	3	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	3
		Percent Non-Detects	100.00%

Warning: This data set only has 3 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (school_pentachlorophenol) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (school_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	3	Number of Distinct Observations	3

Warning: This data set only has 3 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (school_teq (nd=1/2dl)) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (skroch_pentachlorophenol)

General Statistics

Number of Valid Data	10	Number of Detected Data	9
Number of Distinct Detected Data	9	Number of Non-Detect Data	1
		Percent Non-Detects	10.00%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00261	Minimum Detected	-5.947
Maximum Detected	0.149	Maximum Detected	-1.902
Mean of Detected	0.0275	Mean of Detected	-4.748
SD of Detected	0.05	SD of Detected	1.428
Minimum Non-Detect	0.000297	Minimum Non-Detect	-8.122
Maximum Non-Detect	0.000297	Maximum Non-Detect	-8.122

Warning: There are only 9 Detected Values in this data

Note: It should be noted that even though bootstrap may be performed on this data set

the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.577	Shapiro Wilk Test Statistic	0.747
5% Shapiro Wilk Critical Value	0.829	5% Shapiro Wilk Critical Value	0.829
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0247	Mean	-5.155
SD	0.048	SD	1.862

95% DL/2 (t) UCL	0.0525

Maximum Likelihood Estimate(MLE) Method	
Mean	0.0215
SD	0.0489
95% MLE (t) UCL	0.0499
95% MLE (Tiku) UCL	0.048

95% H-Stat (DL/2) UCL	0.756

Log ROS Method	
Mean in Log Scale	-5.064
SD in Log Scale	1.677
Mean in Original Scale	0.0248
SD in Original Scale	0.0479
95% t UCL	0.0526
95% Percentile Bootstrap UCL	0.052
95% BCA Bootstrap UCL	0.0622
95% H UCL	0.342

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.437
Theta Star	0.0629
nu star	7.858
A-D Test Statistic	1.486
5% A-D Critical Value	0.767
K-S Test Statistic	0.767
5% K-S Critical Value	0.293

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	0.149
Mean	0.0247
Median	0.00479
SD	0.048
k star	0.308
Theta star	0.0803
Nu star	6.161
AppChi2	1.723
95% Gamma Approximate UCL (Use when n >= 40)	0.0884
95% Adjusted Gamma UCL (Use when n < 40)	0.113

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data do not follow a Discernable Distribution (0.05)

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	0.025
SD	0.0454
SE of Mean	0.0152
95% KM (t) UCL	0.0529
95% KM (z) UCL	0.05
95% KM (jackknife) UCL	0.0527
95% KM (bootstrap t) UCL	0.722
95% KM (BCA) UCL	0.0535
95% KM (Percentile Bootstrap) UCL	0.052
95% KM (Chebyshev) UCL	0.0913
97.5% KM (Chebyshev) UCL	0.12
99% KM (Chebyshev) UCL	0.176

Potential UCLs to Use

97.5% KM (Chebyshev) UCL	0.12

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SurfConc_DL (skroch_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	16	Number of Distinct Observations	15

Raw Statistics

Minimum	0.0000128

Log-transformed Statistics

Minimum of Log Data	-11.27

Maximum	0.0007374	Maximum of Log Data	-7.212
Mean	9.915E-05	Mean of log Data	-10.07
Geometric Mean	4.243E-05	SD of log Data	1.162
Median	0.0000273		
SD	0.0001843		
Std. Error of Mean	4.608E-05		
Coefficient of Variation	N/A		
Skewness	3.182		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.515	Shapiro Wilk Test Statistic	0.86
Shapiro Wilk Critical Value	0.887	Shapiro Wilk Critical Value	0.887
Data not Normal at 5% Significance Level		**Data not Lognormal at 5% Significance Level**	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	0.0001799	95% H-UCL	0.0002026
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	0.000189
95% Adjusted-CLT UCL (Chen-1995)	0.0002141	97.5% Chebyshev (MVUE) UCL	0.000237
95% Modified-t UCL (Johnson-1978)	0.000186	99% Chebyshev (MVUE) UCL	0.0003312

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.619	**Data do not follow a Discernable Distribution (0.05)**
Theta Star	0.0001602	
MLE of Mean	9.915E-05	
MLE of Standard Deviation	0.000126	
nu star	19.81	
Approximate Chi Square Value (.05)	10.71	**Nonparametric Statistics**
Adjusted Level of Significance	0.0335	95% CLT UCL 0.0001749
Adjusted Chi Square Value	9.954	95% Jackknife UCL 0.0001799
		95% Standard Bootstrap UCL 0.0001733
Anderson-Darling Test Statistic	1.639	95% Bootstrap-t UCL 0.0004114
Anderson-Darling 5% Critical Value	0.778	95% Hall's Bootstrap UCL 0.0004471
Kolmogorov-Smirnov Test Statistic	0.283	95% Percentile Bootstrap UCL 0.0001826
Kolmogorov-Smirnov 5% Critical Value	0.224	95% BCA Bootstrap UCL 0.0002247
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 0.0003
		97.5% Chebyshev(Mean, Sd) UCL 0.0003869
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL 0.0005576
95% Approximate Gamma UCL (Use when n >= 40)	0.0001834	
95% Adjusted Gamma UCL (Use when n < 40)	0.0001973	

Potential UCL to Use		
	Use 95% Chebyshev (Mean, Sd) UCL	0.0003

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

SurfConc_DL (smith_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	2	Number of Distinct Observations	2

Warning: This data set only has 2 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SurfConc_DL (smith_teq (nd=1/2dl)) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SurfConc_DL (spigot_pentachlorophenol)

General Statistics

Number of Valid Data	39	Number of Detected Data	20
Number of Distinct Detected Data	20	Number of Non-Detect Data	19
		Percent Non-Detects	48.72%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	0.00282	Minimum Detected	-5.87
Maximum Detected	0.282	Maximum Detected	-1.267
Mean of Detected	0.0585	Mean of Detected	-3.6
SD of Detected	0.0765	SD of Detected	1.315
Minimum Non-Detect	0.0005767	Minimum Non-Detect	-7.458
Maximum Non-Detect	0.0006914	Maximum Non-Detect	-7.277

Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	19
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	20
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	48.72%

UCL Statistics

Normal Distribution Test with Detected Values Only		**Lognormal Distribution Test with Detected Values Only**	
Shapiro Wilk Test Statistic	0.72	Shapiro Wilk Test Statistic	0.974
5% Shapiro Wilk Critical Value	0.905	5% Shapiro Wilk Critical Value	0.905
Data not Normal at 5% Significance Level		**Data appear Lognormal at 5% Significance Level**	
Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0302	Mean	-5.778
SD	0.0616	SD	2.447
95% DL/2 (t) UCL	0.0468	95% H-Stat (DL/2) UCL	0.36
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-5.283
		SD in Log Scale	2.009
		Mean in Original Scale	0.0305
		SD in Original Scale	0.0614
		95% t UCL	0.0471

95% Percentile Bootstrap UCL	0.0471
95% BCA Bootstrap UCL	0.0524
95% H-UCL	0.131

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.697
Theta Star	0.084
nu star	27.89
A-D Test Statistic	0.496
5% A-D Critical Value	0.778
K-S Test Statistic	0.778
5% K-S Critical Value	0.201

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	0.282
Mean	0.03
Median	0.00282
SD	0.0617
k star	0.157
Theta star	0.191
Nu star	12.23
AppChi2	5.38
95% Gamma Approximate UCL (Use when n >= 40)	0.0683
95% Adjusted Gamma UCL (Use when n < 40)	0.0706

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Gamma Distributed at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	0.0314
SD	0.0602
SE of Mean	0.00989
95% KM (t) UCL	0.0481
95% KM (z) UCL	0.0477
95% KM (jackknife) UCL	0.0472
95% KM (bootstrap t) UCL	0.0593
95% KM (BCA) UCL	0.0511
95% KM (Percentile Bootstrap) UCL	0.0484
95% KM (Chebyshev) UCL	0.0745
97.5% KM (Chebyshev) UCL	0.0932
99% KM (Chebyshev) UCL	0.13

Potential UCLs to Use

95% KM (BCA) UCL	0.0511

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SurfConc_DL (spigot_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	36	Number of Distinct Observations	36

Raw Statistics

Minimum	6.24E-08
Maximum	0.0008295
Mean	5.285E-05
Geometric Mean	4.565E-06
Median	5.31E-06
SD	0.0001472
Std. Error of Mean	2.453E-05
Coefficient of Variation	N/A
Skewness	4.625

Log-transformed Statistics

Minimum of Log Data	-16.59
Maximum of Log Data	-7.095
Mean of log Data	-12.3
SD of log Data	2.57

Relevant UCL Statistics

Normal Distribution Test

Shapiro Wilk Test Statistic	0.4
Shapiro Wilk Critical Value	0.935

Data not Normal at 5% Significance Level

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.961
Shapiro Wilk Critical Value	0.935

Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL	9.429E-05

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL (Chen-1995)	0.0001134
95% Modified-t UCL (Johnson-1978)	9.744E-05

Assuming Lognormal Distribution

95% H-UCL	0.0009042
95% Chebyshev (MVUE) UCL	0.0003323
97.5% Chebyshev (MVUE) UCL	0.0004371
99% Chebyshev (MVUE) UCL	0.0006431

Gamma Distribution Test

k star (bias corrected)	0.279
Theta Star	0.0001895
MLE of Mean	5.285E-05
MLE of Standard Deviation	0.0001001
nu star	20.08
Approximate Chi Square Value (.05)	10.91
Adjusted Level of Significance	0.0428
Adjusted Chi Square Value	10.6
Anderson-Darling Test Statistic	1.234
Anderson-Darling 5% Critical Value	0.864
Kolmogorov-Smirnov Test Statistic	0.142
Kolmogorov-Smirnov 5% Critical Value	0.16

Data follow Appr. Gamma Distribution at 5% Significance Level

Data Distribution

Data Follow Appr. Gamma Distribution at 5% Significance Level

Nonparametric Statistics

95% CLT UCL	9.319E-05
95% Jackknife UCL	9.429E-05
95% Standard Bootstrap UCL	9.352E-05
95% Bootstrap-t UCL	0.0001929
95% Hall's Bootstrap UCL	0.0002404
95% Percentile Bootstrap UCL	9.771E-05
95% BCA Bootstrap UCL	0.0001293
95% Chebyshev(Mean, Sd) UCL	0.0001598
97.5% Chebyshev(Mean, Sd) UCL	0.000206
99% Chebyshev(Mean, Sd) UCL	0.0002969

Assuming Gamma Distribution

95% Approximate Gamma UCL (Use when n >= 40)	9.726E-05
95% Adjusted Gamma UCL (Use when n < 40)	0.0001001

Potential UCL to Use

Use 95% Adjusted Gamma UCL	0.0001001

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

SurfConc_DL (stevenson_pentachlorophenol)

General Statistics

Number of Valid Data	6	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	6
		Percent Non-Detects	100.00%

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable SurfConc_DL (stevenson_pentachlorophenol) was not processed!

SurfConc_DL (stevenson_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	6	Number of Distinct Observations	6

Raw Statistics		Log-transformed Statistics	
Minimum	2.43E-07	Minimum of Log Data	-15.23
Maximum	7.56E-06	Maximum of Log Data	-11.79
Mean	1.759E-06	Mean of log Data	-14.09
Geometric Mean	7.594E-07	SD of log Data	1.292
Median	5.07E-07		
SD	2.875E-06		
Std. Error of Mean	1.174E-06		
Coefficient of Variation	N/A		
Skewness	2.33		

Warning: A sample size of 'n' = 6 may not adequate enough to compute meaningful and reliable test statistics and estimates!

It is suggested to collect at least 8 to 10 observations using these statistical methods!
If possible compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

Warning: There are only 6 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.615	Shapiro Wilk Test Statistic	0.865
Shapiro Wilk Critical Value	0.788	Shapiro Wilk Critical Value	0.788
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	4.124E-06	95% H-UCL	3.413E-05
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	4.619E-06
95% Adjusted-CLT UCL (Chen-1995)	4.883E-06	97.5% Chebyshev (MVUE) UCL	5.995E-06
95% Modified-t UCL (Johnson-1978)	4.31E-06	99% Chebyshev (MVUE) UCL	8.699E-06

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.47	Data appear Gamma Distributed at 5% Significance Level
Theta Star	3.744E-06	
MLE of Mean	1.759E-06	

MLE of Standard Deviation	2.566E-06
nu star	5.636
Approximate Chi Square Value (.05)	1.457
Adjusted Level of Significance	0.0122
Adjusted Chi Square Value	0.823
Anderson-Darling Test Statistic	0.703
Anderson-Darling 5% Critical Value	0.723
Kolmogorov-Smirnov Test Statistic	0.283
Kolmogorov-Smirnov 5% Critical Value	0.344

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

95% Approximate Gamma UCL (Use when n >= 40)	6.804E-06
95% Adjusted Gamma UCL (Use when n < 40)	1.204E-05

Nonparametric Statistics

95% CLT UCL	3.689E-06
95% Jackknife UCL	4.124E-06
95% Standard Bootstrap UCL	3.499E-06
95% Bootstrap-t UCL	2.405E-05
95% Hall's Bootstrap UCL	2.314E-05
95% Percentile Bootstrap UCL	3.971E-06
95% BCA Bootstrap UCL	4.294E-06
95% Chebyshev(Mean, Sd) UCL	6.875E-06
97.5% Chebyshev(Mean, Sd) UCL	9.089E-06
99% Chebyshev(Mean, Sd) UCL	1.344E-05

Potential UCL to Use

Use 95% Approximate Gamma UCL 6.804E-06

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

SurfConc_DL (vintage_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	1	Number of Distinct Observations	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable SurfConc_DL (vintage_teq (nd=1/2dl)) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SUBSURFACE SOIL DATA UCL STATISTICS

General UCL Statistics for Data Sets with Non-Detects

User Selected Options

From File	C898_SubsurfSoilData_ProUCLinput.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

SubsurfConc_DL (cassell_pentachlorophenol)

General Statistics

Number of Valid Observations	3	Number of Distinct Observations	3

Warning: This data set only has 3 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable SubsurfConc_DL (cassell_pentachlorophenol) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SubsurfConc_DL (cassell_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	1	Number of Distinct Observations	1

Warning: This data set only has 1 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable SubsurfConc_DL (cassell_teq (nd=1/2dl)) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SubsurfConc_DL (milton_pentachlorophenol)

General Statistics

Number of Valid Data	3	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	3
		Percent Non-Detects	100.00%

Warning: This data set only has 3 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable SubsurfConc_DL (milton_pentachlorophenol) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SubsurfConc_DL (parcel b_1-methylnaphthalene)

General Statistics

Number of Valid Data	7	Number of Detected Data	5
Number of Distinct Detected Data	5	Number of Non-Detect Data	2
		Percent Non-Detects	28.57%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.011	Minimum Detected	-4.51
Maximum Detected	164	Maximum Detected	5.1
Mean of Detected	35.24	Mean of Detected	0.445
SD of Detected	72.1	SD of Detected	3.633
Minimum Non-Detect	0.33	Minimum Non-Detect	-1.109
Maximum Non-Detect	0.67	Maximum Non-Detect	-0.4

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	4
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	3
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	57.14%

Warning: There are only 5 Detected Values in this data

Note: It should be noted that even though bootstrap may be performed on this data set

the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.596	Shapiro Wilk Test Statistic	0.998
5% Shapiro Wilk Critical Value	0.762	5% Shapiro Wilk Critical Value	0.762
Data not Normal at 5% Significance Level		**Data appear Lognormal at 5% Significance Level**	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	25.24	Mean	-0.0958
SD	61.29	SD	3.113
95% DL/2 (t) UCL	70.26	95% H-Stat (DL/2) UCL	56753941
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-0.555
		SD in Log Scale	3.422
		Mean in Original Scale	25.18
		SD in Original Scale	61.32
		95% t UCL	70.22
		95% Percentile Bootstrap UCL	70.6
		95% BCA Bootstrap UCL	93.73
		95% H-UCL	1.461E+09

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.226	**Data appear Gamma Distributed at 5% Significance Level**
Theta Star	156.1	
nu star	2.257	

A-D Test Statistic	0.282
5% A-D Critical Value	0.764
K-S Test Statistic	0.764
5% K-S Critical Value	0.386

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	164
Mean	25.17
Median	0.27
SD	61.33
k star	0.162
Theta star	155.7
Nu star	2.263
AppChi2	0.192
95% Gamma Approximate UCL (Use when n >= 40)	296
95% Adjusted Gamma UCL (Use when n < 40)	522.7

Note: DL/2 is not a recommended method.

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	25.21
SD	56.76
SE of Mean	23.99
95% KM (t) UCL	71.82
95% KM (z) UCL	64.66
95% KM (jackknife) UCL	70.24
95% KM (bootstrap t) UCL	1714
95% KM (BCA) UCL	71.72
95% KM (Percentile Bootstrap) UCL	70.44
95% KM (Chebyshev) UCL	129.8
97.5% KM (Chebyshev) UCL	175
99% KM (Chebyshev) UCL	263.9

Potential UCLs to Use

95% KM (Chebyshev) UCL	129.8

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SubsurfConc_DL (parcel b_2-methylnaphthalene)

General Statistics

Number of Valid Data	11	Number of Detected Data	4
Number of Distinct Detected Data	4	Number of Non-Detect Data	7
		Percent Non-Detects	63.64%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	0.15	Minimum Detected	-1.897
Maximum Detected	262	Maximum Detected	5.568
Mean of Detected	66.65	Mean of Detected	1.29
SD of Detected	130.2	SD of Detected	3.123
Minimum Non-Detect	0.05	Minimum Non-Detect	-2.996
Maximum Non-Detect	0.67	Maximum Non-Detect	-0.4

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	8
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	3
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	72.73%

Warning: There are only 4 Distinct Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.638
5% Shapiro Wilk Critical Value	0.748

Data not Normal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	24.29
SD	78.84
95% DL/2 (t) UCL	67.38
Maximum Likelihood Estimate(MLE) Method	N/A

MLE yields a negative mean

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.937
5% Shapiro Wilk Critical Value	0.748

Data appear Lognormal at 5% Significance Level

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	-1.388
SD	2.842
95% H-Stat (DL/2) UCL	8481
Log ROS Method	
Mean in Log Scale	-4.884
SD in Log Scale	5.281
Mean in Original Scale	24.23
SD in Original Scale	78.86
95% t UCL	67.33
95% Percentile Bootstrap UCL	71.73
95% BCA Bootstrap UCL	95.81
95% H-UCL	2.12E+13

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.228
Theta Star	292.4
nu star	1.823
A-D Test Statistic	0.515
5% A-D Critical Value	0.72
K-S Test Statistic	0.72
5% K-S Critical Value	0.422

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	262
Mean	24.23
Median	0.000001
SD	78.86
k star	0.114
Theta star	212.9
Nu star	2.504
AppChi2	0.242
95% Gamma Approximate UCL (Use when n >= 40)	250.7
95% Adjusted Gamma UCL (Use when n < 40)	N/A

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Gamma Distributed at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	24.33
SD	75.16
SE of Mean	26.17
95% KM (t) UCL	71.76
95% KM (z) UCL	67.37
95% KM (jackknife) UCL	66.72
95% KM (bootstrap t) UCL	2978
95% KM (BCA) UCL	262
95% KM (Percentile Bootstrap) UCL	72.69
95% KM (Chebyshev) UCL	138.4
97.5% KM (Chebyshev) UCL	187.8
99% KM (Chebyshev) UCL	284.7

Potential UCLs to Use

95% KM (t) UCL	71.76

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SubsurfConc_DL (parcel b_bap equivalents)

General Statistics

Number of Valid Data	11	Number of Detected Data	6
Number of Distinct Detected Data	6	Number of Non-Detect Data	5
		Percent Non-Detects	45.45%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	0.0149	Minimum Detected	-4.209
Maximum Detected	0.438	Maximum Detected	-0.826
Mean of Detected	0.242	Mean of Detected	-2.076
SD of Detected	0.193	SD of Detected	1.571
Minimum Non-Detect	0.1	Minimum Non-Detect	-2.303
Maximum Non-Detect	3.3	Maximum Non-Detect	1.194

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	11
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	0
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	100.00%

Warning: There are only 6 Detected Values in this data

Note: It should be noted that even though bootstrap may be performed on this data set

the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		**Lognormal Distribution Test with Detected Values Only**	
Shapiro Wilk Test Statistic	0.839	Shapiro Wilk Test Statistic	0.768
5% Shapiro Wilk Critical Value	0.788	5% Shapiro Wilk Critical Value	0.788
Data appear Normal at 5% Significance Level		**Data not Lognormal at 5% Significance Level**	

Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.312	Mean	-2.054
SD	0.472	SD	1.461
95% DL/2 (t) UCL	0.57	95% H-Stat (DL/2) UCL	2.306
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	-2.718
		SD in Log Scale	1.359
		Mean in Original Scale	0.147
		SD in Original Scale	0.175
		95% t UCL	0.243
		95% Percentile Bootstrap UCL	0.233
		95% BCA Bootstrap UCL	0.246
		95% H-UCL	0.826

Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**
k star (bias corrected)	0.556	**Data appear Normal at 5% Significance Level**
Theta Star	0.436	
nu star	6.669	

A-D Test Statistic	0.702
5% A-D Critical Value	0.718
K-S Test Statistic	0.718
5% K-S Critical Value	0.342

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.0149
Maximum	0.438
Mean	0.153
Median	0.0436
SD	0.173
k star	0.599
Theta star	0.255
Nu star	13.17
AppChi2	6.01
95% Gamma Approximate UCL (Use when n >= 40)	0.334
95% Adjusted Gamma UCL (Use when n < 40)	0.383

Note: DL/2 is not a recommended method.

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	0.155
SD	0.175
SE of Mean	0.061
95% KM (t) UCL	0.266
95% KM (z) UCL	0.256
95% KM (jackknife) UCL	0.263
95% KM (bootstrap t) UCL	0.266
95% KM (BCA) UCL	0.311
95% KM (Percentile Bootstrap) UCL	0.309
95% KM (Chebyshev) UCL	0.421
97.5% KM (Chebyshev) UCL	0.537
99% KM (Chebyshev) UCL	0.763

Potential UCLs to Use

95% KM (t) UCL	0.266
95% KM (Percentile Bootstrap) UCL	0.309

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SubsurfConc_DL (parcel b_c11 to c22 aromatics)

General Statistics

Number of Valid Data	9	Number of Detected Data	7
Number of Distinct Detected Data	7	Number of Non-Detect Data	2
		Percent Non-Detects	22.22%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	20	Minimum Detected	2.996
Maximum Detected	3000	Maximum Detected	8.006
Mean of Detected	1139	Mean of Detected	6.066
SD of Detected	1253	SD of Detected	1.825
Minimum Non-Detect	10	Minimum Non-Detect	2.303
Maximum Non-Detect	10	Maximum Non-Detect	2.303

Warning: There are only 7 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.822	Shapiro Wilk Test Statistic	0.908
5% Shapiro Wilk Critical Value	0.803	5% Shapiro Wilk Critical Value	0.803

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	887.1
SD	1195
95% DL/2 (t) UCL	1628
Maximum Likelihood Estimate(MLE) Method	
Mean	694.9
SD	1359
95% MLE (t) UCL	1537
95% MLE (Tiku) UCL	1546

Data appear Lognormal at 5% Significance Level

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	5.075
SD	2.522
95% H-Stat (DL/2) UCL	2116460
Log ROS Method	
Mean in Log Scale	5.091
SD in Log Scale	2.514
Mean in Original Scale	887.4
SD in Original Scale	1195
95% t UCL	1628
95% Percentile Bootstrap UCL	1515
95% BCA Bootstrap UCL	1608
95% H UCL	2026958

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.456
Theta Star	2500
nu star	6.38
A-D Test Statistic	0.403
5% A-D Critical Value	0.743
K-S Test Statistic	0.743
5% K-S Critical Value	0.325

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	3000
Mean	886
Median	176
SD	1196
k star	0.174
Theta star	5097
Nu star	3.129
AppChi2	0.412
95% Gamma Approximate UCL (Use when n >= 40)	6736
95% Adjusted Gamma UCL (Use when n < 40)	10622

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Normal at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	890.4
SD	1124
SE of Mean	404.7
95% KM (t) UCL	1643
95% KM (z) UCL	1556
95% KM (jackknife) UCL	1615
95% KM (bootstrap t) UCL	2064
95% KM (BCA) UCL	1614
95% KM (Percentile Bootstrap) UCL	1575
95% KM (Chebyshev) UCL	2654
97.5% KM (Chebyshev) UCL	3418
99% KM (Chebyshev) UCL	4917

Potential UCLs to Use

95% KM (t) UCL	1643
95% KM (Percentile Bootstrap) UCL	1575

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SubsurfConc_DL (parcel b_c5 to c8 aliphatics)

General Statistics

Number of Valid Data	22	Number of Detected Data	2

Number of Distinct Detected Data	2	Number of Non-Detect Data	20
		Percent Non-Detects	90.91%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	4.6	Minimum Detected	1.526
Maximum Detected	9.7	Maximum Detected	2.272
Mean of Detected	7.15	Mean of Detected	1.899
SD of Detected	3.606	SD of Detected	0.528
Minimum Non-Detect	0.211	Minimum Non-Detect	-1.556
Maximum Non-Detect	2	Maximum Non-Detect	0.693

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	20
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	2
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	90.91%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		**Data not Lognormal at 5% Significance Level**	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.889	Mean	-1.377
SD	2.191	SD	1.294
95% DL/2 (t) UCL	1.693	95% H-Stat (DL/2) UCL	1.366
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A
		Mean in Original Scale	N/A
		SD in Original Scale	N/A
		95% t UCL	N/A
		95% Percentile Bootstrap UCL	N/A
		95% BCA Bootstrap UCL	N/A
		95% H-UCL	N/A

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	N/A	**Data do not follow a Discernable Distribution (0.05)**

Theta Star	N/A
nu star	N/A

A-D Test Statistic	N/A
5% A-D Critical Value	N/A
K-S Test Statistic	N/A
5% K-S Critical Value	N/A

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data

Minimum	N/A
Maximum	N/A
Mean	N/A
Median	N/A
SD	N/A
k star	N/A
Theta star	N/A
Nu star	N/A
AppChi2	N/A
95% Gamma Approximate UCL (Use when n >= 40)	N/A
95% Adjusted Gamma UCL (Use when n < 40)	N/A

Nonparametric Statistics

Kaplan-Meier (KM) Method

Mean	4.832
SD	1.062
SE of Mean	0.32
95% KM (t) UCL	5.383
95% KM (z) UCL	5.359
95% KM (jackknife) UCL	8.202
95% KM (bootstrap t) UCL	4.832
95% KM (BCA) UCL	N/A
95% KM (Percentile Bootstrap) UCL	9.7
95% KM (Chebyshev) UCL	6.228
97.5% KM (Chebyshev) UCL	6.832
99% KM (Chebyshev) UCL	8.019

Potential UCLs to Use

95% KM (t) UCL	5.383
95% KM (% Bootstrap) UCL	9.7

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SubsurfConc_DL (parcel b_c9 to c10 aromatics)

General Statistics

Number of Valid Data	22	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	19
		Percent Non-Detects	86.36%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	26	Minimum Detected	3.258
Maximum Detected	366	Maximum Detected	5.903
Mean of Detected	195	Mean of Detected	4.808
SD of Detected	170	SD of Detected	1.38
Minimum Non-Detect	0.0477	Minimum Non-Detect	-3.043
Maximum Non-Detect	2	Maximum Non-Detect	0.693

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	19
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	3
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	86.36%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.

However, results obtained using 4 to 9 distinct values may not be reliable.

It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	1
5% Shapiro Wilk Critical Value	0.767

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	26.68
SD	86.25
95% DL/2 (t) UCL	58.32
Maximum Likelihood Estimate(MLE) Method	N/A

MLE yields a negative mean

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.918
5% Shapiro Wilk Critical Value	0.767

Data appear Lognormal at 5% Significance Level

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	-2.129
SD	3.017
95% H-Stat (DL/2) UCL	589.3
Log ROS Method	
Mean in Log Scale	-1.86
SD in Log Scale	2.892
Mean in Original Scale	26.66
SD in Original Scale	86.26
95% t UCL	58.31
95% Percentile Bootstrap UCL	58.78
95% BCA Bootstrap UCL	76.59
95% H-UCL	390.9

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	N/A
Theta Star	N/A
nu star	N/A
A-D Test Statistic	N/A
5% A-D Critical Value	N/A
K-S Test Statistic	N/A
5% K-S Critical Value	N/A

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	N/A
Maximum	N/A
Mean	N/A
Median	N/A
SD	N/A
k star	N/A
Theta star	N/A
Nu star	N/A
AppChi2	N/A
95% Gamma Approximate UCL (Use when n >= 40)	N/A
95% Adjusted Gamma UCL (Use when n < 40)	N/A

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Normal at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	49.05
SD	77.4
SE of Mean	20.21
95% KM (t) UCL	83.82
95% KM (z) UCL	82.29
95% KM (jackknife) UCL	156.6
95% KM (bootstrap t) UCL	62.93
95% KM (BCA) UCL	366
95% KM (Percentile Bootstrap) UCL	N/A
95% KM (Chebyshev) UCL	137.1
97.5% KM (Chebyshev) UCL	175.3
99% KM (Chebyshev) UCL	250.1

Potential UCLs to Use

95% KM (t) UCL	83.82
95% KM (Percentile Bootstrap) UCL	N/A

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SubsurfConc_DL (parcel b_c9 to c12 aliphatics)

General Statistics

Number of Valid Data	22	Number of Detected Data	3
Number of Distinct Detected Data	3	Number of Non-Detect Data	19
		Percent Non-Detects	86.36%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	202	Minimum Detected	5.308
Maximum Detected	781	Maximum Detected	6.661
Mean of Detected	488.7	Mean of Detected	6.05
SD of Detected	289.5	SD of Detected	0.686
Minimum Non-Detect	0.263	Minimum Non-Detect	-1.336
Maximum Non-Detect	2	Maximum Non-Detect	0.693

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	19
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	3
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	86.36%

Warning: There are only 3 Distinct Detected Values in this data set
The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		**Lognormal Distribution Test with Detected Values Only**	
Shapiro Wilk Test Statistic	1	Shapiro Wilk Test Statistic	0.973
5% Shapiro Wilk Critical Value	0.767	5% Shapiro Wilk Critical Value	0.767
Data appear Normal at 5% Significance Level		**Data appear Lognormal at 5% Significance Level**	

Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	66.95	Mean	-0.397
SD	193.4	SD	2.749
95% DL/2 (t) UCL	137.9	95% H-Stat (DL/2) UCL	804.8
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	2.586
		SD in Log Scale	1.501
		Mean in Original Scale	74.12
		SD in Original Scale	190.9
		95% t UCL	144.1
		95% Percentile Bootstrap UCL	144.2
		95% BCA Bootstrap UCL	173.7
		95% H-UCL	122.4

Gamma Distribution Test with Detected Values Only	
k star (bias corrected)	N/A
Theta Star	N/A
nu star	N/A
A-D Test Statistic	N/A
5% A-D Critical Value	N/A
K-S Test Statistic	N/A
5% K-S Critical Value	N/A
Data not Gamma Distributed at 5% Significance Level	
Assuming Gamma Distribution	
Gamma ROS Statistics using Extrapolated Data	
Minimum	N/A
Maximum	N/A
Mean	N/A
Median	N/A
SD	N/A
k star	N/A
Theta star	N/A
Nu star	N/A
AppChi2	N/A
95% Gamma Approximate UCL (Use when n >= 40)	N/A
95% Adjusted Gamma UCL (Use when n < 40)	N/A

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only
Data appear Normal at 5% Significance Level

Nonparametric Statistics	
Kaplan-Meier (KM) Method	
Mean	241.1
SD	131.5
SE of Mean	34.34
95% KM (t) UCL	300.2
95% KM (z) UCL	297.6
95% KM (jackknife) UCL	422.1
95% KM (bootstrap t) UCL	265.3
95% KM (BCA) UCL	N/A
95% KM (Percentile Bootstrap) UCL	781
95% KM (Chebyshev) UCL	390.8
97.5% KM (Chebyshev) UCL	455.6
99% KM (Chebyshev) UCL	582.8
Potential UCLs to Use	
95% KM (t) UCL	300.2
95% KM (Percentile Bootstrap) UCL	781

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SubsurfConc_DL (parcel b_c9 to c18 aliphatics)

General Statistics

Number of Valid Data	9	Number of Detected Data	5
Number of Distinct Detected Data	5	Number of Non-Detect Data	4
		Percent Non-Detects	44.44%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	431	Minimum Detected	6.066
Maximum Detected	7946	Maximum Detected	8.98
Mean of Detected	2906	Mean of Detected	7.563
SD of Detected	2938	SD of Detected	1.06
Minimum Non-Detect	1.6	Minimum Non-Detect	0.47
Maximum Non-Detect	10	Maximum Non-Detect	2.303

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	4
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	5
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	44.44%

Warning: There are only 5 Detected Values in this data

Note: It should be noted that even though bootstrap may be performed on this data set

the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.808
5% Shapiro Wilk Critical Value	0.762

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	1615
SD	2580
95% DL/2 (t) UCL	3215
Maximum Likelihood Estimate(MLE) Method	
Mean	323.5
SD	3793
95% MLE (t) UCL	2675
95% MLE (Tiku) UCL	3067

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.974
5% Shapiro Wilk Critical Value	0.762

Data appear Lognormal at 5% Significance Level

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	4.317
SD	3.96
95% H-Stat (DL/2) UCL	8.35E+11
Log ROS Method	
Mean in Log Scale	6.228
SD in Log Scale	1.771
Mean in Original Scale	1660
SD in Original Scale	2549
95% t UCL	3241
95% Percentile Bootstrap UCL	3100
95% BCA Bootstrap UCL	3605
95% H UCL	60097

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.676
Theta Star	4300
nu star	6.759
A-D Test Statistic	0.272
5% A-D Critical Value	0.688
K-S Test Statistic	0.688
5% K-S Critical Value	0.362

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	7946
Mean	1615
Median	431
SD	2581
k star	0.133
Theta star	12139
Nu star	2.394
AppChi2	0.218
95% Gamma Approximate UCL (Use when n >= 40)	17718
95% Adjusted Gamma UCL (Use when n < 40)	27246

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Normal at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	1806
SD	2313
SE of Mean	861.9
95% KM (t) UCL	3409
95% KM (z) UCL	3224
95% KM (jackknife) UCL	3234
95% KM (bootstrap t) UCL	4640
95% KM (BCA) UCL	4079
95% KM (Percentile Bootstrap) UCL	3580
95% KM (Chebyshev) UCL	5563
97.5% KM (Chebyshev) UCL	7189
99% KM (Chebyshev) UCL	10382

Potential UCLs to Use

95% KM (t) UCL	3409
95% KM (Percentile Bootstrap) UCL	3580

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SubsurfConc_DL (parcel b_ethylbenzene)

General Statistics

Number of Valid Data	22	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	20
		Percent Non-Detects	90.91%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.12	Minimum Detected	-2.12
Maximum Detected	228	Maximum Detected	5.429
Mean of Detected	114.1	Mean of Detected	1.655
SD of Detected	161.1	SD of Detected	5.338
Minimum Non-Detect	0.00629	Minimum Non-Detect	-5.069
Maximum Non-Detect	0.5	Maximum Non-Detect	-0.693

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	21
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	1
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	95.45%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	N/A	Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A	5% Shapiro Wilk Critical Value	N/A
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	10.4	Mean	-3.915
SD	48.6	SD	2.43
95% DL/2 (t) UCL	28.23	95% H-Stat (DL/2) UCL	5.267
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE method failed to converge properly		Mean in Log Scale	N/A
		SD in Log Scale	N/A

Mean in Original Scale	N/A
SD in Original Scale	N/A
95% t UCL	N/A
95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A
95% H-UCL	N/A

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	N/A
Theta Star	N/A
nu star	N/A
A-D Test Statistic	N/A
5% A-D Critical Value	N/A
K-S Test Statistic	N/A
5% K-S Critical Value	N/A

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data

Minimum	N/A
Maximum	N/A
Mean	N/A
Median	N/A
SD	N/A
k star	N/A
Theta star	N/A
Nu star	N/A
AppChi2	N/A
95% Gamma Approximate UCL (Use when n >= 40)	N/A
95% Adjusted Gamma UCL (Use when n < 40)	N/A

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data do not follow a Discernable Distribution (0.05)

Nonparametric Statistics

Kaplan-Meier (KM) Method

Mean	10.48
SD	47.47
SE of Mean	14.31
95% KM (t) UCL	35.11
95% KM (z) UCL	34.02
95% KM (jackknife) UCL	161.1
95% KM (bootstrap t) UCL	10.48
95% KM (BCA) UCL	228
95% KM (Percentile Bootstrap) UCL	228
95% KM (Chebyshev) UCL	72.86
97.5% KM (Chebyshev) UCL	99.86
99% KM (Chebyshev) UCL	152.9

Potential UCLs to Use

99% KM (Chebyshev) UCL	152.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SubsurfConc_DL (parcel b_naphthalene)

General Statistics

Number of Valid Data	24	Number of Detected Data	2
Number of Distinct Detected Data	2	Number of Non-Detect Data	22
		Percent Non-Detects	91.67%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	1.6	Minimum Detected	0.47
Maximum Detected	26	Maximum Detected	3.258
Mean of Detected	13.8	Mean of Detected	1.864
SD of Detected	17.25	SD of Detected	1.971
Minimum Non-Detect	0.0104	Minimum Non-Detect	-4.566
Maximum Non-Detect	0.67	Maximum Non-Detect	-0.4

Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	22
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	2
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	91.67%

Warning: Data set has only 2 Distinct Detected Values.
This may not be adequate enough to compute meaningful and reliable test statistics and estimates.
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

Unless Data Quality Objectives (DQOs) have been met, it is suggested to collect additional observations.

The number of detected data may not be adequate enough to perform GOF tests, bootstrap, and ROS methods.
Those methods will return a 'N/A' value on your output display!

It is necessary to have 4 or more Distinct Values for bootstrap methods.
However, results obtained using 4 to 9 distinct values may not be reliable.
It is recommended to have 10 to 15 or more observations for accurate and meaningful results and estimates.

UCL Statistics

Normal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A

Data not Normal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	1.187
SD	5.296
95% DL/2 (t) UCL	3.039
Maximum Likelihood Estimate(MLE) Method	N/A

MLE method failed to converge properly

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	N/A
5% Shapiro Wilk Critical Value	N/A

Data not Lognormal at 5% Significance Level

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	-3.975
SD	2.218
95% H-Stat (DL/2) UCL	1.731
Log ROS Method	
Mean in Log Scale	N/A
SD in Log Scale	N/A
Mean in Original Scale	N/A
SD in Original Scale	N/A
95% t UCL	N/A
95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A
95% H-UCL	N/A

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	N/A
Theta Star	N/A
nu star	N/A
A-D Test Statistic	N/A
5% A-D Critical Value	N/A
K-S Test Statistic	N/A
5% K-S Critical Value	N/A

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data

Data Distribution Test with Detected Values Only

Data do not follow a Discernable Distribution (0.05)

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	2.617
SD	4.876
SE of Mean	1.408
95% KM (t) UCL	5.029
95% KM (z) UCL	4.932
95% KM (jackknife) UCL	18.7

Minimum	N/A	95% KM (bootstrap t) UCL	N/A
Maximum	N/A	95% KM (BCA) UCL	26
Mean	N/A	95% KM (Percentile Bootstrap) UCL	N/A
Median	N/A	95% KM (Chebyshev) UCL	8.752
SD	N/A	97.5% KM (Chebyshev) UCL	11.41
k star	N/A	99% KM (Chebyshev) UCL	16.62
Theta star	N/A		
Nu star	N/A	**Potential UCLs to Use**	
AppChi2	N/A	97.5% KM (Chebyshev) UCL	11.41
95% Gamma Approximate UCL (Use when n >= 40)	N/A		
95% Adjusted Gamma UCL (Use when n < 40)	N/A		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SubsurfConc_DL (parcel b_pentachlorophenol)

General Statistics

Number of Valid Data	86	Number of Detected Data	51
Number of Distinct Detected Data	50	Number of Non-Detect Data	35
		Percent Non-Detects	40.70%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	0.00229	Minimum Detected	-6.077
Maximum Detected	1270	Maximum Detected	7.147
Mean of Detected	129.4	Mean of Detected	1.62
SD of Detected	237.1	SD of Detected	4.063
Minimum Non-Detect	0.0006	Minimum Non-Detect	-7.419
Maximum Non-Detect	2.7	Maximum Non-Detect	0.993

Note: Data have multiple DLs - Use of KM Method is recommended		Number treated as Non-Detect	54
For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	32
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	62.79%

UCL Statistics

Normal Distribution Test with Detected Values Only		**Lognormal Distribution Test with Detected Values Only**	
Lilliefors Test Statistic	0.293	Lilliefors Test Statistic	0.157
5% Lilliefors Critical Value	0.124	5% Lilliefors Critical Value	0.124
Data not Normal at 5% Significance Level		**Data not Lognormal at 5% Significance Level**	

Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	76.86	Mean	-1.058
SD	192.7	SD	4.998
95% DL/2 (t) UCL	111.4	95% H-Stat (DL/2) UCL	5350562
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-1.816
		SD in Log Scale	5.376
		Mean in Original Scale	76.73

SD in Original Scale	192.7
95% t UCL	111.3
95% Percentile Bootstrap UCL	112.5
95% BCA Bootstrap UCL	122.3
95% H-UCL	33344284

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.223
Theta Star	580.2
nu star	22.75
A-D Test Statistic	0.752
5% A-D Critical Value	0.897
K-S Test Statistic	0.897
5% K-S Critical Value	0.137

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	1270
Mean	76.73
Median	0.0185
SD	192.7
k star	0.0958
Theta star	800.9
Nu star	16.48
AppChi2	8.301
95% Gamma Approximate UCL (Use when n >= 40)	152.3
95% Adjusted Gamma UCL (Use when n < 40)	154.2

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Gamma Distributed at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	76.74
SD	191.6
SE of Mean	20.87
95% KM (t) UCL	111.4
95% KM (z) UCL	111.1
95% KM (jackknife) UCL	111.3
95% KM (bootstrap t) UCL	127.7
95% KM (BCA) UCL	115.2
95% KM (Percentile Bootstrap) UCL	115
95% KM (Chebyshev) UCL	167.7
97.5% KM (Chebyshev) UCL	207.1
99% KM (Chebyshev) UCL	284.4

Potential UCLs to Use

95% KM (BCA) UCL	115.2

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

SubsurfConc_DL (parcel b_teq (nd=1/2dl))

General Statistics

Number of Valid Data	39	Number of Detected Data	34
Number of Distinct Detected Data	34	Number of Non-Detect Data	5
		Percent Non-Detects	12.82%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	1.191E-07	Minimum Detected	-15.94
Maximum Detected	0.0037	Maximum Detected	-5.6
Mean of Detected	0.0003218	Mean of Detected	-11.75
SD of Detected	0.0008482	SD of Detected	2.95
Minimum Non-Detect	1.17E-07	Minimum Non-Detect	-15.96
Maximum Non-Detect	0.000007	Maximum Non-Detect	-11.87

Note: Data have multiple DLs - Use of KM Method is recommended

Number treated as Non-Detect 24

For all methods (except KM, DL/2, and ROS Methods),		Number treated as Detected	15
Observations < Largest ND are treated as NDs		Single DL Non-Detect Percentage	61.54%

UCL Statistics

Normal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.447
5% Shapiro Wilk Critical Value	0.933

Data not Normal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	0.0002807
SD	0.0007979
95% DL/2 (t) UCL	0.0004961
Maximum Likelihood Estimate(MLE) Method	N/A

MLE yields a negative mean

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.927
5% Shapiro Wilk Critical Value	0.933

Data not Lognormal at 5% Significance Level

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	-12.21
SD	3.061
95% H-Stat (DL/2) UCL	0.00786
Log ROS Method	
Mean in Log Scale	-12.4
SD in Log Scale	3.306
Mean in Original Scale	0.0002806
SD in Original Scale	0.0007979
95% t UCL	0.000496
95% Percentile Bootstrap UCL	0.0005062
95% BCA Bootstrap UCL	0.0005824
95% H-UCL	0.0217

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.201
Theta Star	0.0016
nu star	13.66
A-D Test Statistic	3.28
5% A-D Critical Value	0.9
K-S Test Statistic	0.9
5% K-S Critical Value	0.167

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	1.191E-07
Maximum	0.0037
Mean	0.0002807
Median	3.382E-06
SD	0.0007979
k star	0.195
Theta star	0.00144
Nu star	15.23
AppChi2	7.424
95% Gamma Approximate UCL (Use when n >= 40)	0.000576
95% Adjusted Gamma UCL (Use when n < 40)	0.0005932

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data do not follow a Discernable Distribution (0.05)

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	0.0002806
SD	0.0007876
SE of Mean	0.000128
95% KM (t) UCL	0.0004965
95% KM (z) UCL	0.0004912
95% KM (jackknife) UCL	0.000496
95% KM (bootstrap t) UCL	0.0007566
95% KM (BCA) UCL	0.0005002
95% KM (Percentile Bootstrap) UCL	0.0005229
95% KM (Chebyshev) UCL	0.0008386
97.5% KM (Chebyshev) UCL	0.00108
99% KM (Chebyshev) UCL	0.00155

Potential UCLs to Use

99% KM (Chebyshev) UCL	0.00155

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

For additional insight, the user may want to consult a statistician.

SubsurfConc_DL (parmenter_pentachlorophenol)

General Statistics

Number of Valid Data	2	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	2
		Percent Non-Detects	100.00%

Warning: This data set only has 2 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable SubsurfConc_DL (parmenter_pentachlorophenol) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SubsurfConc_DL (parmenter_teq (nd=1/2dl))

General Statistics

Number of Valid Observations	5	Number of Distinct Observations	5

Raw Statistics		Log-transformed Statistics	
Minimum	1.08E-07	Minimum of Log Data	-16.04
Maximum	5.83E-06	Maximum of Log Data	-12.05
Mean	2.227E-06	Mean of log Data	-14.25
Geometric Mean	6.472E-07	SD of log Data	1.968
Median	3.36E-07		
SD	2.823E-06		
Std. Error of Mean	1.263E-06		
Coefficient of Variation	N/A		
Skewness	0.686		

Warning: A sample size of 'n' = 5 may not adequate enough to compute meaningful and reliable test statistics and estimates!

It is suggested to collect at least 8 to 10 observations using these statistical methods!
If possible compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

Warning: There are only 5 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set,
the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.76	Shapiro Wilk Test Statistic	0.815
Shapiro Wilk Critical Value	0.762	Shapiro Wilk Critical Value	0.762
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution	
95% Student's-t UCL	4.919E-06
95% UCLs (Adjusted for Skewness)	
95% Adjusted-CLT UCL (Chen-1995)	4.718E-06
95% Modified-t UCL (Johnson-1978)	4.984E-06

Assuming Lognormal Distribution	
95% H-UCL	0.0398
95% Chebyshev (MVUE) UCL	9.723E-06
97.5% Chebyshev (MVUE) UCL	1.293E-05
99% Chebyshev (MVUE) UCL	1.921E-05

Gamma Distribution Test	
k star (bias corrected)	0.338
Theta Star	6.587E-06
MLE of Mean	2.227E-06
MLE of Standard Deviation	3.83E-06
nu star	3.382
Approximate Chi Square Value (.05)	0.494
Adjusted Level of Significance	0.0086
Adjusted Chi Square Value	0.189
Anderson-Darling Test Statistic	0.608
Anderson-Darling 5% Critical Value	0.71
Kolmogorov-Smirnov Test Statistic	0.304
Kolmogorov-Smirnov 5% Critical Value	0.371

Data appear Gamma Distributed at 5% Significance Level

Data Distribution
Data appear Gamma Distributed at 5% Significance Level

Nonparametric Statistics	
95% CLT UCL	4.304E-06
95% Jackknife UCL	4.919E-06
95% Standard Bootstrap UCL	4.051E-06
95% Bootstrap-t UCL	4.871E-05
95% Hall's Bootstrap UCL	4.501E-05
95% Percentile Bootstrap UCL	4.254E-06
95% BCA Bootstrap UCL	4.47E-06
95% Chebyshev(Mean, Sd) UCL	7.731E-06
97.5% Chebyshev(Mean, Sd) UCL	1.011E-05
99% Chebyshev(Mean, Sd) UCL	1.479E-05

Assuming Gamma Distribution	
95% Approximate Gamma UCL (Use when n >= 40)	1.525E-05
95% Adjusted Gamma UCL (Use when n < 40)	3.984E-05

Potential UCL to Use	
Use 95% Approximate Gamma UCL	1.525E-05

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

SubsurfConc_DL (school_pentachlorophenol)

General Statistics

Number of Valid Data	3	Number of Detected Data	0
Number of Distinct Detected Data	0	Number of Non-Detect Data	3
		Percent Non-Detects	100.00%

Warning: This data set only has 3 observations!
Data set is too small to compute reliable and meaningful statistics and estimates!
The data set for variable SubsurfConc_DL (school_pentachlorophenol) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!
If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

SubsurfConc_DL (school_teq (nd=1/2dl))

General Statistics

Number of Valid Observations 3 Number of Distinct Observations 3

Warning: This data set only has 3 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable SubsurfConc_DL (school_teq (nd=1/2dl)) was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

BREAST MILK EPCS

TABLE E3.1.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Parcel A	C5-C8 Aliphatics	mg/kg	1.3E+02	na	1.3E+02	1.3E+02	mg/kg	Max	Less than 10 sample data points
	C9-C12 Aliphatics	mg/kg	2.0E+00 U	na	2.0E+00 U	2.0E+00	mg/kg	Max DL	No detected samples
	C9-C10 Aromatics	mg/kg	2.0E+00 U	na	2.0E+00 U	2.0E+00	mg/kg	Max DL	No detected samples
	Ethylbenzene	mg/kg	5.0E-02 U	na	5.0E-02 U	5.0E-02	mg/kg	Max DL	No detected samples
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	mg/kg	3.3E-01 U	na	3.3E-01 U	3.3E-01	mg/kg	Max DL	No detected samples
	Naphthalene	mg/kg	1.0E-01 U	na	1.0E-01 U	1.0E-01	mg/kg	Max DL	No detected samples
	BaP equivalents	mg/kg	4.1E-01	na	4.1E-01	4.1E-01	mg/kg	Max	Less than 10 sample data points
	C9-C18 Aliphatics	mg/kg	1.2E+01	na	1.2E+01	1.2E+01	mg/kg	Max	Less than 10 sample data points
	C11-C22 Aromatics	mg/kg	2.6E+02	na	2.6E+02	2.6E+02	mg/kg	Max	Less than 10 sample data points
	Pentachlorophenol	mg/kg	4.7E-02	2.3E-01 (NP)	3.1E-01	2.3E-01	mg/kg	97.5% UCL - NP	Kaplan-Meier (Chebyshev) method
	TEQ (ND=1/2DL)	mg/kg	1.9E-04 J	1.9E-03 (NP)	2.0E-03 J	1.9E-03	mg/kg	99% UCL - NP	Chebyshev (mean, SD) method
Parcel B	C5-C8 Aliphatics	mg/kg	5.6E+00	7.9E+00 (NP)	1.6E+01	7.9E+00	mg/kg	95% UCL - NP	Kaplan-Meier (t) method
	C9-C12 Aliphatics	mg/kg	2.4E+02	na	9.1E+02	9.1E+02	mg/kg	Max	UCL value not recommended by ProUCL
	C9-C10 Aromatics	mg/kg	9.2E+01	3.7E+02 (NP)	3.7E+02	3.7E+02	mg/kg	95% UCL - NP	Kaplan-Meier (BCA) method
	Ethylbenzene	mg/kg	5.6E-02 J	na	4.6E-02	4.6E-02	mg/kg	Max	Only one detected sample data point
	1-Methylnaphthalene	mg/kg	7.1E+00 J	na	3.4E+00 J	3.4E+00	mg/kg	Max	Less than 10 sample data points
	2-Methylnaphthalene	mg/kg	4.8E-01 J	2.0E+00 (NP)	2.5E+00	2.0E+00	mg/kg	95% UCL - NP	Kaplan-Meier (percentile bootstrap) method
	Naphthalene	mg/kg	9.3E-02 J	na	4.9E-01	4.9E-01	mg/kg	Max	Only one detected sample data point
	BaP equivalents	mg/kg	3.0E-01 J	6.1E-01 (NP)	1.6E+00	6.1E-01	mg/kg	95% UCL - NP	Kaplan-Meier (BCA) method
	C9-C18 Aliphatics	mg/kg	6.8E+02 J	1.8E+03 (NP)	6.9E+03	1.8E+03	mg/kg	95% UCL - NP	Kaplan-Meier (t) method
	C11-C22 Aromatics	mg/kg	8.3E+02 J	6.1E+03 (NP)	6.4E+03	6.1E+03	mg/kg	99% UCL - NP	Kaplan-Meier (Chebyshev) method
	Pentachlorophenol	mg/kg	5.7E+02	3.4E+03 (NP)	5.3E+04	3.4E+03	mg/kg	97.5% UCL - NP	Kaplan-Meier (Chebyshev) method
	TEQ (ND=1/2DL)	mg/kg	1.1E-03 J	3.8E-03 (NP)	4.8E-02	3.8E-03	mg/kg	95% UCL - NP	Chebyshev (mean, SD) method
Spigot	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	3.1E-02	5.1E-02 (NP)	2.8E-01	5.1E-02	mg/kg	95% UCL - NP	Kaplan-Meier (BCA) method
	TEQ (ND=1/2DL)	mg/kg	5.3E-05 J	1.0E-04 (O)	8.3E-04 J	1.0E-04	mg/kg	95% UCL - O	Adjusted gamma method

TABLE E3.1.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Cassell	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	9.6E-01	1.6E+00 (NP)	2.3E+00	2.3E+00	mg/kg	Max	Less than 10 sample data points
	TEQ (ND=1/2DL)	mg/kg	6.2E-04 J	na	1.5E-03	1.5E-03	mg/kg	Max	Less than 10 sample data points
Parmenter	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	3.2E-03 J	4.4E-03 (NP)	6.5E-03	4.4E-03	mg/kg	95% UCL - NP	Kaplan-Meier (percentile bootstrap) method
	TEQ (ND=1/2DL)	mg/kg	1.1E-05 J	1.9E-05 (O)	5.1E-05 J	1.9E-05	mg/kg	95% UCL - O	Approx. gamma method
Skroch	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	2.5E-02 J	1.2E-01 (NP)	1.5E-01	1.2E-01	mg/kg	97.5% UCL - NP	Kaplan-Meier (Chebyshev) method
	TEQ (ND=1/2DL)	mg/kg	9.9E-05 J	3.0E-04 (NP)	7.4E-04 J	3.0E-04	mg/kg	95% UCL - NP	Chebyshev (mean, SD) method

TABLE E3.1.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Chaney	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	2.2E-04 U	na	2.2E-04 U	2.2E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	8.6E-06 J	na	1.0E-05 J	1.0E-05	mg/kg	Max	Less than 10 sample data points
Peirano Tract B	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	8.5E-04 J	na	1.7E-03 J	1.7E-03	mg/kg	Max	Less than 10 sample data points
Renfroe	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	1.1E-05 J	na	1.7E-05 J	1.7E-05	mg/kg	Max	Less than 10 sample data points

TABLE E3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
3WT	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	2.0E-05 J	na	2.0E-05 J	2.0E-05	mg/kg	Max	Less than 10 sample data points
Milton	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	7.6E-03	1.2E-02 (N)	1.5E-02	1.5E-02	mg/kg	Max	Less than 10 sample data points
	TEQ (ND=1/2DL)	mg/kg	1.9E-05 J	na	3.4E-05 J	3.4E-05	mg/kg	Max	Less than 10 sample data points
Peirano Parcel B	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	1.7E-02	3.9E-02 (NP)	6.0E-02	6.0E-02	mg/kg	Max	Less than 10 sample data points
	TEQ (ND=1/2DL)	mg/kg	1.1E-03 J	1.9E-03 (NP)	5.1E-03 J	1.9E-03	mg/kg	95% UCL - NP	Hall's bootstrap method

TABLE E3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Peirano Tract A	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	3.5E-04 U	na	3.5E-04 U	3.5E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	2.8E-04 J	2.8E-03 (NP)	1.8E-03 J	1.8E-03	mg/kg	Max	Less than 10 sample data points
Robak	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	9.6E-03	na	9.6E-03	9.6E-03	mg/kg	Max	Less than 10 sample data points
	TEQ (ND=1/2DL)	mg/kg	2.2E-05 J	na	3.4E-05 J	3.4E-05	mg/kg	Max	Less than 10 sample data points
Smith	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	1.6E-05 J	na	2.1E-05 J	2.1E-05	mg/kg	Max	Less than 10 sample data points

TABLE E3.1.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Stevenson	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	6.8E-04 U	na	6.8E-04 U	6.8E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	1.8E-06 J	6.8E-06 (O)	7.6E-06 J	7.6E-06	mg/kg	Max	Less than 10 sample data points
Vintage	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	4.0E-06 J	na	4.0E-06 J	4.0E-06	mg/kg	Max	Less than 10 sample data points
Cemetery	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	5.1E-06 J	na	5.1E-06 J	5.1E-06	mg/kg	Max	Less than 10 sample data points

TABLE E3.1.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Right-of-Way	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	3.8E+01	na	3.8E+01	3.8E+01	mg/kg	Max	Less than 10 sample data points
	TEQ (ND=1/2DL)	--	--	--	--	--	--	na	na
Rodeo	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	6.2E-07 J	na	6.2E-07 J	6.2E-07	mg/kg	Max	Less than 10 sample data points

TABLE E3.1.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
School	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	2.1E-04 U	na	2.1E-04 U	2.1E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	1.1E-06 J	na	1.7E-06 J	1.7E-06	mg/kg	Max	Less than 10 sample data points

Notes:

(1) The arithmetic means were calculated by ProUCL based on the distribution characteristics and sample size of the underlying data set. If sample sizes were insufficient for ProUCL to compute statistics, means were manually calculated by averaging the available sample data and, if applicable, factoring in nondetects at half their detection limit.

(2) Distribution codes are as follows: (N) = normal, (NP) = nonparametric, (O) = other. Where two UCLs were recommended by ProUCL, the greatest value was used.

(3) EPC statistic codes are as follows:

Max = maximum
Max DL = maximum detection limit
##% UCL - NP = ##% UCL of nonparameteric data
##% UCL - O = ##% UCL of other parameteric data
Mean - N = mean of normal data
Mean - NP = mean of nonparametric data
Mean - O = mean of other parametric data

-- = no sample data available
CT = central tendency
EPC = exposure point concentration
J = estimated
na = not applicable (e.g., unable to be calculated because of too few samples or no detected samples)
RME = reasonable maximum exposure
U = undetected
UCL = upper confidence limit

TABLE E3.1.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Parcel A	C5-C8 Aliphatics	mg/kg	1.3E+02	na	1.3E+02	1.3E+02	mg/kg	Mean	Only one sample data point
	C9-C12 Aliphatics	mg/kg	2.0E+00 U	na	2.0E+00 U	2.0E+00	mg/kg	Max DL	No detected samples
	C9-C10 Aromatics	mg/kg	2.0E+00 U	na	2.0E+00 U	2.0E+00	mg/kg	Max DL	No detected samples
	Ethylbenzene	mg/kg	5.0E-02 U	na	5.0E-02 U	5.0E-02	mg/kg	Max DL	No detected samples
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	mg/kg	3.3E-01 U	na	3.3E-01 U	3.3E-01	mg/kg	Max DL	No detected samples
	Naphthalene	mg/kg	1.0E-01 U	na	1.0E-01 U	1.0E-01	mg/kg	Max DL	No detected samples
	BaP equivalents	mg/kg	4.1E-01	na	4.1E-01	4.1E-01	mg/kg	Mean	Only one sample data point
	C9-C18 Aliphatics	mg/kg	1.2E+01	na	1.2E+01	1.2E+01	mg/kg	Mean	Only one sample data point
	C11-C22 Aromatics	mg/kg	2.6E+02	na	2.6E+02	2.6E+02	mg/kg	Mean	Only one sample data point
	Pentachlorophenol	mg/kg	4.7E-02	2.3E-01 (NP)	3.1E-01	4.7E-02	mg/kg	Mean - NP	Kaplan-Meier method
	TEQ (ND=1/2DL)	mg/kg	1.9E-04 J	1.9E-03 (NP)	2.0E-03 J	1.9E-04	mg/kg	Mean	Mean of raw statistics; all detected samples
Parcel B	C5-C8 Aliphatics	mg/kg	5.6E+00	7.9E+00 (NP)	1.6E+01	5.6E+00	mg/kg	Mean - NP	Kaplan-Meier method
	C9-C12 Aliphatics	mg/kg	2.4E+02	na	9.1E+02	2.4E+02	mg/kg	Mean - NP	Kaplan-Meier method
	C9-C10 Aromatics	mg/kg	9.2E+01	3.7E+02 (NP)	3.7E+02	9.2E+01	mg/kg	Mean - NP	Kaplan-Meier method
	Ethylbenzene	mg/kg	5.6E-02 J	na	4.6E-02	4.6E-02	mg/kg	Max	Max is less than mean (1/2 DL substitution method)
	1-Methylnaphthalene	mg/kg	7.1E+00 J	na	3.4E+00 J	3.4E+00	mg/kg	Max	Max is less than mean (1/2 DL substitution method)
	2-Methylnaphthalene	mg/kg	4.8E-01 J	2.0E+00 (NP)	2.5E+00	4.8E-01	mg/kg	Mean - NP	Kaplan-Meier method
	Naphthalene	mg/kg	9.3E-02 J	na	4.9E-01	9.3E-02	mg/kg	Mean	1/2 DL substitution method
	BaP equivalents	mg/kg	3.0E-01 J	6.1E-01 (NP)	1.6E+00	3.0E-01	mg/kg	Mean - NP	Kaplan-Meier method
	C9-C18 Aliphatics	mg/kg	6.8E+02 J	1.8E+03 (NP)	6.9E+03	6.8E+02	mg/kg	Mean - NP	Kaplan-Meier method
	C11-C22 Aromatics	mg/kg	8.3E+02 J	6.1E+03 (NP)	6.4E+03	8.3E+02	mg/kg	Mean - NP	Kaplan-Meier method
	Pentachlorophenol	mg/kg	5.7E+02	3.4E+03 (NP)	5.3E+04	5.7E+02	mg/kg	Mean - NP	Kaplan-Meier method
	TEQ (ND=1/2DL)	mg/kg	1.1E-03 J	3.8E-03 (NP)	4.8E-02	1.1E-03	mg/kg	Mean	Mean of raw statistics; all detected samples
Spigot	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	3.1E-02	5.1E-02 (NP)	2.8E-01	3.1E-02	mg/kg	Mean - NP	Kaplan-Meier method
	TEQ (ND=1/2DL)	mg/kg	5.3E-05 J	1.0E-04 (O)	8.3E-04 J	5.3E-05	mg/kg	Mean - O	Maximum likelihood estimate of mean

TABLE E3.1.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Cassell	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	9.6E-01	1.6E+00 (NP)	2.3E+00	9.6E-01	mg/kg	Mean - NP	Kaplan-Meier method
	TEQ (ND=1/2DL)	mg/kg	6.2E-04 J	na	1.5E-03	6.2E-04	mg/kg	Mean	1/2 DL substitution method
Parmenter	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	3.2E-03 J	4.4E-03 (NP)	6.5E-03	3.2E-03	mg/kg	Mean - NP	Kaplan-Meier method
	TEQ (ND=1/2DL)	mg/kg	1.1E-05 J	1.9E-05 (O)	5.1E-05 J	1.1E-05	mg/kg	Mean - O	Maximum likelihood estimate of mean
Skroch	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	2.5E-02 J	1.2E-01 (NP)	1.5E-01	2.5E-02	mg/kg	Mean - NP	Kaplan-Meier method
	TEQ (ND=1/2DL)	mg/kg	9.9E-05 J	3.0E-04 (NP)	7.4E-04 J	9.9E-05	mg/kg	Mean	Mean of raw statistics; all detected samples

TABLE E3.1.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Chaney	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	2.2E-04 U	na	2.2E-04 U	2.2E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	8.6E-06 J	na	1.0E-05 J	8.6E-06	mg/kg	Mean	Mean of raw statistics; less than 10 sample data points
Peirano Tract B	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	8.5E-04 J	na	1.7E-03 J	8.5E-04	mg/kg	Mean	Mean of raw statistics; less than 10 sample data points
Renfroe	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	1.1E-05 J	na	1.7E-05 J	1.1E-05	mg/kg	Mean	Mean of raw statistics; less than 10 sample data points

TABLE E3.1.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
3WT	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	2.0E-05 J	na	2.0E-05 J	2.0E-05	mg/kg	Mean	Only one sample data point
Milton	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	7.6E-03	1.2E-02 (N)	1.5E-02	7.6E-03	mg/kg	Mean - N	Less than 10 sample data points
	TEQ (ND=1/2DL)	mg/kg	1.9E-05 J	na	3.4E-05 J	1.9E-05	mg/kg	Mean	Mean of raw statistics; less than 10 sample data points
Peirano Parcel B	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	1.7E-02	3.9E-02 (NP)	6.0E-02	1.7E-02	mg/kg	Mean - NP	Kaplan-Meier method
	TEQ (ND=1/2DL)	mg/kg	1.1E-03 J	1.9E-03 (NP)	5.1E-03 J	1.1E-03	mg/kg	Mean	Mean of raw statistics; all detected samples

TABLE E3.1.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Peirano Tract A	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	3.5E-04 U	na	3.5E-04 U	3.5E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	2.8E-04 J	2.8E-03 (NP)	1.8E-03 J	2.8E-04	mg/kg	Mean	Mean of raw statistics; all detected samples
Robak	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	9.6E-03	na	9.6E-03	9.6E-03	mg/kg	Mean	Only one sample data point
	TEQ (ND=1/2DL)	mg/kg	2.2E-05 J	na	3.4E-05 J	2.2E-05	mg/kg	Mean	Mean of raw statistics; less than 10 sample data points
Smith	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	1.6E-05 J	na	2.1E-05 J	1.6E-05	mg/kg	Mean	Mean of raw statistics; less than 10 sample data points

TABLE E3.1.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Stevenson	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	6.8E-04 U	na	6.8E-04 U	6.8E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	1.8E-06 J	6.8E-06 (O)	7.6E-06 J	1.8E-06	mg/kg	Mean - O	Maximum likelihood estimate of mean
Vintage	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	4.0E-06 J	na	4.0E-06 J	4.0E-06	mg/kg	Mean	Only one sample data point
Cemetery	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	5.1E-06 J	na	5.1E-06 J	5.1E-06	mg/kg	Mean	Only one sample data point

TABLE E3.1.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
Right-of-Way	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	3.8E+01	na	3.8E+01	3.8E+01	mg/kg	Mean	Only one sample data point
	TEQ (ND=1/2DL)	--	--	--	--	--	--	na	na
Rodeo	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	--	--	--	--	--	--	na	na
	TEQ (ND=1/2DL)	mg/kg	6.2E-07 J	na	6.2E-07 J	6.2E-07	mg/kg	Mean	Only one sample data point

TABLE E3.1.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean (1)	UCL (Distribution) (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic (3)	Rationale
School	C5-C8 Aliphatics	--	--	--	--	--	--	na	na
	C9-C12 Aliphatics	--	--	--	--	--	--	na	na
	C9-C10 Aromatics	--	--	--	--	--	--	na	na
	Ethylbenzene	--	--	--	--	--	--	na	na
	1-Methylnaphthalene	--	--	--	--	--	--	na	na
	2-Methylnaphthalene	--	--	--	--	--	--	na	na
	Naphthalene	--	--	--	--	--	--	na	na
	BaP equivalents	--	--	--	--	--	--	na	na
	C9-C18 Aliphatics	--	--	--	--	--	--	na	na
	C11-C22 Aromatics	--	--	--	--	--	--	na	na
	Pentachlorophenol	mg/kg	2.1E-04 U	na	2.1E-04 U	2.1E-04	mg/kg	Max DL	No detected samples
	TEQ (ND=1/2DL)	mg/kg	1.1E-06 J	na	1.7E-06 J	1.1E-06	mg/kg	Mean	Mean of raw statistics; less than 10 sample data points

Notes:

(1) The arithmetic means were calculated by ProUCL based on the distribution characteristics and sample size of the underlying data set. If sample sizes were insufficient for ProUCL to compute statistics, means were manually calculated by averaging the available sample data and, if applicable, factoring in nondetects at half their detection limit.

(2) Distribution codes are as follows: (N) = normal, (NP) = nonparametric, (O) = other. Where two UCLs were recommended by ProUCL, the greatest value was used.

(3) EPC statistic codes are as follows:

Max = maximum
Max DL = maximum detection limit
##% UCL - NP = ##% UCL of nonparameteric data
##% UCL - O = ##% UCL of other parameteric data
Mean - N = mean of normal data
Mean - NP = mean of nonparametric data
Mean - O = mean of other parametric data

-- = no sample data available
CT = central tendency
EPC = exposure point concentration
J = estimated
na = not applicable (e.g., unable to be calculated because of too few samples or no detected samples)
RME = reasonable maximum exposure
U = undetected
UCL = upper confidence limit

TABLE E3.6.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parcel A	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	1.8E-04	mg/L	na	Derived using modeling
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	4.3E-05	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	3.4E-07	mg/L	na	Derived using modeling
Parcel B	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	2.7E-04	mg/L	na	Derived using modeling
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	6.3E-01	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	6.8E-07	mg/L	na	Derived using modeling
Spigot	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	9.5E-06	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	1.8E-08	mg/L	na	Derived using modeling

TABLE E3.6.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Cassell	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	6.4E-05	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	4.0E-08	mg/L	na	Derived using modeling
Parmenter	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	1.2E-07	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	5.0E-10	mg/L	na	Derived using modeling
Skroch	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	3.3E-06	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	8.1E-09	mg/L	na	Derived using modeling

TABLE E3.6.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Chaney	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	4.2E-08	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	1.8E-09	mg/L	na	Derived using modeling
Peirano Tract B	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	4.5E-08	mg/L	na	Derived using modeling
Renfroe	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	3.1E-09	mg/L	na	Derived using modeling

TABLE E3.6.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
3WT	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	3.7E-09	mg/L	na	Derived using modeling
Milton	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	2.8E-06	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	6.2E-09	mg/L	na	Derived using modeling
Peirano Parcel B	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	1.7E-06	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	5.2E-08	mg/L	na	Derived using modeling

TABLE E3.6.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Peirano Tract A	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	9.7E-09	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	4.8E-08	mg/L	na	Derived using modeling
Robak	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	1.8E-06	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	6.2E-09	mg/L	na	Derived using modeling
Smith	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	3.8E-09	mg/L	na	Derived using modeling

TABLE E3.6.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Stevenson	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	1.3E-07	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	1.4E-09	mg/L	na	Derived using modeling
Vintage	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	7.2E-10	mg/L	na	Derived using modeling

TABLE E3.6.RME

EXPOSURE POINT CONCENTRATION SUMMARY

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Right-of-Way	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	7.1E-03	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	--	mg/L	na	na

Notes:

Breast milk EPCs were derived using modeling, as discussed in Section 6.3.2.2.

-- = no soil sample data available
CT = central tendency
EPC = exposure point concentration
na = not applicable (e.g., because EPCs were modeled; no dust sample data available)
RME = reasonable maximum exposure
UCL = upper confidence limit

TABLE E3.6.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Parcel A	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	6.9E-05	mg/L	na	Derived using modeling
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	3.7E-06	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	1.0E-08	mg/L	na	Derived using modeling
Parcel B	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	4.9E-05	mg/L	na	Derived using modeling
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	4.5E-02	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	6.1E-08	mg/L	na	Derived using modeling
Spigot	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	2.5E-06	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	2.8E-09	mg/L	na	Derived using modeling

TABLE E3.6.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Cassell	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	1.0E-05	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	4.4E-09	mg/L	na	Derived using modeling
Parmenter	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	3.3E-08	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	7.6E-11	mg/L	na	Derived using modeling
Skroch	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	2.6E-07	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	7.1E-10	mg/L	na	Derived using modeling

TABLE E3.6.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Chaney	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	1.8E-08	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	4.6E-10	mg/L	na	Derived using modeling
Peirano Tract B	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	6.1E-09	mg/L	na	Derived using modeling
Renfroe	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	6.1E-10	mg/L	na	Derived using modeling

TABLE E3.6.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
3WT	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	1.1E-09	mg/L	na	Derived using modeling
Milton	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	6.0E-07	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	1.0E-09	mg/L	na	Derived using modeling
Peirano Parcel B	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	1.7E-07	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	7.5E-09	mg/L	na	Derived using modeling

TABLE E3.6.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Peirano Tract A	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	3.7E-09	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	2.0E-09	mg/L	na	Derived using modeling
Robak	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	7.5E-07	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	1.2E-09	mg/L	na	Derived using modeling
Smith	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	8.5E-10	mg/L	na	Derived using modeling

TABLE E3.6.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Stevenson	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	5.4E-08	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	9.4E-11	mg/L	na	Derived using modeling
Vintage	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	--	mg/L	na	na
	TEQ (ND=1/2DL)	mg/L	na	na	na	2.1E-10	mg/L	na	Derived using modeling

TABLE E3.6.CT

EXPOSURE POINT CONCENTRATION SUMMARY

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Breast Milk
Exposure Medium:	Breast Milk

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Right-of-Way	C5-C8 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C12 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C9-C10 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Ethylbenzene	mg/L	na	na	na	--	mg/L	na	na
	1-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	2-Methylnaphthalene	mg/L	na	na	na	--	mg/L	na	na
	Naphthalene	mg/L	na	na	na	--	mg/L	na	na
	BaP equivalents	mg/L	na	na	na	--	mg/L	na	na
	C9-C18 Aliphatics	mg/L	na	na	na	--	mg/L	na	na
	C11-C22 Aromatics	mg/L	na	na	na	--	mg/L	na	na
	Pentachlorophenol	mg/L	na	na	na	3.0E-03	mg/L	na	Derived using modeling
	TEQ (ND=1/2DL)	mg/L	na	na	na	--	mg/L	na	na

Notes:

Breast milk EPCs were derived using modeling, as discussed in Section 6.3.2.2.

-- = no soil sample data available
CT = central tendency
EPC = exposure point concentration
na = not applicable (e.g., because EPCs were modeled; no dust sample data available)
RME = reasonable maximum exposure
UCL = upper confidence limit

TABLE E4.1.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Ingestion	Breastfeeding Mother	Child (0-6 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.a.
				IR_{soil}	Soil ingestion rate	200	mg/day	MDEQ's (2012) frequently asked questions; USEPA (2011, Table 5-1)	Average daily dose (ADD_{ing}; mg/kg-day) =
				EF	Exposure frequency (non-ditch)	270	days/year	MDEQ's (2012) frequently asked questions	$\frac{EPC_{soil} \times IR_{soil} \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure frequency (ditch)	40	days/year	Prof. judgment	
				ED	Exposure duration	6	years	Ages 1-7 are of particular interest for intense soil exposures	
				CF	Conversion factor	1E-06	kg/mg	--	
				BW	Body weight	18.5	kg	MDEQ's (2012) frequently asked questions	
				AT-n	Averaging time (noncancer endpoint)	2,190	days	Number of days in a 6 yr exposure period	
		Adult (6-30 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.a.
				IR_{soil}	Soil ingestion rate	50	mg/day	MDEQ's (2012) frequently asked questions; USEPA (2011, Table 5-1)	Lifetime average daily dose ($LADD_{ing}$; mg/kg-day) =
				EF	Exposure frequency (non-ditch)	270	days/year	MDEQ's (2012) frequently asked questions	$\frac{EPC_{soil} \times IR_{soil} \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure frequency (ditch)	40	days/year	Prof. judgment	
				ED	Exposure duration	24	years	MDEQ's (2012) frequently asked questions	
				CF	Conversion factor	1E-06	kg/mg	--	
				BW	Body weight	72.2	kg	USEPA (2011, Table 8-1)	
				AT-n	Averaging time (noncancer endpoint)	8,760	days	Number of days in 78 yr lifetime	

TABLE E4.1.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
Dermal	Breastfeeding Mother	Child (0-6 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.b.
				CF	Conversion factor	1E-06	kg/mg	--	Dermally absorbed dose (DAD; mg/kg-day) =
				AF	Adherence factor	0.0432	mg/cm^2-event	Weighted average by age for face, hands, forearms, lower legs, feet (USEPA 2011, Table 7-4)	$\frac{DA_{event} \times EF \times ED \times EV \times SA}{BW \times AT}$
				ABS_d	Dermal absorption factor	See Table 4.5	--	See Table 4.6	
				EF	Exposure frequency (non-ditch)	270	days/year	MDEQ's (2012) frequently asked questions	where absorbed dose per event (DA_{event}; mg/cm^2-event) =
				EF	Exposure frequency (ditch)	40	days/year	Prof. judgment	$EPC_{soil} \times CF \times AF \times ABS_d$
				ED	Exposure duration	6	years	Ages 1-7 are of particular interest for intense soil exposures	
				EV	Event frequency	1	event/day	--	
				SA	Skin surface area	2,400	cm^2	Weighted average by age for head, hands, forearms, lower legs, feet (USEPA 2011, Table 7-2)	
				BW	Body weight	18.5	kg	MDEQ's (2012) frequently asked questions	
				AT-n	Averaging time (noncancer endpoint)	2,190	days	Number of days in a 6 yr exposure period	

TABLE E4.1.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name (1)
		Adult (6-30 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.b.
				CF	Conversion factor	1E-06	kg/mg	--	Lifetime dermal absorbed dose (LDAD; mg/kg-day) =
				AF	Adherence factor	0.1092	mg/cm^2-event	Average for face, hands, forearms, and lower legs for females (USEPA 2011, Table 7-4)	$\frac{DA_{event} \times EF \times ED \times EV \times SA}{BW \times AT}$
				ABS_d	Dermal absorption factor	See Table 4.5	--	See Table 4.6	
				EF	Exposure frequency (non-ditch)	270	days/year	MDEQ's (2012) frequently asked questions	where DA_{event} (mg/cm^2-event) =
				EF	Exposure frequency (ditch)	40	days/year	Prof. judgment	$EPC_{soil} \times CF \times AF \times ABS_d$
				ED	Exposure duration	24	years	MDEQ's (2012) frequently asked questions	
				EV	Event frequency	1	event/day	--	
				SA	Skin surface area	5,500	cm^2	Average for head, hands, forearms, lower legs for females (USEPA 2011, Table 7-2)	
				BW	Body weight	72.2	kg	USEPA (2011, Table 8-1)	
				AT-n	Averaging time (noncancer endpoint)	8,760	days	Number of days in 78 yr lifetime	

Notes:

CT = central tendency
MDEQ = Montana Department of Environmental Quality
RME = reasonable maximum exposure
USEPA = U.S. Environmental Protection Agency

Sources:

MDEQ. 2012. Frequently Asked Questions. Risk Assessment/Analysis. Montana Department of Environmental Quality. Accessed 5/25/2012.

USEPA. 1989. Risk assessment guidance for Superfund: Volume 1 - Human health evaluation manual (Part A). Interim Final. EPA/540/1-89/002. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, DC. 287 pp.

USEPA. 2011. Exposure factors handbook: 2011 edition. EPA/600/R-09/052F. National Center for Environmental Assessment, U.S. Environmental Protection Agency, Washington, DC.

TABLE E4.1.CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Breastfeeding Mother	Child (0-6 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.a.
				IR_{soil}	Soil ingestion rate	50	mg/day	USEPA (2011, Table 5-1)	Average daily dose (ADD_{ing}; mg/kg-day) =
				EF	Exposure frequency (non-ditch)	150	days/year	Prof. judgment	$\frac{EPC_{soil} \times IR_{soil} \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure frequency (ditch)	20	days/year	Prof. judgment	
				ED	Exposure duration	6	years	Ages 1-7 are of particular interest for intense soil exposures	
				CF	Conversion factor	1E-06	kg/mg	--	
				BW	Body weight	18.5	kg	MDEQ's (2012) frequently asked questions	
				AT-n	Averaging time (noncancer endpoint)	2,190	days	Number of days in a 6 yr exposure period	
		Adult (6-30 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.a.
				IR_{soil}	Soil ingestion rate	20	mg/day	USEPA (2011, Table 5-1)	Lifetime average daily dose ($LADD_{ing}$; mg/kg-day) =
				EF	Exposure frequency (non-ditch)	150	days/year	Prof. judgment	$\frac{EPC_{soil} \times IR_{soil} \times EF \times ED \times CF}{BW \times AT}$
				EF	Exposure frequency (ditch)	20	days/year	Prof. judgment	
				ED	Exposure duration	12	years	Mean time residing in same residence (USEPA 2011, Table 16.5)	
				CF	Conversion factor	1E-06	kg/mg	--	
				BW	Body weight	72.2	kg	USEPA (2011, Table 8-1)	
				AT-n	Averaging time (noncancer endpoint)	4,380	days	Number of days in 78 yr lifetime	

TABLE E4.1.CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Dermal	Breastfeeding Mother	Child (0-6 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.b.
				CF	Conversion factor	1E-06	kg/mg	--	Dermally absorbed dose (DAD; mg/kg-day) =
				AF	Adherence factor	0.0432	mg/cm^2-event	Weighted average by age for face, hands, forearms, lower legs, feet (USEPA 2011, Table 7-4)	$\frac{DA_{event} \times EF \times ED \times EV \times SA}{BW \times AT}$
				ABS_d	Dermal absorption factor	See Table 4.5	--	See Table 4.6	
				EF	Exposure frequency (non-ditch)	150	days/year	Prof. judgment	where absorbed dose per event (DA_{event}; mg/cm^2-event) =
				EF	Exposure frequency (ditch)	20	days/year	Prof. judgment	$EPC_{soil} \times CF \times AF \times ABS_d$
				ED	Exposure duration	6	years	Ages 1-7 are of particular interest for intense soil exposures	
				EV	Event frequency	1	event/day	--	
				SA	Skin surface area	2,400	cm^2	Weighted average by age for head, hands, forearms, lower legs, feet (USEPA 2011, Table 7-2)	
				BW	Body weight	18.5	kg	MDEQ's (2012) frequently asked questions	
				AT-n	Averaging time (noncancer endpoint)	2,190	days	Number of days in a 6 yr exposure period	

TABLE E4.1.CT

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Medium:	Soil
Exposure Medium:	Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
		Adult (6-30 years)	Surface soil	EPC_{soil}	Chemical concentration in surface soil	See Table 3.1	mg/kg	See Table 3.1	Exhibit 6-1.b.
				CF	Conversion factor	1E-06	kg/mg	--	Lifetime dermal absorbed dose (LDAD; mg/kg-day) =
				AF	Adherence factor	0.1092	mg/cm^2-event	Average for face, hands, forearms, and lower legs for females (USEPA 2011, Table 7-4)	$\frac{DA_{event} \times EF \times ED \times EV \times SA}{BW \times AT}$
				ABS_d	Dermal absorption factor	See Table 4.5	--	See Table 4.6	
				EF	Exposure frequency (non-ditch)	150	days/year	Prof. judgment	where DA_{event} (mg/cm^2-event) =
				EF	Exposure frequency (ditch)	20	days/year	Prof. judgment	$EPC_{soil} \times CF \times AF \times ABS_d$
				ED	Exposure duration	12	years	Mean time residing in same residence (USEPA 2011, Table 16.5)	
				EV	Event frequency	1	event/day	--	
				SA	Skin surface area	5,500	cm^2	Average for head, hands, forearms, lower legs for females (USEPA 2011, Table 7-2)	
				BW	Body weight	72.2	kg	USEPA (2011, Table 8-1)	
				AT-n	Averaging time (noncancer endpoint)	4,380	days	Number of days in 78 yr lifetime	

Notes:

CT = central tendency
MDEQ = Montana Department of Environmental Quality
RME = reasonable maximum exposure
USEPA = U.S. Environmental Protection Agency

TABLE E4.5

VALUES USED FOR CHEMICAL-SPECIFIC INTAKE CALCULATIONS

S & W Sawmill Facility, Darby, MT

Chemical of Potential Concern	Dermal Absorption Factor for Soil (ABS_d)				Organic Water Partition Coefficient (log K_{ow})				Root Concentration Factor (RCF)				Below-Ground Produce Correction Factor ($VG_{rootveg}$)				Soil/Water Partition Coefficient (Kd_s)				Breast Milk Biotransfer Factor (Bb_{milk})			
	Value	Units	Source(s)	Date(s)	Value	Units	Source(s)	Date(s)	Value	Units	Source(s)	Date(s)	Value	Units	Source(s)	Date(s)	Value	Units	Source(s)	Date(s)	Value	Units	Source(s)	Date(s)
C5-C8 Aliphatics	1	--	MDEQ	2009	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
C9-C12 Aliphatics	0.5	--	MDEQ	2009	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
C9-C10 Aromatics	0.5	--	MDEQ	2009	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Ethylbenzene	0	--	MDEQ	2009	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
1-Methylnaphthalene	0.13	--	USEPA	2004	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
2-Methylnaphthalene	0.13	--	USEPA	2004	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Naphthalene	0.13	--	USEPA	2004	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
BaP equivalents	0.13	--	USEPA	2004	6	--	USEPA	2012	1258.9	--	log (RCF) = 0.77 * log Kow - 1.52	na	0.01	--	USEPA	2005	10200	L/kg	Kd_s = Koc * 0.1	na	0.44	days/kg milk	MDEQ	2001
C9-C18 Aliphatics	0.5	--	MDEQ	2009	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
C11-C22 Aromatics	0.1	--	MDEQ	2009	nv	na	na	na	nv	na	na	na	nv	na	na	na	nv	na	na	na	nv	na	na	na
Pentachlorophenol	0.25	--	USEPA	2004	5.1	--	USEPA	2012	255.3	--	log (RCF) = 0.77 * log Kow - 1.52	na	0.01	--	USEPA	2005	160.0	L/kg	Kd_s = Koc * 0.1	na	0.6	days/kg milk	MDEQ	2001
TEQ (ND=1/2DL)	0.03	--	USEPA	2004	7.2 (1)	--	USEPA	2012	10568.2	--	log (RCF) = 0.77 * log Kow - 1.52	na	0.01	--	USEPA	2005	97724	L/kg	Kd_s = Koc * 0.1	na	0.92	days/kg milk	MDEQ	2001

Notes:

(1) Mean Kow for all dioxin congeners

ABSd = dermal absorption factor

BaP = benzo(a)pyrene

MDEQ = Montana Department of Environmental Quality

na = not applicable; in some cases a value may be available but was not used if a COPC would not be evaluated under a particular exposure scenario

nv = no value available

TEQ = 2,3,7,8-TCDD toxicity equivalents with non-detects set at 1/2 the detection limit

USEPA = U.S. Environmental Protection Agency

References:

MDEQ. 2009. Montana Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases. Appendix E: Direct Contact. September. Montana Department of Environmental Quality.

USEPA. 2004. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005. July. U.S. Environmental Protection Agency, Washington, DC.

USEPA. 2012. Superfund Chemical Data Matrix.

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Parcel A Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	1.3E+02	mg/kg	3.3E-04	mg/kg-day
				C9-C12 Aliphatics	2.0E+00	mg/kg	5.0E-06	mg/kg-day
				C9-C10 Aromatics	2.0E+00	mg/kg	5.0E-06	mg/kg-day
				Ethylbenzene	5.0E-02	mg/kg	1.3E-07	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	3.3E-01	mg/kg	8.3E-07	mg/kg-day
				Naphthalene	1.0E-01	mg/kg	2.5E-07	mg/kg-day
				BaP equivalents	4.1E-01	mg/kg	4.8E-06	mg/kg-day
				C9-C18 Aliphatics	1.2E+01	mg/kg	3.0E-05	mg/kg-day
				C11-C22 Aromatics	2.6E+02	mg/kg	6.5E-04	mg/kg-day
				Pentachlorophenol	2.3E-01	mg/kg	5.8E-07	mg/kg-day
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	4.6E-09	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	1.3E+02	mg/kg	9.5E-04	mg/kg-day
				C9-C12 Aliphatics	2.0E+00	mg/kg	7.2E-06	mg/kg-day
				C9-C10 Aromatics	2.0E+00	mg/kg	7.2E-06	mg/kg-day
				Ethylbenzene	5.0E-02	mg/kg	0.0E+00	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	3.3E-01	mg/kg	3.1E-07	mg/kg-day
				Naphthalene	1.0E-01	mg/kg	9.3E-08	mg/kg-day
				BaP equivalents	4.1E-01	mg/kg	9.0E-07	mg/kg-day
				C9-C18 Aliphatics	1.2E+01	mg/kg	4.3E-05	mg/kg-day
				C11-C22 Aromatics	2.6E+02	mg/kg	1.9E-04	mg/kg-day
				Pentachlorophenol	2.3E-01	mg/kg	4.1E-07	mg/kg-day
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	4.0E-10	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Parcel B Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	7.9E+00	mg/kg	2.0E-05	mg/kg-day
				C9-C12 Aliphatics	9.1E+02	mg/kg	2.3E-03	mg/kg-day
				C9-C10 Aromatics	3.7E+02	mg/kg	9.3E-04	mg/kg-day
				Ethylbenzene	4.6E-02	mg/kg	1.2E-07	mg/kg-day
				1-Methylnaphthalene	3.4E+00	mg/kg	8.5E-06	mg/kg-day
				2-Methylnaphthalene	2.0E+00	mg/kg	5.1E-06	mg/kg-day
				Naphthalene	4.9E-01	mg/kg	1.2E-06	mg/kg-day
				BaP equivalents	6.1E-01	mg/kg	7.1E-06	mg/kg-day
				C9-C18 Aliphatics	1.8E+03	mg/kg	4.6E-03	mg/kg-day
				C11-C22 Aromatics	6.1E+03	mg/kg	1.5E-02	mg/kg-day
				Pentachlorophenol	3.4E+03	mg/kg	8.5E-03	mg/kg-day
				TEQ (ND=1/2DL)	3.8E-03	mg/kg	9.5E-09	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	7.9E+00	mg/kg	5.7E-05	mg/kg-day
				C9-C12 Aliphatics	9.1E+02	mg/kg	3.3E-03	mg/kg-day
				C9-C10 Aromatics	3.7E+02	mg/kg	1.3E-03	mg/kg-day
				Ethylbenzene	4.6E-02	mg/kg	0.0E+00	mg/kg-day
				1-Methylnaphthalene	3.4E+00	mg/kg	3.2E-06	mg/kg-day
				2-Methylnaphthalene	2.0E+00	mg/kg	1.9E-06	mg/kg-day
				Naphthalene	4.9E-01	mg/kg	4.6E-07	mg/kg-day
				BaP equivalents	6.1E-01	mg/kg	1.3E-06	mg/kg-day
				C9-C18 Aliphatics	1.8E+03	mg/kg	6.5E-03	mg/kg-day
				C11-C22 Aromatics	6.1E+03	mg/kg	4.4E-03	mg/kg-day
				Pentachlorophenol	3.4E+03	mg/kg	6.1E-03	mg/kg-day
				TEQ (ND=1/2DL)	3.8E-03	mg/kg	8.2E-10	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Spigot Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	5.1E-02	mg/kg	1.3E-07	mg/kg-day
				TEQ (ND=1/2DL)	1.0E-04	mg/kg	2.5E-10	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	5.1E-02	mg/kg	9.2E-08	mg/kg-day
				TEQ (ND=1/2DL)	1.0E-04	mg/kg	2.2E-11	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Cassell Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	2.3E+00	mg/kg	8.6E-07	mg/kg-day
				TEQ (ND=1/2DL)	1.5E-03	mg/kg	5.5E-10	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	2.3E+00	mg/kg	6.1E-07	mg/kg-day
				TEQ (ND=1/2DL)	1.5E-03	mg/kg	4.8E-11	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Parmenter Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	4.4E-03	mg/kg	1.6E-09	mg/kg-day
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	6.9E-12	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	4.4E-03	mg/kg	1.2E-09	mg/kg-day
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	5.9E-13	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Skroch Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	1.2E-01	mg/kg	4.5E-08	mg/kg-day
				TEQ (ND=1/2DL)	3.0E-04	mg/kg	1.1E-10	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	1.2E-01	mg/kg	3.2E-08	mg/kg-day
				TEQ (ND=1/2DL)	3.0E-04	mg/kg	9.6E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Chaney Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	2.2E-04	mg/kg	5.6E-10	mg/kg-day
				TEQ (ND=1/2DL)	1.0E-05	mg/kg	2.5E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	2.2E-04	mg/kg	4.0E-10	mg/kg-day
				TEQ (ND=1/2DL)	1.0E-05	mg/kg	2.2E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Peirano Tract B Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	1.7E-03	mg/kg	6.2E-10	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	1.7E-03	mg/kg	5.3E-11	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Renfroe Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	1.7E-05	mg/kg	4.3E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	1.7E-05	mg/kg	3.7E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
3WT Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	5.1E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	4.4E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Milton Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	1.5E-02	mg/kg	3.8E-08	mg/kg-day
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	8.5E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	1.5E-02	mg/kg	2.7E-08	mg/kg-day
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	7.3E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Peirano Parcel B Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	6.0E-02	mg/kg	2.2E-08	mg/kg-day
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	7.1E-10	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	6.0E-02	mg/kg	1.6E-08	mg/kg-day
				TEQ (ND=1/2DL)	1.9E-03	mg/kg	6.1E-11	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Peirano Tract A Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	3.5E-04	mg/kg	1.3E-10	mg/kg-day
				TEQ (ND=1/2DL)	1.8E-03	mg/kg	6.6E-10	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	3.5E-04	mg/kg	9.4E-11	mg/kg-day
				TEQ (ND=1/2DL)	1.8E-03	mg/kg	5.7E-11	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Robak Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	9.6E-03	mg/kg	2.4E-08	mg/kg-day
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	8.5E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	9.6E-03	mg/kg	1.7E-08	mg/kg-day
				TEQ (ND=1/2DL)	3.4E-05	mg/kg	7.3E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Smith Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	2.1E-05	mg/kg	5.2E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	2.1E-05	mg/kg	4.5E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Stevenson Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	6.8E-04	mg/kg	1.7E-09	mg/kg-day
				TEQ (ND=1/2DL)	7.6E-06	mg/kg	1.9E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	6.8E-04	mg/kg	1.2E-09	mg/kg-day
				TEQ (ND=1/2DL)	7.6E-06	mg/kg	1.6E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Vintage Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	1.0E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	8.6E-13	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Right-of-Way Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	3.8E+01	mg/kg	9.5E-05	mg/kg-day
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day
			Total Ingestion					

TABLE E7.8.RME

CALCULATION OF CHEMICAL INTAKES

REASONABLE MAXIMUM EXPOSURE

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	3.8E+01	mg/kg	6.8E-05	mg/kg-day
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

Notes:

BaP = benzo(a)pyrene

CT = central tendency

EPC = exposure point concentration

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents with non-detects set at 1/2 the detection limit

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Parcel A Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	1.3E+02	mg/kg	8.8E-05	mg/kg-day
				C9-C12 Aliphatics	2.0E+00	mg/kg	1.3E-06	mg/kg-day
				C9-C10 Aromatics	2.0E+00	mg/kg	1.3E-06	mg/kg-day
				Ethylbenzene	5.0E-02	mg/kg	3.3E-08	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	3.3E-01	mg/kg	2.2E-07	mg/kg-day
				Naphthalene	1.0E-01	mg/kg	6.7E-08	mg/kg-day
				BaP equivalents	4.1E-01	mg/kg	1.3E-06	mg/kg-day
				C9-C18 Aliphatics	1.2E+01	mg/kg	8.0E-06	mg/kg-day
				C11-C22 Aromatics	2.6E+02	mg/kg	1.7E-04	mg/kg-day
				Pentachlorophenol	4.7E-02	mg/kg	3.2E-08	mg/kg-day
				TEQ (ND=1/2DL)	1.9E-04	mg/kg	1.3E-10	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	1.3E+02	mg/kg	6.0E-04	mg/kg-day
				C9-C12 Aliphatics	2.0E+00	mg/kg	4.6E-06	mg/kg-day
				C9-C10 Aromatics	2.0E+00	mg/kg	4.6E-06	mg/kg-day
				Ethylbenzene	5.0E-02	mg/kg	0.0E+00	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	3.3E-01	mg/kg	2.0E-07	mg/kg-day
				Naphthalene	1.0E-01	mg/kg	5.9E-08	mg/kg-day
				BaP equivalents	4.1E-01	mg/kg	8.2E-07	mg/kg-day
				C9-C18 Aliphatics	1.2E+01	mg/kg	2.7E-05	mg/kg-day
				C11-C22 Aromatics	2.6E+02	mg/kg	1.2E-04	mg/kg-day
				Pentachlorophenol	4.7E-02	mg/kg	5.4E-08	mg/kg-day
				TEQ (ND=1/2DL)	1.9E-04	mg/kg	2.6E-11	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Parcel B Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	5.6E+00	mg/kg	3.7E-06	mg/kg-day
				C9-C12 Aliphatics	2.4E+02	mg/kg	1.6E-04	mg/kg-day
				C9-C10 Aromatics	9.2E+01	mg/kg	6.2E-05	mg/kg-day
				Ethylbenzene	4.6E-02	mg/kg	3.1E-08	mg/kg-day
				1-Methylnaphthalene	3.4E+00	mg/kg	2.3E-06	mg/kg-day
				2-Methylnaphthalene	4.8E-01	mg/kg	3.2E-07	mg/kg-day
				Naphthalene	9.3E-02	mg/kg	6.2E-08	mg/kg-day
				BaP equivalents	3.0E-01	mg/kg	9.7E-07	mg/kg-day
				C9-C18 Aliphatics	6.8E+02	mg/kg	4.6E-04	mg/kg-day
				C11-C22 Aromatics	8.3E+02	mg/kg	5.6E-04	mg/kg-day
				Pentachlorophenol	5.7E+02	mg/kg	3.8E-04	mg/kg-day
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	7.6E-10	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	5.6E+00	mg/kg	2.5E-05	mg/kg-day
				C9-C12 Aliphatics	2.4E+02	mg/kg	5.4E-04	mg/kg-day
				C9-C10 Aromatics	9.2E+01	mg/kg	2.1E-04	mg/kg-day
				Ethylbenzene	4.6E-02	mg/kg	0.0E+00	mg/kg-day
				1-Methylnaphthalene	3.4E+00	mg/kg	2.0E-06	mg/kg-day
				2-Methylnaphthalene	4.8E-01	mg/kg	2.9E-07	mg/kg-day
				Naphthalene	9.3E-02	mg/kg	5.5E-08	mg/kg-day
				BaP equivalents	3.0E-01	mg/kg	5.9E-07	mg/kg-day
				C9-C18 Aliphatics	6.8E+02	mg/kg	1.6E-03	mg/kg-day
				C11-C22 Aromatics	8.3E+02	mg/kg	3.8E-04	mg/kg-day
				Pentachlorophenol	5.7E+02	mg/kg	6.6E-04	mg/kg-day
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	1.5E-10	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Spigot Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	3.1E-02	mg/kg	2.1E-08	mg/kg-day
				TEQ (ND=1/2DL)	5.3E-05	mg/kg	3.5E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	3.1E-02	mg/kg	3.6E-08	mg/kg-day
				TEQ (ND=1/2DL)	5.3E-05	mg/kg	7.2E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Cassell Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	9.6E-01	mg/kg	8.6E-08	mg/kg-day
				TEQ (ND=1/2DL)	6.2E-04	mg/kg	5.5E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	9.6E-01	mg/kg	1.5E-07	mg/kg-day
				TEQ (ND=1/2DL)	6.2E-04	mg/kg	1.1E-11	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Parmenter Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	3.2E-03	mg/kg	2.9E-10	mg/kg-day
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	9.5E-13	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	3.2E-03	mg/kg	4.9E-10	mg/kg-day
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	1.9E-13	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Skroch Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	2.5E-02	mg/kg	2.2E-09	mg/kg-day
				TEQ (ND=1/2DL)	9.9E-05	mg/kg	8.8E-12	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	2.5E-02	mg/kg	3.8E-09	mg/kg-day
				TEQ (ND=1/2DL)	9.9E-05	mg/kg	1.8E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Chaney Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	2.2E-04	mg/kg	1.5E-10	mg/kg-day
				TEQ (ND=1/2DL)	8.6E-06	mg/kg	5.8E-12	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	2.2E-04	mg/kg	2.6E-10	mg/kg-day
				TEQ (ND=1/2DL)	8.6E-06	mg/kg	1.2E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Peirano Tract B Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	8.5E-04	mg/kg	7.6E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	8.5E-04	mg/kg	1.6E-11	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Renfroe Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	7.6E-12	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	1.1E-05	mg/kg	1.6E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
3WT Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	1.4E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	2.0E-05	mg/kg	2.8E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Milton Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	7.6E-03	mg/kg	5.1E-09	mg/kg-day
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	1.3E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	7.6E-03	mg/kg	8.7E-09	mg/kg-day
				TEQ (ND=1/2DL)	1.9E-05	mg/kg	2.6E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Peirano Parcel B Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	1.7E-02	mg/kg	1.5E-09	mg/kg-day
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	9.4E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	1.7E-02	mg/kg	2.5E-09	mg/kg-day
				TEQ (ND=1/2DL)	1.1E-03	mg/kg	1.9E-11	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Peirano Tract A Soil (ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	3.5E-04	mg/kg	3.1E-11	mg/kg-day
				TEQ (ND=1/2DL)	2.8E-04	mg/kg	2.5E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	3.5E-04	mg/kg	5.4E-11	mg/kg-day
				TEQ (ND=1/2DL)	2.8E-04	mg/kg	5.1E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Robak Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	9.6E-03	mg/kg	6.4E-09	mg/kg-day
				TEQ (ND=1/2DL)	2.2E-05	mg/kg	1.5E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	9.6E-03	mg/kg	1.1E-08	mg/kg-day
				TEQ (ND=1/2DL)	2.2E-05	mg/kg	3.1E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Smith Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	1.6E-05	mg/kg	1.1E-11	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	1.6E-05	mg/kg	2.2E-12	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Stevenson Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	6.8E-04	mg/kg	4.6E-10	mg/kg-day
				TEQ (ND=1/2DL)	1.8E-06	mg/kg	1.2E-12	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	6.8E-04	mg/kg	7.8E-10	mg/kg-day
				TEQ (ND=1/2DL)	1.8E-06	mg/kg	2.4E-13	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Vintage Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	2.7E-12	mg/kg-day
			Total Ingestion					
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	--	mg/kg	--	mg/kg-day
				TEQ (ND=1/2DL)	4.0E-06	mg/kg	5.5E-13	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
Right-of-Way Soil (non-ditch)	Soil	Surface Soil	Ingestion	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	3.8E+01	mg/kg	2.5E-05	mg/kg-day
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day
			Total Ingestion					

TABLE E7.8.CT

CALCULATION OF CHEMICAL INTAKES

CENTRAL TENDENCY

S & W Sawmill Facility, Darby, MT

Scenario Timeframe:	Current/Future
Receptor Population:	Breastfeeding Mother
Receptor Age:	Child (0-6 years) and Adult (6-30 years)

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Intake	
					Value	Units	Value	Units
			Dermal	C5-C8 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C12 Aliphatics	--	mg/kg	--	mg/kg-day
				C9-C10 Aromatics	--	mg/kg	--	mg/kg-day
				Ethylbenzene	--	mg/kg	--	mg/kg-day
				1-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				2-Methylnaphthalene	--	mg/kg	--	mg/kg-day
				Naphthalene	--	mg/kg	--	mg/kg-day
				BaP equivalents	--	mg/kg	--	mg/kg-day
				C9-C18 Aliphatics	--	mg/kg	--	mg/kg-day
				C11-C22 Aromatics	--	mg/kg	--	mg/kg-day
				Pentachlorophenol	3.8E+01	mg/kg	4.3E-05	mg/kg-day
				TEQ (ND=1/2DL)	--	mg/kg	--	mg/kg-day
			Total Dermal					
		Total Soil Direct Contact						

Notes:

BaP = benzo(a)pyrene

CT = central tendency

EPC = exposure point concentration

RME = reasonable maximum exposure

TEQ = 2,3,7,8-TCDD toxicity equivalents with non-detects set at 1/2 the detection limit

APPENDIX F

LAND USE

Priscilla Tomlinson

From: Roll, Robert [RRoll@mt.gov]
Sent: Monday, September 16, 2013 12:37 PM
To: Priscilla Tomlinson
Cc: 'Tom C Richardson'; 'David Cosgriff'; Jennifer Sampson
Subject: RE: Vines (2004) deed restriction

Priscilla,

Thank you for providing the Vines Declaration of Covenants, Conditions, and Restrictions document.

DEQ has reviewed the document and noted the following language:

"Section 1. Amendment. This Declaration may be amended by the Declarant, in its sole discretion or by a vote consenting of such Amendment by an affirmative vote of Seventy-Five Percent (75%) of the voting Members of a later formed Subdivision Association. Amendment other than in accordance with this Article is not permissible. All amendments must be provided, by way of notice, to all Owners within thirty (30) days after adoption of said amendment. In addition, any adopted Amendment must be filed with the Clerk and Recorder's office of Ravalli County, State of Montana."

By this section, the prohibition on residential use can be lifted. Therefore, please continue to evaluate the properties for both residential and commercial use. When DEQ prepares the Record of Decision (ROD) for the Facility, DEQ will identify and evaluate the reasonable anticipated future use of the property and take into consideration this covenant as well as the other statutory considerations.

Thank you,

Robert L. Roll
State of Montana
Department of Environmental Quality
Site Response Section
Direct: 406-841-5025
Fax: 406-841-5050

From: Priscilla Tomlinson [mailto:ptomlinson@integral-corp.com]
Sent: Wednesday, September 11, 2013 8:35 AM
To: Roll, Robert
Cc: 'Tom C Richardson'; 'David Cosgriff'; Jennifer Sampson
Subject: Vines (2004) deed restriction

Hi Bob,

As agreed during our meeting on April 9, attached is the Vines (2004) deed restriction for the DVN commercial subdivision east of Highway 93 (Robak, Smith, 3WT LLC, and Vintage Construction). We will provide this deed restriction in an appendix to the BRA report as directed.

The following text from the beginning of Article II indicates the intent to establish a commercial subdivision:

> Section 1. Statement of Purpose. The purpose of this Declaration of Covenants and Restrictions is to insure a use and development of DVN Commercial Subdivision consistent with the

desire and intention of Declarant to establish a commercial subdivision of high quality….

It is the purpose of this Declaration, in general, to provide that DVN Commercial Subdivision will be so managed, maintained, and preserved that it will at all times be regarded as a commercial subdivision of outstanding excellence.

Please let us know if you agree that these properties should be evaluated as commercial rather than residential.

Regards,

Priscilla

Priscilla Tomlinson | Managing Scientist
Integral Consulting Inc. | www.integral-corp.com
411 1st Avenue S., Suite 550 | Seattle, WA 98104
Tel: 206.957.0344 | Cell: 425.894.6872 | Fax: 206.230.9601

HEALTH ENVIRONMENT TECHNOLOGY SUSTAINABILITY

DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS

by

Danny M. Vines and Nancy T. Vines

THIS DECLARATION made this 15 day of October, 2004, by Danny M. Vines and Nancy T. Vines, owners of the following described real property, hereinafter referred to as the "Declarant";

Ret MT Nwco PO Box 8777 Missoula MT 59807

WITNESSETH:

WHEREAS, the Declarant is the owner of certain real property in Ravalli County, State of Montana known as DVN Commercial Subdivision and more particularly described in Exhibit "A", being the Plat of DVN Commercial Subdivision, attached hereto and by this reference incorporated herein; and

WHEREAS, the Declarant intends to develop DVN Commercial Subdivision into a commercial subdivision of individual units consisting of buildings designed for commercial offices and retail businesses. Each unit shall be subject to this Declaration of Covenants, Conditions and Restrictions; and

WHEREAS, the Declarant desires to provide for the preservation of the distinctive quality of DVN Commercial Subdivision and for the maintenance of a common area and the buildings and for these purposes, the Declarant desires to subject the real property hereinafter described to this Declaration of Covenants, Conditions and Restrictions.

NOW, THEREFORE, Declarant hereby declares that all the property described in Exhibit "A" attached shall be held, sold, and conveyed subject to the following limitations, restrictions, regulations and uses upon and of such real property as restrictive and protective covenants, all of which are for the purpose of enhancing and protecting the value, desirability, and attractiveness of the DVN Commercial Subdivision by providing a reasonably uniform plan for the development and maintenance of the same as a desirable commercial development. This Declaration of Covenants, Conditions and Restrictions shall run with the real property and shall be binding upon all parties having or acquiring any right, title, or interest in the described property, or any part thereof, and shall inure to the benefit of and be binding upon each successor in interest to the owner thereof.

ARTICLE I

Property Subject to Covenants and Restrictions

Section 1. **Description of DVN Commercial Subdivision.** The real property to which this Declaration relates, and which is subject to the Covenants and Restrictions, is the property which Declarant is developing, and said real property is legally described as follows:

A parcel of land in the S1/2NW1/4 of Section 11, Township 3 North, Range 21 West, P.M.M., Ravalli County, Montana, and being more particularly described as Parcel C, Certificate of Survey No. 294. EXCEPTING AND RESERVING THEREFROM that portion deeded to the State of Montana in Book 186 of Deeds, page 775.

Section 2. **DVN Commercial Subdivision Subject to Covenants and Restrictions.** DVN Commercial Subdivision is hereby made and declared to be subject to the conditions, covenants, restrictions, reservations, grants and easements contained in this Declaration, and the sale, transfer, mortgage, conveyance, use of the Lots and the Common Areas are and shall at all times hereafter be subject to the Covenants and Restrictions.

ARTICLE II

General Purpose of Declaration

Section 1. **Statement of Purpose.** The purpose of this Declaration of Covenants and Restrictions is to insure a use and development of DVN Commercial Subdivision consistent with the desire and intention of Declarant to establish a commercial subdivision of high quality; to protect the Owners of structures therein against use of DVN Commercial Subdivision, or any part of DVN Commercial Subdivision in a manner that conflicts with complimentary and permissible uses as provided for in this Declaration and incompatible with the proper enjoyment of such a subdivision; to insure that the DVN Commercial Subdivision is at all times carefully and efficiently maintained and that the lawns, private roadways, walks, and open spaces within DVN Commercial Subdivision are always so maintained and operated that they may be enjoyed and used with comfort and pleasure by the Owners of structures within the DVN Commercial Subdivision and by the customers who visit the commercial entities therein. It is the purpose of this Declaration, in general, to provide that DVN Commercial Subdivision will be so managed, maintained, and preserved that it will at all times be regarded as a commercial subdivision of outstanding excellence.

Section 2. **Declarant/Subdivision Association.** As of the Date of this original Declaration, a Subdivision Association has not yet been formed to oversee and promulgate Rules and Regulations for the DVN Commercial Subdivision. At some time in the future, a Subdivision Association may be formed. Such Subdivision Association will require Owners to pay an annual fee and will assume all of the powers conveyed to the Declarant herein, among other Rules and Regulations.

Section 3. **Declarant's Right to Transfer Title to Association.** Until the Lots shall have been sold, the development of DVN Commercial Subdivision has been completed by Declarant, and a Subdivision Association has been formed, all of the rights, powers and obligations granted in this Declaration are to be vested in, and possessed by, Declarant.

ARTICLE III

Enforcement

Section 1. **Interested Parties.** Declarants or their Assigns shall have the option and right to enforce, by any proceeding at law or in equity, all restrictions, covenants, reservations, and charges now or hereafter imposed by the provisions of this Declarant. The method of enforcement may include proceedings to enjoin the violation, to recover damages, or both. Failure by the Declarants or by an Owner of the other adjoining property to enforce any such provision shall in no event be deemed a waiver of the right to do so thereafter.

Section 2. **Costs of Enforcement.** Should any lawsuit or other legal proceeding be instituted by any person entitled to enforcement against any owner of property who is alleged to have violated one or more of the provisions of this Declaration, the party that loses shall pay the attorneys fees for both the Plaintiff and the Defendant.

Section 3. **Severability.** Invalidation of any one of these covenants or restrictions by judgment or court order shall in no way affect any other provisions which shall remain in full force and effect.

ARTICLE IV

The Lots and The Owners

Section 1. **Creation of Lots.** Lots were created by the recording of a Plat of Subdivision. Said Plat of Subdivision shows, for each Lot, a lot number, the legal description, boundary dimensions, and configuration.

Section 2. **Designation of Lot.** Each Lot may for all purposes, including but without limitation, conveyances and mortgages, be identified and referred to as "Lot Number ____, as described and delineated on DVN Commercial Subdivision Plat or Subdivision, recorded in the Clerk and Recorder's Office of Ravalli County, Montana, as Book ___ and Page ____."

Section 3. **Owner.** By purchasing or otherwise acquiring a Lot or Lots, each Owner agrees to be bound by all the Covenants and Restrictions contained in this Declaration.

ARTICLE V

Term

The provisions of this Declaration shall be binding unless modified, revoked or amended by unanimous approval of the owners of the properties described and delineated on DVN Commercial Subdivision Plat or Subdivision, recorded in the Clerk and Recorder's Office of Ravalli County, Montana, as Book ___ and Page ____.

ARTICLE VI
Restrictions

Section. 1. **Easements**. Easements and rights-of way are reserved for the creation, construction, and maintenance of utilities, including gas, water, telephone, electricity, sewers, storm drains, public, quasi-public, and private, as well as for any public, private, or quasi-public utility or function necessary or expedient for the public health and welfare. The easements and rights-of-way shall be confined to the rear six feet of every lot and six feet along the side of every building plot, and along every street of the subdivision, and as more particularly shown and described on the plat of DVN Commercial Subdivision.

Section 2. **Building Plans.** Plans and specifications for construction on any and all structures and Lots must be submitted to the Declarant, for written approval as to quality of workmanship and materials, harmony of external design, size, and existing structures, and as to location with respect to topography and finish grade elevation prior to the commencement of any construction in the subdivision.

The Declarant shall have sole and exclusive decision making authority in connection with the architectural control of the property. Each Owner of a Lot shall comply strictly with the conditions of plat approval for the DVN Commercial Subdivision and shall further comply with any and all laws, regulations, rules, ordinances and building codes pertaining to and governing the improvements and structures erected, constructed or contained on the property. No structural modifications of any structure or Lot shall be undertaken or completed by any Lot Owner, or any third person, without first obtaining the written approval of the Declarant. The Declarant shall be under no obligation to approve exterior structural modifications to structures or to the Lots.

The Declarant may require payment of fees for application for review of proposed modifications, review of complaints or protests alleging violation of these restrictions as to matters within the jurisdiction of the Declarant. Fees as set by the Declarant shall be in an amount sufficient to recently compensate the Declarant for its administrative costs and expenses likely to be incurred in connection with its activities. The Declarant may require payment of the fee in advance as a condition of making its review or determination. Unless waived by the Declarant, failure to pay any fee required for Declarant's review or action shall be interpreted as though the matter was not presented for review and no action of the Declarant is required. The Declarant shall not be liable to any Owner for any damage, loss or prejudice suffered as a result of performance of the Declarant; provided, however, that such Declarant has, with the actual knowledge possessed by it, acted in good faith.

Prior to the commencement of construction of any kind on any Lot, the Lot Owner shall be required to submit to the Declarant for approval in writing the following information:

(a) Location of the proposed structure;

(b) Landscaping;

(c) Building floor plans;

(d) Exterior elevations and exterior openings of buildings;

(e) Intended building use;

(f) Exterior finishes and materials;

(g) Square footage;

(h) Exterior color of all structures. Buildings and structures shall have colors compatible with the general concept of the DVN Commercial Subdivision, which shall be construed in the sole discretion of the Declarant.

Section 3. **Utility Installation Fee.** No construction of any kind shall be commenced until the utility installation fee has been paid, or arrangements for payment satisfactory to the Declarant have been made.

Section 4. **Signs.** No sign of any kind shall be exhibited in any way on or above the property of the subdivision without the written approval of the Declarant of its duly authorized agent, except one professional sign of not more than one square foot, one sign of not more than five square feet advertising the property for sale of rent, or signs used by a builder to advertise the property during the construction and sales period, and except for signs in commercial zones advertising accredited businesses.

Section 5. **Fences.** No fence or hedge shall be erected or maintained on the property of the subdivision which materially impair the continuity of the general landscaping plan of the subdivision. For this purpose, a hedge or fence should, if possible, be maintained at no greater than four feet, and shall not in any manner impair the general scheme of the subdivision area. The Declarant may, in its discretion, approve minor projections above the restricted heights for architectural features. No wall or fence of any kind whatsoever shall be constructed on any Lot until after the Height, type, design, and location has been approved in writing by the Declarant, or its duly authorized agent.

Section 6. **Outside Lighting.** Outside illumination equipment shall not be constructed unless the same is attached to the main structure or, in the alternative, as attached to a pole not to exceed eight (8) feet in height. All outside illumination must be downward pointed and side shielded. "All night" mercury or farm-style outdoor lights are expressly prohibited.

Section 7. **Water and Sewage.** The laws of the State of Montana and County of Ravalli, as well as the rules and regulations of their administrative agencies, now or in the future in effect with regard to sewage disposal, water supply, and sanitation apply to the subdivision under this instrument. All buildings shall connect with central water and sewer utilities within 90 days when made available. However, wells may be maintained for outside use, including watering of lawns, etc., subject to approval of duly constituted public health authorities.

Section 8. **Trucks and Trailers.** No Lot shall be used as a junkyard or auto graveyard. No semi-trucks or trailers shall be permitted to be parked in the subdivision for a period of more than four hours, unless the same is present in the actual construction or repair of buildings located on the land, and no trucks or trailers shall be parked overnight.

Section 9. **Exterior Maintenance.** Each Owner of a Lot shall provide exterior maintenance upon such Lot and structures, if any, to include painting and repairing the structures. The Lot Owner shall maintain the lawn and landscaping of each Lot, including watering. In providing such exterior maintenance, the Owner shall utilize color and landscaping schemes that are harmonious with the surrounding area and consistent with the conditions of the County of Ravalli for plat approval and further consistent with the concept for the DVN Commercial Subdivision. In the event any Owner shall fail or neglect to provide such exterior maintenance, the Declarant shall notify such Owner in writing specifying the failure and demanding that it be remedied within thirty days. If the Owner shall fail or refuse to provide such exterior maintenance within the thirty-day period, the Declarant may then enter such Lot and provide the required maintenance at the expense of the Owner. The full amount shall be due and payable within thirty days after the Owner is billed therefore and shall become a special assessment upon that Lot. The Declarant may exercise all legal rights to collect that assessment. Such entry in the Lot by the Declarant shall not be deemed a trespass.

Section 10. **Landscaping Controls.** Initial landscaping shall be done by the Lot Owner, and changes in such landscaping shall be made by an Owner only with the prior approval of the Declarant. All landscaping shall be in general conformance with the Parking & Drainage Plan attached hereto as Exhibit B, and by this reference incorporated herein. The Declarant has the right, in making a judgment as to the giving or withholding of approval of proposed changes in landscaping submitted in writing to the Declarant, to consider the desirability of the proposed landscaping or grading in relation to other landscaping and grading in DVN Commercial Subdivision, and to consider the character and qualities of the commercial development existing or being created within the DVN Commercial Subdivision.

Section 11. **Parking in Frontage.** The Declarant has agreed to pave a parking access road. For the purpose of this provision, the parking access road is described as, approximately 30 feet in width and is located between the southern boundary of Lot 2 and approximately 30 feet north of the northern boundary of Lot 4. Any additional paving that may be required on any lot shall be the sole responsibility of the owner of said lot.

Any additional maintenance, replacement, resurfacing or other requirements relating to the parking access road shall be as set forth in a Road Maintenance Agreement which relates to the real property and which is recorded in the Clerk's and Recorder's Office of Ravalli County, State of Montana. and shall become a special assessment upon that Lot. The Declarant may exercise all legal rights to collect that assessment. Such entry in the Lot by the Declarant shall not be deemed a trespass.

Section 12. **Prohibition of Animals.** No animals or fowl, domestic or wild shall be kept on any of the Lots without prior written approval of Declarant. In no event may any animal be raised, bred or maintained for any commercial purpose. Animals shall not be permitted to become a nuisance or annoyance to the neighborhood. Violations of the requirements regarding animals shall be considered a breach of these Restrictions, giving rise to such remedies as are allowed by law for the breach of any other Covenants contained herein.

Section 13. **Prohibition of Vehicles.** Boats and recreational vehicles shall not be stored or parked overnight on any Lot within DVN Commercial Subdivision or elsewhere within the Common Area. Trailers, mobile homes, campers and similar vehicles are included in this prohibition against recreational vehicles. Violation of the foregoing restrictions shall entitle Declarant to enforce the rights and remedies hereinafter specified, whether or not said violation constitutes a nuisance.

Section 14. **Garbage.** No rubbish, trash, garbage or other waste shall be allowed to accumulate on any Lot except in sanitary containers which shall be emptied on at least a weekly basis by a local garbage collection firm. On garbage collection days, garbage cans may be placed in a location convenient for collection. All garbage shall be stored in containers of metal, plastic or other suitable material, which shall have sufficiently tight fitting covers to prevent the escape of noxious odors and to prevent entrance by pets. Garbage cans shall be stored indoors. There shall be no burning of leaves or trash.

Section 15. **Nuisances.** No noxious or offensive activities shall be carried on or permitted upon any of the Lots or on the property, nor shall anything be done thereon which may or may become an annoyance or nuisance to the subdivision, nor shall the property or any Lot be used in any way or for any purpose which may endanger the health or safety of, or unreasonably disturb the structure on any Lot. No business or commercial activities dealing in pornographic or adult materials or adult entertainment shall be carried on or permitted upon any of the Lots or on the property. No tent, shack, garage, temporary or permanent building or structure of any kind on the lot shall be used at any time as either a temporary or permanent residence. No plants or seeds or other things or conditions, harboring or breeding or likely to attract noxious insects or creatures, or likely to be conducive to plant disease, shall be brought into or permitted to exist or to be maintained within DVN Commercial Subdivision.

Section 16. **Damaged Property.** Any structure damaged by fire or other casualty must be removed from the premises or repairs commenced within 120 days unless an extension of time for such removal or repair is granted by the Declarant. Any damaged structure not so removed or repaired may be removed at the Owner's expense and the Declarant may pursue any and all legal and equitable remedies to enforce compliance and to recover any expenses incurred in connection herewith. Any costs incurred by the Declarant in relation to this Section shall become a special assessment upon the Lot of the Owner. The Declarant may exercise all legal rights to collect that assessment.

Any damaged structure shall be reconstructed in its original exterior design and shape. The reconstruction or repair of any damaged structure shall strictly comply with the conditions of plat approval of the County of Ravalli and shall further comply with any and all restrictions of any law, regulations, ordinances and building codes pertaining to the design and exterior of the structure. Prior to commencement of construction of the damaged structure, the Lot Owner shall submit to the Declarant for approval written plans and specifications.

Section 17. **Noxious Weed Control.** The Owner of any lot shall not allow noxious weeds to remain or grow on the lot. Weeds shall be controlled by the use of allowable chemicals, cutting, pulling, tillage or some other form of weed management allowed under the guidelines of the Ravalli County weed control program. Ground disturbance caused by construction or maintenance shall be revegetated with beneficial species at the first appropriate opportunity.

Section 18. **Wildlife and Wildlife Habitat.** Lot owners shall accept responsibility for the general proximity of wildlife, the potential wildlife/human interactions, and be responsible for protecting their vegetation from damage, or plant only non-palatable vegetation. There is potential for vegetation damage by wild life to lawns, landscaping, flowers and ornamental shrubs located on or near the property. Lot owners shall keep pets on the lot owner's land or under the immediate control of its owner. Harassment of big game animals by dogs is illegal. Montana law also prohibits supplemental feeding of game animals and artificial feeding is prohibited. For more information in the regard, please refer to the Montana Fish, Wildlife and Parks at (406) 542-5500. (*Effects on Wildlife and Wildlife Habitat)*

Section 19. **Radon Exposure.** The owner understands and accepts the potential health risk from radon concentrations, which are presently undetermined at this location. Unacceptable levels of radon can be reduced through building design and abatement techniques incorporated into structures. *(Effects on Public Health and Safety)*

Section 20. **Primary Heat Source.** The primary heat source for any newly constructed buildings in this subdivision shall be at least 75% efficient. *(Effects on Natural Environment)*

Section 21. **Wavier of Protest to Creation of RSID/SID.** Owners and their successors in interest waive all rights in perpetuity to protest the creation of a city/rural improvement district for any purpose allowed by law, including, but not limited to creating and/or improving a community water or wastewater treatment system and improving and/or maintaining the roads that access the subdivision, including related right-of-way, drainage structures, and traffic control signs. *(Effects on Local Services)*

Section 22. **Required Posting of County-Issued Addresses for Lots within this Subdivision.** The uniform Fire Code 901.4.4 requires lot owners to post the County-issued addresses at the intersection of the interior subdivision road and the parking area for each primary commercial building as soon as construction on the building begins. *(Effects on Local Services-Fire Protection & Public Health and Safety)*

Section 23. **Required Installation of On-Site Stormwater Drainage Facilities.** Each lot owner is required to install additional stormwater drainage facilities, water supply, and waste water treatment systems on each lot in accordance with the Montana Department of Environmental Quality Certificate of Subdivision Plat Approval filed with the final subdivision plat. Additionally, each lot owner is required to maintain all stormwater drainage facilities located on each lot as shown on the Montana Department of Environmental Quality Certificate of Subdivision Plat Approval including those within the 60' wide easement for the common parking access/interior road adjacent to U.S. Highway 93 and the additional stormwater drainage facilities required to be installed on each lot by the lot owner. *(Effects on Local Services-Road & the Natural Environment)*

Section 24. **Covenants and Restrictions - Running With Land**. The Covenants and Restrictions created by this Declaration run with the land both as to burden and benefit, and every conveyance or other instrument affecting DVN Commercial Subdivision shall be deemed subject to these Covenants and Restriction and bound thereby as fully and as firmly as if said Covenants and Restrictions were fully set forth in said conveyance or other instrument.

ARTICLE VII

Easements

Section 1. **Easements Reserved by Declarant.** Notwithstanding any provision herein to the contrary, until such time as the Declarant is no longer vested with or controls title to any part of DVN Commercial Subdivision, the Declarant and its agents and contractors shall have the right (a) to place and maintain on the Property model structures, sales offices, advertising signs, parking spaces and lighting in connection therewith, at such location and in such forms as the Declarant may determine in its discretion, to be used by the Declarant in connection with the promotion, sale, or lease of the Lots or of the structures constructed thereon or to be constructed thereon, (b) to come over, across and upon the Property for the purpose of making alterations or improvements to the structures, Lots or Common Areas, and (c) to store on the Common Areas equipment and materials used in connection with such work on the structures, Lots or Common Areas, all without the payment of any fees or charges whatsoever.

Section 2. **Easements for Public Utilities, Sanitary and Storm Sewers, Storm Water Drainage.** Declarant, in the Plat of Subdivision for DVN Commercial Subdivision established and reserved, or may establish and reserve, easements over portions of DVN Commercial Subdivision for sanitary and storm sewers, Storm Water Drainage and for all other public utility purposes including electricity, gas, water, cable, television, and telephones, and Declarant has the concomitant right, in connection with said grant of easements, including, but without limitation, the right of maintenance, repair and replacement. Declarant is fully authorized and empowered to execute and deliver any and all documents necessary to implement these provisions, and the Owners shall be deemed to have approved and confirmed such documents, and to be bound thereby. No structure of any kind shall be erected, placed or permitted to remain on such easements.

ARTICLE VIII

Party Walls

Section 1. **Owner's Rights and Obligations.** Each of the Owners immediately adjacent to a party wall shall have the obligations and be entitled to the rights and privileges granted herein and, to the extent not inconsistent herewith, the general rules of law regarding party walls. If any party wall is damaged or destroyed or destroyed through the act or acts of an adjoining Owner, or his agents, servants, guests, or members of his family, whether such act is willful, negligent or accidental, such Owner shall rebuild or repair the wall in as good a condition as formerly without cost to the other adjoining Owner. Any party wall damaged or destroyed by some act or event other than that produced by one of the adjacent Owners, his agents, servants, guests or family, shall be rebuilt or repaired by both adjoining Owners to the same good condition as formerly, at their joint and equal expense, as promptly as reasonably possible. Any Owner who proposes to modify, rebuild, repair or make additions to its own residence or any reconstruction upon his Lot in any manner which requires the extension, alteration or modification of any party wall, shall first obtain the written consent of the adjacent Owner, in addition to obtaining written consent from the Declaration.

ARTICLE IX

Assessments

Section 1. **Assessment for Taxes and Maintenance Prior to Transfer to an Association.** All taxes and expenses for maintenance and operation of the Common Areas and for the services hereinabove specified, performed upon Lots, shall be paid by assessments upon the Owners. Declarant shall make assessments for maintenance and operations on a quarterly basis. The assessments for maintenance and operations shall be subject to periodic adjustment, upward or downward, each such adjustment to be based upon the estimate then made by Declarant of the expense of managing and operating DVN Commercial Subdivision during the period for which the estimate has been made. The Owners shall make assessment payments in a prompt manner after the Declarant has forwarded the assessment amounts to the Owners.

Section 2. **Allocation of Assessment Liability Among Owners.** All taxes and expenses in connection with maintenance, improvement, management and operation of the Subdivision, herein sometimes referred to as "Maintenance Expense" shall be borne in equal shares by all the Owners. Each Owner agrees to be liable for and to pay all assessments herein provided for.

Section 3. **Lien for Assessments.** If an Owner fails to pay an assessment portion thereof for which he is liable, then the Declarant shall have a lien, effective as of the date on which payment was due, on such Owner's Lot for the purpose of securing the obligation of the Owner in respect of said unpaid assessment or portion thereof.

Section 4. **Lien Rights of Declarant.** All of the lien rights and other rights herein provided for shall be possessed by the Declarant as fully and as effectively in ever respect.

ARTICLE X

Compliance, Breach of Covenants, and Default

Section 1. **Rights and Remedies of Declarant**. Each Owner is bound by and shall comply with the terms of this Declaration and the Rules and Regulations adopted pursuant thereto and by all amendments to them. A failure by an Owner to comply with this Declaration, or any authorized amendment to said Declaration, shall constitute a Default by such Owner. If a default occurs, the Declarant shall have the right to recover damages at law, to procure injunctive relief, to foreclose on any lien rights the Declarant may have, or to avail itself of any other rights or remedies permitted at law or in equity including court costs and attorney's fees and all other expenses of the proceeding, and all damages, liquidated or otherwise, together with interest thereon at 15% per annum. The rights and remedies of the Declarant shall be cumulative and shall be enforceable concurrently in a single proceeding.

Section 2. **Liability of Owners for Negligence.** Each Owner shall be liable for any damage caused by his act or negligence, or by the act or negligence of any party whose right to be upon the DVN

Commercial Subdivision is derived from such Owner, but only to the extent that such damage is not covered by insurance carried by the Declarant.

ARTICLE XI

Amendment of Declaration

Section 1. **Amendment**. This Declaration may be amended by the Declarant, in its sole discretion or by a vote consenting of such Amendment by an affirmative vote of Seventy-Five Percent (75%) of the voting Members of a later formed Subdivision Association. Amendment other than in accordance with this Article is not permissible. All amendments must be provided, by way of notice, to all Owners within thirty (30) days after adoption of said amendment. In addition, any adopted Amendment must be filed with the Clerk and Recorder's office of Ravalli County, State of Montana.

ARTICLE XII

General Provisions

Section 1. **Notices - In General**. Notices given pursuant to this Declaration or in connection therewith shall be written, and shall be delivered in person or by mail. Notices shall be deemed delivered on the date personal delivery is made or on the date of mailing. Notice to an Owner may be given to the Owner at his Lot. Notice to the Declarant may be given to the Declarant's address as set forth below.

Section 2. **Non-Waiver Except by Written Instrument**. No conditions, covenants, restrictions, reservations, grants or other provisions of this Declaration shall be deemed to have been waived by silence, or inaction, or failure to enforce rights or by any other matters whatsoever, other than a writing executed by the party against whom the waiver is asserted, which expressly states that a specified right or remedy is being waived. No waiver shall be deemed to have been effected by the failure to enforce rights or remedies of which a party is possessed, regardless of the number of breaches or violations of said rights, which have occurred.

Section 3. **Partial Invalidity – Severability.** The invalidity of any of the conditions, covenants, restrictions or reservations herein contained, or of any other provision of whatever nature of this Declaration shall not in any way impair or affect the validity or enforceability of any other provisions of this Declaration, and any such invalidity shall be deemed partial and separable, and all of this Declaration shall be deemed valid, effective and binding except for the invalid provision.

Section 4. **Captions**. Captions used in this Declaration are inserted solely as a matter of convenience and shall not be relied upon or used in construing the text thereof.

Section 5. **Recordation**. Prior to consummation of the sale of the first Lot in DVN Commercial Subdivision by delivery of a deed to said Lot and immediately following the recording of the Final Plat of Subdivision, this Declaration shall be recorded in the office of the Clerk and Recorder of Ravalli County, Montana. All amendments to the Declaration shall also be recorded in said Recorder's Office.

IN WITNESS WHEREOF, this document has been executed on the day and year first above written.

DECLARANT: Danny M. Vines and Nancy T. Vines

SS: _____
Danny M. Vines
P.O. Box 151507
Lufkin, Texas 75915-1507

SS: Nancy T. Vines
Nancy T. Vines
P.O. Box 151507
Lufkin, Texas 75915-1507

STATE OF Texas }
:ss
County of Angelina }

This instrument was acknowledged before me by Danny M. Vines and Nancy T. Vines
on October 15, 2004.

SS Nelda Holcomb
Print Name Nelda Holcomb
Notary Public for the State of Texas
Residing at Lufkin, TX
My commission expires 12-19-04

- SEAL -

NELDA HOLCOMB
Notary Public
STATE OF TEXAS
My Comm. Exp. 12-19-2004

DRAIN

18" CMP CULVERT WITH FLARED END SECTIONS

SQ CUT AND MATCH EXISTING GRADE STA 4+01.98 ELEV. = 95.00

PROPOSED 60' COMMON PARKING ACCESS AND PUBLIC UTILITY EASEMENT

U. S. HWY 93 S

REQUIRED STORMWATER SWALE FOR SHARED ACCESS

SQ CUT AND MATCH EXISTING GRADE STA 0+00 ELEV. = 99.00

PROPOSED 60' COMMON PARKING ACCESS AND PUBLIC UTILITY EASEMENT

32" X 48" CMP CULVERT MAINTAINED BY DITCH OWNER

30' ACCESS EASEMENT

15' ACCESS EASEMENT

LOT 5
10.07 Acres

LOT 4
1.46 Acres

LOT 3
1.10 Acres

15' UTILITY EASEMENT

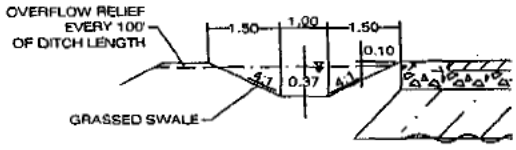
LOT 2
1.57 Acres

LOT 1
1.06 Acres

32" X 48" CMP CULVERT MAINTAINED BY DITCH OWNER

MONTANA RAIL LINK - BITTERROOT BRANCH

NOTE: SHARED ACCESS ALIGNMENT DOES HAVE A CENTER LINE RADIUS OF 300'



SHARED ACCESS DRAINAGE SWALE DETAIL

NO SCALE

60 0 60
SCALE IN FEET

Landworks
Consulting & Design, Inc.
Civil Engineering Land Consulting
Ph. (406) 542-1415
Fax. (406) 542-8252
PO Box 7908
Missoula, MT 59807

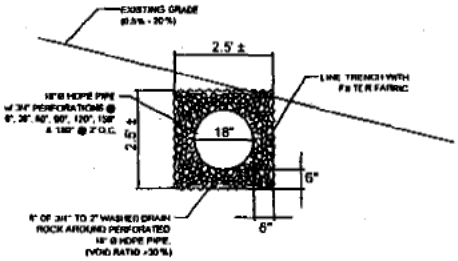
LEGEND

- EXISTING WELL (ABANDONED)
- PROPOSED WELL
- DRAINAGE ARROWS
- EASEMENTS
- PROPERTY LINE
- RAILROAD
- EDGE OF ROAD
- INTERMEDIATE CONTOUR (1' INT)
- INDEX CONTOUR (5' INT)
- EDGE OF SHARED ACCESS ROAD TO BE INSTALLED PRIOR TO FILING THE PLAT
- APPROXIMATE PROPOSED STORM DRAINAGE LOCATIONS
- ROADSIDE DITCH
- IRR — IRRIGATION DITCH
- SHARED ACCESS DRAINAGE SWALE
- E — EXISTING ELECTRIC
- PROPOSED DRAINFIELD AND REPLACEMENT AREAS (45' X 10') APPROVED FLOW 200 GPD
- EXISTING DRAINFIELD AREA
- PIN DOWN CURB
- REQUIRED LANDSCAPING. ALSO CAN BE USED AS POTENTIAL LOCATION FOR STORM WATER MANAGEMENT/STORM DRAINAGE
- OTHER GRASSED/LANDSCAPED AREAS OR POTENTIAL STORM DRAINAGE AREAS
- ASPHALT PAVING ACCESS/PARKING AREAS
- EXISTING ASPHALT AT APROACH
- STA ELEV. — STATION AND SPOT ELEVATION OF ASPHALT FOR SHARED ACCESS ROAD

Description	% Impervious	Lot 1		Lot 2		Lot 3		Lot 4		Lot 5	
		Flows (cfs)	Storage (cf)	Flows (cfs)	Storage (cf)	Flows (cfs)	Storage (cf)	Flows (cfs)	Storage (cf)	Flows (cfs)	Storage (cf)
Area (acres)		1.09		1.57		1.10		1.46		2.00	
Pre-Development		0.11	0	0.17	0	0.12	0	0.16	0	0.22	0
Post-Development	80.00%	0.31	720	0.46	1060	0.32	750	0.43	990	0.59	1350
Post-Development	75.00%	0.30	870	0.45	1000	0.31	700	0.41	930	0.57	1270
Post-Development	70.00%	0.29	830	0.43	930	0.30	650	0.40	870	0.54	1180
Post-Development	65.00%	0.28	590	0.41	860	0.28	610	0.38	800	0.52	1100
Post-Development	60.00%	0.26	540	0.39	800	0.27	560	0.36	740	0.50	1020
Post-Development	55.00%	0.25	500	0.37	730	0.26	510	0.35	680	0.47	930
Post-Development	50.00%	0.24	450	0.35	670	0.25	470	0.33	620	0.45	850
Post-Development	45.00%	0.23	410	0.33	600	0.23	420	0.31	560	0.43	760
Post-Development	40.00%	0.21	360	0.32	530	0.22	360	0.29	500	0.40	680
Post-Development	35.00%	0.20	320	0.30	470	0.21	330	0.26	440	0.38	590
Post-Development	30.00%	0.18	270	0.28	400	0.20	280	0.26	370	0.36	510

STORM WATER MANAGEMENT

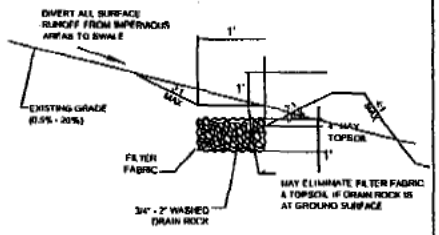
1. LOT OWNER/CONTRACTOR SHALL UTILIZE A OR B SHOWN BELOW, TO RETAIN 100% OF ALL STORMWATER GENERATED FROM IMPERVIOUS AREA. SEE ABOVE FOR SIZING CRITERIA.
2. APPROXIMATE LOCATIONS ARE SHOWN ON PLAN. EXACT LOCATIONS TO BE DETERMINED BY EACH LOT OWNER.
3. MAINTENANCE OF STORMWATER FACILITY SHALL BE RESPONSIBILITY OF EACH LOT OWNER. MAINTENANCE SHALL INCLUDE, BUT NOT TO BE LIMITED TO PERIODIC INSPECTIONS & CLEANING OF FACILITIES.
4. LOTS SHALL BE DEVELOPED IN ACCORDANCE W/ THE "MONTANA SEDIMENT AND EROSION CONTROL MANUAL" CHAPTER 5.



(A) TYPICAL INFILTRATION TRENCH

NO SCALE

NOTE: STORAGE VOLUME = 3 CU. FT PER ONE (1) FOOT OF TRENCH MUST DIRECT ALL ROOF DRAINS, DRIVEWAY, & PARKING DRAINAGE TO SWALE.



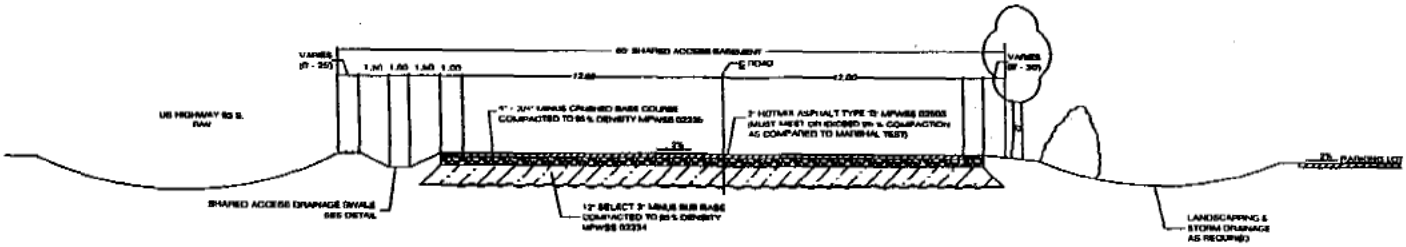
(B) TYPICAL INFILTRATION DRAINAGE SWALE

NO SCALE

NOTE: STORAGE VOLUME = 4 CU. FT PER ONE (1) FOOT OF TRENCH MUST DIRECT ALL ROOF DRAINS, DRIVEWAY, & PARKING DRAINAGE TO TRENCH.

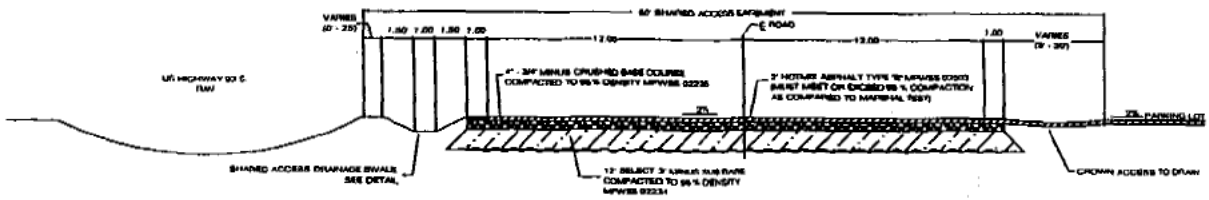
PARKING PLAN:

1. THE UN-OBSTRUCTED TRAVEL WAY AT THE FRONT OF EACH LOT SHALL BE 24' WIDE AND CONSTRUCTED AS SHOWN IN THE REQUIRED TYPICAL SHARED ACCESS CROSS SECTION AND SHOULD BE CONSTRUCTED TO TIE INTO ANY EXISTING ACCESS CONSTRUCTED FOR ADJACENT LOTS. THE SHARED ACCESS WILL BE BUILT WITHIN 120 DAYS AFTER CLOSING THE FIRST SALE OF ANY LOT.
2. PARKING LAYOUTS SHOWN ARE TYPICAL, OTHER DESIGNS MAY BE ACCEPTABLE AS LONG AS ALL STIPULATED MINIMUM REQUIREMENTS ARE MET.
3. PRIVATE ACCESSES, OFF THE SHARED ACCESS, SHOULD BE A MINIMUM OF 20 FEET WIDE FOR ONE WAY TRAFFIC AND 24 FEET FOR TWO WAY TRAFFIC AND SHALL NOT EXCEED 60 FEET IN EITHER CASE.
4. PARKING SPACES SHALL BE A MINIMUM OF 10' X 20'.
5. THE MINIMUM LANDSCAPING AT THE FRONT OF EACH LOT SHALL BE 15 FEET WIDE AND AT LEAST 50 % OF THE TOTAL FRONTAGE. EXACT LOCATIONS OF LANDSCAPING SHALL BE DETERMINED BY THE PROPERTY OWNER.
6. LANDSCAPING SHALL INCLUDE: A) A COMBINATION OF BOULDERS, COBBLES, AND OTHER DECORATIVE OBJECTS TO A MAXIMUM COVERAGE OF 20 % - 30% OF THE REQUIRED LANDSCAPED AREA.
   B) PLANT MATERIAL FOR A MINIMUM COVERAGE OF 70 % - 80% OF THE REQUIRED LANDSCAPED AREA AT MATURITY. THE PLANT MATERIAL SHOULD BE DROUGHT TOLERANT AND/OR NATIVE AND INCLUDE A COMBINATION OF SHRUBS AND TREES.



REQUIRED TYPICAL SHARED ACCESS X-SECTION AT LANDSCAPING

NO SCALE



REQUIRED TYPICAL SHARED ACCESS X-SECTION AT LOT ENTRANCE

NO SCALE

120

REVISIONS	
DATE	DESCRIPTION
5-7-04	ACCESS

DATE: MARCH 9, 2004

JASON S. RICE 13470 PE LICENSED PROFESSIONAL ENGINEER MONTANA

DVN COMMERCIAL SUBDIVISION

PARKING & DRAINAGE PLAN

LOCATION: SECTION 11, T03N, R21W, PMM RAVALLI COUNTY, MONTANA

PREPARED FOR: DANNY VINES

DWG LOCATION: Z:\2003 PROJECTS\1047 - DANNY VINES\DWG\3 -1047 BASE

LANDWORKS PROJECT NO.	FLAT FILE NO.	SHEET
03-1047	XX	1 OF 1

DARBY GROWTH POLICY

Adopted by Resolution 483, April 12, 2011

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In 1999 the Montana Legislature passed Senate Bill 97 authorizing Local Governments to adopt a Growth Policy master plan, now referred to as a "growth policy", and established a list of minimum requirements to be included in the plan. The list of requirements is included in Section 76-1-601 MCA and became law October 1, 1999. Some changes were subsequently made to the law by the 2001 and 2003 legislative bodies. The Darby Growth Policy is structured according to this Legislation providing the community with a technically sound method for dealing with future change, and giving local leaders a reference document establishing policies which will help guide them to the Town's future vision. Realizing the importance of providing workable regulations and maintaining flexibility in the planning process, the law also requires that an implementation strategy be developed which includes a timetable for reviewing the plan at least once every 5 years and revising it if necessary.

INTRODUCTION

The planning process is a systematic approach to problem solving at the local and regional level, and provides an opportunity to identify and promote policies that will allow the community to achieve the goals and objectives of a vision for the future. The process follows a logical path that begins with a review of existing conditions, and continues by attempting to forecast anticipated changes and the need for services and facilities. Understanding changes and their impacts allows the Town to establish a framework that will result in development that is in the best interest of its citizens. The framework provided in the Growth Policy provides the necessary principles, criteria and policies to make logical, carefully considered decisions on matters that have a broad and lasting effect on the community.

The Darby Growth Policy is intended to serve as a planning guide for local officials and citizens throughout the planning period from its adoption in 2010 up to the year 2020. The document will be reviewed and updated at least every 5 years during the planning period.

The Darby Growth Policy includes an analysis of existing conditions, trends and resources in Part 1. Population and economic conditions as well as other demographic indicators are summarized in the front section of the document. Population projections and trends in land use, housing, economic conditions, local services and natural resources are discussed.

The public input process was initiated in the development stage of the Growth Policy in order to provide ample opportunity for all voices to be heard prior to the development of goals, objectives and policies that would provide guidance in the shaping of the Land Use Plan. The Town Council solicited public opinion on a variety of issues through distribution of a community needs survey of the project, and additional input was obtained throughout the process at civic meetings, and through information made available by the Resource Assessment Team and Town Council. Part 2 of the report contains a listing of goals and objectives adopted for use in implementing the Growth Policy. Part 3 includes a discussion of anticipated needs and impacts on community services and Part 4 shows the Land Use Plan. Part 5 contains the Implementation

HISTORY

(Provided by the Bitterroot Chamber of Commerce)

The history of Darby dates back to *1888* when the town was platted. The town was incorporated in 1917. This led to other industries of agriculture, and lumber as well as mining for minerals other than gold. Darby is known for colorful inhabitants, and deeply rooted family values.

The town residents have been described as: laid-back, slow-paced, gentle, unworldly, and hospitable. We'll proudly agree with that.

In general the dwellings in Darby are older homes, but relatively well maintained. Most of the newer home construction has occurred on the west side of town. In a couple of sections of town the housing is very old and in need of repair or replacement. The majority of housing is single family with multi family occurring throughout town. Single family mobile homes occur in the single family and multi family zoned areas.

Subdivision activity has been minor over the last 10 years within the town limits. New residential in-fill development could occur on open and vacant land inside the platted area using the existing street system provided that ground water, flood plain and land use compatibility issues are addressed.

Commercial Development Pattern

The Darby Business District is concentrated along Highway 93. The commercial activity occupies lots primarily in the half block area adjacent to the highway and is mixed with residential. There has been some recent commercial development along Highway 93 adjacent to the North and South town limits.

The activities include a variety of commercial operations including several bars, restaurants, a grocery store, banks, motels, automotive service businesses, a hardware store, lumber yard and several other small business establishments. There are also several office buildings .The Business District has remained relatively unchanged in terms of distribution throughout the history of Darby, but improvements and changes have taken place over the last 20 years that have resulted in different commercial uses within the traditional retail commercial area. Although several businesses have been renovated, there has been very little activity requiring new construction.

Industrial Use

There are no current intensive industrial establishments located in Darby.

Public or Government Use

This land use category includes Government Buildings and Facilities, Schools, Churches, Library, Community Club House and Fraternal or similar organizations. Local Government, the Community Clubhouse and Library facilities in Darby are located primarily in the center of town. Federal Government and the Schools are located in the northern portion of Town. Churches are located throughout Town. Currently there are no health care facilities in Darby.

Developed parkland is dispersed throughout the town. Parks in the Town of Darby are Tin Cup Park, South Park, Waincrest Park, Main Street Park**,** River Park, Skateboard Park, Rich Cromwell Rodeo Grounds along with tennis courts and ball fields that are located near the school. The most recent park is a Veterans Memorial Park located adjacent to Highway 93 on the South edge of Darby.

The Town is currently developing a non-motorized trail system around and within the town, which accesses the school, business district, parks and ball fields.
Of the total area of approximately 480 acres in Darby approximately 80% has been developed. An examination of the existing land use map illustrates that small vacant parcels are scattered throughout the developed area of the Town. However, it is evident that the majority of the vacant corporate land lies near the perimeter of Darby.
It is apparent that a significant part of any expected growth in Darby can be accommodated on presently vacant land within the existing Town Limits. Although it is expected that some subdivision activity will continue in the rural area adjacent to the Town Limits, existing conditions provide an opportunity for growth inside or near the existing platted area. The factors that are the primary determinants of how growth will be accommodated and distributed within the Town are: 1) The availability of community sewer and water service; 2) Primary access from arterial streets; 3) Zoning & Growth Policies.

PUBLIC SERVICES AND FACILITIES

Schools

Enrollment projections for the Darby School show a continued decrease in students for the last seven years. In 2003, Darby School had 527 students; the student population in 2009 was 373 students. The school is expecting to downsize from a class B to class C school with in the next few years. Darby will probably remain a class C school until new industry comes to the area.

PLANNING AREA

The jurisdictional planning area includes the area within the Town Boundary and extending approximately 1 mile on each side with irregular projections.

Figure 1 is a vicinity map showing the setting of Darby and its relationship to surrounding topography. Figure 2 shows the Planning Area boundary and the platted street system and block layout in Darby on an ortho photo.

POPULATION

The existing population of Darby is a key indicator of the type and extent of services that are needed to serve the community today, and when compared to recent and past trends, land development demands of the future can be more accurately anticipated. An awareness of recent population trends provides a valuable guide for planning, budgeting, and financing decisions Population forecasts are used to determine future needs for infrastructure improvements, land development, housing and community facilities. As changes in population occur, the impact of these changes must be evaluated and provisions made to accommodate the needs of the community.

The Town of Darby has maintained a population level near 750 persons over the past two decades.

The importance of agriculture has declined as the dependence on retail trade and service occupations has increased. The trends show a decrease in agricultural employment and resource based employment since 1980.

-Income

Typical of rural agricultural areas, per capita income for Ravalli County is less than the statewide average. For the period from 1996 through 2000, per capita income was consistently about $3,000 higher for the State than for Ravalli County. This is a continuation of a long established trend and will probably continue since higher income jobs typically associated with urban and suburban lifestyles are not likely to increase in Ravalli County or Darby appreciably in the foreseeable future. The County and Darby have increased in per capita income, but have not closed the gap significantly compared to the State average in recent years.

HOUSING

General

Housing data is invaluable in considering programs for present and future community improvements. The information is important not only because it allows us to form a detailed picture of the physical aspects of the existing residential community, but because it permits us to arrive at conclusions regarding housing needs, trends, and infrastructure demands for the future. Although it is true that personal living environments change periodically in response to dynamic social and economic forces, it is a fact that the basic need of man for protection from the environment remains constant. Therefore, the provision of housing facilities for increases or changes in population should be a daily concern for government officials and others working in the public sector. Changes in housing demand, which may occur with respect to housing type, cost and geographic distribution, should be analyzed on a periodic basis, so that housing programs and public utility services, which cater to existing and future demand, can be designed and effectively administered.

The following section includes a description of housing characteristics and trends in Darby. Observations are made concerning the type, distribution, cost and quantity of housing units. Results indicative of present demand are also discussed.

Number of Housing Units

The U.S. Census provides recent detailed housing data indicating the number and type of units within Ravalli County and the Darby Town Limits for the year 2000. The data can be used to compare housing counts performed during the decennial census for previous census years, and can be a good indicator of community stability and economic health for the period.

Law Enforcement

The Town of Darby has it own Police Department**,** currently staffed with two Officers.

Fire Protection

Local residents depend heavily on the resources of the Darby Volunteer Fire Department. The Darby Volunteer Fire Department is an independent entity funded by a voter approved tax levy. The district area mirrors the Darby School District. The Town of Darby contracts with the Department for fire protection for Town residents. Because of the constant danger to life and property posed by the threat of fire, it is imperative that the community maintain fire equipment in operable condition

and that it enlist the services of reliable, capable individuals for times of fire emergencies. In times, when property values and building replacement costs are growing at alarming rates, the value of the local fire department services are becoming more and more obvious. Also, we are constantly reminded of the benefits of the department for the safety of the local population, both in terms of performance in time of immediate need for fire prevention through safety education programs.

Since the Fire Department is a necessary part of all communities, whether they are experiencing population growth or decline, it is important that local officials and others directly involved in the planning process become aware of the types of services that are available.
The Darby Fire department is located at 500 N Main St.

Health Care

Health care needs for Darby are met primarily through neighboring community Doctors and clinics. Extended care and special care services are provided in neighboring facilities in Hamilton and Missoula.
There is ambulance service from Marcus Daly Memorial Hospital as well as a full time volunteer QRU. Emergency calls are dispatched through the 911 system centered in the Sheriff's office in Hamilton.

Major medical services are located in Hamilton at Daly Hospital and in Missoula at Saint Patrick & Community Hospitals. These facilities have a 24-hour emergency room, inpatient and outpatient care and surgery and obstetrics departments. St. Patrick also has a cancer treatment center.
These services are adequate to address most long-term care needs of Darby, but the primary response for emergencies and short-term care comes from Marcus Daly Memorial Hospital located in Hamilton.

Government Administration

The Town Hall is the primary office space for conducting daily business and for regular meetings of Darby elected officials. The building is centrally located at 101 E. Tanner Avenue.
The Town Hall Office, Darby Police Department and Darby City Court are located in the same structure. Town records are stored in this office.
The Town Hall has a conference room, which is used, for community meetings as well as the court facilities for the Town Court. Monthly council meetings are held there with ample room for the Council Table and seating for additional people during a public meeting. There are restroom facilities, and ample parking in front of and across the street from the building. The building is in good condition and there are no plans for expansion at this time.
Employees stationed at the Town Hall include the Mayor, Clerk/Treasurer and Assistant Clerk who are responsible for daily Town business and water and sewer billings and collection. The Public Works Director, and Public Works Assistant also use the space, and are in charge of street maintenance, water and sewer systems, cemetery, building maintenance and parks.
The Darby Public Library is located at 101 ½ South Marshall Street. The Library was built in 2004, after formation of a Library District. This independent entity is run by an appointed board, a full time Librarian, part time employees plus volunteer staff. The

Library hosts book signings, story time and a variety of programs. The Darby Public Library is an important community resource and receives steady use and support from the local community.

Parks & Recreation

Parks are one of the most noticeable attributes of a healthy community. They are a reflection of the community's pride and hospitality. Attractive parklands display the natural environment and offer spiritual and physical refreshment to its users. The visual impact of the parks breaks the monotony of the streets and buildings and increases property value. They provide the opportunity for increased interaction between people and offer an especially important opportunity for the youth of the community. Parks allow young people to participate in constructive activities. Parks may be considered as a City's investment in each of its citizens. Darby's park facilities have been developed to serve the needs of the local population for outdoor sporting activities and to provide play areas for the young children of the community. Because of the rural nature of the Town and proximity to abundant open space there are many outdoor recreation opportunities. Parkland is widely dispersed in all areas of the Town boundary. The sites include four School softball/baseball fields, a School tennis court, four picnic areas, a skateboard park, and a rodeo grounds. Needed park improvements including landscaping, sod and irrigation systems have been identified. The town is also in the process of constructing a non-motorized trail system around and through out the town.

Solid Waste Collection and Disposal

Bitterroot Disposal, a private enterprise, provides for the Town of Darby Solid Waste Collection. Each commercial and residential user is responsible for his own solid waste.

Roads and Streets

The street system in Darby is on the Highway 93 that traverses north to south through Town and serves as Main Street. Highway 93 is administered by the Montana Department of Transportation (MDT). The paved roadway is in good condition and is maintained on a regular basis.

The Town of Darby is typified by paved streets and normal right-of ways. The street grades follow the terrain and includes steep grades accessing the elevated bench south west of town.

Maintenance – Darby's streets are a mix of paved and hard packed gravel. This is a total of approximately 7 miles of paved streets and approximately 2.5 miles of gravel alleys.

Due to harsh winter weather, Darby experiences frost upheavals resulting in continuous road maintenance. Repairs consist of patching potholes during the summer and fall.

The sidewalks & curbs along Highway 93 are fairly new and in good condition. A limited amount of sidewalks exist in the remainder of Town.

Water System

The Darby water system provides domestic water for the community and fire protection. The oldest portions of the system were constructed in the early 1960's. The water system consists of several components, including 3 operating groundwater wells, an older steel 100,000 tank and a pre-stressed concrete 900,000

gallon storage reservoir, distribution mains, and services. Many parts of the system are also showing the effects of age and inadequate long range planning. Problem areas were addressed in the Water System Analysis prepared in the late 1980's following an investigation of the existing water system. The Town re-constructed a significant portion of the water system in 2009/2010.
The Darby municipal water supply treatment facility began operation in April 2010. The water is tested regularly and has proven to be a reliable source of quality groundwater. The water is classified as moderately hard. Tests for synthetic organic chemicals (SOC), volatile organic compounds (VOC) and nitrate concentrations have consistently tested below allowable limits.

Sewer System

An analysis of the Town of Darby wastewater needs was completed in the late 1950's to identify existing deficiencies and anticipated future needs. The study results showed that the community is facing the problem of funding major improvements to both the collection system and treatment facility in the relatively near future.

The original system was constructed in 1963. Several extensions have been made to the collection system, but the treatment system has not undergone any substantial improvement since the early 1970's. Darby's wastewater system consists of approximately eight miles lineal feet of gravity sewer laterals, mains, and interceptors which discharge to three cell treatment lagoons.

Treatment System – The existing wastewater treatment system was also constructed in between 1960 & 1975. The DEQ has conducted routine inspections of the Darby facility throughout the years and the community has responded to problems noted during those inspections. According to the 1994-1995 Master Plan, Darby's treatment system was designed to handle a population of approximately 1500. The 2000 Census population was 710.

NATURAL RESOURCES

General

The Town of Darby lies in a mountain valley between the Bitterroot and Sapphire Mountains. The climate of the area is semi-arid and is characterized by large variations in precipitation between the valley and mountain elevations.
The geology and climate of the area are favorable for a healthy rural lifestyle that has the potential to attract many people to the area. The study area is not subjected to impacts from natural hazards such as extended periods of flooding or frequent high wind velocities, but earth quake potential is a concern for construction of public buildings and facilities.
Limitations to development in Darby and the surrounding vicinity are centered on impacts due to the influence of soils, surface water and groundwater. Local populations of fish and wildlife may also be affected by changes in use and management of existing agricultural lands.

Soils

The Soil Conservation Service (SCS) of the U.S. Department of Agriculture issued a report for the Ravalli County Soil Survey in 1989 that covers the Darby area. 'The

soil survey is an inventory and evaluation of the soils in the survey area and can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also it can help avoid soil-related failures in land uses." The information is useful in planning for management of soils for crops, pasture and rangeland as well as sites for buildings, sanitary facilities, recreation and wildlife habitat.

The report contains tables showing a list of soils classifications and a corresponding series of tables that give information about the suitability of the soil for specific uses including, pastureland, irrigated and non-irrigated cropland, crop yields, land capability and woodlands. Soils are also rated for their potential to support building foundations, sanitary facilities, as a source of construction materials such as gravel for road building, and water feature embankments. This soils map is available thru U.S. Department of Agriculture, Ravalli County Soil Survey.

Surface Water • The Darby planning area is part of the Tin Cup & Bunkhouse watersheds that encompasses a four square mile area. The streams from the mountain zones converge on the Bitterroot River.

Groundwater

As previously mentioned, tests have shown that the groundwater in the area is of high quality. The Ravalli County Sanitarian's office does not have any record of water quality problems associated with septic systems. According to local sources and limitations indicated in well records, the groundwater level is relatively high in certain parts of town and may be a concern for development of structures with deep foundations or basements.

The Darby planning area has numerous wells drilled for domestic and stock water use.

DARBY GROWTH POLICY

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GOALS AND OBJECTIVES QUESTIONNAIRE SUMMARYGOALS AND OBJECTIVE STATEMENT
Community Facilities and Utilities
Commercial and Industrial Aesthetics and Environment
Residential
Parks and Recreation.
Natural Resources Agriculture
Transportation

GOALS AND OBJECTIVES

A very important element in this planning study has been the preparation of a goals and objectives statement. It identifies existing areas of concern, anticipated future concerns, and the desired condition or "state of the Town" in twenty years. Obviously a goals and objectives statement cannot be prepared by anyone other than the residents of Darby.

As shown in the population projections in Part One, the planning period for the Growth Policy extends to the year 2020. The goals included here are intended to provide broad, general guidelines within the planning period and the objectives are mid-term more specific measures to be taken within the context of the long-term goals. The implementation goals listed are steps to be taken to reach objectives within the current short term or five year period.

The people of Darby identified these issues during the seven listening sessions, which were designed to determine the challenges, strengths and future visions for their community.

Main Topic: Housing

- First Time Home Buyers
- Housing Rehab Program
- Visible Improvements
- Enforcing Decay ordinance & Demolition
- Lack of Mid-Priced Housing
- Multi-Family Housing
- More owner based residential homes

Main Topic: Jobs

- Living wage jobs
- Sustainable industry
    - Natural resources management and education
    - Workforce training
- Improve small business environment
    - Training and education
    - Expand market for products
- Tourism/destination community
- Main Street

    - Consistent appearance, i.e. old west theme
    - Lighting, signage, parking
    - Remove eyesores-blight

Main Topic: communication

- Re-engagement between Forest Service and community
- Re-invigorate the Civic Club group
- New people/ideas/money mesh with the long time locals
- Continue to engage the school programs with the community residents
- Improved communication among community organizations
- Web site improvements and marketability
- Capitalize on positive leadership (council, mayor, etc.)

Main Topic: Recreation

- Biking/Walking Trail
- Multi-purpose Center
    - Youth (see main topic also)
    - Senior Citizens
    - Performing Arts
    - Pool
- Skate Park
- Sports
- River Front Park
- Year Round/All Season Activities

Main Topic: Youth

- After School Activities
    - Mentoring/Tutoring Program
    - Lack of programs for 7-12
    - Lag time after school/before events
- Sports
    - Improved community support
    - More Choices
- Jobs (high school employment plus future jobs)
- Bring D.A.R.E. back (or some drug education program)
- School enrollment (declining)

Main Topic: Misc. Community Issues

- Clubhouse-balance between utilization, pricing, staffing and costs
- Volunteer Burnout
- Domestic Abuse
- Drug Use – meth labs
- Public transportation
- Repeat previous success path

GOALS AND OBJECTIVE STATEMENT:

<u>Community Facilities and Utilities</u>

Goal: Provide for the social, cultural, governmental and service needs of community at least cost to the taxpayers.

Objectives:

1. Encourage the continued provision of social and cultural facilities within Darby.
2. Ensure the community facilities are strategically located and are of attractive and adequate design.
3. Encourage the planning of efficient community services (most services for the least cost).
4. Ensure the continued high quality of such community services as the library, parks, fire protection, and construct senior facilities.
5. Encourage the coordination of agencies and organizations providing utilities, services and facilities.
3. Encourage the timely upgrade and/or expansion of municipal facilities (water, sewer, streets, etc.) to continue to provide quality service and to accommodate growth as desired.
4. Develop a program to solve the long-time problem of adequate quantity and quality of the community's water supply. Encourage the installation of underground facilities.

Implementation Goals:

1. Maintain current level of funding and support to library, emergency services and Town Parks**.**
2. Continue to develop program for improvement of town water and sewer services, following previous studies to set priority projects. Pursue all grants possible.
3. Codify all town ordinances and nullify all that are obsolete. Communicate ordinances to populace.
2. Designate the Town Council member to represent town at all Ravalli County Economic Development Council meetings and report back to Council.

<u>Commercial and Industrial</u>

Goal: Improve the business conditions in the Darby downtown area and to provide more job opportunities.

Objectives:

1. Create an attractive downtown appearance by providing green areas where possible, adequate parking, adequate sidewalks, tree plantings, and building maintenance.
2. Retain the present Darby central business district as the focus of the community's business and shopping activity.
3. Encourage use of vacant floor space through expansion of business opportunities.
4. Discourage strip commercial development along arterial highways.
5. Encourage commercial development characterized by proper location, adequate sites, sufficient off-street parking and attractive design.
6. Encourage the development of tourist related commercial facilities, which will improve the community's position for tourist trade.

7. Encourage the development of service related commercial ventures to meet the needs of the community (pharmacy, medical services, etc.).
5. Encourage the establishment of properly located, light industry, which will assist in improving available job opportunities. Provide for the proper location of light industrial uses according to the demand on public facilities, relationship to public facilities, and compatibility with surrounding land uses, protecting desirable locations from other unrelated or incompatible uses.

Implementation Goals:

1. Develop Asset Based Community Development program.
    a. Create a "Community Vision 2010".
    b. Create a database of community members and skills,
    c. Include student input and efforts to build database.
2. Promote "Shop at Home" campaign to encourage community support of existing businesses.
3. Apply for "Montana Certified Community" status.
4. Initiate a zero interest loan program to assist town businesses to rehabilitate and beautify their storefront. Set loan maximums and revolving fund.
5. Acquire parking lot for off-street parking near Main Street.
6. Replace sidewalks and improve handicap access to Hwy 93.

<u>Aesthetics and Environment</u>

Goal: Provide for an attractive environment within the developed portions of Darby and the protection of the natural environment within the Bitterroot Valley.

Objectives:

1. Establish a program for improvement and maintenance of entrances to the community.
2. Encourage the use of visual screening between residential, commercial, and areas set aside for light industry.
3. Provide for land use controls, which will prevent incompatible land use development in the future.
4. Encourage adoption of regulations, which control the use of signs along roadways and in commercial areas.
5. Recognize the need for continued surveillance of blighted and mixed land use areas and the development of programs to reduce or eliminate the effects caused by their existence.
6. Encourage the maintenance of vacant lots, alleys, and roadways.
7. Encourage the protection of the natural environment within the Bittreroot Valley.
8. Encourage the identification of historical buildings, structures, and sites within the community.
9. Encourage the use of the County Weed Plan for control and elimination of weeds.

10. Encourage the establishment of tree and shrubbery guidelines for public safety.

Implementation Goals:

1. Assist Chamber in developing a Visitors Center offering information on Darby area.
2. Develop a history of Darby and the Bitterroot Valley, including historic buildings. Use in marketing campaign to promote uniqueness of Darby.
3. Adopt an ordinance for maintenance of trees and shrubs within town, for safety issues.

Residential

Goal: Preserve and improve the quality of the living environment within Darby.

Objectives:

1. Encourage the provision of an adequate supply of sound housing to meet the needs of both present and future populations.
2. Develop necessary measures to prevent the effects of deterioration and blight within existing residential areas by encouraging the removal or improvement of all sub-standard structures, and the maintenance of vacant lots, fence lines, utility easements and road right-of-ways.
3. Encourage the preparation and adoption of building and housing codes.
4. Protect residential areas from the encroachment of incompatible or unrelated uses.
5. Ensure proper location of housing and residential areas through consideration of soils capability, flood plains, topography, groundwater, and such other conditions, which may act as a detriment to proposed development.
6. Develop residential areas in locations, which relate to existing and proposed public facilities and services (water, sewer, streets, etc.).
7. Develop both low and medium density residential areas with a variety of housing types, including mobile homes parks.
8. Provide for safer, more dust-free residential areas through more adequate street and subdivision design.
9. Encourage development of new residential areas to fill in the voids in existing development and prevent further sprawl.
10. Encourage the building and maintenance of sidewalks in residential areas.

Implementation Goals:

1. Update and enforce "Nuisance" ordinances.
2. Adopt and enforce a leash law and/or other pet ordinances within town limits.

3. Provide incentive to remove abandoned buildings (i.e. "credit" or other benefit such as tax deductible donation to the Fire Department, etc.).
4. Repair all existing street lights and identify areas for possible additions of lights.

Parks and Recreation

Goal: Promote the development of recreational facilities, which will benefit both the residents of Darby and the local economy.

Objectives:
1. Encourage the continued provision of park facilities and land areas commensurate with the needs of the community.
2. Encourage the development of facilities which will promote the recreational economy of the Bitterroot Valley covering a wide range of activities.
3. Encourage development of recreational facilities which will not detract from the natural environment.
4. Encourage the development of year round recreational Facilities
5. Encourage the preparation of a master plan and improvement program for the parks acquired through subdivision requirements.
6. Encourage the joint use of park and recreational activities with schools.

Implementation Goals:

1. Develop multi-phase plan to improve facilities with consideration given to a walking trail and/or bike paths.
2. Improve fencing and barriers at town parks.
3. Incorporate National Forest sites into marketing materials/Campaign for Darby.

Natural Resources

Goal: Provide for the utilization of natural resources while retaining the environmental quality and natural character of the community.

Objectives:
1. Provide protection and proper management of natural resources.
2. Encourage measures which will minimize air and water pollution.
3. Ensure the protection and preservation of the natural character of the Bitterroot Valley.

Transportation

Goal: Increase and improve the availability, quality and efficiency of transportation facilities in Darby.

Objectives:

1. Encourage the design of a balanced street system to serve the existing and projected land use pattern.
2. Develop adequate street design and construction standards according to the function the street serves such as arterial, collector, or residential access,
3. Encourage the design of residential street systems, which consider topography, safety, and well being of present and future residents.
4. Encourage the paving of streets within Darby where traffic volume and public opinion warrant need.
5. Encourage the installation of curb and gutter and other drainage facilities where warranted.
6. Promote the development of adequate truck, railroad, and passenger services to the Darby area.

Implementation Goals:
1. Pave or otherwise improve primary streets:
2. Improve drainage on primary streets.

PART THREE TABLE OF CONTENTS

ASSESSMENT OF NEEDS

General
Housing

Business
Industry
Public Services
Community Facilities

OPPORTUNITIES AND CONSTRAINTS

General
Groundwater
Floodplains

ASSESSMENT OF NEEDS

General

The analysis of data collected during the inventory phase and Resource Team Assessment Report highlighted recent trends and community attitudes, and provide insight into development issues and problems that should be addressed in the plan. To some extent, these issues are identified in the goals and objectives included in this report, but more specific needs are discussed in the following sections.

Housing

Census data for population and housing in Darby indicates that there has been a slight decrease from 2000 to 2010, a trend expected to continue through 2020. Given the amount of vacant land within the town limits, housing needs for the population forecast during the planning period could conceivably be accommodated within the vacant platted area in the Town. It is more likely, however that some of the growth will occur on the fringe outside of the existing town boundary. Renovation of vacant housing units may account for a small portion of the housing needed during the next 10 years, but most new residential activity is forecast to be in-fill on platted and subdivided land within the Town. Any unexpected growth in response to unforeseen economic factors may result in new residential subdivisions outside of the existing town limits and may require an update to the plan recommendations.

Subdivision proposals must be closely scrutinized for impacts on existing uses and public services that would be required. It is likely that any new development proposed through the subdivision process will be on land outside the existing city limits in the area shown as unclassified on the Land Use Plan Map. Although it is not the intent of the plan to prohibit development in this area, it is preferable that the existing land use be continued, particularly where a viable agricultural operation will be negatively affected by a change in use.

It could be assumed that the relative demand for single-family, multiple-family and mobile home units will be near the present and past levels shown in the housing section of this report.

Business

The commercial activities in Darby are historically very static because of the influence of Hamilton and Missoula retail outlets on the local buyers. Consequently, the need for additional commercial services and land in the planning area is dictated in part by the ability of new enterprises to compete with the established neighboring business community. The local

population has nevertheless expressed a desire to expand the local business environment and maintain a solid core of local retail services in the existing down town district. It is also desirable to provide for additional commercial activity along Highway 93.
The emphasis should be placed on the preservation and enhancement of the existing business district in Darby as well as improvement and expansion of the highway commercial district

Industry
The Resource Assessment Report indicates that the planned community for Darby should include space for light industrial development as well as improvement of retail trade opportunities. Because the agricultural, mining and forestry industries no longer represent the largest share of county income, there is no need to provide adequate land for a continuation of local services for these enterprises. Preference should be given to preserving the existing land along the railroad corridor. Light industrial development should be concentrated in the area along the railroad and possibly on north Highway 93 beyond the existing town limits where light industrial/commercial activity is already established. The type of industrial activity allowed should be addressed in land use regulations adopted in accordance with the guidance established in the Growth Policy. Additionally, because the opportunity to locate new "clean" light industrial or industrial/commercial uses may occur in the future, provisions should be made to allow for this type of use in areas conducive to a clean, quite and aesthetically pleasing environment.
Public Services
The streets and sewer and water systems are affected by expansion occurring within the service area of each system, and the impacts of development proposals on these systems must be considered before proposed development plans are approved. The Town is in the process of addressing the needs relating to sewer and water for the population anticipated during the planning period. The water system supply has recently been upgraded by the installation of new wells and meters along with a 900,000 gallon storage tank. The sewer system is old and has been experiencing problems relating to treatment system capacity and the condition of the collection system. The lagoon may require improvements to meet current standards and allow for future expansion of the Town.
The street system in Darby, as in all communities in Montana, is in constant need of maintenance. Maintenance is completed on an as-needed basis. Most streets in Darby are paved.

Community Facilities .
Community services providing fire protection, law enforcement, health care, public administration and schools should be considered in the development of the land use plan since obvious shortages or inadequacies in existing facilities could result in the need for additional public land for future expansion. Typically, we must depend on detailed facility plans developed by the affected public entity (through study committees) to identify facility needs.

Although there may be a shortage of some resources required to provide these services in Darby, there were no urgent needs identified within the limited scope of the growth plan. School facility planning should include a master plan to identify potential land to accommodate the facility, and methods of funding it should also be included in the study.
Capital improvements for the Town's public buildings are scheduled and budgeted within a priority system addressing all capital needs for the Town. A detailed Capital Improvements Program (CIP) includes priorities for funding and improving these facilities.

OPPORTUNITIES AND CONSTRAINTS

Groundwater

The Darby planning area has some areas with shallow depths to groundwater. Generally, the groundwater depth presents a constraint to urban use of the land because of increased costs associated with extending or maintaining public utility systems, and because of the difficulty in constructing stable foundations to support new structures. Data indicates that these shallow groundwater conditions occur in Darby in areas near streams, primarily from spring runoff. Seasonal high groundwater conditions near irrigation ditches severely limits development down gradient from the ditch. Since groundwater levels vary significantly throughout the town, site-specific conditions should be identified prior to authorization of new development proposals.
The effect of high groundwater on sewer and water main extensions does not necessarily present a barrier to future development; however, it is beneficial to be aware of the subsurface conditions because construction in groundwater drives up the cost of installation and maintenance. The need for additional planning for construction of foundation systems is evident for areas known to be subject to high groundwater conditions.

Floodplains

Existing Floodplain - There are no officially designated flood plain studies or designations within the town.

DARBY GROWTH POLICY

PART FOUR TABLE OF CONTENTS

THE PLANNING PROCESS

LAND USE PLAN MAP

General

Land Use Classifications

Residential

Medium Density Residential

Low Density Residential

Genera! Commercial

Public and Semi-public

Public Facilities

Unclassified

THE PLANNING PROCESS

The plan includes provide a framework for the Planning Board and Town Council to make decisions on land use proposals that reflect and coordinate the needs related to public facilities and infrastructure, transportation, housing, land capability and economic development. The Darby area is experiencing changes in demand for essential services, and the community has recognized the need to plan carefully to maximize benefits of public expenditures and respond to preferences identified for growth and improvements to the Town. It is the intention of this plan to foster and encourage future development that will cause minimum impacts on the Town, protect the major elements of the economy, and preserve the rural quality of life enjoyed in the Town Of Darby today.

The Growth Policy (which includes the Data Element showing conditions and trends, Goals and Objectives, Land Use Plan, and Implementation Strategy) is a non-binding document developed through public process that identifies land use issues, and gives direction for dealing with those issues. Regulations, in contrast, carry out the direction and policy of the plan by articulating, in specific language, requirements that govern the use of land. Any land use regulations should conform to the adopted plan. The purpose of this concern is to ensure that land use regulations are drafted and enforced in the context of a broad, carefully considered, public purpose. The plan is the public's expression of a planning vision for the community. Regulations adopted in conformance with a plan are less likely to be arbitrary than those adopted in isolation.

LAND USE PLAN MAP

General

The land use plan illustrates the vision of the future development pattern for the Town of Darby. Based on the goals and policies expressed by the local population and government officials, the plan is an expression of desirable community attributes to be retained in future development proposals. It acknowledges the existing development pattern and infrastructure which have basically targeted or committed certain areas in Town for development, even though they may have some environmental or other constraints. The land use plan also reflects the community interest in preserving natural resource values, avoiding environmental degradation, preserving public investments in infrastructure and providing for efficient, cost effective expansion of the community.

Facility plans for water and wastewater showing existing system capacities and limitations were important references in the designation of preferred growth areas.

The Bitterroot Valley resources, each with important functions and values, that must be protected. Darby is committed to protecting these valuable resources while providing for future growth of the community according to a plan that reflects the vision of the local population.

The land use plan is shown on the official Growth Policy map. The following sections discuss the selected land use classifications for the Darby Planning Area.

Land Use Classifications

Residential

The land use plan map shows two density arrangements that should be used to guide the direction and intensity of residential land use in Darby. The distribution of these categories (as shown on the maps) is a reflection of existing land use trends and projected needs for land based on the population and densities discussed in the needs assessment. The classifications in the plan are:

Medium Density Residential

The central residential area has been developed on lots ranging in size from approximately 9375square feet to over 1/3 of an acre. The plan density is to allow for new residential development to occur at densities as required to promote infill in the existing platted area, with the emphasis on small to medium lot size residential development. Multiple family units are encouraged, particularly on near Highway 93.

The use of mobile homes for new housing in the district should be allowed subject to standards developed by the governing body.

This designation recognizes the existing platted streets and lots of the town, and the need for expansion to occur on smaller lots that provide enough space for affordable housing. According to the plan, growth would include renovation of existing properties and infill in the Town with reasonable access to the existing sewer and water systems.

Low Density Residential

Future development proposals should include a plan acceptable to the governing body for connection to municipal sewer and water facilities.

General Commercial

The existing commercial district contains a small cross section of businesses in areas that are conveniently located for vehicular access and public visibility. The business district is centered along Highway 93. The land use plan shows a continuation of existing use and allows for expansion along the highway in the existing platted area. Areas currently used for public activities and services are preserved while small pockets of residential use are recommended for eventual conversion to a business activity. It is the intent of the plan to promote improvements in the existing commercial district and to encourage innovative approaches to the most efficient use of the land for commercial services, parking and advertising. As discussed in the needs assessment. Development constraints that may exist on sites that must be mitigated are: highway access and connection to the Town's sewer and water

systems. If new development is proposed in this area, environmental impacts must also be identified.

Public and Semi-Public

Public Facilities

Public buildings and facilities are an integral part of Darby and should be preserved and improved to serve future generations. Uses included in this classification are public offices, the library, fire department, schools, churches and lodges. As stated in the assessment of community needs, there is not an urgent demand for additional public land for expansion or improvement of services. It appears that school facilities required for the planning period can be provided on the existing site and that improvements for the Town's office space could also be adequately addressed through renovations on-site. Although other additional land has not been included for public facilities, any large development proposals can create additional needs that should be addressed in future plan updates. Public parcels are shown on the land use plan map.

Emphasis on providing better recreational opportunities in Town should be continued and planning efforts for improvements should be supported.

In the interest of supporting recreational development as outdoor interests expand and population increases, the development of a recreation trail is being pursued.

DARBY GROWTH POLICY

PART FIVE TABLE OF CONTENTS

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IMPLEMENTATION MEASURES

General

Several tools are available for use in applying the adopted goals and objectives of the growth policy to shape the future of Darby. The background conditions relating to population, land use, economics, public services and systems, and the natural environment were used in

conjunction with policy statements to produce a land use plan for the Town. The general idea of what the local people advocate for their community growth is therefore apparent; however, because the growth policy is a non-binding document, we must look for a way of providing the most efficient and practical methods to provide regulatory guidance. Regulations must be drafted to carry out the direction of the plan by articulating specific requirements that govern the use of the land. Traditional enforcement tools used in Montana include subdivision regulations, zoning regulations, floodplain regulations, and conservation easements. Building codes are also used to help improve the living environment consistent with adopted policies. Another type of enforcement tool, though less commonly used, is performance zoning or development permit regulations. Establishing annexation polices with clear and understandable procedures can be used as an effective tool for review and approval of new development that is consistent with the community goal of providing efficient community services.

The rural character of the Town of Darby and the simple yet structured existing development pattern would be compatible with regulations restricting various uses to certain zones. The expression of a continuation of this pattern for future development through the goals and objectives needs assessment survey, and land use plan indicates that a local zoning ordinance could be a logical and workable approach to regulating land use in a manner consistent with the direction given in the growth policy. This method of regulation and its relationship to the growth policy is summarized later in this report.

All future subdivision development proposals in the Town must be reviewed according to the procedures and standards established in any updated regulations. The application of development design standards and other subdivision requirements is an effective method of minimizing negative impacts and unidentified costs that can result from new subdivision activity.

Building codes in Darby are administered by the Montana Department of Labor and Industry, Building Codes Bureau, and provide a method of controlling the quality and safety of new construction in the area. The State Building Codes Bureau, through the Permit and Inspection Program, reviews all new public, commercial and industrial buildings and also regulates residential construction for buildings with five or more units. There is presently a full time building inspector in the Town of Darby.

Zoning Ordinance

The enforcement of the zoning ordinance is probably the most logical approach to establishing a reliable and functional planning process in Darby. Designation of residential, commercial and industrial zones in town creates specific boundaries compatible with the recommendations of the growth policy and allow for the enactment of rules and standards to be applied in each zone. The zoning map is therefore a crucial part of the ordinance and is closely tied to the land use plan map and the goals and objectives of the growth policy.

In Montana, municipalities are authorized to enact zoning regulations under the Municipal Zoning Enabling Act. State statute links the growth policy to

zoning regulations by requiring that the local government have an adopted growth policy in place before zoning. A 2002 Attorney General's Opinion held that zoning regulations might not be adopted or substantively revised unless a growth policy has been adopted. The zoning regulations must conform to the policy plan.

Floodplain Regulations

Floodplain regulations are currently enforced in Darby through the local floodplain administrator (public works director) and in the surrounding area by the county floodplain administrator. Subdivision design standards contained in the subdivision regulations address procedures and requirements for floodplain development review.

Capital Improvements Plan

The goals, objectives and policy statements contained in this document make specific reference to the need for improvement and expansion of the public infrastructure system of Darby to adequately serve the existing and future population during the planning period. These infrastructure improvements are being implemented in an orderly and predictable manner through the development of a Capital Improvements Plan (CIP).

All communities are faced with the need for capital improvements - repair or replacement of existing physical facilities, land acquisition and construction of new facilities such as community centers, parks and playgrounds, fire stations, and sewage treatment plants. Capital improvements programming is the preparation and updating of a proposed schedule of public works and related equipment to be built or purchased by a community during the foreseeable future. Capital improvements programming cannot guarantee that all of the proposed projects will be undertaken, but it can go a long way toward guaranteeing the most effective use of limited resources.

A capital improvements program provides a vital link between a community's growth policy and the implementation of that plan. The CIP works in conjunction with the community's annual operating budget and its long-range fiscal policy and is one of the most effective management tools available to a community. By preparing and following a CIP, local officials are in a better position to make objective and informed decisions as to how their community will provide for its citizens. Capital improvements programming can also be the basis for improving intergovernmental and regional relations, as a proposed project may involve several communities.

These benefits, and others inherent in capital improvements programming, are not automatic but are dependent on the commitment of the community. The objective of the CIP is to match needed improvement projects with revenue and financing sources to ensure that public facilities will be repaired, expanded, or constructed as required by future growth, public health and safety, or other community needs. How, when, and where public facilities are provided greatly affects the pattern of future land development and the public cost of providing these facilities.

At a minimum, the CIP should contain:

1. A list of needed capital improvement projects for several or all of the public facilities managed by the local government;
2. Clear priorities for funding and constructing the improvement projects (the needs list is put in priority order);

3. Potential and recommended funding sources to pay for each project; and
4. A rough time schedule for each project.

The growth policy indicates that there is a continued demand for improvements, particularly with regard to the, wastewater system, water system, street system, storm drainage and pedestrian/bicycle facilities

The community Resource Assessment Team Report and goals and objectives have identified community beautification as a high priority, as well as revitalization of the Main business district. Beautification projects could include demolition of dilapidated buildings and clearing vacant lots, and could also address the need for sidewalk and streetscape improvements. Priorities for business district revitalization and community beautification should be established following identification of design standards that are embraced by the business and planning community. Specific beautification and downtown revitalization projects should then be added to the list of improvements in the Capital Improvements Plan.

The projects listed in the improvement schedules of the sewer and water plans should be completed according to the priority schedule using a combination of available public funding sources and local monies. The funding sources should include participation in the CTEP, CDBG, DNRC and TSEP programs as well as available low interest loans available through a variety of other sources. An evaluation of the projects selected should be completed to identify costs and possible funding sources.

Annexation Review

The process of annexation of new property on the perimeter of the town is an important consideration in evaluating and controlling impacts from new development. It is frequently desirable for the Town to annex new subdivisions in order to minimize adverse environmental effects and promote efficiency in provision of public utility services. The review process for a proposed development can be streamlined by creating a better understanding of the requirements of the process and its relationship to subdivision review. A comprehensive review of the existing policies of the town, and preparation of an annexation packet describing the town's current application and submittal requirements as well as the process options available under state law. would be a tremendous aid to both the subdivision applicant and the reviewing authority.

Implementation Strategy

As discussed in the previous sections, the growth policy is an advisory document only and essentially lays the foundation for adoption of implementation measures. Zoning is another important implementation tool available to the town for administration of the principles contained in the growth policy. Other implementation measures related to community improvements and tied to the goals and objectives of the Growth Policy are included in the Implementation Plan.

APPENDIX G

EXPOSURE PARAMETER AVERAGING; RISK AND HAZARD APPORTIONING

Table G-1. Calculation of Age-weighted Body Weights[a]

Male and Female Combined		Female	
Receptor Age Group	Mean Body Weight (kg)	Receptor Age Group	Mean Body Weight (kg)
1 year	11.4	1 year	11.1
2 years	13.8	2 years	13.5
3 years	18.6	3 years	18.3
4 years	18.6	4 years	18.3
5 years	18.6	5 years	18.3
6 years	31.8	6 years	31.7
1 to 6 years	**18.8**	**1 to 6 years**	**18.5**
6 years	31.8		
7 years	31.8		
8 years	31.8		
9 years	31.8		
10 years	31.8		
11 years	56.8		
12 years	56.8		
13 years	56.8		
14 years	56.8		
15 years	56.8		
16 years	71.6		
17 years	71.6		
18 years	71.6		
6 to 18 years	**50.6**		
11 to 18 years	**62.4**		

Notes:

Shaded cells indicate age-weighted averages used in risk calculations.

USEPA = U.S. Environmental Protection Agency

[a] USEPA. 2011. Exposure factors handbook: 2011 edition. EPA/600/R-09/052F. Table 8-1. National Center for Environmental Assessment, U.S. Environmental Protection Agency, Washington, DC.

Table G-2. Soil Ingestion Rates

Receptor Age Group	Upper Percentile (RME Scenario)	Central Tendency (CTE Scenario)
Child (1–6 years)[a]	200	50
Trespasser (6–18 years)[a]	100	50
Adult (resident and commercial/industrial)[a]	50	20
Adult (construction/excavation work)[b]	330	100

Notes:

CTE = central tendency exposure
MDEQ = Montana Department of Environmental Quality
RME = reasonable maximum exposure
USEPA = U.S. Environmental Protection Agency

[a] USEPA. 2011. Exposure Factors Handbook: 2011 Edition. Table 5-1. EPA/600/R-09/052F. National Center for Environmental Assessment, U.S. Environmental Protection Agency, Washington, DC.

[b] MDEQ. 2012. Frequently Asked Questions for construction/excavation worker (upper percentile). Available at http://www.deq.mt.gov/StateSuperfund/FrequentlyAskedQuestions.mcpx. For central tendency, a value of 100 mg/day was based on professional judgment.

Table G-3. Recommended Human Milk and Lipid Intake Rates for Breast-fed Infants[a]

Receptor Age Group	Upper Percentile (mL/day) Milk	Upper Percentile (mL/day) Lipid [a,b]	Mean (mL/day) Milk	Mean (mL/day) Lipid [a,b]	Infant Body Weight [c] (kg)
Birth to <1 month	950	38	510	20	4.8
1 to <3 months	980	40	690	27	5.9
3 to <6 months	1000	42	770	30	7.4
6 to <12 months	1000	42	620	25	9.2
Weighted Average over 12 months	993	41	660	26	7.8

Notes:

Shaded cells indicate age-weighted averages used in risk calculations.

USEPA = U.S. Environmental Protection Agency

[a] USEPA. 2011. Exposure factors handbook: 2011 edition. EPA/600/R-09/052F. Table 15-1. National Center for Environmental Assessment, U.S. Environmental Protection Agency, Washington, DC.

[b] Lipid content assumed to be 4% (Table 15-1; USEPA 2011)

[c] Values taken from Table 8-1 (USEPA 2011)

Table G-4. Intake Rates of Homegrown Produce (Root Vegetables)

	Root Vegetables [a,b] (g/kg-day)			
Receptor Age Group	95th	95th (adjusted) [c]	Mean	Mean (adjusted) [c]
1 to < 2 years	10.4	6.9	2.52	1.7
2 to < 3 years	10.4	6.9	2.52	1.7
3 to < 6 years	4.73	3.1	1.28	0.8
6 to < 7 years	5.59	3.7	1.32	0.9
1 to 6 Years	6.8	4.5	1.7	1.1
20 to 39 years	3.08	2.03	0.87	0.6
40 to 69 years	3.56	2.35	1.13	0.7
Adult (24 Years)	3.2	2.1	0.91	0.60

Notes:

Shaded cells indicate age-weighted averages used in risk calculations.

USEPA = U.S. Environmental Protection Agency

[a] USEPA. 2011. Exposure factors handbook: 2011 edition. EPA/600/R-09/052F. National Center for Environmental Assessment, U.S. Environmental Protection Agency, Washington, DC.

[b] Values are from Table 13-62 (USEPA 2011)

[c] The values reported in Table 13-62 (USEPA 2011) were not adjusted for loss in weight due to preparation and cooking losses (see Table 13-1, USEPA 2011). The adjusted values assumed preparation and cooking losses of 12% and 22%, respectively (Philips and Moya 2012) for a total of 34% loss in weight prior to ingestion.

Surface Area (SA) Values For Body Parts (Adults)

From EPA Exposure Factors Handbook Highlights (2011) Table 7-3

	Head	Face=Head/3	Trunk	Arms	Forearms =Arms*0.45	Hands	Legs	Lower Legs (Legs*0.4)	Feet
Males	0.136	0.045	0.827	0.314	0.141	0.107	0.682	0.273	0.137
Females	0.114	0.038	0.654	0.237	0.107	0.089	0.598	0.239	0.122
Average	0.125	0.042	0.741	0.276	0.124	0.098	0.64	0.256	0.1295

Face SA = (Head SA)/3 from RAGS Part E, page 3-12

Forearms = (Arms SA)*0.45 from RAGS Part E, Page 3-11

Lower Legs = (Legs SA)*0.4 from RAGS Part E, Page 3-11

Surface Area (SA)

ADULT RESIDENT: Head, Forearms, Hands, and Lower legs

	Head	Forearms	Hands	Lower Legs		
Males	0.136	0.141	0.107	0.273		
Females	0.114	0.107	0.089	0.239		
Average	0.125	0.124	0.098	0.256	0.6030	m2
					6030	cm2

SA, Adult Resident = 6000 cm2

Formula for SA from RAGS Part E, Equation 3.13

Adherence Factor (AF)

ADULT RESIDENT: Face, Forearms, Hands, and Lower legs

	Face	Forearms	Hands	Lower Legs		
Males	0.045	0.141	0.107	0.273		
Females	0.038	0.107	0.089	0.239		
Average	0.042	0.124	0.098	0.256	0.5196	<-Sum of SA's
AF (outdoor sports)	0.0314	0.0872	0.1336	0.1223		
=SA*AF -->	0.0013	0.0108	0.0131	0.0313	0.0565	<-Sum of (SA*AF)

Body Part Specific AF Data from EPA Exposure Factors Handbook Highlights (2011) Table 7-3

= (Sum(SA*AF))/(SUM(SA's)) 0.1088 mg/cm2

Formula for AF from RAGS Part E, Equation 3.18

AF, Adult Resident = 0.1088 mg/cm2

SA

ADULT COMMERCIAL/INDUSTRIAL: Head, Forearms, and Hands

	Head	Forearms	Hands		
Males					
Females	0.136	0.141	0.107		
Average	0.114	0.107	0.089		
	0.125	0.124	0.098	0.3470	m2
				3470	cm2

SA, Adult Comm./Ind. = 3500 cm2

Formula for AF from RAGS Part E, Equation 3.14

AF

Adult Comm./Ind: Face, Forearms and Hands

	Face	Forearms	Hands		
Males	0.045	0.141	0.107		
Females	0.038	0.107	0.089		
Average	0.042	0.124	0.098	0.2636	<-Sum of SA's
AF (outdoor sports)	0.0314	0.0872	0.1336		

Body Part Specific AF Data from EPA Exposure Factors Handbook Highlights (2011) Table 7-3

=SA*AF -->	0.0013	0.0108	0.0131	0.0252	<-Sum of (SA*AF)

= (Sum(SA*AF))/(SUM(SA's))

Formula for AF from RAGS Part E, Equation 3.19 — 0.0956 mg/cm2

AF, Adult Comm./Ind.= 0.0956 mg/cm2

SA

Adult Construction Worker:Head, Forearms, and Hands

	Head	Forearms	Hands		
Males	0.136	0.141	0.107		
Females	0.114	0.107	0.089		
Average	0.125	0.123975	0.098	0.3470	m2
				3470	cm2

SA, Adult Comm./Ind. = 3500 cm2

Formula for SA from Montana DEQ, based on RAGS Part E, Eq. 3-19

AF

Adult Construction Worker:Face, Forearms, and Hands

	Face	Forearms	Hands		
Males	0.045	0.141	0.107		
Females	0.038	0.107	0.089		
Average	0.042	0.124	0.098	0.2636	<-Sum of SA's
AF (construction activities)	0.0982	0.1859	0.2763		

Body Part Specific AF Data from EPA Exposure Factors Handbook Highlights (2011) Table 7-3

=SA*AF -->	0.0041	0.0230	0.0271	0.0542	<-Sum of (SA*AF)

AF, Adult Construction Worker= 0.2056 mg/cm2 | 0.2056 | mg/cm2

Formula for AF from Montana DEQ, based on RAGS Part E, Eq. 3-19

Child Surface Area

Age	Duration,D (years)	Head	Head (m2)	Arms	Forearms (Arms*0.45)	Forearms (m2)	Hands	Hands (m2)	Legs	Lower Legs (Legs*0.4)	Lower Legs (m2)	Feet	Feet (m2)	
0 to <1 month	0.083	0.053	0.004	0.040	0.018	0.002	0.015	0.001	0.060	0.024	0.002	0.019	0.002	
1 to <3 m	0.167	0.060	0.010	0.045	0.020	0.003	0.017	0.003	0.068	0.027	0.005	0.021	0.004	
3 to <6 m	0.250	0.069	0.017	0.052	0.023	0.006	0.020	0.005	0.078	0.031	0.008	0.025	0.006	
6 to <12 m	0.500	0.082	0.041	0.062	0.028	0.014	0.024	0.012	0.093	0.037	0.019	0.029	0.015	
1 to <2 y	1.000	0.087	0.087	0.069	0.031	0.031	0.030	0.030	0.122	0.049	0.049	0.033	0.033	
2 to <3 y	1.000	0.051	0.051	0.088	0.040	0.040	0.028	0.028	0.154	0.062	0.062	0.038	0.038	
3 to <6 y	3.000	0.061	0.183	0.106	0.048	0.143	0.037	0.111	0.195	0.078	0.234	0.049	0.147	
total	6		0.3937			0.2384		0.1901			0.3773		0.2438	
Average			0.066			0.0397		0.0317			0.0629		0.0406	0.2406 m2
														2406 cm2

Face SA = (Head SA)/3 from RAGS Part E, page 3-12
Forearms = (Arms SA)*0.45 from RAGS Part E, Page 3-11
Lower Legs = (Legs SA)*0.4 from RAGS Part E, Page 3-11

SA, Child = 2,400 cm2

Equation from RAGS Part E, equation 3.15
Body Part Specific Surface Area Data from EPA Exposure Factors Handbook Highlights (2011) Table 7-2

Child Adherence Factor

	SA	AF	=SA*AF	
Face	0.0219	0.012	2.62E-04	
Forearms	0.0397	0.024	9.54E-04	
Hands	0.0317	0.099	3.14E-03	
Lower Legs	0.0629	0.02	1.26E-03	
Feet	0.0406	0.071	2.89E-03	
TOTAL	0.1968		8.50E-03	0.0432

AF, Child = 0.0432 mg/cm2

Notes
SA numbers from other tab in workbook
Face SA = (Head SA)/3 from RAGS Part E, page 3-12

AF for Face is "Outdoor sports" all others are "Daycare"

Equation from RAGS Part E, equation 3.19
Body Part Specific Adherence Factors from Data from EPA Exposure Factors Handbook Highlights (2011) Table 7-3

Older Child (Tresspasser) Surface Area

6-18 years old

Age	Duration,D (years)	Head	Head	Arms	Forearms (Arms*0.45)	Forearms	Hands	Hands	Legs	Lower Legs (Legs*0.4)	Lower Legs	Feet	Feet	
0 to <1 month	0.000	0.053	0.000	0.040	0.018	0.000	0.015	0.000	0.060	0.024	0.000	0.019	0.000	
1 to <3 m	0.000	0.060	0.000	0.045	0.020	0.000	0.017	0.000	0.068	0.027	0.000	0.021	0.000	
3 to <6 m	0.000	0.069	0.000	0.052	0.023	0.000	0.020	0.000	0.078	0.031	0.000	0.025	0.000	
6 to <12 m	0.000	0.082	0.000	0.062	0.028	0.000	0.024	0.000	0.093	0.037	0.000	0.029	0.000	
1 to <2 y	0.000	0.087	0.000	0.069	0.031	0.000	0.030	0.000	0.122	0.049	0.000	0.033	0.000	
2 to <3 y	0.000	0.051	0.000	0.088	0.040	0.000	0.028	0.000	0.154	0.062	0.000	0.038	0.000	
3 to <6 y	0.000	0.061	0.000	0.106	0.048	0.000	0.037	0.000	0.195	0.078	0.000	0.049	0.000	
6 to < 11y	5.000	0.066	0.330	0.151	0.068	0.340	0.051	0.255	0.311	0.124	0.622	0.073	0.365	
11 to <16y	5.000	0.073	0.365	0.227	0.102	0.511	0.072	0.360	0.483	0.193	0.966	0.105	0.525	
16 to <21 y	3.000	0.075	0.225	0.269	0.121	0.363	0.083	0.249	0.543	0.217	0.652	0.112	0.336	
total	13		0.9200			1.2137		0.8640			2.2396			
Average			0.0708			0.0934		0.0665			0.1723		0.0000	0
														4029

SA, Older Child Tresspasser = 4000 | revised based on 13 year exposure

Child is 10 to <18 years Old
Equation from RAGS Part E, equation 3.15
Body Part Specific Surface Area Data from EPA Exposure Factors Handbook Highlights (2011) Table 7-2
this is kids 13-15 playing soccer, which is similar to DEQ's tresspasser scenario (Older Child)

Older Child (Tresspasser) Adherence Factor

	SA	AF	=SA*AF	
Face	0.0236	0.012	2.83E-04	
Forearms	0.0934	0.011	1.03E-03	
Hands	0.0665	0.11	7.31E-03	
Lower Legs	0.1723	0.031	5.34E-03	
Feet	0.0000	0	0.00E+00	
TOTAL	0.3557		1.40E-02	0.0393

AF, Older Child Tresspasser = 0.0393 mg/cm2 | revised based on 13 year exposure

Notes
SA numbers from other tab in workbook
Face SA = (Head SA)/3

AF for Face is "Outdoor sports" *NOTE* feet =0, due to shoes.

Equation from RAGS Part E, equation 3.19
Body Part Specific AF Data from EPA Exposure Factors Handbook Highlights (2011) Table 7-3 "Outdoor Sports" for Children

SUMMARY

ADULT RESIDENT
SA = 6,000 cm2 BW
AF = 0.1088 mg/cm2

ADULT COMMERCIAL INDUSTRIAL
SA = 3,500 cm2
AF= 0.0956

ADULT CONSTRUCTION WORKER
SA = 3,500 cm2
AF= 0.2056

CHILD RESIDENT 0 to <6 years old
SA = 2,400 cm2
AF = 0.0432 mg/cm2

****
NOTE: Tresspassers are site specific!
OLDER CHILD (10 to <18 years old)TRESSPASSER
SA = 4,400 cm2
AF = 0.0392 mg/cm2

Table G-5. Hazard and Risk Apportionment among Chemical of Potential Concern for Oral/Dermal Soil Exposure

	Oral Pathway				Hazard Indices for Each Target Organ							
COPC	Carcinogen	Target Cancer Risk [a]	Target Organs	Minimum Target Hazard Quotient [b]	Blood	Body Weight	Development	Kidney	Liver	Nervous System	Reproduction	Respiratory System
C5-C8 Aliphatics			Body weight, nervous system	0.50		0.50				1.00		
C9-C12 Aliphatics			Blood, kidney, liver	0.20	0.50			0.20	0.25			
C9-C10 Aromatics			Kidney	0.20				0.20				
Ethylbenzene	X	1.7E-06	Kidney, liver	0.20				0.20	0.25			
1-Methylnaphthalene	X	1.7E-06	Respiratory	0.50								0.50
2-Methylnaphthalene			Respiratory	0.50								0.50
Naphthalene			Body weight	0.50		0.50						
BaP equivalents	X	1.7E-06	na	na								
C9-C18 Aliphatics			Blood, kidney, liver	0.20	0.50			0.20	0.25			
C11-C22 Aromatics			Kidney	0.20				0.20				
Pentachlorophenol	X	1.7E-06	Liver	0.25					0.25			
TEQ	X	1.7E-06	Development, reproduction	1.00			1.00				1.00	
Total	5	9E-06		na	1	1	1	1	1	1	1	1

Risk and hazard values are unitless.

Notes:

BaP = benzo(a)pyrene

COPC = chemical of potential concern

na = not applicable

TEQ = 2,3,7,8-TCDD toxicity equivalent

[a] Total cancer risk of 1E-5 was distributed evenly across 6 carcinogens (ethylbenzene, 1-methylnaphthalene, naphthalene, BaP equivalents, pentachlorophenol, and TEQ) based on cumulative risk from ingestion, dermal, and inhalation exposure routes. Risk apportionment will be revised after fate and transport modeling is completed.

[b] For each target organ, the total hazard index of 1 was distributed evenly across all chemicals affecting that target organ. Hazard apportionment will be revised after fate and transport modeling is completed.

Table G-6. Hazard and Risk Apportionment among Chemical of Potential Concern for Dust Inhalation Exposure

					Hazard Indices for Each Target Organ							
COPC	Carcinogen	Target Cancer Risk [a]	Target Organs	Minimum Target Hazard Quotient [b]	Blood	Body Weight	Development	Endocrine System	Liver	Nervous System	Reproduction	Respiratory System
C5-C8 Aliphatics			Nervous system	1.00						1.00		
C9-C12 Aliphatics			Respiratory, endocrine	0.25			0.25	0.33				0.25
C9-C10 Aromatics			Body weight	0.50		0.50						
Ethylbenzene	X	1.7E-06	Development	0.25			0.25					
1-Methylnaphthalene			na	na								
2-Methylnaphthalene			na	na								
Naphthalene	X	1.7E-06	Respiratory	0.25								0.25
BaP equivalents	X	1.7E-06	na	na								
C9-C18 Aliphatics			Respiratory, endocrine	0.25				0.33				0.25
C11-C22 Aromatics			Body weight	0.25		0.50	0.25					
Pentachlorophenol	X	1.7E-06	na	na								
TEQ	X	1.7E-06	Liver, reproductive, developmental, endocrine, respiratory, blood	0.25	1.00		0.25	0.33	1.00		1.00	0.25
Total	5	9E-06		na	1	1	1	1	1	1	1	1

Risk and hazard values are unitless.

Notes:

BaP = benzo(a)pyrene

COPC = chemical of potential concern

na = not applicable

TEQ = 2,3,7,8-TCDD toxicity equivalent

[a] Total cancer risk of 1E-5 was distributed evenly across 6 carcinogens (ethylbenzene, 1-methylnaphthalene, naphthalene, BaP equivalents, pentachlorophenol, and TEQ) based on cumulative risk from ingestion, dermal, and inhalation exposure routes. Risk apportionment will be revised after fate and transport modeling is completed.

[b] For each target organ, the total hazard index of 1 was distributed evenly across all chemicals affecting that target organ. Hazard apportionment will be revised after fate and transport modeling is completed.

Table G-7. Hazard and Risk Apportionment among Chemical of Potential Concern for Soil Vapor Inhalation

					Hazard Indices for Each Target Organ							
COPC	Carcinogen	Target Cancer Risk [a]	Target Organs	Minimum Target Hazard Quotient [b]	Body Weight	Development	Endocrine System	Immune System	Kidney	Liver	Nervous System	Respiratory System
Benzene	X	3E-06	Immune	1.00				1.00				
C5-C8 Aliphatics			Nervous system	0.33							0.33	
C9-C12 Aliphatics			Respiratory, endocrine	0.50			1.00					0.50
C9-C10 Aromatics			Body weight	1.00	1.00				1.00	1.00		
Ethylbenzene	X	3E-06	Development	1.00		1.00						
m,p-Xylenes			Nervous system	0.33							0.33	
o-Xylene			Nervous system	0.33							0.33	
Naphthalene	X	3E-06	Respiratory	0.50								0.50
Total	3	1E-05		na	1	1	1	1	1	1	1	1

Risk and hazard values are unitless.

Notes:

COPC = chemical of potential concern

na = not applicable

[a] Total cancer risk of 1E-5 was distributed evenly across three carcinogens. Risk apportionment will be revised after fate and transport modeling is completed.

[b] For each target organ, the total hazard index of 1 was distributed evenly across all chemicals affecting that target organ. Hazard apportionment will be revised after fate and transport modeling is completed.

APPENDIX H

DIOXIN AND FURAN TOXICITY

Montana Department of
ENVIRONMENTAL QUALITY

Brian Schweitzer, Governor
Richard H. Opper, Director

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

August 27, 2012

VIA E-MAIL AND U.S. MAIL

Tom Richardson
International Paper Company (IP)
6400 Poplar Avenue
Memphis, TN 38197

Subject: S&W Sawmill Facility – Baseline Risk Assessment, Selection of a Cancer-Based Toxicity Criterion for Dioxins and Furans

Dear Tom:

On July 9, 2012, the Montana Department of Environmental Quality (DEQ) received the *Selection of a Cancer-Based Toxicity Criterion for Dioxins and Furans* memorandum (Memorandum) from Integral Consulting, Inc. (Integral) on behalf of International Paper (IP). DEQ has reviewed the Memorandum, and while DEQ recognizes that there is scientific evidence that a threshold approach may be considered in making risk management decisions, DEQ does not find the data adequate to justify such a significant change in approach at this point in time.

The 2006 National Research Council (NRC) *Health Risks from Dioxin and Related Compounds: Evaluation of the EPA Reassessment* recommends that the Environmental Protection Agency (EPA) continue to calculate linear risk estimates as well as non-linear risk estimates. DEQ is not prepared at this time to change its approach to dioxin risk assessment at its dioxin facilities until the EPA finalizes its dioxin cancer risk assessment. Therefore, DEQ requires that a linear cancer slope factor continue to be used for quantitative risk assessment and that cumulative cancer risks be calculated. A qualitative assessment using an alternative or threshold approach is acceptable in the Uncertainty Section and will be considered in risk management decisions for the site.

DEQ also requires that the California EPA (Cal EPA) cancer slope factor that it has previously used in dioxin risk assessment continue to be used. The 2009 Simon et.al. study cited by Integral supporting this position as the preferred point of departure identified by the Hill Model is very close to the Cal EPA cancer slope factor. This slope factor must be used to evaluate cancer risks, while the new EPA 2012 reference dose is required for evaluation of non-cancer risks. This will ensure that DEQ decisions are protective in the interim while it awaits the final EPA dioxin cancer risk assessment.

The revised draft of the Baseline Risk Assessment must be submitted in both modifiable electronic and hard-copy form to DEQ by October 29, 2012. If you have any questions regarding this letter or any other Facility related questions, please contact me at rroll@mt.gov, or by phone ((406) 841-5025).

Sincerely,

Robert L. Roll
Environmental Science Specialist
Montana Department of Environmental Quality

cc: David Cosgriff, Arrowhead Engineering
Cynthia Brooks, DEQ Legal

Integral Consulting Inc.
45 Exchange Street
Suite 200
Portland, ME 04101

telephone: 207.874.9000
facsimile: 207.874.7800
www.integral-corp.com

MEMORANDUM

To:	Robert Roll, Montana Department of Environmental Quality (MDEQ)
cc:	Tom Richardson, International Paper Company Priscilla Tomlinson, Integral Consulting Inc.
From:	Ellen Ebert, Integral Consulting Inc.
Date:	July 9, 2012
Subject:	S&W Sawmill, Darby, MT, Baseline Risk Assessment, Selection of a Cancer-Based Toxicity Criterion for Dioxins and Furans
Project No.:	C898

International Paper Company (IPC) is preparing the draft final baseline risk assessment (BRA) for the S&W Sawmill Facility (Facility) in Darby, Montana, in response to comments from the Montana Department of Environmental Quality (MDEQ) on earlier drafts of the BRA and to address new information for the Facility. The BRA will address human health risks associated with exposures to dioxins and furans, which are among the chemicals present in soils at the Facility. For the draft final BRA for the Facility, IPC proposes to evaluate the potential carcinogenic effects of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD) and related dioxin and furan congeners, or "dioxin-like" compounds (DLCs), present at the Facility using a tolerable daily intake (TDI) approach, and to evaluate the cancer risks associated with DLCs using an oral slope factor only in the uncertainty analysis. Noncancer hazards will be evaluated using the U.S. Environmental Protection Agency's (EPA) recently published reference dose (RfD) for TCDD (USEPA 2012).

Use of the TDI approach is proposed as the best science available for evaluating cancer risks associated with exposures to DLCs. EPA has traditionally used a cancer slope factor (CSF) to evaluate cancer risks due to TCDD exposures, which assumes a linear dose–response relationship. However, EPA has been conducting a reassessment of the toxicological potential of TCDD since 1991, and during that time, considerable evidence has emerged to indicate that the cancer dose–response relationship is not linear, and that instead there is a threshold dose associated with the carcinogenic toxicity of TCDD. The

TDI approach is consistent with the evidence of a threshold dose for carcinogenesis following TCDD exposure. Additional details describing the evidence are presented below.

A TDI of 2.3 pg/kg-day is proposed for use in the draft final BRA for the Facility. This TDI was derived from the tolerable monthly intake (TMI) of 70 pg/kg-month developed by the Joint Food and Agriculture Organization of the United Nations/World Health Organization (FAO/WHO) Expert Committee on Food Additives (JECFA) (JECFA 2002) after an extensive review of the toxicological studies of DLCs by an international panel of experts. IPC proposes to use the JECFA value as the benchmark with which to compare estimated exposures to DLCs to determine whether there is an unacceptable risk of developing cancer as a result of human exposure to Facility-related media. If the estimated exposure exceeds the JECFA value of 2.3 pg/kg-day, it will be concluded that there is unacceptable risk of cancer associated with exposures to Facility-related materials. Noncancer hazards will be evaluated by comparing dose levels with EPA's more conservative RfD for TCDD of 0.7 pg/kg-day (USEPA 2012).

BACKGROUND

DLCs are chemicals of potential concern (COPC) for the Facility.[1] Consequently, the BRA will evaluate risks associated with exposure to Facility-related DLCs to determine whether the Facility poses an unacceptable risk to human health. According to standard risk assessment practice, this evaluation will be conducted by estimating receptor exposures for each exposure pathway and scenario, and combining those exposure estimates with DLC-specific toxicological criteria to estimate the associated cancer risks and noncancer hazards.

DLCs are considered to have the potential to cause both carcinogenic and noncancer (noncarcinogenic) health effects. Noncarcinogenic toxicological criteria are derived using a point of departure (POD) (e.g., for organ-specific, developmental or

[1] In all, there are 75 dioxin and 135 furan congeners that are differentiated by the numbers and positions of the chlorine atoms present. Seventeen of those congeners have chlorine substitutions in the 2, 3, 7, and 8-positions of the molecule. It is widely believed that the toxicity of these 17 congeners occurs through a common biochemical mechanism (binding with the aryl hydrocarbon receptor) and that TCDD exhibits the greatest toxicity. Thus, to evaluate mixtures of DLCs, an approach has been developed that estimates the toxicity of each dioxin/furan congener relative to the toxicity of TCDD and assigns a toxic equivalency factor (TEF) to that compound (Van den Berg et al. 2006; USEPA 2010). The concentration of each congener is converted to an equivalent concentration of TCDD by multiplying the concentration of the congener by its TEF to derive a toxicity equivalent (TEQ) concentration for that congener. The congener-specific TEQ concentrations are summed to derive a total TEQ concentration for the mixture, which is then evaluated using the toxicological criteria developed for TCDD.

reproductive toxicity) that is based on either the highest dose tested at which no adverse effects were observed or the lowest dose tested at which adverse effects were observed (lowest-observed-adverse-effect level, or LOAEL). In noncancer risk assessment, the POD indicates a mode of toxicity with a dose threshold below which adverse effects do not occur. Ultimately, the noncarcinogenic toxicological criterion is the dose level at which no adverse health effects are expected to occur.

For chemicals that are considered to have the potential to be carcinogenic, toxicological criteria are developed using toxicological studies in which either tumor formation was an outcome or precursors to tumorigenicity were observed. Historically, EPA's default position has been to assume that all carcinogenic compounds have no threshold dose (i.e., there is some degree of cancer risk regardless of the level of exposure), so EPA has used CSFs to evaluate the carcinogenic risks of these compounds. Thus, EPA's standard default risk assessment procedures reflect the conservative assumption that there is no threshold dose for carcinogenic effects; that is, there is no entirely "safe" dose, and exposure to any amount of the chemical will contribute to an individual's overall risk of developing cancer during a lifetime.

However, in its Guidelines for Carcinogen Risk Assessment (USEPA 2005), EPA also recognizes that some carcinogens act in a manner within the body (i.e., a mode of action) that follows a nonlinear, threshold response. A nonlinear dose-response relationship is one in which some level of exposure exists at which there is no increased risk of cancer within the exposed population, analogous to noncancer effects. EPA allows for estimates of carcinogenic potency to be based on a nonlinear model when sufficient evidence exists to support a nonlinear mode of action for the general population and any subpopulations of concern (USEPA 2005).

The following sections present a summary of EPA's process for identifying the appropriate method for assessment of cancer risks associated with exposure to DLCs, summaries of the key papers considered by EPA and considered by others, and a discussion that synthesizes the considerations and proposes TDI and RfD values for use at the S&W Sawmill Facility.

HISTORY OF TOXICOLOGICAL CRITERIA FOR TCDD

USEPA's historical regulatory activities related to TCDD have focused on its carcinogenic potential and the results of a rat bioassay conducted by Kociba et al. (1978), which demonstrated an increased incidence of hepatocellular and respiratory tumors in rats exposed to TCDD in their food. Based on the information available at that time, USEPA (1985) classified TCDD as a Class B2 (probable) carcinogen. It derived a CSF of

156,000 (mg/kg-day)$^{-1}$ using a non-threshold, linear dose response model[2] to estimate the potential for TCDD to cause cancer in humans at low environmental dose levels. This CSF has been widely used historically by USEPA and risk assessors to evaluate the potential carcinogenic effects of TCDD but has never been published in USEPA's Integrated Risk Information System (IRIS) database. A slightly different value of 150,000 (mg/kg-day)$^{-1}$ was subsequently published in USEPA's Health Effects Assessment Summary Tables (USEPA 1997). There was no explanation, however, for the apparent discrepancy between these two CSFs.

In 1991, EPA announced that it would reassess the health risks associated with exposures to TCDD. It published the first external review draft of its reassessment of TCDD's health effects in 1994. Following Science Advisory Board (SAB) and expert panel reviews, EPA revised and re-released its assessment in 2000 (USEPA 2000), in which it proposed a CSF of 1,000,000 (mg/kg-day)$^{-1}$. During its review of the revised 2000 draft, the SAB expressed concerns about the analyses and conclusions presented by EPA on the carcinogenicity of TCDD (SAB 2001). In response to the SAB comments, EPA completed revisions to certain sections of the reassessment document in 2003 (USEPA 2003, 2004), but did not change the proposed CSF of 1,000,000 (mg/kg-day)$^{-1}$ or the approach used to develop it (USEPA 2003).

Despite these revisions, the uncertainties and apparent limitations were significant enough to require further and broader expert review. Hence, the 2003 draft reassessment was reviewed by an expert committee from the National Research Council (NRC 2006) of the National Academies of Science (NAS), as recommended by the Interagency Work Group on Dioxin and backed by the White House Administration (IWP 2003; USEPA 2004). This additional expert review was recommended because of both SAB and continued public concerns regarding the robustness of the risk estimates provided in EPA's draft reassessment and associated uncertainties.

At the same time that EPA was conducting its reassessment, independent analyses were being conducted by other health agencies worldwide. The Agency for Toxic Substances and Disease Registry (ATSDR), WHO, FAO, European Commission Scientific Committee on Foods, Japanese Ministry of Health and Welfare, and Health Council of the Netherlands all derived dose-based quantitative health guidelines for TCDD that they considered to be protective for both cancer and noncancer endpoints (Pohl et al. 2002). These guidelines ranged from 1 to 4 pg/kg-day based on a number of different toxicological endpoints (De Rosa et al. 1999a,b; Pohl et al. 2002). The underlying risk

[2] A linear dose response model is a model that assumes that the frequency or severity of a biological response varies proportionately with the dosage and that there is no dosage that is without some risk of harm.

assessments for these various guidelines considered the entire toxicological database for DLCs and incorporated uncertainty factors to ensure that resulting toxicological criteria would be protective for both the cancer and noncancer endpoints.

In 2010, EPA released its draft report titled EPA's Reanalysis of Key Issues Related to Dioxin Toxicity and Response to NAS Comments (USEPA 2010; Reanalysis) in which it responded to some of the recommendations that had been made by NAS related to its carcinogenic dose response assessment of TCDD. However, subsequent comments provided to EPA on the 2010 Reanalysis indicated that there was a continuing lack of scientific consensus and that EPA had not sufficiently addressed a number of the uncertainties and recommendations discussed by NAS, including:

- The use of a linear dose response model to estimate the carcinogenic potential of dioxin despite the potential for there to be a threshold for this endpoint
- The approaches used in developing the proposed oral CSF and RfD
- The variability and uncertainties associated with the proposed toxicological criteria.

Substantial work remains before EPA's carcinogenic dose response assessment for TCDD can be finalized. EPA has now bifurcated its reassessment. It published its noncancer dose response assessment and RfD for TCDD to its IRIS database in February 2012 (USEPA 2012) but has delayed its carcinogenic dose response document to a later, as yet unspecified, date (USEPA 2011).

THRESHOLD VS. NON-THRESHOLD MODE OF ACTION

Since EPA initiated its reassessment of the toxicity of TCDD in 1991, there has been considerable scientific debate as to whether there is a threshold dose level below which carcinogenic effects of TCDD are not expected to occur. In other words, is there a dose level below which an exposed individual would not be expected to have an increased risk of developing cancer?

Below, the work of several agencies to develop carcinogenic toxicity criteria for TCDD is reviewed. Those criteria based on the assumption that a CSF for TCDD should be derived using a linear dose response model (USEPA 1985; CalEPA 1986; OEHHA 2007; Simon et al. 2009) are presented first, followed by information supporting the assumption that there is a threshold dose for TCDD's carcinogenic activity (WHO 1991, 1992; JECFA 2001, 2002; De Rosa et al. 1997, 1999a,b; Simon et al. 2009).

Linear (non-threshold) CSF

Toxicity criteria that have been developed assuming no threshold for the carcinogenic effects of TCDD include those developed by USEPA (1985), the California Environmental Protection Agency (CalEPA) (CalEPA 1986), the California Office of Environmental Health Hazard Assessment (OEHHA) (OEHHA 2007), and Simon et al. (2009).

USEPA (1985)

In its Health Assessment Document, USEPA (1985) used a linear dose response model to develop an oral CSF for TCDD of 156,000 $(mg/kg\text{-}day)^{-1}$. This value was based on the combined incidence of nasal, palate, and lung carcinomas and hyperplastic nodules and carcinomas in the livers of female rats studied by Kociba et al. (1978). Using two different histopathological analyses, combined with a multistage linearized dose response model, EPA developed a range of CSFs of 151,000 to 161,000 $(mg/kg\text{-}day)^{-1}$. EPA selected the geometric mean of these two values, 156,000 $(mg/kg\text{-}day)^{-1}$ as its recommended CSF (USEPA 1985).

CalEPA (1986)

In 1986, CalEPA reviewed the available data and completed multiple analyses. It calculated one CSF value using the same tumor incidence data from the Kociba et al. (1978) rat study that was used by EPA, and a second CSF using the data provided by a National Toxicology Program (NTP) mouse bioassay (NTP 1982). After fitting multiple data sets to a linearized multistage model, CalEPA determined that a CSF of 130,000 $(mg/kg\text{-}day)^{-1}$ resulted when the NTP (1982) data were used (CalEPA 1986). This was based on the incidence of liver tumors in male mice, which CalEPA determined to be the most sensitive species, sex, and target organ. The value was derived by converting animal doses to human doses using body weight scaling, and fitting a linearized multistage model to the data for hepatic adenomas and carcinomas in male mice, as reported in that study.

OEHHA (2007)

In 2007, the OEHHA proposed an alternative value of 26,000 $(mg/kg\text{-}day)^{-1}$ (OEHHA 2007), based on the results of a more recent NTP (2006) study. This value was used in

deriving drinking water criteria even though the previous value of 130,000 (mg/kg-day)$^{-1}$ is still presented on the CalEPA web site.[3]

Simon et al. (2009)

Simon et al. (2009) used two approaches (one linear and one nonlinear) to derive cancer potency estimates for TCDD. Both approaches were based on a 2-year rat bioassay conducted by NTP (2006). The NTP study evaluated the carcinogenic potency of both mixtures of DLCs and individual compounds, including TCDD. The study was well designed to include six dosing groups, measurements of both tissue concentrations and enzyme activity levels at different time points, and sacrifices of animals during the study to refine the dose–response assessment. NTP concluded that, based on increased incidences of cholangiocarcinomas and cellular adenomas of the liver, gingival squamous cell carcinomas, and cystic keratinizing epithelioma of the lung, there was evidence of carcinogenesis in female Sprague Dawley rats.

This study design allowed Simon et al. to conduct an analysis of cancer potency on the basis of internal dose, thereby considering interspecies differences in toxicokinetics and mode of action in selecting their POD. Despite their concerns that rodent liver tumors may not be relevant to human health risk assessment, Simon et al. (2009) used the combined incidence of liver tumors as the endpoint for their evaluation, in recognition that these types of tumors have historically been used by USEPA in its cancer risk assessments for dioxin.

Simon et al. (2009) used the lifetime average liver concentration (LALC) as the dose metric that was most relevant to the development of liver tumors. Benchmark dose (BMD) modeling was conducted to identify the dose response relationship between the tumor incidence and the LALC. The authors then selected a benchmark response (BMR) of 1 percent to obtain liver concentrations to be used as the POD.

The LALC was estimated in the rats using the model developed by Aylward et al. (2005a,b) and Carrier et al. (1995a,b). This model was also used to determine the human equivalent doses based on the human liver concentrations that corresponded to the rat liver concentrations at the identified POD, thereby estimating the external human dose in a manner consistent with guidance developed by USEPA (2005) and WHO-IPCS (2008).

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[3] http://www.oehha.ca.gov/air/hot_spots/tsd052909.html. It is not clear whether OEHHA intends to update its previous value to be consistent with the value used for developing drinking water criteria. Both values appear on its web site, and attempts to contact toxicologists at OEHHA to clarify this have been unsuccessful.

To complete the linear extrapolation, the lower confidence limit of the human equivalent dose was back-extrapolated, using the Aylward/Carrier model, from the lower confidence limit of the benchmark dose tissue concentration in the rats. The cancer potency factors were then calculated from the POD value, by calculating the ratio between the BMR of 1 percent and the POD. While both the dichotomous Hill model and the multistage model were used, the authors preferred the dichotomous Hill model because they considered it to be more consistent with receptor-mediated toxicity. They calculated a CSF of 100,000 $(mg/kg\text{-}day)^{-1}$ when using a linear extrapolation approach. (Results of the nonlinear approach using the same data are discussed in the following section.)

Threshold Approaches

Toxicity criteria for TCDD based on the assumption that there is a threshold for its carcinogenic effects include those developed by WHO (1991, 1992), WHO in concert with the International Programme on Chemical Safety (WHO-IPCS 1998), Simon et al. (2009), and JECFA (2002).

WHO (1991, 1992)

WHO used a nonlinear (threshold) approach to develop a TDI of 10 pg/kg-day that it considered to be protective of both cancer and noncancer endpoints. WHO (1991, 1992) reviewed the available data for TCDD, concluded that it was carcinogenic in animals, and then developed a TDI based on liver, immunological, and reproductive effects in animals, which it believed to be the most sensitive endpoints. To do this, WHO established a no effect level of approximately 1,000 pg/kg-day, adjusted that dose by a factor of 10 to derive an equivalent human dose level of 100 pg/kg-day and applied an additional uncertainty factor of 10 to account for the lack of sufficient data on reproductive effects in humans. This resulted in its recommended TDI of 10 pg/kg-day.

WHO-IPCS (1998)

Subsequently, WHO-IPCS (1998), reassessed the toxicity of TCDD and concluded that the most sensitive adverse effects included developmental and reproductive effects and that the most appropriate measure of exposure was tissue burden, rather than ingested dose. The panel of experts identified tissue burden effect levels and concluded that the LOAEL tissue burdens ranged from 28 to 73 ng/kg. They used a steady state pharmacokinetic model to calculate a TDI that would result in that tissue burden range, estimated to be between 14 and 37 pg/kg-day. They then incorporated an uncertainty factor of 10 to address the uncertainties associated with the use of LOAELs, potential interspecies differences, potential differences in sensitivity within the human

population, and the differences in half-lives of elimination of compounds of a complex TEQ mixture. This resulted in a TDI range of 1 to 4 pg/kg-day that was established to be protective of all endpoints, including cancer.

Simon et al. (2009)

Simon et al. (2009) started with the same NTP (2006) data and approach, discussed previously, to calculate their second estimate of cancer potency assuming a threshold dose. To do this, the ratio between the BMD at the chosen POD was calculated and then additional chemical-specific adjustment factors (CSAFs) were incorporated. These included an interspecies CSAF of 0.1 to account for the fact that humans are roughly one-tenth as sensitive as rodents on a toxicodynamic basis, and a combined CSAF of 10 to account for variations in toxicokinetics and toxicodynamic sensitivity within the human population. The combined adjustment factor of 1 yielded a cancer-based RfD of 100 pg/kg-day.

This peer-reviewed study integrated USEPA (2005) guidance on carcinogen dose response with the most current cancer bioassay data available from NTP (2006). It was consistent with the recommendations made by USEPA's SAB (2001) and NAS (2006) in that it included use of a nonlinear approach, accounted for differences in toxicokinetics in rats and humans, considered internal dose metrics, and quantified the uncertainties associated with each choice made. Simon et al. (2009) stated that, due to the known mode of action of TCDD, the use of the threshold-based RfD of 100 pg/kg-day was a more appropriate measure of cancer potency than the CSF of 100,000 $(mg/kg\text{-}day)^{-1}$ that they calculated using a linear model. However, in recognition of USEPA's preference for the use of a linearized model, these authors also provided the alternative CSF of 100,000 $(mg/kg\text{-}day)^{-1}$ discussed previously.

JECFA (2002)

JECFA (2002) also derived a TDI based on body burden. This committee included individuals from the U.S. Food and Drug Administration (USA), Health Canada (Canada), the National Institute of Public Health and the Environment (Netherlands), Municipal Institute of Medical Research (Spain), Chemisches and Veterinär-untersuchungsamt (Germany), Scientific Directorate on Human Nutrition and Food Safety of the National Institute for Agricultural Research (France), Center for Risk Management (USA), and the National Institute of Public Health and the Environment (Netherlands). These individuals reviewed all of the available scientific literature related to the toxicology of dioxins and furans in both animal and human studies that was available at that time. Based on their comprehensive review and analysis, the committee concluded that there is a threshold for all toxic effects associated with

exposure, including cancer, and that developmental effects represented the most sensitive of all of the toxic endpoints. They concluded that a TDI level based on noncancer effects would also address any potential cancer risk. The derivation of JECFA's threshold toxicity criterion is discussed below.

The committee selected two animal studies to provide the basis for its estimated TMI. These included the Faqi et al. (1998) study and the Ohsako et al. (2001) study. The Faqi et al. study, which provided the lower lowest-observed-effect level (LOEL), evaluated sensitive, specific endpoints such as male offspring reproductive organ weights, sperm parameters, and testosterone concentrations (JECFA 2001). Liver and testis dioxin concentrations in male offspring and maternal body burdens were also evaluated. The Ohsako et al. (2001) study, which provided a no-observed-effect level (NOEL), related maternal body burdens to sensitive endpoints in male offspring, including testis weight, sperm production, anogenital distance, androgen receptor levels, and adipose and testis TCDD levels. These specific biochemical and functional endpoints, together with use of a body burden dose metric, made the Faqi et al. and Ohsako et al. studies particularly well-suited for evaluation of the effects of TCDD.

Toxicokinetic conversions of these study data to identify equivalent maternal body burdens were conducted using both a linear approach and a power model approach. After converting using a linear model, the committee reported that these two studies indicated a maternal body burden at the LOEL of 25 ng/kg body weight (bw), and a body burden of 13 ng/kg bw for the NOEL. After conducting the conversion using a power model, the LOEL and NOEL values for these two studies were converted to equivalent maternal body burdens with long-term dosing of 39 and 19 ng/kg bw, respectively.

The committee then evaluated the potential body burdens in the rats resulting from background exposure levels for the animals and concluded that the maternal body burden of TCDD observed in the studies should be adjusted upwards by 3 ng/kg bw to address background concentrations. This adjustment resulted in maternal body burdens of 28 and 16 ng/kg bw for the LOEL and NOEL, respectively, using the linear model, and maternal body burdens of 42 and 22 ng/kg bw, respectively, using the power model.

Using data collected by Hurst et al. (2000a,b), in which maternal and fetal body burdens were compared at days 15–16 of gestation, these body burdens were estimated to correspond to equivalent human monthly intakes (EHMIs) of 240 and 423 pg/kg bw-month for values derived using the linear model, and EHMIs of 330 and 630 pg/kg bw for values derived using the power model.

JECFA then selected safety factors to adjust those EHMIs for the purposes of evaluating human health effects. For the Ohsako et al. (2001) study, there was no reason to include factors adjusting from a LOEL to a NOEL, to scale between animals or humans, or to reflect interspecies differences in toxicokinetics or sensitivity. A single default safety factor of 3.2 (square root of 10) was used to adjust the EHMI to reflect inter-individual differences among humans. Incorporation of this factor resulted in an estimated range of TMIs of 74 to 103 pg/kg bw-month (based on the NOEL), depending upon whether the linear or power model was used to estimate the equivalent maternal body burden.

A similar approach was used to adjust the EMHIs based on the Faqi et al. (1998) study. The default factor of 3.2 was also used to adjust this range to account for inter-individual variability. In addition, a second safety factor of 3 was used to adjust for the use of a LOEL instead of a NOEL. This resulted in a total safety factor of 9.6. When this safety factor was applied to the range of EMHIs based on that study (423 to 630 pg/kg bw-month, depending on the use of a linear or power model, respectively), it resulted in a range of TMIs of 44 to 66 pg/kg bw-month.

The committee concluded that the range of provisional TMIs (PTMIs) was 40 to 100 pg/kg bw-month, depending upon the study used as the basis and the model used to estimate body burden. It selected the mid-point of that range, 70 pg/kg bw-month, to be the PTMI.

JECFA reported this PTMI on a monthly basis to stress its view that there should be no acute RfD for DLCs because of their long half-lives. However, risk assessments conducted in the U.S. generally report exposures as an average daily dose, rather than a monthly dose. Thus, the PTMI has been converted to a daily dose level by dividing by an assumption of 30 days per month. This results in a TDI of 2.3 pg/kg-day.

DISCUSSION

There is a lack of scientific and regulatory consensus concerning the appropriate way to evaluate the carcinogenic potential of TCDD and other DLCs. While EPA and some other regulatory agencies in the U.S. have historically used a linear dose response model to evaluate the carcinogenic potency of TCDD, there is growing consensus worldwide, including among members of EPA's SAB and NAS, that there is likely a threshold for TCDD carcinogenicity and that it should be evaluated using a nonlinear, threshold approach (De Rosa et al 1997, 1999a,b; WHO-IPCS 1998; JECFA 2002; Simon et al. 2009; NAS 2006; ACC 2010).

MDEQ has stated that it prefers to use Calera's 1986 CSF of 130,000 $(mg/kg\text{-}day)^{-1}$ to evaluate risks associated with DLCs rather than any of the CSFs developed or proposed by EPA. The 1986 CalEPA CSF does not appear, however, to be the most scientifically supportable estimate of the carcinogenicity of DLCs, both because it is based on an older NTP study and because it was derived assuming a linear dose response; thus, it does not reflect the widely held position that there is a threshold for dioxin toxicity, including carcinogenicity.

The threshold-based value of 100 pg/kg-day developed by Simon et al. (2009) for cancer effects reflects current views about the mode of action of TCDD and that TCDD likely has a threshold for its carcinogenic activity (TCEQ 2012; De Rosa et al. 1997, 1999a,b; SAB 2007, 2011; NAS 2006). The derivation of this value was scientifically transparent and the study was peer reviewed. It is less conservative, however, than the JECFA value.

JECFA included an international committee of scientific experts who reviewed all of the available scientific literature related to the toxicology of DLCs that was available at that time. These experts concluded that there was a threshold for all toxic effects associated with exposure, including cancer, and that developmental effects represented the most sensitive of all of the toxic endpoints. They identified a TDI that addressed both cancer and noncancer effects. Studies that have been conducted since that time have supported their conclusions (e.g., NTP 2006; Simon et al. 2009).

Use of the threshold-based JECFA TDI will require that MDEQ consider changing the way it evaluates carcinogenic risks for DLCs. This is because instead of providing an estimate of incremental lifetime cancer risk that can be evaluated using MDEQ's target risk benchmark of $1x10^{-5}$, this approach will instead result in a cancer-based hazard quotient. If the estimated exposure level exceeds the JECFA value of 2.3 pg/kg-day, it will indicate that there is potential for unacceptable levels of cancer risk to occur at the Facility. It will not be possible to assign an estimate of the probability of developing cancer (e.g., $1x10^{-6}$) as is typically done in conventional risk assessments for carcinogens. Conversely, if the estimated exposure level is below the JECFA value, it may be concluded that there is no cancer risk associated with that level of exposure.

While such an approach differs from historical risk assessment practices and EPA's approach for carcinogens, it has been adopted by other countries (e.g., Canada, European Union). In addition, the Texas Commission on Environmental Quality (TCEQ) has concluded that the linear (non-threshold) approach being advocated by EPA is not scientifically supportable and that TCDD should be evaluated as a cancer-causing compound that has a threshold dose for all toxic effects (TCEQ 2010a,b, 2012; Haney 2010; Honeycutt 2011).

For example, TCEQ submitted comments related to the EPA 2010 Reanalysis, stating that "EPA should adopt a nonlinear approach per the NAS committee, who unanimously agreed that the current weight of scientific evidence on the carcinogenicity of TCDD is adequate to justify the use of nonlinear extrapolation methods. TCEQ concurs with NAS that scientific evidence (e.g., mode of action, tumor dose-response data) is adequate to favor the use of a nonlinear model that would include a threshold response over the use of the default linear assumption" (TCEQ 2010b). This position was confirmed in comments provided by TCEQ to the Science Advisory Board Dioxin Review Panel (Haney 2010).

Honeycutt (2011) reiterated TCEQ's position when he testified before the U.S. House of Representatives Energy and Commerce Committee concerning the quality of EPA's risk assessments. In that testimony, he stated that because EPA was moving toward the approach that there is no safe level of exposure, it was forcing states like Texas to conduct more of their own chemical risk assessments and develop their own values. He reported that TCEQ had developed new guidance documents, which had been peer reviewed by panels of scientists, including scientists with EPA, CalEPA, and Canada. In the most current version of the TCEQ Guidelines to Develop Toxicity Factors (Revised 2012 draft), TCEQ clearly states that it considers dioxin to act through a threshold mechanism (TCEQ 2012).

JECFA and other agencies worldwide support the use of a threshold value that can address both cancer and noncancer effects. JECFA's TDI of 2.3 pg/kg-day was developed by an expert scientific panel and has been peer reviewed (USEPA 2010). It is well supported by the toxicological literature and an international panel of scientists, and is consistent with SAB comments on the dioxin reassessment and the opinions of other toxicologists who support the use of a threshold approach in developing toxicological criteria for DLCs (Committee 2006; NRC 2006; Simon et al. 2009; TCEQ 2009, 2010a, 2012; De Rosa et al. 1997, 1999a,b).

Use of this dose level is also supported by ATSDR (1998), which developed its chronic oral minimal risk level (MRL) based on developmental toxicity (altered social behavior) in rhesus monkeys (Schantz et al. 1992). While MRLs are based on noncancer health endpoints rather than cancer causation, ATSDR's review of the toxicological literature concluded that animals and humans responded to TCDD at similar body burdens and that its chronic MRL of 1 pg/kg-day was "approximately two orders of magnitude below any human effect levels demonstrated either experimentally or in epidemiologic studies for both cancer and noncancer health end points" (De Rosa et al. 1999b). Thus, it is clear that ATSDR considers this dose level to be protective of all potential toxic effects associated with exposure to TCDD, including cancer.

IPC proposes to use the TDI of 2.3 pg/kg-day to evaluate the potential carcinogenic risk associated with TCDD and other DLCs in the baseline risk assessment for the S&W Sawmill Facility. While JECFA has asserted that its threshold dose is protective of all potential cancer and noncancer health effects, IPC recognizes that EPA has adopted a lower noncancer RfD for TCDD (USEPA 2012). Accordingly, the potential noncancer hazards associated with Facility-related exposures will be evaluated using EPA's recently published RfD of 0.7 pg/kg-day for TCDD.

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APPENDIX I

MNHP REPORT ON SPECIES OF CONCERN

MONTANA
Natural Heritage
Program

P.O. Box 201800 • 1515 East Sixth Avenue • Helena, MT 59620-1800 • fax 406.444.0266 • tel 406.444.5354 • http://mtnhp.org

August 8, 2012

hsummers@integral-corp.com

Dear hsummers@integral-corp.com,

I am writing in response to your recent request regarding Montana species of concern in the vicinity of the city of Darby. I checked our databases for information in this general area and have enclosed 42 species occurrence reports for 13 animal species of concern, 1 plant species occurrence report, a map depicting species of concern and wetland locations, and explanatory material. Note that the maps are in Adobe GeoPDF format. With the appropriate Adobe Reader, it provides a convenient way to query and understand the information presented on the map. Documentation is included.

Please keep in mind the following when using and interpreting the enclosed information and maps:

(1) These materials are the result of a search of our database for species of concern that occur in an area defined by the requested city location with an additional three-mile buffer surrounding the requested area. This is done to provide a more inclusive set of records and to capture records that may be immediately adjacent to the requested area. Please let us know if a buffer greater than 3 miles would be of use to your efforts. Reports are provided for the species of concern that are located in your requested area with a three-mile buffer. Species of concern outside of this buffered area may be depicted on the map due to the map extent, but are not selected for the SOC report.

(2) On the map, polygons represent one or more source features as well as the locational uncertainty associated with the source features. A source feature is a point, line, or polygon that is the basic mapping unit of a Species Occurrence (SO) representation. The recorded location of the occurrence may vary from its true location due to many factors, including the level of expertise of the data collector, differences in survey techniques and equipment used, and the amount and type of information obtained. Therefore, this inaccuracy is characterized as locational uncertainty, and is now incorporated in the representation of an SO. If you have a question concerning a specific SO, please do not hesitate to contact us.

(3) This report may include sensitive data, and is not intended for general distribution, publication, or for use outside of your organization. In particular, public release of specific location information may jeopardize the welfare of threatened, endangered, or sensitive species or biological communities.

(4) The accompanying map(s) display land management status, which may differ from ownership. Also, this report may include data from privately owned lands, and approval by the landowner is advisable if specific location information is considered for distribution. Features shown on this map do not imply public access to any lands.

(5) Additional biological data for the search area(s) may be available from other sources. We suggest you contact the U.S. Fish and Wildlife Service for any additional information on threatened and endangered species (406-449-5225). For additional fisheries information in your area of interest, you may wish to contact Montana Fish, Wildlife, and Park's Montana Fisheries Information System (phone: 406-444-3373, or web site: **http://fwp.mt.gov/fishing/mFish/**).

(6) Additional information on species habitat, ecology and management is available on our web site in the Plant, Animal, and ecological Systems Field Guides, which we encourage you to consult for valuable information. You can access these guides at http://mtnhp.org. General information on any species can be found by accessing the link to NatureServe Explorer.

The results of a data search by the Montana Natural Heritage Program reflect the current status of our data collection efforts. These results are not intended as a final statement on sensitive species within a given area, or as a substitute for on-site surveys, which may be required for environmental assessments. The information is intended for project screening only with respect to species of concern, and not as a determination of environmental impacts, which should be gained in consultation with appropriate agencies and authorities.

I hope the enclosed information is helpful to you. Please feel free to contact me at (406) 444-3290 or via my e-mail address, below, should you have any questions or require additional information.

Sincerely,

Martin P. Miller
Montana Natural Heritage Program
martinm@mt.gov

Montana Species of Concern
Darby, MT

SPECIES OF CONCERN: A polygon feature representing only what is known from direct observation with a defined level of certainty regarding the spatial location of the feature.

NonVascular Plants
- NonVascular Plants

Vascular Plants
- Vascular Plants

Invertebrates
- Invertebrates

Amphibians
- Amphibians

Fish
- Fish

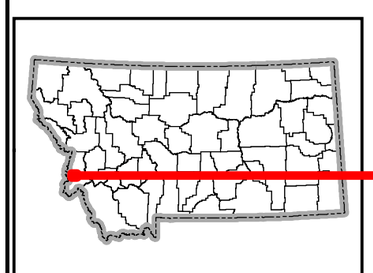
Reptiles
- Reptiles

Birds
- Birds

Mammals
- Mammals

Sites
- Sites

Wetland Types
- Lake
- River
- Freshwater Pond
- Freshwater Emergent Wetland
- Freshwater Scrub-Shrub Wetland
- Freshwater Forested Wetland
- Riparian Emergent
- Riparian Scrub-Shrub
- Riparian Forested

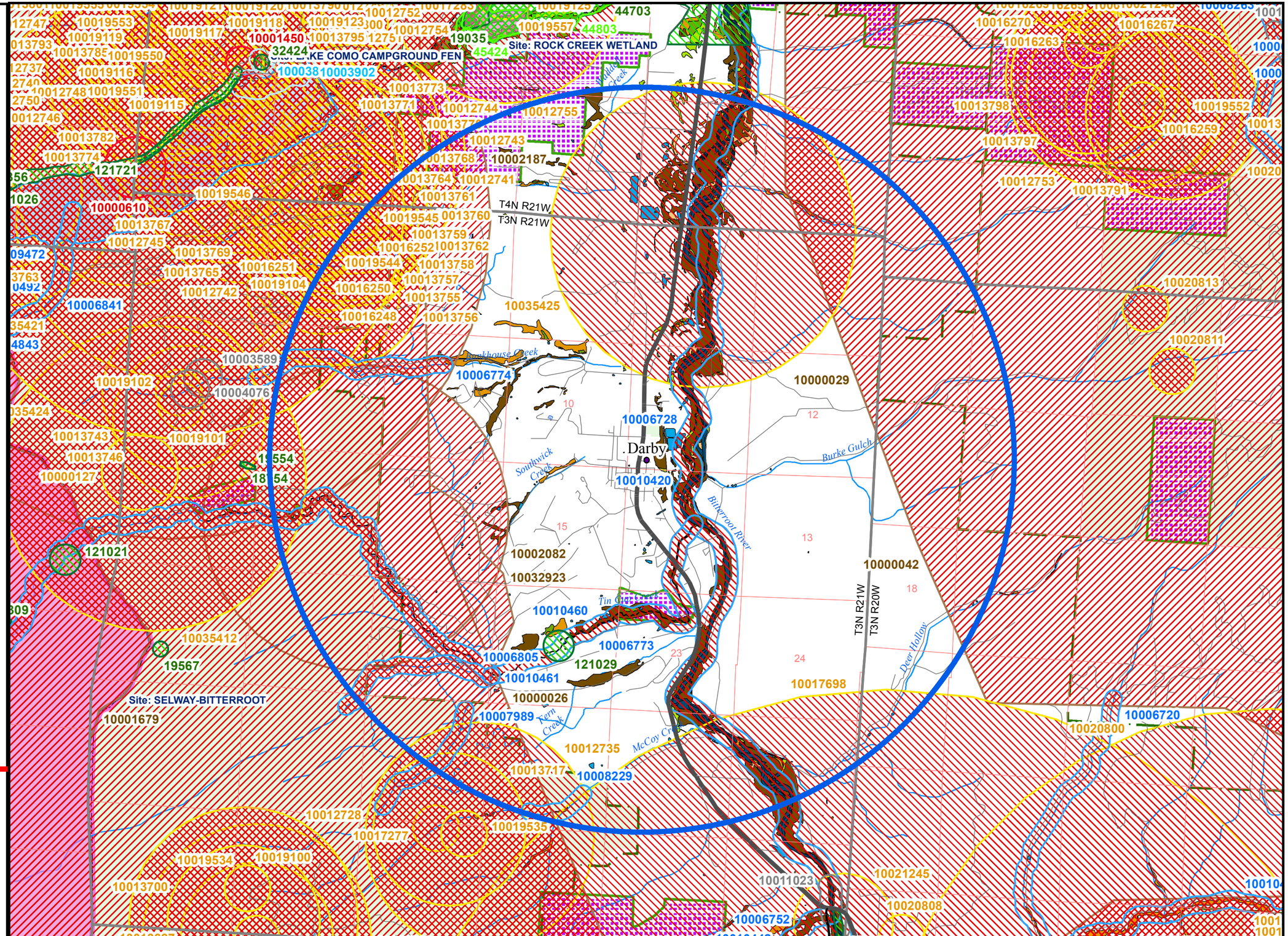


Not all legend items may occur on the map.

Features shown on this map do not imply public access to any lands.

This map displays management status, which may vary from ownership.

MONTANA Natural Heritage Program



Natural Resource Information System, Montana State Library
1515 East Sixth Ave., Helena, MT 59620-1800

406 444-5354 http://mtnhp.org mtnhp@mt.gov

Map Document: K:\REQUESTS\Requests\12\PRVT\12prvt0025\12prvt0025.mxd (8/8/2012)

Natural Resource Information System
Montana State Library
PO Box 201800
Helena, MT 59620-1800
(406)444-3009 mtnhp@mt.gov

Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, August 8, 2012

Ardea herodias

View Species in MT Field Guide

Common Name: Great Blue Heron

General Habitat: Riparian forest

Description: Birds

Mapping Delineation:

Confirmed nesting area buffered by a minimum distance of 6,500 meters in order to be conservative about encompassing the areas commonly used for foraging near the breeding colony and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G5

FWP CFWCS Tier: 3

MT PIF Code:

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management:

Species Occurrences

Species Occurence Map Label: 10017698

First Observation Date:	1991-02-16	**SO Number:**	23
Last Observation Date:	1991-12-14	**Acreage:**	32,633

Haliaeetus leucocephalus

View Species in MT Field Guide

Common Name: Bald Eagle

General Habitat: Riparian forest

Description: Birds

Mapping Delineation:

Confirmed nesting area buffered by a minimum distance of 2,000 meters in order to be conservative about encompassing the breeding territory and area commonly used for renesting and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S4
Global: G5

FWP CFWCS Tier: 1

MT PIF Code: 2

Federal Agency Status:

U.S. Fish & Wildlife Service: DM; BGEPA; MBTA; BCC
U.S. Forest Service: SENSITIVE
U.S. Bureau of Land Management: SENSITIVE

Species Occurrences

Species Occurence Map Label: 10035425

First Observation Date:	2002-03-01	**SO Number:**	496
Last Observation Date:	2002-09-01	**Acreage:**	3,089

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PO Box 201800
Helena, MT 59620-1800
(406)444-3009 mtnhp@mt.gov

Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, August 8, 2012

Species Occurrences

Species Occurence Map Label: 10035424

First Observation Date:	2003-06-16	**SO Number:**	20
Last Observation Date:	2004-05-25	**Acreage:**	6,951

Species Occurence Map Label: 10035412

First Observation Date:	2007-05-15	**SO Number:**	107
Last Observation Date:	2007-05-15	**Acreage:**	3,089

Dryocopus pileatus

View Species in MT Field Guide

Common Name: Pileated Woodpecker

General Habitat: Moist conifer forests

Description: Birds

Mapping Delineation:

Observations with evidence of breeding activity buffered by a minimum distance of 1,500 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G5

FWP CFWCS Tier: 2

MT PIF Code: 2

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management:

Species Occurrences

Species Occurence Map Label: 10012744

First Observation Date:	1998-06-10	**SO Number:**	317
Last Observation Date:	1998-06-10	**Acreage:**	1,738

Species Occurence Map Label: 10012743

First Observation Date:	2001-05-25	**SO Number:**	208
Last Observation Date:	2001-05-25	**Acreage:**	1,738

Species Occurence Map Label: 10012735

First Observation Date:	2001-07-09	**SO Number:**	489
Last Observation Date:	2001-07-09	**Acreage:**	1,738

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Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, August 8, 2012

Species Occurrences

Species Occurence Map Label: 10012741

First Observation Date: 2004-05-25 **SO Number:** 310
Last Observation Date: 2004-05-25 **Acreage:** 1,738

Nucifraga columbiana

View Species in MT Field Guide

Common Name: Clark's Nutcracker **General Habitat:** Conifer forest
Description: Birds
Mapping Delineation:
Observations with evidence of breeding activity buffered by a minimum distance of 1,000 meters in order to be conservative about encompassing the spring/summer breeding territories of family groups and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G5

FWP CFWCS Tier: 3

MT PIF Code: 3

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management:

Species Occurrences

Species Occurence Map Label: 10013770

First Observation Date: 1994-05-24 **SO Number:** 1,562
Last Observation Date: 1994-05-24 **Acreage:** 772

Species Occurence Map Label: 10013768

First Observation Date: 1994-05-24 **SO Number:** 1,679
Last Observation Date: 1998-06-10 **Acreage:** 772

Species Occurence Map Label: 10013758

First Observation Date: 1996-05-30 **SO Number:** 263
Last Observation Date: 1996-05-30 **Acreage:** 772

Species Occurence Map Label: 10013757

First Observation Date: 1996-05-30 **SO Number:** 414
Last Observation Date: 1996-05-30 **Acreage:** 772

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Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, August 8, 2012

Species Occurrences

Species Occurence Map Label: 10013756

First Observation Date:	1996-05-30	**SO Number:**	1,686
Last Observation Date:	1996-05-30	**Acreage:**	772

Species Occurence Map Label: 10013755

First Observation Date:	1996-05-30	**SO Number:**	1,205
Last Observation Date:	2002-05-26	**Acreage:**	772

Species Occurence Map Label: 10013759

First Observation Date:	2001-05-25	**SO Number:**	1,628
Last Observation Date:	2001-06-08	**Acreage:**	772

Species Occurence Map Label: 10013761

First Observation Date:	2001-05-25	**SO Number:**	1,183
Last Observation Date:	2003-05-27	**Acreage:**	772

Species Occurence Map Label: 10013762

First Observation Date:	2001-06-08	**SO Number:**	1,782
Last Observation Date:	2003-05-27	**Acreage:**	772

Species Occurence Map Label: 10013717

First Observation Date:	2001-07-09	**SO Number:**	2,103
Last Observation Date:	2001-07-09	**Acreage:**	772

Species Occurence Map Label: 10013760

First Observation Date:	2003-06-05	**SO Number:**	346
Last Observation Date:	2003-06-05	**Acreage:**	772

Species Occurence Map Label: 10013764

First Observation Date:	2003-06-05	**SO Number:**	1,857
Last Observation Date:	2003-06-05	**Acreage:**	772

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Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, August 8, 2012

Certhia americana

View Species in MT Field Guide

Common Name: Brown Creeper

General Habitat: Moist conifer forests

Description: Birds

Mapping Delineation:

Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G5

FWP CFWCS Tier: 2

MT PIF Code: 1

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management:

Species Occurrences

Species Occurence Map Label: 10019544

First Observation Date:	2003-06-30	**SO Number:**	104
Last Observation Date:	2003-06-30	**Acreage:**	70

Species Occurence Map Label: 10019545

First Observation Date:	2003-06-30	**SO Number:**	127
Last Observation Date:	2003-06-30	**Acreage:**	70

Troglodytes pacificus

View Species in MT Field Guide

Common Name: Pacific Wren

General Habitat: Moist conifer forests

Description: Birds

Mapping Delineation:

Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G5

FWP CFWCS Tier: 2

MT PIF Code: 2

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management:

Species Occurrences

Species Occurence Map Label: 10019104

First Observation Date: 2002-05-26 **SO Number:** 262
Last Observation Date: 2002-05-26 **Acreage:** 70

Carpodacus cassinii

View Species in MT Field Guide

Common Name: Cassin's Finch **General Habitat:** Drier conifer forest
Description: Birds
Mapping Delineation:
Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing the courtship and foraging distance from nesting areas and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G5

FWP CFWCS Tier: 3

MT PIF Code: 3

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management:

Species Occurrences

Species Occurence Map Label: 10016248

First Observation Date: 1995-05-24 **SO Number:** 1,166
Last Observation Date: 1995-05-24 **Acreage:** 70

Species Occurence Map Label: 10016252

First Observation Date: 2001-05-25 **SO Number:** 753
Last Observation Date: 2001-05-25 **Acreage:** 70

Species Occurence Map Label: 10016250

First Observation Date: 2002-05-26 **SO Number:** 1,227
Last Observation Date: 2002-05-26 **Acreage:** 70

Species Occurence Map Label: 10016251

First Observation Date: 2003-05-27 **SO Number:** 883
Last Observation Date: 2003-05-27 **Acreage:** 70

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Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, August 8, 2012

Oncorhvnchus clarkii lewisi

View Species in MT Field Guide

Common Name: Westslope Cutthroat Trout

General Habitat: Mountain streams, rivers, lakes

Description: Fish

Mapping Delineation:

Stream reaches and standing water bodies where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters, standing water bodies greater than 1 acre are buffered 50 meters, and standing water bodies less than 1 acre are buffered 30 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S2
Global: G4T3

FWP CFWCS Tier: 1

MT PIF Code:

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service: SENSITIVE
U.S. Bureau of Land Management: SENSITIVE

Species Occurrences

Species Occurence Map Label: 10006728

First Observation Date:
Last Observation Date:
SO Number: 39,265
Acreage: 9,332

Species Occurence Map Label: 10006773

First Observation Date:
Last Observation Date:
SO Number: 39,315
Acreage: 1,326

Species Occurence Map Label: 10006774

First Observation Date:
Last Observation Date:
SO Number: 39,316
Acreage: 151

Species Occurence Map Label: 10006805

First Observation Date:
Last Observation Date:
SO Number: 39,349
Acreage: 131

Species Occurence Map Label: 10007989

First Observation Date:
Last Observation Date:
SO Number: 43,306
Acreage: 105

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Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, August 8, 2012

Species Occurrences

Species Occurence Map Label: 10008229

First Observation Date:
Last Observation Date:
SO Number: 45,536
Acreage: 53

Salvelinus confluentus

View Species in MT Field Guide

Common Name: Bull Trout
General Habitat: Mountain streams, rivers, lakes
Description: Fish
Mapping Delineation:

Stream reaches and standing water bodies where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters, standing water bodies greater than 1 acre are buffered 50 meters, and standing water bodies less than 1 acre are buffered 30 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S2
Global: G3

FWP CFWCS Tier: 1

MT PIF Code:

Federal Agency Status:

U.S. Fish & Wildlife Service: LT
U.S. Forest Service: THREATENED
U.S. Bureau of Land Management: SPECIAL STATUS

Species Occurrences

Species Occurence Map Label: 10010420

First Observation Date:
Last Observation Date:
SO Number: 12,074
Acreage: 2,900

Species Occurence Map Label: 10010460

First Observation Date:
Last Observation Date:
SO Number: 12,370
Acreage: 247

Species Occurence Map Label: 10010461

First Observation Date:
Last Observation Date:
SO Number: 12,371
Acreage: 849

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Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, August 8, 2012

Corvnorhinus townsendii

View Species in MT Field Guide

Common Name: Townsend's Big-eared Bat

General Habitat: Caves in forested habitats

Description: Mammals

Mapping Delineation:

Confirmed area of occupancy based on the documented presence of adults or juveniles. Point observation location is buffered by a distance of 4,200 meters in order to encompass the 95% confidence interval for nightly foraging distance reported for the species in California and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S2
Global: G4

FWP CFWCS Tier: 1

MT PIF Code:

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service: SENSITIVE
U.S. Bureau of Land Management: SENSITIVE

Species Occurrences

Species Occurence Map Label: 10002187

First Observation Date:	1959-07-17	**SO Number:**	4,981
Last Observation Date:	1959-07-17	**Acreage:**	13,625

Martes pennanti

View Species in MT Field Guide

Common Name: Fisher

General Habitat: Mixed conifer forests

Description: Mammals

Mapping Delineation:

Confirmed area of occupancy based on the documented presence of adults or juveniles within tracking regions containing core habitat for the species. Outer boundaries of tracking regions are defined by areas of forest cover on individual mountain ranges or clusters of adjacent mountain ranges with continuous forest cover.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G5

FWP CFWCS Tier: 2

MT PIF Code:

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service: SENSITIVE
U.S. Bureau of Land Management: SENSITIVE

Species Occurrences

Species Occurence Map Label: 10032923

First Observation Date:	1976	**SO Number:**	3
Last Observation Date:	2011	**Acreage:**	2,589,250

Species Occurrences

Species Occurence Map Label: 10000042

First Observation Date: 1983 **SO Number:** 4
Last Observation Date: 2006 **Acreage:** 1,803,120

Gulo gulo

View Species in MT Field Guide

Common Name: Wolverine **General Habitat:** Boreal Forest and Alpine Habitats
Description: Mammals
Mapping Delineation:
Confirmed area of occupancy based on the documented presence of adults or juveniles within tracking regions containing core habitat for the species. Outer boundaries of tracking regions are defined by areas of forest cover on individual mountain ranges or clusters of adjacent mountain ranges with continuous forest cover.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G4

FWP CFWCS Tier: 2

MT PIF Code:

Federal Agency Status:

U.S. Fish & Wildlife Service: C
U.S. Forest Service: SENSITIVE
U.S. Bureau of Land Management: SENSITIVE

Species Occurrences

Species Occurence Map Label: 10000029

First Observation Date: 1948 **SO Number:** 5
Last Observation Date: 2009 **Acreage:** 1,803,120

Species Occurence Map Label: 10000026

First Observation Date: 1952 **SO Number:** 2
Last Observation Date: 2011 **Acreage:** 2,577,251

Spilogale gracilis

View Species in MT Field Guide

Common Name: Western Spotted Skunk **General Habitat:** Riparian shrub
Description: Mammals
Mapping Delineation:
Confirmed breeding area based on the presence of a resident animal of any age. Point observation location is buffered by a minimum distance of 450 meters in order to encompass the maximum summer home range size reported for the species and otherwise is buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

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Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, August 8, 2012

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S1S3
Global: G5

FWP CFWCS Tier: 2

MT PIF Code:

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management:

Species Occurrences

Species Occurence Map Label: 10002082

First Observation Date:	1929-11-01	SO Number:	14,807
Last Observation Date:	1929-11-30	Acreage:	3,089

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Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, August 8, 2012

Mimulus ampliatus

View Species in MT Field Guide

Common Name: Stalk-leaved Monkeyflower

General Habitat: Vernally moist soil (Valleys to subalpine)

Description: Vascular Plants

Mapping Delineation:

Individual occurrences are generally based upon a discretely mapped area provided by an observer and are not separated by any pre-defined distance. Individual clusters of plants mapped at fine spatial scales (separated by less than approximately 25-50 meters) may be grouped together into one occurrence if they are not separated by distinct areas of habitat or terrain features. Point observations are buffered to encompass any locational uncertainty associated with the observation.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3

Global: G4

Federal Agency Status:

U.S. Fish & Wildlife Service:

U.S. Forest Service: SENSITIVE

U.S. Bureau of Land Management:

Species Occurrences

Species Occurence Map Label: 121029

First Observation Date: 06/08/1975
Last Observation Date: 06/08/1975

SO Number: 21
SO Rank: H

Acreage: 31

MONTANA
Natural Heritage
Program

P.O. Box 201800 • 1515 East Sixth Avenue • Helena, MT 59620-1800 • fax 406.444.0266 • tel 406.444.5354 • http://mtnhp.org

October 2, 2013

Shannon Ashurst
Integral Consulting Inc.
411 1st Avenue S., Suite 550
Seattle, Washington 98104

Dear Shannon,

I am writing in response to your recent request regarding Montana Species of Concern in the vicinity of Darby. I checked our databases for information in this general area and have enclosed 40 species occurrence reports for 12 animal species of concern, 1 species occurrence report for 1 plant species of concern, a map depicting species of concern and wetland locations, and explanatory material. Note that the maps are in Adobe GeoPDF format. With the appropriate Adobe Reader, it provides a convenient way to query and understand the information presented on the map. Documentation is included.

Please keep in mind the following when using and interpreting the enclosed information and maps:

(1) These materials are the result of a search of our database for species of concern that occur in an area defined by the requested city location with an additional three-mile buffer surrounding the requested area. This is done to provide a more inclusive set of records and to capture records that may be immediately adjacent to the requested area. Please let us know if a buffer greater than 1 mile would be of use to your efforts. Reports are provided for the species of concern that are located in your requested area with a three-mile buffer. Species of concern outside of this buffered area may be depicted on the map due to the map extent, but are not selected for the SOC report.

(2) On the map, polygons represent one or more source features as well as the locational uncertainty associated with the source features. A source feature is a point, line, or polygon that is the basic mapping unit of a Species Occurrence (SO) representation. The recorded location of the occurrence may vary from its true location due to many factors, including the level of expertise of the data collector, differences in survey techniques and equipment used, and the amount and type of information obtained. Therefore, this inaccuracy is characterized as locational uncertainty, and is now incorporated in the representation of an SO. If you have a question concerning a specific SO, please do not hesitate to contact us.

(3) This report may include sensitive data, and is not intended for general distribution, publication, or for use outside of your organization. In particular, public release of specific location information

may jeopardize the welfare of threatened, endangered, or sensitive species or biological communities.

(4) The accompanying map(s) display land management status, which may differ from ownership. Features shown on this map do not imply public access to any lands.

(5) Additional biological data for the search area(s) may be available from other sources. We suggest you contact the U.S. Fish and Wildlife Service for any additional information on threatened and endangered species (406-449-5225). For additional fisheries information in your area of interest, you may wish to contact Montana Fish, Wildlife, and Park's Montana Fisheries Information System (phone: 406-444-3373, or web site: **http://fwp.mt.gov/fishing/mFish/**).

(6) Additional information on species habitat, ecology and management is available on our web site in the Plant, Animal, and ecological Systems Field Guides, which we encourage you to consult for valuable information. You can access these guides at http://mtnhp.org. General information on any species can be found by accessing the link to NatureServe Explorer.

The results of a data search by the Montana Natural Heritage Program reflect the current status of our data collection efforts. These results are not intended as a final statement on sensitive species within a given area, or as a substitute for on-site surveys, which may be required for environmental assessments. The information is intended for project screening only with respect to species of concern, and not as a determination of environmental impacts, which should be gained in consultation with appropriate agencies and authorities.

In order to help us improve our services to you, we invite you to take a simple survey. The survey is intended to gather some basic information on the value and quality of the information and services you recently received from the Montana Natural Heritage Program. The survey is short and should not take more than a few minutes to complete. All information will be kept confidential and will be used internally to improve the delivery of services and to help document the value of our services. Use this link to go to the survey: **http://www.surveymonkey.com/s/RYN8Y8L**.

I hope the enclosed information is helpful to you. Please feel free to contact me at (406) 444-3290 or via my e-mail address, below, should you have any questions or require additional information.

Sincerely,

Martin P. Miller
Montana Natural Heritage Program
martinm@mt.gov

Montana Species of Concern
Darby

SPECIES OF CONCERN: A polygon feature representing only what is known from direct observation with a defined level of certainty regarding the spatial location of the feature.

NonVascular Plants
- NonVascular Plants

Vascular Plants
- Vascular Plants

Invertebrates
- Invertebrates

Amphibians
- Amphibians

Fish
- Fish

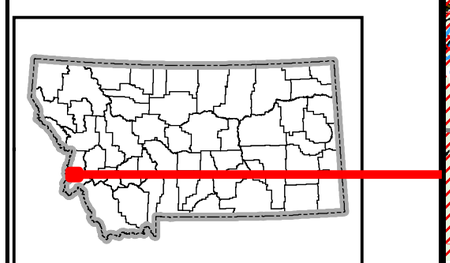
Reptiles
- Reptiles

Birds
- Birds

Mammals
- Mammals

Sites
- Sites

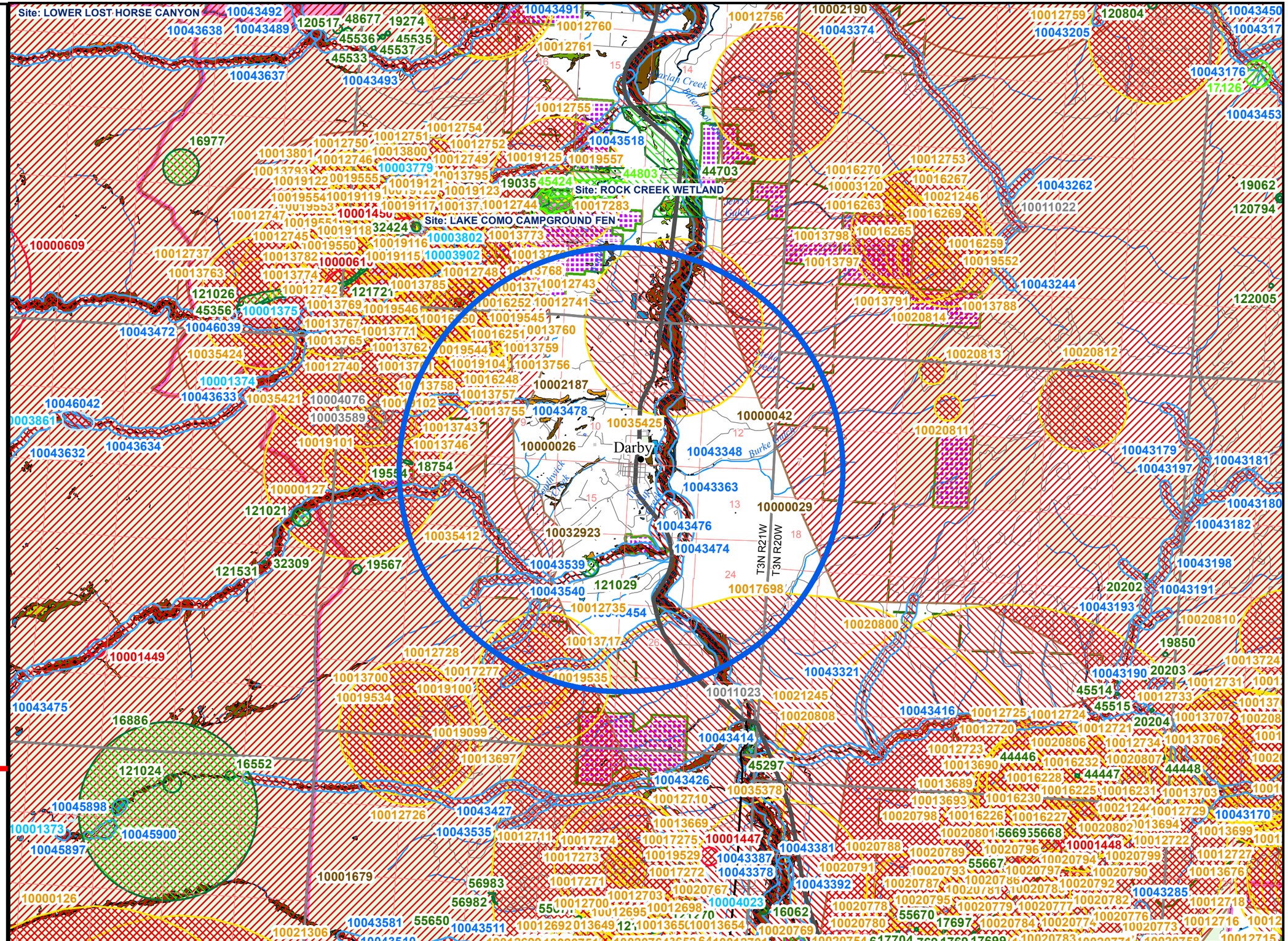
Wetland Types
- Lake
- River
- Freshwater Pond
- Freshwater Emergent Wetland
- Freshwater Scrub-Shrub Wetland
- Freshwater Forested Wetland
- Riparian Emergent
- Riparian Scrub-Shrub
- Riparian Forested



Not all legend items may occur on the map.

Features shown on this map do not imply public access to any lands.

This map displays management status, which may vary from ownership.



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Map Document: K:\REQUESTS\Requests\14PRVT\14prvt0066\14prvt0066.mxd (10/1/2013)

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Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, October 2, 2013

Ardea herodias

View Species in MT Field Guide

Common Name: Great Blue Heron

General Habitat: Riparian forest

Description: Birds

Mapping Delineation:

Confirmed nesting area buffered by a minimum distance of 6,500 meters in order to be conservative about encompassing the areas commonly used for foraging near the breeding colony and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G5

FWP CFWCS Tier: 3

MT PIF Code:

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management:

Species Occurrences

Species Occurence Map Label: 10017698

First Observation Date: 1991-02-16
Last Observation Date: 1991-12-14
SO Number: 23
Acreage: 32,633

Haliaeetus leucocephalus

View Species in MT Field Guide

Common Name: Bald Eagle

General Habitat: Riparian forest

Description: Birds

Mapping Delineation:

Confirmed nesting area buffered by a minimum distance of 2,000 meters in order to be conservative about encompassing the breeding territory and area commonly used for renesting and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S4
Global: G5

FWP CFWCS Tier: 1

MT PIF Code: 2

Federal Agency Status:

U.S. Fish & Wildlife Service: DM; BGEPA; MBTA; BCC
U.S. Forest Service: SENSITIVE
U.S. Bureau of Land Management: SENSITIVE

Species Occurrences

Species Occurence Map Label: 10035425

First Observation Date: 2002-03-01
Last Observation Date: 2002-09-01
SO Number: 496
Acreage: 3,089

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Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, October 2, 2013

Species Occurrences

Species Occurence Map Label: 10035424

First Observation Date:	2003-06-16	**SO Number:**	20
Last Observation Date:	2004-05-25	**Acreage:**	6,951

Species Occurence Map Label: 10035412

First Observation Date:	2007-05-15	**SO Number:**	107
Last Observation Date:	2007-05-15	**Acreage:**	3,089

Dryocopus pileatus

View Species in MT Field Guide

Common Name: Pileated Woodpecker

General Habitat: Moist conifer forests

Description: Birds

Mapping Delineation:

Observations with evidence of breeding activity buffered by a minimum distance of 1,500 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G5

FWP CFWCS Tier: 2

MT PIF Code: 2

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management:

Species Occurrences

Species Occurence Map Label: 10012744

First Observation Date:	1998-06-10	**SO Number:**	317
Last Observation Date:	1998-06-10	**Acreage:**	1,738

Species Occurence Map Label: 10012743

First Observation Date:	2001-05-25	**SO Number:**	208
Last Observation Date:	2001-05-25	**Acreage:**	1,738

Species Occurence Map Label: 10012735

First Observation Date:	2001-07-09	**SO Number:**	489
Last Observation Date:	2001-07-09	**Acreage:**	1,738

Species Occurrences

Species Occurence Map Label: 10012741

First Observation Date: 2004-05-25 **SO Number:** 310
Last Observation Date: 2004-05-25 **Acreage:** 1,738

Nucifraga columbiana

View Species in MT Field Guide

Common Name: Clark's Nutcracker **General Habitat:** Conifer forest
Description: Birds
Mapping Delineation:
Observations with evidence of breeding activity buffered by a minimum distance of 1,000 meters in order to be conservative about encompassing the spring/summer breeding territories of family groups and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G5

FWP CFWCS Tier: 3

MT PIF Code: 3

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management:

Species Occurrences

Species Occurence Map Label: 10013770

First Observation Date: 1994-05-24 **SO Number:** 1,562
Last Observation Date: 1994-05-24 **Acreage:** 772

Species Occurence Map Label: 10013768

First Observation Date: 1994-05-24 **SO Number:** 1,679
Last Observation Date: 1998-06-10 **Acreage:** 772

Species Occurence Map Label: 10013758

First Observation Date: 1996-05-30 **SO Number:** 263
Last Observation Date: 1996-05-30 **Acreage:** 772

Species Occurence Map Label: 10013757

First Observation Date: 1996-05-30 **SO Number:** 414
Last Observation Date: 1996-05-30 **Acreage:** 772

Natural Resource Information System
Montana State Library
PO Box 201800
Helena, MT 59620-1800
(406)444-3009 mtnhp@mt.gov

Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, October 2, 2013

Species Occurrences

Species Occurence Map Label: 10013756

First Observation Date:	1996-05-30	**SO Number:**	1,686
Last Observation Date:	1996-05-30	**Acreage:**	772

Species Occurence Map Label: 10013755

First Observation Date:	1996-05-30	**SO Number:**	1,205
Last Observation Date:	2002-05-26	**Acreage:**	772

Species Occurence Map Label: 10013759

First Observation Date:	2001-05-25	**SO Number:**	1,628
Last Observation Date:	2001-06-08	**Acreage:**	772

Species Occurence Map Label: 10013761

First Observation Date:	2001-05-25	**SO Number:**	1,183
Last Observation Date:	2003-05-27	**Acreage:**	772

Species Occurence Map Label: 10013762

First Observation Date:	2001-06-08	**SO Number:**	1,782
Last Observation Date:	2003-05-27	**Acreage:**	772

Species Occurence Map Label: 10013717

First Observation Date:	2001-07-09	**SO Number:**	2,103
Last Observation Date:	2001-07-09	**Acreage:**	772

Species Occurence Map Label: 10013760

First Observation Date:	2003-06-05	**SO Number:**	346
Last Observation Date:	2003-06-05	**Acreage:**	772

Species Occurence Map Label: 10013764

First Observation Date:	2003-06-05	**SO Number:**	1,857
Last Observation Date:	2003-06-05	**Acreage:**	772

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Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, October 2, 2013

Certhia americana

View Species in MT Field Guide

Common Name: Brown Creeper

General Habitat: Moist conifer forests

Description: Birds

Mapping Delineation:

Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G5

FWP CFWCS Tier: 2

MT PIF Code: 1

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management:

Species Occurrences

Species Occurence Map Label: 10019544

First Observation Date:	2003-06-30	**SO Number:**	104
Last Observation Date:	2003-06-30	**Acreage:**	70

Species Occurence Map Label: 10019545

First Observation Date:	2003-06-30	**SO Number:**	127
Last Observation Date:	2003-06-30	**Acreage:**	70

Troglodytes pacificus

View Species in MT Field Guide

Common Name: Pacific Wren

General Habitat: Moist conifer forests

Description: Birds

Mapping Delineation:

Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing home ranges and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G5

FWP CFWCS Tier: 2

MT PIF Code: 2

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management:

Species Occurrences

Species Occurence Map Label: 10019104

First Observation Date: 2002-05-26 **SO Number:** 262
Last Observation Date: 2002-05-26 **Acreage:** 70

Haemorhous cassinii

View Species in MT Field Guide

Common Name: Cassin's Finch
General Habitat: Drier conifer forest
Description: Birds
Mapping Delineation:
Observations with evidence of breeding activity buffered by a minimum distance of 300 meters in order to be conservative about encompassing the courtship and foraging distance from nesting areas and otherwise buffered by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G5

FWP CFWCS Tier: 3

MT PIF Code: 3

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service:
U.S. Bureau of Land Management:

Species Occurrences

Species Occurence Map Label: 10016248

First Observation Date: 1995-05-24 **SO Number:** 1,166
Last Observation Date: 1995-05-24 **Acreage:** 70

Species Occurence Map Label: 10016252

First Observation Date: 2001-05-25 **SO Number:** 753
Last Observation Date: 2001-05-25 **Acreage:** 70

Species Occurence Map Label: 10016250

First Observation Date: 2002-05-26 **SO Number:** 1,227
Last Observation Date: 2002-05-26 **Acreage:** 70

Species Occurence Map Label: 10016251

First Observation Date: 2003-05-27 **SO Number:** 883
Last Observation Date: 2003-05-27 **Acreage:** 70

Natural Resource Information System
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Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, October 2, 2013

Oncorhvnchus clarkii lewisi

View Species in MT Field Guide

Common Name: Westslope Cutthroat Trout

General Habitat: Mountain streams, rivers, lakes

Description: Fish

Mapping Delineation:

Stream reaches and standing water bodies where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters, standing water bodies greater than 1 acre are buffered 50 meters, and standing water bodies less than 1 acre are buffered 30 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S2
Global: G4T3

FWP CFWCS Tier: 1

MT PIF Code:

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service: SENSITIVE
U.S. Bureau of Land Management: SENSITIVE

Species Occurrences

Species Occurence Map Label: 10043540
First Observation Date:
Last Observation Date:
SO Number:
Acreage: 105

Species Occurence Map Label: 10043539
First Observation Date:
Last Observation Date:
SO Number:
Acreage: 131

Species Occurence Map Label: 10043478
First Observation Date:
Last Observation Date:
SO Number:
Acreage: 151

Species Occurence Map Label: 10043454
First Observation Date:
Last Observation Date:
SO Number:
Acreage: 271

Species Occurence Map Label: 10043476
First Observation Date:
Last Observation Date:
SO Number:
Acreage: 1,202

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Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, October 2, 2013

Species Occurrences

Species Occurence Map Label: 10043363

First Observation Date:
Last Observation Date:
SO Number:
Acreage: 2,892

Salvelinus confluentus

View Species in MT Field Guide

Common Name: Bull Trout
General Habitat: Mountain streams, rivers, lakes
Description: Fish
Mapping Delineation:

Stream reaches and standing water bodies where the species presence has been confirmed through direct capture or where they are believed to be present based on the professional judgement of a fisheries biologist due to confirmed presence in adjacent areas. In order to reflect the importance of adjacent terrestrial habitats to survival, stream reaches are buffered 100 meters, standing water bodies greater than 1 acre are buffered 50 meters, and standing water bodies less than 1 acre are buffered 30 meters into the terrestrial habitat based on PACFISH/INFISH Riparian Conservation Area standards.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S2
Global: G4

FWP CFWCS Tier: 1

MT PIF Code:

Federal Agency Status:

U.S. Fish & Wildlife Service: LT
U.S. Forest Service: THREATENED
U.S. Bureau of Land Management: SPECIAL STATUS

Species Occurrences

Species Occurence Map Label: 10043474

First Observation Date:
Last Observation Date:
SO Number:
Acreage: 1,184

Species Occurence Map Label: 10043348

First Observation Date:
Last Observation Date:
SO Number:
Acreage: 2,901

Corvnorhinus townsendii

View Species in MT Field Guide

Common Name: Townsend's Big-eared Bat
General Habitat: Caves in forested habitats
Description: Mammals
Mapping Delineation:

Confirmed area of occupancy based on the documented presence of adults or juveniles. Point observation location is buffered by a distance of 4,200 meters in order to encompass the 95% confidence interval for nightly foraging distance reported for the species in California and otherwise by the locational uncertainty associated with the observation up to a maximum distance of 10,000 meters.

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Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, October 2, 2013

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G3G4

FWP CFWCS Tier: 1

MT PIF Code:

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service: SENSITIVE
U.S. Bureau of Land Management: SENSITIVE

Species Occurrences

Species Occurence Map Label: 10002187

First Observation Date: 1959-07-17
Last Observation Date: 1959-07-17
SO Number: 4,981
Acreage: 13,625

Martes pennanti

View Species in MT Field Guide

Common Name: Fisher
Description: Mammals
General Habitat: Mixed conifer forests

Mapping Delineation:

Confirmed area of occupancy based on the documented presence of adults or juveniles within tracking regions containing core habitat for the species. Outer boundaries of tracking regions are defined by areas of forest cover on individual mountain ranges or clusters of adjacent mountain ranges with continuous forest cover.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G5

FWP CFWCS Tier: 2

MT PIF Code:

Federal Agency Status:

U.S. Fish & Wildlife Service:
U.S. Forest Service: SENSITIVE
U.S. Bureau of Land Management: SENSITIVE

Species Occurrences

Species Occurence Map Label: 10032923

First Observation Date: 1976
Last Observation Date: 2011
SO Number: 3
Acreage: 2,589,250

Species Occurence Map Label: 10000042

First Observation Date: 1983
Last Observation Date: 2006
SO Number: 4
Acreage: 1,803,120

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Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, October 2, 2013

Gulo gulo

View Species in MT Field Guide

Common Name: Wolverine

General Habitat: Boreal Forest and Alpine Habitats

Description: Mammals

Mapping Delineation:

Confirmed area of occupancy based on the documented presence of adults or juveniles within tracking regions containing core habitat for the species. Outer boundaries of tracking regions are defined by areas of forest cover on individual mountain ranges or clusters of adjacent mountain ranges with continuous forest cover.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3
Global: G4

FWP CFWCS Tier: 2

MT PIF Code:

Federal Agency Status:

U.S. Fish & Wildlife Service: C
U.S. Forest Service: SENSITIVE
U.S. Bureau of Land Management: SENSITIVE

Species Occurrences

Species Occurence Map Label: 10000029

First Observation Date:	1948	**SO Number:**	5
Last Observation Date:	2009	**Acreage:**	1,803,120

Species Occurence Map Label: 10000026

First Observation Date:	1952	**SO Number:**	2
Last Observation Date:	2011	**Acreage:**	2,577,251

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Species of Concern Data Report

Visit http://mtnhp.org for additional information.

Report Date:
Wednesday, October 2, 2013

Mimulus ampliatus

View Species in MT Field Guide

Common Name: Stalk-leaved Monkeyflower

General Habitat: Vernally moist soil (Valleys to subalpine)

Description: Vascular Plants

Mapping Delineation:

Individual occurrences are generally based upon a discretely mapped area provided by an observer and are not separated by any pre-defined distance. Individual clusters of plants mapped at fine spatial scales (separated by less than approximately 25-50 meters) may be grouped together into one occurrence if they are not separated by distinct areas of habitat or terrain features. Point observations are buffered to encompass any locational uncertainty associated with the observation.

Species Status

Click Status for Explanations

Natural Heritage Ranks:

State: S3

Global: G3

Federal Agency Status:

U.S. Fish & Wildlife Service:

U.S. Forest Service: SENSITIVE

U.S. Bureau of Land Management:

Species Occurrences

Species Occurence Map Label: 121029

First Observation Date: 06/08/1975
Last Observation Date: 06/08/1975

SO Number: 21
SO Rank: H

Acreage: 31

APPENDIX J

WELL LOGS

03N21W11BC

MONTANA WELL LOG REPORT

Form No. 603 R2-04

Well ID# 7108

This log reports the activities of a licensed Montana well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered. **This form is to be completed by the driller and filed with MBMG within 60 days of completion of the work. Acquiring Water Rights is the well owner's responsibility and is not accomplished by the filing of this report.**

Well log information is stored in the Groundwater Information Center at the Montana Bureau of Mines and Geology (Butte) and water right information is stored in the Water Rights Bureau records (Helena).

For fields that are not applicable, enter NA. Optional fields have a grayed background. Record additional information in the REMARKS section.

1. WELL OWNER:

Name PERRY & SHERRI CHAPPELLE

OK

Mailing address P.O. BOX 413

DARBY, MT. 59829

2. WELL LOCATION: List ¼ from smallest to largest

____ ¼ ____ ¼ SW ¼ NW ¼, Section 11

Township 3 N/S Range 21 E/W County RAVALLI

Lot ____, Tract/Blk ___ Subdivision Name

Well Address

GPS ☐ Yes ☐ No

Latitude ____ Longitude ____

Error as reported by GPS locator (± feet) ____

Horizontal datum ☐ NAD27 ☐ WGS84

3. PROPOSED USE: ☒ Domestic ☐ Stock ☐ Irrigation ☐ Public water supply ☐ Monitoring Well ☐ Other:

4. TYPE OF WORK:

☒ New well ☐ Deepen existing well ☐ Abandon existing well

Method: ☐ Cable ☒ Rotary ☐ Other:

5. WELL CONSTRUCTION DETAILS:

Borehole:

Dia. 6 in. from 0 ft. to 37.5 ft.

Dia. ____ in. from ____ ft. to ____ ft.

Dia. ____ in. from ____ ft. to ____ ft.

Casing:

Steel: Wall thickness .250 ☐ Threaded ☒ Welded

Dia. 6 in. from +2.5 ft. to 37.5 ft.

Dia. ____ in. from ____ ft. to ____ ft.

Plastic: Pressure Rating ____ lbs. ☐ Threaded ☐ Welded

Dia. ____ in. from ____ ft. to ____ ft.

Perforations/Slotted Pipe:

Type of perforator used T/C

Size of perforations/slots 5 in. by 5/32 in.

12 no. of perforations/slots from 29.5 ft. to 34.5 ft.

____ no. of perforations/slots from ____ ft. to ____ ft.

Screens: ☐ Yes ☒ No

Material

Dia. ____ Slot size ____ from ____ ft. to ____ ft.

Dia. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel Packed: ☐ Yes ☒ No

Size of gravel

Gravel placed from ____ ft. to ____ ft.

Packer: ☐ Yes ☒ No

Type ____ Depth(s) ____

Grout: Material used BENTONITE

Depth from 0 ft. to 18 ft. ~~OR+~~ ☒ Continuous feed

6. WELL TEST DATA:

A well test is required for all wells. (*See details on well log report cover.*)

☒ Static water level 10 ft. below top of casing **or**

☐ Closed-in artesian pressure ____ psi.

How was test flow measured:

bucket/stopwatch, weir, flume, flowmeter, etc

Yellowstone Controlled Groundwater Area - Water Temperature ____ °F

☐ AQUIFER TEST DATA FORM ATTACHED

Test - 1 hour minimum

Drawdown is the amount water level is lowered below static level.

All depth measurements shall be from the top of the well casing.

Time of recovery is hours/minutes since pumping stopped.

Air test*

30 gpm with drill stem set at 35 ft. for 1 hours

Time of recovery 10 hrs/min. Recovery water level 10 ft.

OR Bailer test*

____ gpm with ____ ft. of drawdown after ____ hours

Time of recovery ____ hrs/min. Recovery water level ____ ft.

OR Pump test*

Depth pump set for test ____ ft.

___ gpm pump rate with ___ ft. of drawdown after ___ hrs pumping

Time of recovery ____ hrs/min. Recovery water level ____ ft.

OR Flowing Artesian*

____ gpm for ____ hours

Flow controlled by ____

**During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the resevoir of the well casing.*

7. WELL LOG: PE

Depth, Feet From	Depth, Feet To	Material: color/rock and type/descriptor (example: blue/shale/hard, or brown/gravel/water, or brown/sand/heaving)
0	2"	TOP SOIL
2	37.5	BLACK, WHITE GRAVELS W/B

RECEIVED MAY 05 2005 M.B.M.G.

☐ ADDITIONAL SHEETS ATTACHED

8. DATE WELL COMPLETED: 4/28/05

9. REMARKS:

10. DRILLER/CONTRACTOR'S CERTIFICATION:

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name, firm, or corporation (print) ESLINGER DRILLING

Address 897 McWILLIAMS DR. CORVALLIS. MT.

Signature [signature]

Date 5/3/05 License no. 614

Montana Bureau of Mines & Geology
The University of Montana
1300 West Park Street
Butte, MT 59701

MBMG ID# 218807

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3N 21W 2 CA

MONTANA WELL LOG REPORT

Form No. 603 R2-04

Well ID# 7210

This log reports the activities of a licensed Montana well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered. **This form is to be completed by the driller and filed with MBMG within 60 days of completion of the work. Acquiring Water Rights is the well owner's responsibility and is not accomplished by the filing of this report.**

Well log information is stored in the Groundwater Information Center at the Montana Bureau of Mines and Geology (Butte) and water right information is stored in the Water Rights Bureau records (Helena).

For fields that are not applicable, enter NA. Optional fields have a grayed background. Record additional information in the REMARKS section.

1. WELL OWNER:

Name PHILLIP & PEGGY BARRETT

Mailing address 650 CEADERCREEK RD.

HENERY, GA. 30269

OK

2. WELL LOCATION: List ¼ from smallest to largest

____ ¼ ____ ¼ NE ¼ SW ¼, Section 2

Township 3 (N/S) Range 21 (E/W) County RAVALLI

Lot ____, Tract/Blk ____ Subdivision Name

Well Address

GPS ☐ Yes ☐ No

Latitude ____ Longitude ____

Error as reported by GPS locator (± feet) ____

Horizontal datum ☐ NAD27 ☐ WGS84

3. PROPOSED USE: ☒ Domestic ☐ Stock ☐ Irrigation ☐ Public water supply ☐ Monitoring Well ☐ Other:

4. TYPE OF WORK:

☒ New well ☐ Deepen existing well ☐ Abandon existing well

Method: ☐ Cable ☒ Rotary ☐ Other:

5. WELL CONSTRUCTION DETAILS:

Borehole:

Dia. 6 in. from 0 ft. to 40 ft.

Dia. ____ in. from ____ ft. to ____ ft.

Dia. ____ in. from ____ ft. to ____ ft.

Casing:

Steel: Wall thickness .250 ☐ Threaded ☒ Welded

Dia. 6 in. from +2 ft. to 40 ft.

Dia. ____ in. from ____ ft. to ____ ft.

Plastic: Pressure Rating ____ lbs. ☐ Threaded ☐ Welded

Dia. ____ in. from ____ ft. to ____ ft.

Perforations/Slotted Pipe:

Type of perforator used T/C

Size of perforations/slots 5 in. by 5/32 in.

12 no. of perforations/slots from 32 ft. to 37 ft.

____ no. of perforations/slots from ____ ft. to ____ ft.

Screens: ☐ Yes ☒ No

Material

Dia. ____ Slot size ____ from ____ ft. to ____ ft.

Dia. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel Packed: ☐ Yes ☒ No

Size of gravel

Gravel placed from ____ ft. to ____ ft.

Packer: ☐ Yes ☒ No

Type ____ Depth(s) ____

Grout: Material used BENTONITE

Depth from 0 ft. to 18 ft. ~~OR~~ + ☒ Continuous feed

6. WELL TEST DATA:

A well test is required for all wells. (*See details on well log report cover.*)

☒ Static water level 5 ft. below top of casing **or**

☐ Closed-in artesian pressure ____ psi.

How was test flow measured:

bucket/stopwatch, weir, flume, flowmeter, etc

Yellowstone Controlled Groundwater Area - Water Temperature ____ °F

☐ AQUIFER TEST DATA FORM ATTACHED

Test - 1 hour minimum

Drawdown is the amount water level is lowered below static level.

All depth measurements shall be from the top of the well casing.

Time of recovery is hours/minutes since pumping stopped.

Air test*

60+ gpm with drill stem set at 35 ft. for 1 hours

Time of recovery 5 hrs/min. Recovery water level 5 ft.

OR Bailer test*

____ gpm with ____ ft. of drawdown after ____ hours

Time of recovery ____ hrs/min. Recovery water level ____ ft.

OR Pump test*

Depth pump set for test ____ ft.

____ gpm pump rate with ____ ft. of drawdown after ____ hrs pumping

Time of recovery ____ hrs/min. Recovery water level ____ ft.

OR Flowing Artesian*

____ gpm for ____ hours

Flow controlled by ____

**During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the resevoir of the well casing.*

7. WELL LOG: PE

Depth, Feet From	Depth, Feet To	Material: color/rock and type/descriptor (example: blue/shale/hard, or brown/gravel/water, or brown/sand/heaving)
0	6*	TOP SOIL
6	12	SAND,GRAVEL,COBBLES BROWN
12	40	LIGHT TAN GRAVELS W/B

RECEIVED
OCT 12 2005
M.B.M.G.

☐ ADDITIONAL SHEETS ATTACHED

8. DATE WELL COMPLETED: 9/23/05

9. REMARKS:

10. DRILLER/CONTRACTOR'S CERTIFICATION:

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name, firm, or corporation (print) ESLINGER DRILLING

Address 897 McWILLIAMS DR.CORVALLIS,MT.

Signature Rusty Eslinger

Date 9/29/05 License no. 614

Montana Bureau of Mines & Geology
The University of Montana
1300 West Park Street
Butte, MT 59701

MBMG ID# 222204

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~~21N~~ 21W 2 CC
3N

MONTANA WELL LOG REPORT

Well ID# 5758

Form No. 603 R2-04

This log reports the activities of a licensed Montana well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered. **This form is to be completed by the driller and filed with MBMG within 60 days of completion of the work.** **Acquiring Water Rights is the well owner's responsibility and is not accomplished by the filing of this report.**

Well log information is stored in the Groundwater Information Center at the Montana Bureau of Mines and Geology (Butte) and water right information is stored in the Water Rights Bureau records (Helena).

For fields that are not applicable, enter NA. Optional fields have a grayed background. Record additional information in the REMARKS section.

1. WELL OWNER:
Name Henry Earl Butler
Mailing address PO Box 518
Pardee MT 59829

2. WELL LOCATION: List ¼ from smallest to largest
___ ¼ ___ ¼ SW ¼ SW ¼, Section 2
Township 30 ~~N~~/S Range 21 E~~W~~ County Ravalli
Lot ___, Tract/Blk ___ Subdivision Name
Well Address
GPS ☐ Yes ☐ No
Latitude ___ Longitude ___
Error as reported by GPS locator (± feet)
Horizontal datum ☐ NAD27 ☐ WGS84

3. PROPOSED USE: ☒ Domestic ☐ Stock ☐ Irrigation
☐ Public water supply ☐ Monitoring Well ☐ Other:

4. TYPE OF WORK:
☒ New well ☐ Deepen existing well ☐ Abandon existing well
Method: ☐ Cable ☒ Rotary ☐ Other:

5. WELL CONSTRUCTION DETAILS:

Borehole:
Dia. 6 in. from 0 ft. to 39 ft.
Dia. ___ in. from ___ ft. to ___ ft.
Dia. ___ in. from ___ ft. to ___ ft.

Casing:
Steel: Wall thickness 250 ☐ Threaded ☒ Welded
Dia. 6 in. from +18" ft. to 39 ft.
Dia. ___ in. from ___ ft. to ___ ft.

Plastic: Pressure Rating ___ lbs. ☐ Threaded ☐ Welded
Dia. ___ in. from ___ ft. to ___ ft.

Perforations/Slotted Pipe:
Type of perforator used
Size of perforations/slots ___ in. by ___ in.
___ no. of perforations/slots from ___ ft. to ___ ft.
___ no. of perforations/slots from ___ ft. to ___ ft.

Screens: ☒ Yes ☐ No
Material Steel
Dia. 6" Slot size 3" from 34 ft. to 39 ft.
Dia. ___ Slot size ___ from ___ ft. to ___ ft.

Gravel Packed: ☐ Yes ☒ No
Size of gravel
Gravel placed from ___ ft. to ___ ft.

Packer: ☐ Yes ☒ No
Type ___ Depth(s) ___

Grout: Material used Bentonite
Depth from ___ ft. to ___ ft. OR ☒ Continuous feed

6. WELL TEST DATA:
A well test is required for all wells. (*See details on well log report cover.*)
☒ Static water level 18 ft. below top of ~~casing~~ or ground
☐ Closed-in artesian pressure ___ psi.
How was test flow measured:
bucket/stopwatch, weir, flume, flowmeter, etc ___
Yellowstone Controlled Groundwater Area - Water Temperature ___ °F
☐ AQUIFER TEST DATA FORM ATTACHED

Test - 1 hour minimum
Drawdown is the amount water level is lowered below static level.
All depth measurements shall be from the top of the well casing.
Time of recovery is hours/minutes since pumping stopped.

Air test*
35+ gpm with drill stem set at 34 ft. for 1 hours
Time of recovery 0 ~~hrs/min~~. Recovery water level 18 ft.

OR Bailer test*
___ gpm with ___ ft. of drawdown after ___ hours
Time of recovery ___ hrs/min. Recovery water level ___ ft.

OR Pump test*
Depth pump set for test 34 ft.
___ gpm pump rate with ___ ft. of drawdown after ___ hrs pumping
Time of recovery ___ hrs/min. Recovery water level ___ ft.

OR Flowing Artesian*
___ gpm for ___ hours
Flow controlled by ___

**During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the resevoir of the well casing.*

7. WELL LOG: PE

Depth, Feet From	Depth, Feet To	Material: color/rock and type/descriptor (example: blue/shale/hard, or brown/gravel/water, or brown/sand/heaving)
0	1	TOP SOIL
1	39	SAND & GRAVEL WB

RECEIVED
MAY 10 2006
M.B.M.G.

☐ ADDITIONAL SHEETS ATTACHED

8. DATE WELL COMPLETED: ___

9. REMARKS: ___

10. DRILLER/CONTRACTOR'S CERTIFICATION:
All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.
Name, firm, or corporation (print) Ravalli Drilling Inc
Address PO Box 250050 Gran Island MT
Signature [signature]
Date 4/18/6 License no. 443

Montana Bureau of Mines & Geology
The University of Montana
1300 West Park Street
Butte, MT 59701

MBMG ID# 225921

BUREAU OF MINES COPY

3N 21W 11 BC

MONTANA WELL LOG REPORT

Form No. 603 R2-04

Well ID# _____

This log reports the activities of a licensed Montana well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered. **This form is to be completed by the driller and filed with MBMG within 60 days of completion of the work. Acquiring Water Rights is the well owner's responsibility and is not accomplished by the filing of this report.**

Well log information is stored in the Groundwater Information Center at the Montana Bureau of Mines and Geology (Butte) and water right information is stored in the Water Rights Bureau records (Helena).

For fields that are not applicable, enter NA. Optional fields have a grayed background. Record additional information in the REMARKS section.

1. WELL OWNER:
Name: Rasmussen Builders
Mailing address: P.O. Box 1090
Darby Montana 59829

2. WELL LOCATION: List ¼ from smallest to largest
____ ¼ ____ ¼ SW ¼ NW ¼, Section 11
Township 3 N/S Range 21 E/W County Ravalli
Lot ____, Tract/Blk ____ Subdivision Name
Well Address _____
GPS ☐ Yes ☒ No
Latitude _____ Longitude _____
Error as reported by GPS locator (± feet) _____
Horizontal datum ☐ NAD27 ☐ WGS84

OK

3. PROPOSED USE: ☒ Domestic ☐ Stock ☐ Irrigation
☐ Public water supply ☐ Monitoring Well ☐ Other:

4. TYPE OF WORK:
☒ New well ☐ Deepen existing well ☐ Abandon existing well
Method: ☐ Cable ☒ Rotary ☐ Other: _____

5. WELL CONSTRUCTION DETAILS:

Borehole:
Dia. 8" in. from 0 ft. to 20 ft.
Dia. 6 5/8 in. from 20 ft. to 60 ft.
Dia. ____ in. from ____ ft. to ____ ft.

Casing:
Steel: Wall thickness .250 ☐ Threaded ☒ Welded
Dia. 6" ID in. from +18" ft. to 60 ft.
Dia. ____ in. from ____ ft. to ____ ft.

Plastic: Pressure Rating N/A lbs. ☐ Threaded ☐ Welded
Dia. ____ in. from ____ ft. to ____ ft.

Perforations/Slotted Pipe:
Type of perforator used N/A
Size of perforations/slots ____ in. by ____ in.
____ no. of perforations/slots from ____ ft. to ____ ft.
____ no. of perforations/slots from ____ ft. to ____ ft.

Screens: ☐ Yes ☒ No
Material _____
Dia. ____ Slot size ____ from ____ ft. to ____ ft.
Dia. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel Packed: ☐ Yes ☒ No
Size of gravel _____
Gravel placed from ____ ft. to ____ ft.

Packer: ☐ Yes ☒ No
Type _____ Depth(s) _____

Grout: Material used Bentonite 75#
Depth from 0 ft. to 20 ft. OR ☒ Continuous feed

6. WELL TEST DATA:
A well test is required for all wells. (*See details on well log report cover.*)
☒ Static water level 12 ft. below top of casing **or**
☐ Closed-in artesian pressure ____ psi.
How was test flow measured:
bucket/stopwatch, weir, flume, flowmeter, etc _____
Yellowstone Controlled Groundwater Area - Water Temperature ____ °F
☐ AQUIFER TEST DATA FORM ATTACHED

Test - 1 hour minimum
Drawdown is the amount water level is lowered below static level.
All depth measurements shall be from the top of the well casing.
Time of recovery is hours/minutes since pumping stopped.

Air test*
50 gpm with drill stem set at 50 ft. for 1 hours
Time of recovery ____ hrs/min. Recovery water level ____ ft.

OR Bailer test*
____ gpm with ____ ft. of drawdown after ____ hours
Time of recovery ____ hrs/min. Recovery water level ____ ft.

OR Pump test*
Depth pump set for test ____ ft.
____ gpm pump rate with ____ ft. of drawdown after ____ hrs pumping
Time of recovery ____ hrs/min. Recovery water level ____ ft.

OR Flowing Artesian*
____ gpm for ____ hours
Flow controlled by _____

**During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the resevoir of the well casing.*

7. WELL LOG: PB

Depth, Feet From	Depth, Feet To	Material: color/rock and type/descriptor (example: blue/shale/hard, or brown/gravel/water, or brown/sand/heaving)
0	1	TOP SOIL
1	55	Gravel/SAND
55	63	Gravel W/B
		TD 60'

RECEIVED
OCT 03 2006
M.B.M.G.

☐ ADDITIONAL SHEETS ATTACHED

8. DATE WELL COMPLETED: Sept 22, 2006

9. REMARKS: _____

10. DRILLER/CONTRACTOR'S CERTIFICATION:
All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.
Name, firm, or corporation (print) Advanced Well Drilling
Address 3129 Eastside Hwy Stevensville
Signature [signature]
Date Sept 22, 2006 License no. 619

Montana Bureau of Mines & Geology
The University of Montana
1300 West Park Street
Butte, MT 59701

MBMG ID# 230115

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03N 21W 11 BC

MONTANA WELL LOG REPORT

Form No. 603 R2-04

Well ID# 7517

This log reports the activities of a licensed Montana well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered. **This form is to be completed by the driller and filed with MBMG within 60 days of completion of the work. Acquiring Water Rights is the well owner's responsibility and is not accomplished by the filing of this report.**

Well log information is stored in the Groundwater Information Center at the Montana Bureau of Mines and Geology (Butte) and water right information is stored in the Water Rights Bureau records (Helena).

For fields that are not applicable, enter NA. Optional fields have a grayed background. Record additional information in the REMARKS section.

1. WELL OWNER:

Name JULIAN A. MILTON

Mailing address P.O. BOX 688

DARBY, MT. 59829

2. WELL LOCATION: List ¼ from smallest to largest

___ ¼ ___ ¼ SW ¼ NW ¼, Section 11

Township 3N/S Range 21E/W County RAVALLI

Lot 5A Tract/Blk ___ Subdivision Name DYN COMM SUB

Well Address 3294 US HWY 93 DARBY, MT.

GPS ☐ Yes ☐ No

Latitude 46°01.985N Longitude 114°10.655W

Error as reported by GPS locator (± feet) ___

Horizontal datum ☐ NAD27 ☐ WGS84

3. PROPOSED USE: ☒ Domestic ☐ Stock ☐ Irrigation ☐ Public water supply ☐ Monitoring Well ☐ Other:

4. TYPE OF WORK:

☒ New well ☐ Deepen existing well ☐ Abandon existing well

Method: ☐ Cable ☒ Rotary ☐ Other: ___

5. WELL CONSTRUCTION DETAILS:

Borehole:

Dia. 6 in. from 0 ft. to 59 ft.

Dia. ___ in. from ___ ft. to ___ ft.

Dia. ___ in. from ___ ft. to ___ ft.

Casing:

Steel: Wall thickness .250 ☐ Threaded ☒ Welded

Dia. 6 in. from +3 ft. to 59 ft.

Dia. ___ in. from ___ ft. to ___ ft.

Plastic: Pressure Rating ___ lbs. ☐ Threaded ☐ Welded

Dia. ___ in. from ___ ft. to ___ ft.

Perforations/Slotted Pipe:

Type of perforator used T/C

Size of perforations/slots 5 in. by 5/32 in.

12 no. of perforations/slots from 51 ft. to 56 ft.

___ no. of perforations/slots from ___ ft. to ___ ft.

Screens: ☐ Yes ☒ No

Material ___

Dia. ___ Slot size ___ from ___ ft. to ___ ft.

Dia. ___ Slot size ___ from ___ ft. to ___ ft.

Gravel Packed: ☒ Yes ☐ No

Size of gravel NATURAL ACCURI NG

Gravel placed from 59 ft. to 59 ft.

Packer: ☐ Yes ☒ No

Type ___ Depth(s) ___

Grout: Material used BENTONITE

Depth from 0 ft. to 18 ft. ☐ + ☒ Continuous feed

6. WELL TEST DATA:

A well test is required for all wells. (*See details on well log report cover.*)

☒ Static water level 21.5 ft. below top of casing **or**

☐ Closed-in artesian pressure ___ psi.

How was test flow measured:

bucket/stopwatch, weir, flume, flowmeter, etc ___

Yellowstone Controlled Groundwater Area - Water Temperature ___ °F

☐ AQUIFER TEST DATA FORM ATTACHED

Test - 1 hour minimum

Drawdown is the amount water level is lowered below static level.

All depth measurements shall be from the top of the well casing.

Time of recovery is hours/minutes since pumping stopped.

Air test*

40 gpm with drill stem set at 53 ft. for 1 hours

Time of recovery 10 hrs/min. Recovery water level 21.5 ft.

OR Bailer test*

___ gpm with ___ ft. of drawdown after ___ hours

Time of recovery ___ hrs/min. Recovery water level ___ ft.

OR Pump test*

Depth pump set for test ___ ft.

___ gpm pump rate with ___ ft. of drawdown after ___ hrs pumping

Time of recovery ___ hrs/min. Recovery water level ___ ft.

OR Flowing Artesian*

___ gpm for ___ hours

Flow controlled by ___

**During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the resevoir of the well casing.*

PE

7. WELL LOG:

Depth, Feet From	Depth, Feet To	Material: color/rock and type/descriptor (example: blue/shale/hard, or brown/gravel/water, or brown/sand/heaving)
0	8"	TOP SOIL
8"	22'	SAND, GRAVEL & COBBLES
		LIGHT BROWN
22	59	SAND & GRAVELS LIGHT BROWN

RECEIVED FEB 05 2008 M.B.M.G.

☐ ADDITIONAL SHEETS ATTACHED

8. DATE WELL COMPLETED: 12/18/07

9. REMARKS: ___

10. DRILLER/CONTRACTOR'S CERTIFICATION:

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name, firm, or corporation (print) ESLINGER DRILLING

Address 897 Mawilliams dr.corvallis,mt.

Signature Andy Eslinger

Date 1/16/08 License no. 044

Montana Bureau of Mines & Geology
The University of Montana
1300 West Park Street
Butte, MT 59701

MBMG ID# 241592

03N 21W 10 DAA

MONTANA WELL LOG REPORT

Form No. 603 R2-04

Well ID# 7521

This log reports the activities of a licensed Montana well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered. **This form is to be completed by the driller and filed with MBMG within 60 days of completion of the work. Acquiring Water Rights is the well owner's responsibility and is not accomplished by the filing of this report.**

Well log information is stored in the Groundwater Information Center at the Montana Bureau of Mines and Geology (Butte) and water right information is stored in the Water Rights Bureau records (Helena).

For fields that are not applicable, enter NA. Optional fields have a grayed background. Record additional information in the REMARKS section.

1. WELL OWNER:

Name TOWN OF DARBY

Mailing address P.O. BOX 37

DARBY, MT. 59829

2. WELL LOCATION: List ¼ from smallest to largest

___ ¼ NE ¼ NE ¼ SE ¼, Section 10

Township 3 N/S Range 21 E/W County RAVALLI

Lot ___, Tract/Blk ___ Subdivision Name

Well Address DARBY HIGH SCHOOL

GPS ☐ Yes ☒ No

Latitude 46°01.678N Longitude 114°10.459W

Error as reported by GPS locator (± feet) 10

Horizontal datum ☐ NAD27 ☐ NW3S84

OK

3. PROPOSED USE: ☐ Domestic ☐ Stock ☐ Irrigation ☐ Public water supply ☐ Monitoring Well ☒ Other: TEST WELL

4. TYPE OF WORK:

☒ New well ☐ Deepen existing well ☐ Abandon existing well

Method: ☐ Cable ☒ Rotary ☐ Other: ___

5. WELL CONSTRUCTION DETAILS:

Borehole:

Dia. 6 in. from 0 ft. to 106 ft.

Dia. ___ in. from ___ ft. to ___ ft.

Dia. ___ in. from ___ ft. to ___ ft.

Casing:

Steel: Wall thickness .250 ☐ Threaded ☒ Welded

Dia. 6 in. from +3.5 ft. to 104 ft.

Dia. ___ in. from ___ ft. to ___ ft.

Plastic: Pressure Rating ___ lbs. ☐ Threaded ☐ Welded

Dia. ___ in. from ___ ft. to ___ ft.

Perforations/Slotted Pipe:

Type of perforator used HOLT AIR PERF.

Size of perforations/slots ___ in. by ___ in.

450 no. of perforations/slots from 65 ft. to 95 ft.

___ no. of perforations/slots from ___ ft. to ___ ft.

Screens: ☐ Yes ☒ No

Material ___

Dia. ___ Slot size ___ from ___ ft. to ___ ft.

Dia. ___ Slot size ___ from ___ ft. to ___ ft.

Gravel Packed: ☐ Yes ☒ No

Size of gravel ___

Gravel placed from ___ ft. to ___ ft.

Packer: ☐ Yes ☒ No

Type ___ Depth(s) ___

Grout: Material used BENTONITE

Depth from 0 ft. to 18 ft. ~~☐~~ + ☒ Continuous feed

6. WELL TEST DATA:

A well test is required for all wells. (*See details on well log report cover.*)

☒ Static water level 21.2 ft. below top of casing **or**

☐ Closed-in artesian pressure ___ psi.

How was test flow measured:

bucket/stopwatch, weir, flume, flowmeter, etc ___

Yellowstone Controlled Groundwater Area - Water Temperature ___ °F

☐ AQUIFER TEST DATA FORM ATTACHED

Test - 1 hour minimum

Drawdown is the amount water level is lowered below static level.

All depth measurements shall be from the top of the well casing.

Time of recovery is hours/minutes since pumping stopped.

Air test*

180 gpm with drill stem set at 95 ft. for 4 hours

Time of recovery 28 hrs/min. Recovery water level 21.2 ft.

OR Bailer test*

___ gpm with ___ ft. of drawdown after ___ hours

Time of recovery ___ hrs/min. Recovery water level ___ ft.

OR Pump test*

Depth pump set for test ___ ft.

___ gpm pump rate with ___ ft. of drawdown after ___ hrs pumping

Time of recovery ___ hrs/min. Recovery water level ___ ft.

OR Flowing Artesian*

___ gpm for ___ hours

Flow controlled by ___

**During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the resevoir of the well casing.*

PE

7. WELL LOG:

Depth, Feet From	Depth, Feet To	Material: color/rock and type/descriptor (example: blue/shale/hard, or brown/gravel/water, or brown/sand/heaving)
0	8"	TOP SOIL
8"	30'	SAND & GRAVEL BROWN
30	40	GRAVEL & SAND BROWN
40	50	SAND, GRAVELEY BROWN
50	60	SAND & GRAVEL BROWN
60	70	SAND, TRACE GRAVEL
70	80	SAND, BROWN
80	90	SAND, TRACE GRAVEL, BROWN
90	97	SAND BROWN
97	106	GRANITE ROCK GRAY

RECEIVED

FEB 05 2008

M.B.M.G.

☐ ADDITIONAL SHEETS ATTACHED

8. DATE WELL COMPLETED: 1/15/08

9. REMARKS:

10. DRILLER/CONTRACTOR'S CERTIFICATION:

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name, firm, or corporation (print) ESLINGER DRILLING

Address 897 McWILLIAMS DR. CORVALLIS, MT

Signature Andy Eslinger

Date 1/15/08 License no. 044

Montana Bureau of Mines & Geology
The University of Montana
1300 West Park Street
Butte, MT 59701

MBMG ID# 241597

03N 21W 11 BB

MONTANA WELL LOG REPORT

Form No. 603 R2-04

Well ID# Well #1 NW

This log reports the activities of a licensed Montana well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered. **This form is to be completed by the driller and filed with MBMG within 60 days of completion of the work. Acquiring Water Rights is the well owner's responsibility and is not accomplished by the filing of this report.**

Well log information is stored in the Groundwater Information Center at the Montana Bureau of Mines and Geology (Butte) and water right information is stored in the Water Rights Bureau records (Helena).

For fields that are not applicable, enter NA. Optional fields have a grayed background. Record additional information in the REMARKS section.

1. WELL OWNER:
Name Mike Dembisky
Mailing address P.O. Box 157
Darby Montana 59829

OK

2. WELL LOCATION: List ¼ from smallest to largest
____ ¼ ____ ¼ NW ¼ NW ¼, Section 11
Township 3N N/S Range 21 E/W County Ravalli
Lot ____, Tract/Blk ____ Subdivision Name
Well Address
GPS ☐ Yes ☒ No
Latitude ____ Longitude ____
Error as reported by GPS locator (± feet) ____
Horizontal datum ☐ NAD27 ☐ WGS84

3. PROPOSED USE: ☒ Domestic ☐ Stock ☐ Irrigation
☐ Public water supply ☐ Monitoring Well ☐ Other:

4. TYPE OF WORK:
☒ New well ☐ Deepen existing well ☐ Abandon existing well
Method: ☐ Cable ☒ Rotary ☐ Other:

5. WELL CONSTRUCTION DETAILS:

Borehole:
Dia. 8" in. from 0 ft. to 20 ft.
Dia. 6 5/8 in. from 20 ft. to 60 ft.
Dia. ____ in. from ____ ft. to ____ ft.

Casing:
Steel: Wall thickness .250 ☐ Threaded ☒ Welded
Dia. 6" ID in. from +18" ft. to 60 ft.
Dia. ____ in. from ____ ft. to ____ ft.

Plastic: Pressure Rating N/A lbs. ☐ Threaded ☐ Welded
Dia. ____ in. from ____ ft. to ____ ft.

Perforations/Slotted Pipe:
Type of perforator used N/A
Size of perforations/slots ____ in. by ____ in.
____ no. of perforations/slots from ____ ft. to ____ ft.
____ no. of perforations/slots from ____ ft. to ____ ft.

Screens: ☐ Yes ☒ No
Material ____
Dia. ____ Slot size ____ from ____ ft. to ____ ft.
Dia. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel Packed: ☐ Yes ☒ No
Size of gravel ____
Gravel placed from ____ ft. to ____ ft.

Packer: ☐ Yes ☒ No
Type ____ Depth(s) ____

Grout: Material used Bentonite 50#
Depth from 0 ft. to 20 ft. OR ☒ Continuous feed

6. WELL TEST DATA:
A well test is required for all wells. (*See details on well log report cover.*)
☒ Static water level 16 ft. below top of casing or
☐ Closed-in artesian pressure ____ psi.
How was test flow measured:
bucket/stopwatch, weir, flume, flowmeter, etc ____
Yellowstone Controlled Groundwater Area - Water Temperature ____ °F
☐ AQUIFER TEST DATA FORM ATTACHED

Test - 1 hour minimum
Drawdown is the amount water level is lowered below static level.
All depth measurements shall be from the top of the well casing.
Time of recovery is hours/minutes since pumping stopped.

Air test*
18 gpm with drill stem set at 46 ft. for 1 hours
Time of recovery ____ hrs/min. Recovery water level ____ ft.

OR Bailer test*
____ gpm with ____ ft. of drawdown after ____ hours
Time of recovery ____ hrs/min. Recovery water level ____ ft.

OR Pump test*
Depth pump set for test ____ ft.
____ gpm pump rate with ____ ft. of drawdown after ____ hrs pumping
Time of recovery ____ hrs/min. Recovery water level ____ ft.

OR Flowing Artesian*
____ gpm for ____ hours
Flow controlled by ____

**During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the resevoir of the well casing.*

7. WELL LOG: PE

Depth, Feet From	Depth, Feet To	Material: color/rock and type/descriptor (example: blue/shale/hard, or brown/gravel/water, or brown/sand/heaving)
0	40	Gravel/Sand
40	45	Sand
45	48	Fractured Rock
48	56	Gravel/Sand
56	62	Gravel w/B
		(TD 60')

RECEIVED
AUG 04 2008
M.B.M.G.

☐ ADDITIONAL SHEETS ATTACHED

8. DATE WELL COMPLETED: May 18, 2008

9. REMARKS: ____

10. DRILLER/CONTRACTOR'S CERTIFICATION:
All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.
Name, firm, or corporation (print) Advanced Well Drilling
Address McBell Road Stevensville
Signature [illegible]
Date May 18, 2008 License no. 6019

Montana Bureau of Mines & Geology
The University of Montana
1300 West Park Street
Butte, MT 59701

MBMG ID# 245602

BUREAU OF MINES COPY

MONTANA WELL LOG REPORT

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Other Options

Return to menu
Plot this site on a topographic map
View hydrograph for this site

Site Name: TOWN OF DARBY - WELL#6
GWIC Id: 252042

Section 1: Well Owner(s)

1) TOWN OF DARBY (MAIL)
P.O. BOX 37
DARBY MT 59829 [07/20/2009]
2) TOWN OF DARBY (WELL)
DARBY HIGH SCHOOL
N/A N/A N/A [07/20/2009]

Section 2: Location

Township	Range	Section	Quarter Sections
03N	21W	10	NE¼ SE¼

County	Geocode
RAVALLI	

Latitude	Longitude	Geomethod	Datum
46.0283	114.1826	NAV-GPS	WGS84

Ground Surface Altitude	Method	Datum	Date

Addition	Block	Lot

Section 3: Proposed Use of Water

PUBLIC WATER SUPPLY (1)

Section 4: Type of Work

Drilling Method: ROTARY

Section 5: Well Completion Date

Date well completed: Monday, July 20, 2009

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	28	20
28	103	16

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	58	16	0.375		WELDED	A53B STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
62	82	16		.040	SCREEN-CONTINUOUS-STAINLESS
80.5	92.5	16		.050	SCREEN-CONTINUOUS-STAINLESS
					SCREEN-

Section 7: Well Test Data

Total Depth: 103
Static Water Level: 6
Water Temperature:

Pump Test *

Depth pump set for test 100 feet.
755 gpm pump rate with 25.9 feet of drawdown after 72 hours of pumping.
Time of recovery 72 hours.
Recovery water level 6 feet.
Pumping water level _ feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Section 9: Well Log

Geologic Source

Unassigned

From	To	Description
0	30	SAND, GRAVELLY, BROWN
30	40	SAND AND GRAVELS
40	52	SAND
52	61	SAND AND GRAVELS
61	66	SAND, TRACE GRAVEL, BROWN
66	73	SAND, GRAVELLY BROWN
73	99	SAND, TRACE GRAVEL, BROWN
99	103	GRANITIC ROCK (WEATHERED)

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: DAN OKEEFE
Company: OKEEFE DRILLING CO
License No: WWC-462

92.5	102.5	16		.000	CONTINUOUS-STAINLESS

Date Completed: 7/20/2009

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	28	CEMENT	
58	58	K-PACKER	

3N 21W 2 BC

MONTANA WELL LOG REPORT

Form No. 603 R2-04

Well ID# 1077

This log reports the activities of a licensed Montana well driller and serves as the official record of work done within the borehole and casing and describes the amount of water encountered. **This form is to be completed by the driller and filed with MBMG within 60 days of completion of the work. Acquiring Water Rights is the well owner's responsibility and is not accomplished by the filing of this report.**

Well log information is stored in the Groundwater Information Center at the Montana Bureau of Mines and Geology (Butte) and water right information is stored in the Water Rights Bureau records (Helena).

For fields that are not applicable, enter NA. Optional fields have a grayed background. Record additional information in the REMARKS section.

1. WELL OWNER:
Name ~~Keith~~ Bonnie Stone
Mailing address 105 Golden Way
Darby Montana 59829

2. WELL LOCATION: List ¼ from smallest to largest
____ ¼ ____ ¼ SW ¼ NW ¼, Section 2
Township 3 N/S Range 21 E/W County Ravalli
Lot ____, Tract/Blk ____ Subdivision Name ____
Well Address ____
GPS ☐ Yes ☒ No
Latitude ____ Longitude ____
Error as reported by GPS locator (± feet) ____
Horizontal datum ☐ NAD27 ☐ WGS84

3. PROPOSED USE: ☒ Domestic ☐ Stock ☐ Irrigation
☐ Public water supply ☐ Monitoring Well ☐ Other: ____

4. TYPE OF WORK:
☒ New well ☐ Deepen existing well ☐ Abandon existing well
Method: ☐ Cable ☒ Rotary ☐ Other: ____

5. WELL CONSTRUCTION DETAILS:

Borehole:
Dia. 8" in. from 0 ft. to 20 ft.
Dia. 6 5/8 in. from 20 ft. to 60 ft.
Dia. ____ in. from ____ ft. to ____ ft.

Casing:
Steel: Wall thickness .250 ☐ Threaded ☒ Welded
Dia. 6" ID in. from +18" ft. to 60 ft.
Dia. ____ in. from ____ ft. to ____ ft.

Plastic: Pressure Rating N/A lbs. ☐ Threaded ☐ Welded
Dia. ____ in. from ____ ft. to ____ ft.

Perforations/Slotted Pipe: N/A
Type of perforator used ____
Size of perforations/slots ____ in. by ____ in.
____ no. of perforations/slots from ____ ft. to ____ ft.
____ no. of perforations/slots from ____ ft. to ____ ft.

Screens: ☐ Yes ☒ No
Material ____
Dia. ____ Slot size ____ from ____ ft. to ____ ft.
Dia. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel Packed: ☐ Yes ☒ No
Size of gravel ____
Gravel placed from ____ ft. to ____ ft.

Packer: ☐ Yes ☒ No
Type ____ Depth(s) ____

Grout: Material used Bentonite 50#
Depth from 0 ft. to 18 ft. OR ☒ Continuous feed

6. WELL TEST DATA:
A well test is required for all wells. (*See details on well log report cover.*)
☒ Static water level 17 ft. below top of casing **or**
☐ Closed-in artesian pressure ____ psi.
How was test flow measured:
bucket/stopwatch, weir, flume, flowmeter, etc ____
Yellowstone Controlled Groundwater Area - Water Temperature ____ °F
☐ AQUIFER TEST DATA FORM ATTACHED

Test - 1 hour minimum
Drawdown is the amount water level is lowered below static level.
All depth measurements shall be from the top of the well casing.
Time of recovery is hours/minutes since pumping stopped.

Air test*
35+ gpm with drill stem set at 50 ft. for 1 hours
Time of recovery ____ hrs/min. Recovery water level ____ ft.

OR Bailer test*
____ gpm with ____ ft. of drawdown after ____ hours
Time of recovery ____ hrs/min. Recovery water level ____ ft.

OR Pump test*
Depth pump set for test ____ ft.
____ gpm pump rate with ____ ft. of drawdown after ____ hrs pumping
Time of recovery ____ hrs/min. Recovery water level ____ ft.

OR Flowing Artesian*
____ gpm for ____ hours
Flow controlled by ____

**During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

7. WELL LOG: PE

Depth, Feet From	Depth, Feet To	Material: color/rock and type/descriptor (example: blue/shale/hard, or brown/gravel/water, or brown/sand/heaving)
0	1	TOP SOIL
1	50	Gravel/SAND
50	54	SAND W/B
54	61	Gravel W/B
		TD 60'

M.B.M.G.
MAR 29 2010
RECEIVED

☐ ADDITIONAL SHEETS ATTACHED

8. DATE WELL COMPLETED: FEB 20, 2010

9. REMARKS: ____

10. DRILLER/CONTRACTOR'S CERTIFICATION:
All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.
Name, firm, or corporation (print) Advanced Well Drilling
Address 76 Bell Ring W. Stevensville
Signature [illegible]
Date FEB 20, 2010 License no. 619

Montana Bureau of Mines & Geology
The University of Montana
1300 West Park Street
Butte, MT 59701

34658

255067

BUREAU OF MINES COPY

MONTANA WELL LOG REPORT

This well log reports the activities of a licensed Montana well driller, serves as the official record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Water Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Other Options

Return to menu
Plot this site on a topographic map

Site Name: CHANEY, JERRY
GWIC Id: 260538

Section 1: Well Owner(s)

1) CHANEY, JERRY (MAIL)
3256 CHANEY LANE
DARBY MT 59829 [02/23/2011]

Section 2: Location

Township	Range	Section	Quarter Sections
03N	21W	11	NW¼ NW¼

County
RAVALLI

Geocode

Latitude	Longitude	Geomethod	Datum
46.035095	114.177856	TRS-SEC	NAD83

Ground Surface Altitude **Method** **Datum** **Date**

Addition	Block	Lot
		A

Section 3: Proposed Use of Water

DOMESTIC (1)

Section 4: Type of Work

Drilling Method: ROTARY

Section 5: Well Completion Date

Date well completed: Wednesday, February 23, 2011

Section 6: Well Construction Details

Borehole dimensions

From	To	Diameter
0	25	10
25	83	6

Casing

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-3	83	6	0.25		WELDED	A53B STEEL

Completion (Perf/Screen)

From	To	Diameter	# of Openings	Size of Openings	Description
83	83	6			OPEN BOTTOM

Annular Space (Seal/Grout/Packer)

From	To	Description	Cont. Fed?
0	25	BENTONITE	Y

Section 7: Well Test Data

Total Depth: 83
Static Water Level: 10.1
Water Temperature:

Air Test *

30 gpm with drill stem set at 75 feet for 2 hours.
Time of recovery 0.45 hours.
Recovery water level 10.1 feet.
Pumping water level _ feet.

** During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

Section 8: Remarks

Section 9: Well Log

Geologic Source

Unassigned

From	To	Description
0	1.5	TOPSOIL
1.5	15	SAND & GRAVEL LIGHT BROWN
15	65	SAND, GRAVEL & COBBLES LIGHT BROWN
65	78	TIGHT SAND & GRAVEL LIGHT BROWN
78	83	SAND & GRAVEL W/B LIGHT BROWN

Driller Certification

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: ANDY ESLINGER
Company: ESLINGER DRILLING AND PUMP SERV. INC.
License No: WWD-44
Date Completed: 2/23/2011