Upper Blackfoot Mining Complex
2010 Quarterly Monitoring Data Summary Report

Prepared for:

Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Prepared by:

TerraGraphics Environmental Engineering, Inc.

15 W 6th Avenue, Power Block West, 3rd Floor

Helena, MT 59620

Phone: 406.441.5441; Fax: 406.441.5443

www.terragraphics.com

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Acronyms and Abbreviations

ASARCO	American Smelting and Refining Company
bgs	below ground surface
CaCO3	calcium carbonate
DEQ	Montana Department of Environmental Quality
DQO	Data Quality Objective
DSR	Data Summary Report
ft	foot
gal	gallon
L	liter
mg	milligram
mV	millivolt
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
s	second
SAP	Sampling and Analysis Plan
SC	Specific Conductivity
TerraGraphics	TerraGraphics Environmental Engineering, Inc.
UBMC	Upper Blackfoot Mining Complex
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
µmhos/cm	micromhos per centimeter
µm	micrometer
µS/cm	microsiemens per centimeter

Section 1.0 Introduction

TerraGraphics Environmental Engineering, Inc. (TerraGraphics) was retained by the Montana Department of Environmental Quality (DEQ) to perform quarterly monitoring of groundwater and surface water at the Upper Blackfoot Mining Complex (UBMC) for 2010. The UBMC is a mining district located approximately 15 miles east of the town of Lincoln, Montana in Lewis and Clark County that contains the headwaters of the Blackfoot River (Figure 1). The UBMC includes but is not limited to the Anaconda, Capitol, Carbonate, Consolation, Edith, Flossie-Louise, Mary P., Paymaster, and Mike Horse mines, and the Mike Horse Tailings Impoundment. This report contains a description of the sampling events and analytical data, as well as an explanation of any variations from the sampling plan. The purpose of this sampling effort is to: i) evaluate local aquifer characteristics such as groundwater table elevation and flow direction, ii) conduct quarterly surface and groundwater monitoring to determine a new baseline at the UBMC, and iii) collect baseline water chemistry data for future trend analysis during long-term monitoring to determine effectiveness of remediation efforts.

Table 1-1 presents a summary of the timelines for project tasks.

Table 1-1. Project Schedule

Task Performed	Completion Date
Prepare SAP/QAPP and HASP	February 12, 2010
Download Transducers	March 16 and 17, April 28, June 10, July 8, September 20, and December 8, 2010
Quarterly Groundwater Monitoring	March, June, September, and December 2010
Quarterly Surface Water Monitoring	March, June, September, and December 2010
Construct Gauging Stations for Diversion Ditch	March 23, 2010
Construct Weir for seep at foot of Dam	March 25, 2010

This data summary report (DSR) discusses the quarterly monitoring field activities conducted in 2010 at the UBMC and the associated laboratory analyses. The geochemical and hydrogeologic characteristics of the site's surface water and groundwater have been monitored to: i) evaluate groundwater flow and quality over time at the tailings impoundment site, ii) obtain baseline information regarding local surface water chemistry, and iii) sample and monitor the field parameters and metals concentrations to establish correlations that may be used in the development of the construction quality assurance plan.

1.1 Site Background

Mining activity in the UBMC began with the discovery of silver, lead, and zinc-bearing ores in the late 1800s. Primary ore production occurred in the 1930s and 1940s at the Mike Horse Mine. In 1945 the American Smelting and Refining Company (ASARCO) purchased the Mike Horse Mine and associated properties from the Mike Horse Mine and Milling Company. ASARCO continued the mining operations through 1955, utilizing a floatation process to liberate and recover the metals. The flotation process required the ore to be ground into a fine powder and then mixed with water, frothing reagents, and collecting reagents in order to recover the metals. The waste material (tailings), were then placed into the Mike Horse tailings impoundment constructed on Beartrap Creek. On June 19, 1975, the dam breached and released an estimated 200,000 cubic yards of tailings into Beartrap Creek and the Upper Blackfoot River drainage. These tailings contain sulfide minerals that can oxidize and release heavy metals into the surface water and groundwater.

1.2 Activities

This quarterly monitoring DSR has been prepared to document the data obtained and to summarize the results of the UBMC 2010 quarterly monitoring. The field activities conducted at the UBMC during quarterly monitoring consisted of the following:

- Collected surface water and groundwater samples from nine surface water locations and eight monitoring wells to be analyzed for constituents identified in Section 2.0 of the *Draft Sampling and Analysis Plan (SAP)/Quality Assurance Project Plan (QAPP) for Groundwater and Surface Water Monitoring at the Upper Blackfoot Mining Complex, Lewis and Clark County, Montana* (TerraGraphics 2010), hereinafter referred to as the SAP/QAPP.
- Measured stream discharge at each of the nine surface water monitoring stations; and
- Collected transducer data and hand-measured groundwater elevation data from the installed monitoring wells and piezometers.

UPPER BLACKFOOT MINING COMPLEX LOCATION MAP

TerraGraphics Environmental Engineering, Inc.

SCALE: 1" = 4000'	FIGURE 1 UPPER BLACKFOOT MINING COMPLEX	PROJECT NO: 10013
DRAWN BY: DJK		DATE: 9/18/2012
ENGINEER: JWM		FIGURE: 1

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Section 2.0 Sampling and Analysis Procedure

The work completed during the UBMC quarterly monitoring was performed in general accordance with the SAP/QAPP. Deviations from the SAP/QAPP and the effects of these deviations on data quality and usability are discussed in the Data Validation Report attached in Appendix C.

2.1 Surface Water Sampling and Analysis

2.1.1 Surface Water Sampling

Surface water data were collected from nine surface water sampling stations within the upper reaches of the Blackfoot River. The descriptions of each surface water sampling station are shown in Table 2-1 and the surface water sampling locations are shown on Figure 2. Field tasks for the surface water monitoring included identifying and locating the sample stations, measuring stream discharge at each station, field measurement of chemical and physical parameters, and collecting surface water samples for laboratory analysis using the direct method described in Section 2.2 of the SAP/QAPP.

Table 2-1 Surface Water Sample Locations

Sample Station	Water Body	Surface Water Sample Location
BRSW-01	Beartrap Creek	Beartrap Creek above impoundment area
BRSW-02	Beartrap Creek	In the impoundment area
BRSW-3A	Beartrap Creek	Seepage stream at downstream end
BRSW-3B	Beartrap Creek	Seepage stream at upstream end
BRSW-22	Mike Horse Creek	Mike Horse Creek upstream of confluence with Beartrap Creek
BRSW-23	Beartrap Creek	In Beartrap Creek below confluence with Mike Horse Creek
BRSW-29	Beartrap Creek	Beginning reaches of the Blackfoot River channel
BRSW-38	Beartrap Creek	In Beartrap Creek upstream of Anaconda Creek
BRSW-48	Beartrap Creek	In Beartrap Creek below the dam

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TerraGraphics Environmental Engineering, Inc.

SCALE:	1" = 500'
DRAWN BY:	JWM
ENGINEER:	JWM

FIGURE 2
Surface Water Sample Locations
Upper Blackfoot Mining Complex

PROJECT NO:	10013
DATE:	9/18/2012
FIGURE:	2

TerraGraphics personnel measured the surface water field parameters pH, dissolved oxygen, specific conductance, and temperature at each monitoring location. Surface water samples collected from the UBMC were sent to Energy Laboratories in Helena, Montana for laboratory analysis. Surface water samples were analyzed for total and dissolved metals (aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc); major water quality dissolved ions (chloride, bicarbonate, carbonate, and sulfate); major water quality dissolved cations (calcium, magnesium, potassium, and sodium); and physiochemical parameters (acidity, hardness, pH, specific conductivity (SC), total dissolved solids (TDS), and total suspended solids (TSS)).

The surface water analytical data were evaluated in order to determine if changes in the field-measured parameters of pH and SC can be correlated to metals concentrations. If correlations exist between these field parameters and metals concentrations, then the field parameters could be used during construction to inexpensively and quickly determine if on-site activities cause a release of metals to surface water. Results of the data correlations can be found in Appendix D.

2.1.2 Stream Discharge Measurements

Discharge measurements were taken at the nine surface water sampling sites by TerraGraphics personnel utilizing the area-velocity method (wading technique) per Section 2.3.4 of the SAP/QAPP (TerraGraphics 2010). Stream widths and corresponding depths were measured and recorded in the field to determine cross-sectional areas. Stream velocities for each cross-section were measured and recorded using an electronic hand-held flow meter.

2.2 Groundwater Sampling and Analysis

Groundwater data were collected from eight monitoring wells currently located at the UBMC. As much as possible, groundwater samples were collected during periods of high and low water table elevations. Field tasks included measuring static water levels, field measurement of physiochemical groundwater parameters, groundwater sampling, and the deployment and downloading of transducers (data loggers) in the eight monitoring wells. The descriptions of each groundwater sampling station are shown in Table 2-2 and the groundwater sampling locations are shown on Figure 3.

Table 2-2 Monitoring Well Sample Locations

Well Identification	Location
TDMW-01	North Side of the Dam
TDMW-2S	North Side of the Dam
TDMW-2D	North Side of the Dam
TDMW-3S	West Side of Impoundment
TDMW-3D	West Side of Impoundment
TDMW-4S	West Side of Impoundment
TDMW-4D	West Side of Impoundment
TDMW-05	West Side of Impoundment

2.2.1 Monitoring Well Sampling

Groundwater samples were collected from each of the eight monitoring wells installed near the tailings impoundment for field measurement of chemical/physical parameters and to obtain groundwater samples for laboratory analysis according to the constituents identified in Table 2-2 of the SAP/QAPP. The methods included submersible pumping and low-flow bladder pump sampling. Dissolved metals samples were filtered through a 0.45-micrometer (µm), disposable, in-line filter and deposited directly into laboratory supplied bottles as described in the SAP/QAPP. TerraGraphics personnel measured field parameters including depth to groundwater (DTW), pH, dissolved oxygen, specific conductance, and temperature.

Groundwater samples collected from the UBMC were sent to Energy Labs in Helena, Montana for laboratory analysis. Groundwater samples were analyzed for total and dissolved metals (aluminum, arsenic, cadmium, copper, iron, lead, manganese, and zinc); major water quality dissolved ions (chloride, bicarbonate, carbonate, sulfate); major water quality dissolved cations (calcium, magnesium, potassium, sodium); and physiochemical parameters (alkalinity, hardness as total $CaCO_3$, pH, and specific conductance).

The groundwater analytical data were evaluated in order to determine if changes in the field parameters of pH and SC can be correlated to total metals concentrations in the groundwater samples. If correlations exist between these field parameters and metals concentrations, then the field parameters could be used during construction to quickly and inexpensively determine if on-site activities cause a release of metals to groundwater. Results of the data correlations can be found in Appendix D.

2.2.2 Well Depth and Static Water Level Measurement

Depth to groundwater was measured in the eight monitoring wells following the procedures referenced in the SAP/QAPP and described below:

- After removing the well cap, the static water level was measured using a water-level meter by slowly lowering the water level indicator probe into the well casing.
- As the probe entered the water, a buzzer and indicator light were activated.
- The probe was then gently inserted into and retracted from the water surface so the water surface could be determined accurately.
- The point at which the water level buzzer and light activated represented the DTW.
- The graduation mark on the water level tape adjacent to the north rim of the polyvinyl chloride (PVC) well casing represented the DTW.
- This measurement was recorded in a field logbook and on a groundwater sampling form to a precision of 0.01 foot.
- The probe and attached tape were thoroughly washed with a solution of laboratory-grade detergent and distilled water at the beginning of each monitoring event and then rinsed with distilled water prior to use in each well.

2.2.3 Piezometers

TerraGraphics used six piezometers that have been installed at the UBMC in order to monitor shallow groundwater in the impoundment. Each piezometer contains a transducer that automatically records fluctuation in the groundwater table. Groundwater elevation data can be found in Appendix G of this report.

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TerraGraphics
Environmental Engineering, Inc.

SCALE:	1"=200'
DRAWN BY:	JWM
ENGINEER:	JWM

Groundwater Sample Locations
Upper Blackfoot Mining Complex

PROJECT NO:	10013
DATE:	2/25/2011
FIGURE	3

Section 3.0 Data Quality Objectives

Laboratory data validation and verification was reconciled with the Data Quality Objectives (DQOs) identified in Section 6.0 of the SAP/QAPP. TerraGraphics personnel conducted data quality assurance/quality control (QA/QC) reviews to evaluate the precision, accuracy, and completeness of the data obtained from both the field and the laboratory. Definitions and QC objectives for these parameters are described in the SAP/QAPP. A summary of findings for all evaluated QA/QC review criteria for the quarterly monitoring samples analyzed by Energy Labs in 2010 is provided in the Data Validation Reports attached in Appendix C. QC criteria for precision and accuracy were used to assess and qualify the analytical data.
A total of 79 samples were collected (33 surface water samples, 23 groundwater samples, and 23 field QA/QC samples). Field QA/QC samples included 8 field blanks, 8 rinsate blanks, and 7 field duplicates. A summary of findings for all evaluated QA/QC review criteria for the quarterly monitoring samples analyzed by Energy Labs in 2010 is provided in the Data Validation Reports attached in Appendix C.

Sample results were qualified using USEPA CLP National Functional Guidelines for Inorganic Superfund Data Review (USEPA 2010). Data qualifiers assigned include:
J= estimated concentration
J+ = estimated high concentration
J- = estimated low concentration
R = rejected
"J" qualifiers indicate that results are estimates, but still are usable for decision making purposes. Rejected results are not usable and should not be used in decision making.

There were several instances of improperly labeled sample containers delivered to the laboratory. In all of the cases, the true sample identity was confirmed based on chain-of-custody and logbook notes or through process of elimination. None of these sample results were qualified.

Two batches of samples were noted to have temperatures above required preservation temperatures upon receipt at the lab. H10090242 (September report) was received by the lab at a temperature of 6.3 ºC, and H10120314 (December report) was received by the lab at 9.1 ºC. Conductivity, alkalinity, bicarbonate, carbonate, chloride, TSS, TDS, and sulfate analyses require sample preservation at 6 ºC or less. Alkalinity, biocarbonate, and carbonate analyses methods warm samples to room temperature (~25 ºC) to perform titrations, so results are likely not impacted for these parameters. The TSS and TDS parameters for H10120314 (December report) were also impacted by holding times and were rejected due to both conditions (i.e., holding time exceedances and preservation temperatures). No other qualifiers were needed based on sample receipt temperature.

One sample container had a hole in it. This sample was originally included in the data summary report, but upon further review, the integrity of the sample could not be verified, so its 32 results have been rejected.

Forty (40) sample results that were originally included in the data summary report have been reevaluated and have been rejected based on holding time exceedances for TDS and TSS.

QA/QC was conducted to assess the precision and accuracy of the analyses. Laboratory precision was assessed using Matrix Spike/ Matrix Spike Duplicate (MS/MSD) analysis on one sample from each sample batch, and an acceptable criterion of 20%. A check of laboratory accuracy was assessed using Laboratory Control Sample (LCS) and percent recovery of MS/MSD, with an acceptable criterion of 75%-125%. Associated sample results that did not meet these criteria were qualified as estimates and are still usable for decision making. Completeness is an estimate of the amount of valid data obtained from the analytical measurement system for a given set of data. Percent completeness is defined in the SAP/QAPP as the number of samples collected with valid analytical results obtained, divided by the total number of samples' analytical results, multiplied by 100. The target goal for completeness for this project was 95 percent for all data. This was not met within every sample or laboratory analysis batch. However, based on a complete review, there are 2,264 usable results out of the 2,336 available results. The final completeness for the study was assessed at 97%, meeting the target goal of 95%.

An alternative method to compute completeness as described in Montana's updated data validation guidelines published on August 5, 2010, is to compare the actual number of useable sample results collected to the planned number of anticipated sample results (if 100% of all samples were collected). A total of 92 samples were anticipated (9 locations and 3 QA/QC samples per surface water sampling event and 8 locations and 3 QA/QC samples per groundwater sampling event). Seventy-nine (79) samples were collected (one of which was in a separate location from the normal sampling locations). Two of the eight monitoring wells were too dry to collect laboratory samples at any time in 2010. One additional well was not sampled in December and two surface water locations were not sampled in March or December, due to weather conditions. A field duplicate was not collected with the surface water sampling in March. After data validation, there are 2,264 usable results out of the anticipated 2,768 results. Based on this alternative method of calculating completeness, the completeness for the study was assessed at 82%.

Section 4.0 Results and Discussion

This section discusses the results obtained from the data collection activities described in Section 2.0 of this report. The results and associated discussions are sorted by type and are presented in the following sub-sections. Surface water and groundwater laboratory analytical reports are provided in Appendices A and B, respectively; the data validation report is provided in Appendix C; data correlations and hardness calculations are included in Appendices D and E, respectively; Appendix F contains copies of field notes; and Appendix G contains transducer data.

4.1 Surface Water Results

Surface water field parameter results are listed in Table A-1. The calculated discharge values for each surface water sampling site are summarized in Appendix A2. Surface water sampling results for total metals are summarized in Table A-2; the laboratory analytical reports are included in Appendix A1. Per Circular DEQ-7 (DEQ 2010), standards for metals in surface water (except aluminum) are based upon the total recoverable portion of the sample. Surface water standards for human health and aquatic life are compared with the sampling results.

During quarterly monitoring events performed by TerraGraphics in 2010, eight of the surface water sample locations exceeded the respective human health standards shown in Circular DEQ-7 for total metals.

Acute and chronic aquatic life standards for cadmium, copper, lead, and zinc are reported as a function of total hardness (mg/L $CaCO_3$) of the surface water. In general, these metals become less toxic to aquatic life as the hardness increases. Therefore, the aquatic life standards increase with greater concentrations of $CaCO_3$ in the sample. For the UBMC, calculations were performed in accordance with Circular DEQ-7 (DEQ 2010) to develop the acute and chronic aquatic life standards based on the hardness value of the surface water at each surface water sampling location. The hardness calculations are included in Appendix E.

Surface water samples collected at the UBMC during the quarterly monitoring performed by TerraGraphics in 2010 exceeded the hardness-corrected, chronic aquatic life criteria or human health standards for the metals of concern as follows. Cadmium exceeded acute or chronic aquatic life or human health criteria at eight of the nine surface water sampling locations. Lead exceeded acute or chronic aquatic life or human health criteria at seven of the nine surface water sampling locations. Zinc exceeded acute aquatic life or human health criteria at seven of the nine surface water sampling locations. Hardness-corrected, chronic aquatic life criteria for copper were exceeded at the sampling locations BRSW-23, BRSW-29, BRSW-38, and BRSW-48 and hardness-corrected, acute aquatic life criteria for copper were exceeded at the sampling locations BRSW-3A, BRSW-3B, BRSW-22 and BRSW-48. None of the surface water samples collected in 2010 exceeded Circular DEQ-7 standards for arsenic or dissolved aluminum.

BRSW-01, located on Beartrap Creek upstream of the impoundment, has historically shown to not exceed Circular DEQ-7 standards for total metals in surface water. Sites BRSW-23, BRSW-29, BRSW-38, and BRSW-48 exceeded DEQ-7 standards in all four of the quarterly monitoring events. BRSW-3A and BRSW-3B exceeded those standards in three of the four sampling events. Due to frozen conditions at the site during winter, BRSW-02 and BRSW-22 were only sampled during the June and September surface water monitoring events, which is a deviation from the SAP. Concentrations of total cadmium, copper, lead, and zinc in exceedance of

Circular DEQ-7 standards were found in water samples collected at both BRSW-02 and BRSW-22 during these two monitoring events.

The surface water analytical data were evaluated for possible correlations between total metals concentrations and variations in pH and SC. Such a correlation could be used during construction to efficiently determine if on-site activities cause a release of metals to groundwater. Results of the data correlations can be found in Appendix D. No statistically significant correlations between pH or SC and total metals concentrations in surface water were detected; therefore, these field parameters cannot be used to determine whether there is a release of metals to surface water.

4.2 Groundwater Results

Groundwater field parameter results are listed in Table B-1; groundwater sampling results for dissolved metals are summarized in Table B-2. Laboratory analytical reports are included in Appendix B. Per Circular DEQ-7, standards for metals in groundwater are based upon the dissolved portion of the sample (after filtration through a 0.45-µm membrane filter). The standard assumption in calculating the magnitude of the pollutant for groundwater exposure is that a 70-kilogram person will consume 2 L of water per day for 70 years.

None of the dissolved metal concentrations in the groundwater samples collected from the monitoring wells at the UBMC exceeded the respective human health standards shown in Circular DEQ-7 for dissolved metals, except for manganese. The standard for dissolved manganese in groundwater (0.05 mg/L) is listed in Circular DEQ-7 and is based on taste, odor, and staining. The monitoring well TDMW-4S was consistently dry and could not be sampled during the 2010 quarterly monitoring events, which is a deviation from the SAP. The monitoring well TDMW-3S contained a small amount of water during each attempt to sample it, but not enough to collect samples for laboratory analysis, which is a deviation from the SAP. TDMW-05 did not produce enough water to collect a sample during quarterly monitoring in December, which is a deviation from the SAP.

Groundwater elevations at the UBMC displayed atypical variations that were the result of dewatering performed in the spring of 2010. Seasonal water table elevation fluctuations that would be expected for similar intermontane valleys cannot be isolated from the effects of the dewatering.

The groundwater analytical data were evaluated for possible correlations between total metals concentrations and variations in pH and SC. Such a correlation could be used during construction to quickly and inexpensively determine if on-site activities cause a release of metals to groundwater. Results of the data correlations can be found in Appendix D. No statistically significant correlations between pH or SC and total metals concentrations in groundwater were detected; therefore, these field parameters cannot be used to determine whether there is a release of metals to groundwater.

Section 5.0 Conclusions

5.1 Surface Water

Surface water locations at the UBMC that were part of the 2010 quarterly monitoring program continue to exceed Circular DEQ-7 standards for aquatic and human health. Historically, eight of the nine surface water sample locations have contained elevated levels of total cadmium, lead, and zinc. This same trend was observed during the 2010 quarterly monitoring and should be expected to continue until further remedial actions are implemented at the site. The graphs in Appendix D show no correlation between total metals concentrations in surface water and field-measured pH or SC.

5.2 Groundwater

Groundwater samples collected from the eight monitoring wells as part of the 2010 quarterly monitoring were found to have dissolved metals concentrations below Circular DEQ-7 standards for human health, with the exception of manganese. The standard for dissolved manganese in groundwater (0.05 mg/L) is listed in Circular DEQ-7 and is based on taste, odor, and staining. Comparing the 2010 laboratory analytical results for groundwater with the previous results available for each well, the dissolved metals concentrations are within the historical range of results. Appendix D shows no significant relationship between total metals concentrations in groundwater and field-measured pH or SC.

Section 6.0 References

Montana Department of Environmental Quality (DEQ), 2010. Circular DEQ-7 Montana Numeric Water Quality Standards, 42 pp.

TerraGraphics Environmental Engineering, Inc. (TerraGraphics), 2010. Sampling and Analysis Plan (SAP)/Quality Assurance Project Plan (QAPP) for Groundwater and Surface Water Monitoring at the Upper Blackfoot Mining Complex, Lewis and Clark County, Montana.

Upper Blackfoot Mining Complex
Surface Water Analytical Results
TO 20 - UBMC

Sample ID	Collection Date	Field Parameters						Physiochemical									Common Anions												Common Cations							
		Specific Conductance (µmhos/cm)	pH (s.u.)	Temperature (°F)	Dissolved Oxygen (mg/L)	ORP (mV)	Discharge (cfs)	Specific Conductance (µmhos/cm)	pH (s.u.)	Hardness (mg/L)	Total Dissolved Solids (mg/L)		Total Suspended Solids (mg/L)		Alkalinity, Total as $CaCO_3$ (mg/L)		Bicarbonate as HCO_3 (mg/L)		Carbonate as CO_3 (mg/L)		Chloride (mg/L)		Chloride, Dissolved (mg/L)		Sulfate (mg/L)		Sulfate, Dissolved (mg/L)		Calcium Diss. (mg/L)		Magnesium Diss. (mg/L)		Potassium Diss. (mg/L)		Sodium Diss. (mg/L)	
											result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag
UBM-BRSW01-20100318	3/18/2010 11:46:00 AM	320	8.22	37.5	12.41	162.3	0.44	147	8.1	74	102		10	U	73		84		4	U	1	U	1	U	3		3		16		9		1	U	1	
UBM-BRSW23-20100318	3/18/2010 2:40:00 PM	415	7.85	38.72	10.85	175.6	1.15	234	8	117	154		10	U	73		100		4	U	1	U	1	U	44		44		25		13		1	U	1	
UBM-BRSW29-20100318	3/18/2010 4:27:00 PM	368	7.83	35.97	12.4	173.8	3.04	202	8	105	140		10	U	72		82		4	U	1	U	1	U	29		30		23		11		1	U	1	
UBM-BRSW38-20100318	3/18/2010 5:05:00 PM	388	7.72	36.59	11.89	176	1.46	241	7.8	123	164		10	U	69		77		4	U	1	U	1	U	52		56		26		14		1	U	1	
UBM-BRSW3A-20100318	3/18/2010 3:15:00 PM	520	7.86	49.97	9.54	177.3	0.100	287	8	151	182		10	U	95		110		4	U	1	U	1	U	52		51		33		17		1	U	1	
UBM-BRSW3B-20100318	3/18/2010 3:35:00 PM	500	7.89	47.69	8.38	160.6	0.130	R	R	R	-	R	-	R	-	R	-	R	-	R	-	R	-	R	-	R	-	R	-	R	-	R	-	R	-	R
UBM-BRSW48-20100318	3/18/2010 2:19:00 PM	418	7.87	39.07	10.79	168.8	0.740	247	7.9	128	166		10	U	71		83		4	U	1	U	1	U	53		54		27		15		1	U	1	
UBM-TRENCH-20100318	3/18/2010 12:30:00 PM	309	7.84	38.55	12.75	167.4	-	172	8	96	124		10	U	80		92		4	U	1	U	1	U	7		7		20		11		1	U	1	
UBM-BRSW01-20100608	6/8/2010 10:00:00 AM	280	8.29	40.54	13.74	177.2	6.400	160	8.2	69	89		10	U	71		84		4	U	1	U	1	U	3		3		14		8		1	U	1	U
UBM-BRSW02-20100608	6/8/2010 3:15:00 PM	1520	8	69	11.4	162.6	No Flow	845	7.8	449	642		10	U	45		53		4	U	1	U	1	U	420		410		101		48		1		1	U
UBM-BRSW22-20100608	6/8/2010 11:45:00 AM	305	8	44	12.9	162.7	11.630	172	8.3	88	95		10	U	86		100		4	U	1	U	1	U	7		7		19		10		1	U	1	U
UBM-BRSW23-20100608	6/8/2010 1:45:00 PM	352	8	46	12.5	181.1	10.680	191	8.1	91	116		10	U	82		97		4	U	1	U	1	U	19		18		19		11		1	U	1	U
UBM-BRSW29-20100608	6/8/2010 3:45:00 PM	301	8	47	13.0	156.9	23.400	166	8.1	89	103		10	U	75		88		4	U	1	U	1	U	13		13		20		9		1	U	1	U
UBM-BRSW38-20100608	6/8/2010 5:00:00 PM	327	8	45	12.2	148.9	13.080	183	8.0	87	113		10	U	76		89		4	U	1	U	1	U	20		20		18		10		1	U	1	U
UBM-BRSW3A-20100608	6/8/2010 2:00:00 PM	772	7.23	56.9	9.25	144.6	Low Flow	419	7.6	184	282		10	U	62		73		4	U	1	U	1	U	150		150		36		23		1	U	1	
UBM-BRSW3B-20100608	6/8/2010 2:15:00 PM	672	7.2	53.83	9.36	152.7	Low Flow	370	7.6	162	245		10	U	62		74		4	U	1	U	1	U	120		120		32		20		1	U	1	
UBM-BRSW48-20100608	6/8/2010 1:30:00 PM	347	8.2	46.03	12.53	61.8	8.290	191	8.1	100	108		10	U	84		98		4	U	1	U	1	U	17		16		21		11		1	U	1	U
UBM-BRSW01-20100908	9/8/2010 12:45:00 PM	369	8.57	44.73	11.62	85.4	0.480	204	8.2	104	-	R	-	R	110		140		4	U	1	U	1	U	5	J	4		21	J-	13		1	U	1	
UBM-BRSW02-20100908	9/8/2010 2:15:00 PM	6269	7.9	66.87	9.33	145.9	No Flow	3420	7.1	2510	-	R	-	R	10		13		4	U	2	U	2	U	2600	J	2600		526	J-	290		5		2	
UBM-BRSW22-20100908	9/8/2010 1:45:00 PM	558	8.45	54.68	10.25	140	0.090	304	8.1	145	-	R	-	R	89		110		4	U	1	U	1	U	70	J	70		34	J-	15		1	U	1	U
UBM-BRSW23-20100908	9/8/2010 4:30:00 PM	447	8.5	50.77	11.2	103.5	0.540	245	8.1	119	-	R	-	R	100		120		4	U	1	U	1	U	28	J	28		24	J-	14		1	U	1	
UBM-BRSW29-20100910	9/10/2010 11:00:00 AM	422	8	46.82	11.12	65.8	2.030	228	8	109	-	R	-	R	90		110		4	U	1	U	1	U	32	J	32		23	J-	12		1	U	1	
UBM-BRSW38-20100910	9/10/2010 11:30:00 AM	517	7.92	47.35	10.95	61.3	0.900	282	7.9	132	-	R	-	R	88		110		4	U	1	U	1	U	59	J	60		27	J-	16		1	U	1	
UBM-BRSW3A-20100908	9/8/2010 5:10:00 PM	559	7.77	45.44	7.98	108.9	Low Flow	296	7.8	142	-	R	-	R	100		120		4	U	1	U	1	U	55	J	54		29	J-	17		1	U	1	
UBM-BRSW3B-20100910	9/10/2010 10:00:00 AM	578	7.67	45.93	7.62	109.8	Low Flow	304	7.8	145	-	R	-	R	99		120		4	U	1	U	1	U	61	J	61		29	J-	18		1	U	1	
UBM-BRSW48-20100908	9/8/2010 3:45:00 PM	475	8	52	10.7	-6.8	0.950	259	8.1	128	-	R	-	R	99		120		4	U	1	U	1	U	38	J	38		26	J-	16		1	U	1	
UBM-BRSW01-20101215	12/15/2010 1:00:00 PM	362	9	33	8.9	166.2	Inaccessible	207	8.2	105	-	R	-	R	110		130		4	U	1	U	1	U	5		5		21		13		1	U	1	
UBM-BRSW23-20101216	12/16/2010 1:46:00 PM	550	8	35	-4.6	60.1	0.190	304	8.1	146	-	R	-	R	99		120		4	U	1	U	1	U	56		56		29		18		1	U	1	
UBM-BRSW29-20101216	12/16/2010 3:00:00 PM	471	8	33	8.6	83	1.030	264	7.9	116	-	R	-	R	84		98		4	U	1	U	1	U	48		48		24		14		1	U	2	
UBM-BRSW38-20101216	12/16/2010 3:45:00 PM	594	8	33	5.1	98.1	0.590	329	7.9	147	-	R	-	R	81		99		4	U	1	U	1	U	81		81		30		18		1	U	1	
UBM-BRSW3A-20101215	12/15/2010 2:20:00 PM	522	8	37	6.2	213.7	Low Flow	312	8.0	152	-	R	-	R	100		130		4	U	1	U	1	U	53		53		29		19		1	U	1	
UBM-BRSW3B-20101215	12/15/2010 2:00:00 PM	511	8	40	5.9	232.8	Low Flow	304	7.9	138	-	R	-	R	100		130		4	U	1	U	1	U	48		48		28		17		1	U	1	
UBM-BRSW48-20101216	12/16/2010 1:00:00 PM	587	8	34	-4.6	14.8	Inaccessible	323	8.0	151	-	R	-	R	96		110		4	U	1	U	1	U	68		68		30		18		1	U	1	
Surface Water Standards	Acute	--	--	--	--	--	--	--	6.5-8.5	--	--		--		--		--		--		--		--		--		--		--		--		--		--	
	Chronic	--	--	--	--	--	--	--	6.5-8.5	--	--		--		--		--		--		--		--		--		--		--		--		--		--	
	Human Health	--	--	--	--	--	--	--	6.5-8.5	--	--		--		--		--		--		--		--		--		--		--		--		--		--	

Notes:
Acute and Chronic levels are for aquatic life standards as listed in Circular DEQ-7, 201

Flag Qualifiers:
U - the compound was analyzed for, but not detected
J - estimated concentration
J- = concentration estimated low
R = rejected, results not usable

Upper Blackfoot Mining Complex
Surface Water Analytical Results - Metals
TO 20 - UBMC

Sample ID	Collection Date	Aluminum (mg/L)				Arsenic (mg/L)				Cadmium (mg/L)*				Copper (mg/L)*				Iron (mg/L)				Lead (mg/L)*				Manganese (mg/L)				Zinc (mg/L)*			
		Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag
UBM-BRSW01-20100318	3/18/2010 11:46:00 AM	0.03	U	0.07		0.003	U	0.003	U	0.00008	U	0.00008	U	0.001	U	0.001	U	0.05	U	0.05	U	0.0005	U	0.0005	U	0.006		0.005	U	0.02		0.01	U
UBM-BRSW23-20100318	3/18/2010 2:40:00 PM	0.04		0.08		0.003	U	0.003	U	0.00214		0.0023		0.003		0.006		0.05	U	0.11		0.0014		0.0065		0.102		0.118		0.56		0.58	
UBM-BRSW29-20100318	3/18/2010 4:27:00 PM	0.03	U	0.04		0.003	U	0.003	U	0.00174		0.00185		0.003		0.007		0.05	U	0.28		0.0008		0.0070		0.295		0.296		0.44		0.44	
UBM-BRSW38-20100318	3/18/2010 5:05:00 PM	0.03	U	0.06		0.003	U	0.003	U	0.00325		0.00359		0.004		0.011		0.05	U	0.48		0.0010		0.0116		0.594		0.604		0.82		0.86	
UBM-BRSW3A-20100318	3/18/2010 3:15:00 PM	0.03	U	0.04		0.003	U	0.003	U	0.0003		0.00032		0.003		0.004		0.05	U	0.05	U	0.0005	U	0.0005	U	0.083		0.082		0.15		0.14	
UBM-BRSW3B-20100318	3/18/2010 3:35:00 PM	-	R	-	R	-	R	-	R	-	R	-	R	-	R	-	R	-	R	-	R	-	R	-	R	-	R	-	R	-	R	-	R
UBM-BRSW48-20100318	3/18/2010 2:19:00 PM	0.04		0.11		0.003	U	0.003	U	0.00302		0.00344		0.008		0.015		0.23		0.81		0.0036		0.0175		0.816		0.886		0.7		0.75	
UBM-TRENCH-20100318	3/18/2010 12:30:00 PM	0.03		0.5		0.003	U	0.003	U	0.00008	U	0.00008	U	0.001	U	0.004		0.05	U	0.51		0.0005	U	0.0050		0.01		0.018		0.06		0.05	
UBM-BRSW01-20100608	6/8/2010 10:00:00 AM	0.03	U	0.03	U	0.004		0.003	U	0.00008	U	0.00008	U	0.001	U	0.001	U	0.05	U	0.05	U	0.0005	U	0.0005	U	0.005		0.005	U	0.02	J	0.01	UJ
UBM-BRSW02-20100608	6/8/2010 3:15:00 PM	0.05	J	0.1		0.003	U	0.003	U	0.00238		0.00222		0.008		0.012		0.05	U	0.27		0.0008		0.0269		0.82		0.739		0.38	J-	0.36	J+
UBM-BRSW22-20100608	6/8/2010 11:45:00 AM	0.03	U	0.03	J	0.003	U	0.003	U	0.00073		0.00097		0.004		0.007		0.05	U	0.05	U	0.0013		0.0030		0.023		0.034		0.13	J	0.18	J
UBM-BRSW23-20100608	6/8/2010 1:45:00 PM	0.03	U	0.05	J	0.003	U	0.003	U	0.00175		0.00195		0.007		0.011		0.05	U	0.43		0.0014		0.0057		0.244		0.292		0.39	J-	0.41	J
UBM-BRSW29-20100608	6/8/2010 3:45:00 PM	0.03	U	0.04	J	0.003	U	0.003	U	0.00137		0.00152		0.004		0.007		0.05	U	0.15		0.0024		0.0065		0.179		0.19		0.32	J-	0.31	J
UBM-BRSW38-20100608	6/8/2010 5:00:00 PM	0.03	U	0.06	J	0.003	U	0.003	U	0.00261		0.00274		0.007		0.012		0.08		0.26		0.0053		0.0112		0.298		0.387		0.55	J-	0.55	J-
UBM-BRSW3A-20100608	6/8/2010 2:00:00 PM	0.03	U	0.15	J	0.003	U	0.003	U	0.0111		0.0118		0.019		0.032		0.05	U	0.18		0.0005	U	0.0013		3.1		3.22		2.86	J-	2.94	J-
UBM-BRSW3B-20100608	6/8/2010 2:15:00 PM	0.03	U	0.21	J	0.003	U	0.003	U	0.0134		0.0135		0.025		0.037		0.05	U	0.11		0.0005	U	0.0009		2.97		2.93		3.06	J-	3.1	J-
UBM-BRSW48-20100608	6/8/2010 1:30:00 PM	0.03	U	0.08	J	0.003	U	0.003	U	0.0017		0.00281		0.008		0.05		0.13		0.5		0.0036		0.0254		0.305		0.365		0.34	J-	0.52	J-
UBM-BRSW01-20100908	9/8/2010 12:45:00 PM	0.03	U	0.03	U	0.003	U	0.003	U	0.00008	U	0.00008	U	0.001	U	0.001	U	0.05	U	0.05	U	0.0005	U	0.0005	U	0.005	U	0.005	U	0.05	J+	0.01	U
UBM-BRSW02-20100908	9/8/2010 2:15:00 PM	0.03	U	0.03		0.003	U	0.003	U	0.0114		0.0117		0.008		0.009		0.05	U	0.43		0.0005	U	0.0108		3.23	J+	3.24	J+	0.94		0.92	
UBM-BRSW22-20100908	9/8/2010 1:45:00 PM	0.03	U	0.03	U	0.003	U	0.003	U	0.0086		0.00864		0.033		0.042		0.05	U	0.05	U	0.0018		0.0058		0.187	J+	0.189	J+	1.22		1.24	
UBM-BRSW23-20100908	9/8/2010 4:30:00 PM	0.03	U	0.03	U	0.003	U	0.003	U	0.00141		0.00147		0.003		0.005		0.05	U	0.05	U	0.0005	U	0.0027		0.234	J+	0.223	J+	0.3		0.29	
UBM-BRSW29-20100910	9/10/2010 11:00:00 AM	0.03	U	0.03		0.003	U	0.003	U	0.00257		0.00292		0.003		0.006		0.05	U	0.24		0.0005		0.0061		0.516	J+	0.524	J+	0.57		0.59	
UBM-BRSW38-20100910	9/10/2010 11:30:00 AM	0.03	U	0.06		0.003	U	0.003	U	0.00482		0.00521		0.003		0.011		0.05	U	0.44		0.0005	U	0.0146		1.1	J+	1.1	J+	0.94		1	
UBM-BRSW3A-20100908	9/8/2010 5:10:00 PM	0.03	U	0.05		0.003	U	0.003	U	0.00072		0.00071		0.002		0.007		0.05	U	0.1		0.0005	U	0.0006		0.148	J+	0.256	J+	0.29		0.28	
UBM-BRSW3B-20100910	9/10/2010 10:00:00 AM	0.03	U	0.03	U	0.003	U	0.003	U	0.00089		0.00087		0.002		0.003		0.05	U	0.05	U	0.0005	U	0.0005	U	0.23	J+	0.23	J+	0.39		0.35	
UBM-BRSW48-20100908	9/8/2010 3:45:00 PM	0.03	U	0.03		0.003	U	0.003	U	0.00187		0.00239		0.002		0.008		0.05	U	0.52		0.0005	U	0.0133		0.813	J+	0.816	J+	0.36		0.44	
UBM-BRSW01-20101215	12/15/2010 1:00:00 PM	0.03	U	0.06		0.003	U	0.003	U	0.00008	U	0.00008	U	0.001	U	0.001		0.05	U	0.09		0.0005	U	0.0006		0.005	U	0.008		0.04		0.01	
UBM-BRSW23-20101216	12/16/2010 1:46:00 PM	0.03	U	0.03		0.003	U	0.003	U	0.00233		0.0024		0.005		0.006		0.05	U	0.1		0.0013		0.0036		0.424		0.408		0.72		0.71	
UBM-BRSW29-20101216	12/16/2010 3:00:00 PM	0.03	U	0.06		0.003	U	0.003	U	0.00338		0.00374		0.004		0.012		0.06		0.44		0.0006		0.0112		0.45		0.473		0.92		0.94	
UBM-BRSW38-20101216	12/16/2010 3:45:00 PM	0.03	U	0.06		0.003	U	0.003	U	0.00533		0.00588		0.004		0.016		0.05	U	0.67		0.0008		0.0214		0.929		0.981		1.3		1.41	
UBM-BRSW3A-20101215	12/15/2010 2:20:00 PM	0.03	U	0.21		0.003	U	0.003	U	0.00064		0.00339		0.002		0.04		0.09		1.31		0.0005	U	0.0097		0.564		0.755		0.48		0.62	
UBM-BRSW3B-20101215	12/15/2010 2:00:00 PM	0.03	U	0.09		0.003	U	0.003	U	0.00091		0.0012		0.003		0.008		0.05	U	0.07		0.0005	U	0.0007		0.192		0.311		0.35		0.4	
UBM-BRSW48-20101216	12/16/2010 1:00:00 PM	0.03	U	0.07		0.003	U	0.003	U	0.00342		0.00383		0.006		0.017		0.4		0.98		0.0056		0.0298		1.26		1.28		0.91		0.98	
Surface Water Standards	Acute	0.75				0.34				see Appendix E				see Appendix E				--				see Appendix E				--				see Appendix E			
	Chronic	0.087				0.15				see Appendix E				see Appendix E				1.0				see Appendix E				--				see Appendix E			
	Human Health	--				0.01				0.005				1.3				0.3**				0.015				0.05**				2.0			

Notes:
Acute and Chronic levels are for aquatic life standards as listed in Circular DEQ-7, 2010.
* - these aquatic life standards are hardness dependent.
** - Secondary maximum contaminant level based on taste, odor, and staining.
Flag Qualifiers:
U - the compound was analyzed for, but not detected.
J+ = high estimated concentration
J- = concentration estimated low
R = rejected, results not usable
Blackfoot River concentrations are consistent with the 6/2008 RI sampling results from approximately same area.

Upper Blackfoot Mining Complex
Groundwater Analytical Results
TO 20 - UBMC

Sample ID	Collection Date	Field Parameters					Physiochemical					Common Anions								Common Cations							
		SC (µmhos/cm)	pH (s.u.)	Temperature (°F)	Depth (ft)	DO (mg/L)	SC (µmhos/cm)	pH (s.u.)	Hardness (mg/L)	Alkalinity, Total as CaCO3 (mg/L)		Sulfate (mg/L)		Bicarbonate as HCO3 (mg/L)		Carbonate as CO3 (mg/L)		Chloride (mg/L)		Calcium Diss. (mg/L)		Magnesium Diss. (mg/L)		Potassium Diss. (mg/L)		Sodium Diss. (mg/L)	
										result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag	result	flag
UBM-TDMW01-20100317	3/17/2010 1:59:00 PM	765	7.09	46.12	18.81	8.76	422	7.7	224	98		120		120		4	U	1	U	45		27		1		2	
UBM-TDMW05-20100316	3/16/2010 7:10:00 PM	470	8.28	42.93	75.64	10.9	258	8.2	130	92		42		110		4	U	1	U	28		15		1	U	4	
UBM-TDMW2D-20100317	3/17/2010 1:03:00 PM	404	7.36	45.79	11.95	7.91	221	7.9	113	96		19		120		4	U	1	U	24		13		1	U	1	
UBM-TDMW2S-20100317	3/17/2010 1:22:00 PM	840	7.08	43.82	11.76	4.36	400	7.7	189	100		100		130		4	U	1	U	39		22		1		1	
UBM-TDMW3D-20100317	3/17/2010 10:51:00 AM	984	7.6	44.4	47.72	8.8	452	7.9	230	74		160		90		4	U	1	U	54		23		1	U	2	
UBM-TDMW4D-20100316	3/16/2010 4:01:00 PM	399	7.66	43	39.06	10.31	213	7.9	107	91		19		110		4	U	1	U	22		13		1	U	3	
UBM-TDMW01-20100610	6/10/2010 2:15:00 PM	774	6.81	44.83	16	7.83	426	7.5	210	59		160		75		4	U	1	U	41		26		1	U	1	
UBM-TDMW05-20100610	6/10/2010 11:15:00 AM	496	8.08	44.67	15	12.34	276	8	128	52		83		67		4	U	1	U	33		11		1	U	2	
UBM-TDMW2D-20100610	6/10/2010 3:28:00 PM	464	7.37	46.01	9.3	9.14	255	8	123	82		47		100		4	U	1	U	26		14		1	U	1	
UBM-TDMW2S-20100610	6/10/2010 3:10:00 PM	827	6.86	44.91	9	1.94	452	7.6	185	76		160		96		4	U	1	U	41		22		1	U	1	
UBM-TDMW3D-20100610	6/10/2010 4:38:00 PM	638	7.47	44.44	45.87	14.87	362	7.8	191	42		140		49		4	U	1	U	44		18		1	U	2	
UBM-TDMW4D-20100610	6/10/2010 10:00:00 AM	306	7.83	42.71	14	99	173	7.9	81	52		33		68		4	U	1	U	18		9		1	U	3	
UBM-TDMW01-20100913	9/13/2010 4:30:00 PM	792	7.25	46.09	16.97	5.28	453	7.2	214	94		140		120		4	U	1	U	39		28		1	U	2	
UBM-TDMW05-20100913	9/13/2010 11:30:00 AM	570	8.21	43.93	74.47	13.21	326	8	152	110		60		130		4	U	1	U	34		16		1	U	3	
UBM-TDMW2D-20100913	9/13/2010 5:30:00 PM	439	7.65	45.99	12.64	8.66	279	7.7	123	100		27		130		4	U	1	U	25		15		1	U	2	
UBM-TDMW2S-20100913	9/13/2010 6:00:00 PM	921	7.29	45.99	12.52	7.39	506	7.3	226	100		150		130		4	U	1	U	45		28		1	U	2	
UBM-TDMW3D-20100913	9/13/2010 12:40:00 PM	362	8.06	43.04	41.7	10.87	689	7.5	342	58		310		73		4	U	1	U	78		36		1	U	2	
UBM-TDMW4D-20100913	9/13/2010 10:15:00 AM	362	8.1	43.0	41.7	11	210	7.7	93	77		25		93		4	U	1	U	19		11		1	U	2	
UBM-TDMW01-20101221	12/21/2010 11:00:00 AM	819	7.4	45.7	16.5	-4	458	7.7	213	100		130		130		4	U	1	U	39		28		1		2	
UBM-TDMW2D-20101221	12/21/2010 11:45:00 AM	423	8.0	44.6	11.7	-9	240	7.9	114	100		17		130		4	U	1	U	24		13		1	U	1	
UBM-TDMW2S-20101221	12/21/2010 12:15:00 PM	928	7.2	43.7	11.5	-2	499	7.6	192	110		150		130		4	U	1	U	42		25		1	U	2	
UBM-TDMW3D-20101220	12/20/2010 1:00:00 PM	523	8.0	43.4	47.2	4	299	7.9	126	65		78		79		4	U	1	U	29		13		1	U	2	
UBM-TDMW4D-20101220	12/20/2010 12:00:00 PM	374	7.9	41.9	38.0	-13	210	8	100	94		13		120		4	U	1	U	21		11		1	U	2	

Notes:
SC - Specific Conductance
Flag Qualifiers: J - estimated concentration
J- = concentration estimated low
U - the compound was analyzed for, but not detected

Upper Blackfoot Mining Complex
Groundwater Analytical Results
TO 20 - UBMC

Sample ID	Date Collected	Aluminum (mg/L)				Arsenic (mg/L)				Cadmium (mg/L)				Copper (mg/L)				Iron (mg/L)				Lead (mg/L)				Manganese (mg/L)				Zinc (mg/L)			
		Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag	Dissolved	flag	Total	flag
UBM-TDMW01-20100317	3/17/2010 1:59:00 PM	0.03	U	0.03	U	0.003	U	0.003	U	0.00054		0.00059		0.001	U	0.001	U	0.03	U	0.03	U	0.0007		0.0005	U	0.005	U	0.005	U	0.22		0.24	
UBM-TDMW05-20100316	3/16/2010 7:10:00 PM	0.03		2.04	J+	0.003	U	0.003	U	0.00010		0.00048		0.001		0.03		0.04		6.50		0.0011		0.0178		0.005	U	0.400		0.02		0.08	
UBM-TDMW2D-20100317	3/17/2010 1:03:00 PM	0.03	U	0.26	J+	0.003	U	0.003	U	0.00008	U	0.00008	U	0.001	U	0.003		0.03	U	0.22		0.0005	U	0.0029		0.005	U	0.028		0.01	U	0.01	U
UBM-TDMW2S-20100317	3/17/2010 1:22:00 PM	0.03	U	0.03	U	0.003	U	0.003	U	0.00047		0.00058		0.001	U	0.001	U	0.03	U	0.08		0.0006		0.0005	U	3.31		3.560		0.82		0.90	
UBM-TDMW3D-20100317	3/17/2010 10:51:00 AM	0.03	U	3.62	J+	0.003	U	0.012		0.00008	U	0.00052		0.001	U	0.011		0.03	U	9.29		0.0005	U	0.0464		0.005	U	0.720		0.01	U	0.10	
UBM-TDMW4D-20100316	3/16/2010 4:01:00 PM	0.03	U	1	J+	0.003	U	0.003		0.00008	U	0.00010		0.001	U	0.034		0.03	U	1.68		0.0005	U	0.0078		0.02		0.086		0.01	U	0.02	
UBM-TDMW01-20100610	6/10/2010 2:15:00 PM	0.03	U	0.03	U	0.003	U	0.003	U	0.00030		0.00030	J	0.001	U	0.001	UJ	0.05	U	0.05	UJ	0.0005	U	0.0005	UJ	0.005	U	0.005	UJ	0.26		0.26	J
UBM-TDMW05-20100610	6/10/2010 11:15:00 AM	0.03	U	6.07		0.003	U	0.003	U	0.00008	U	0.00078	J	0.001		0.099	J	0.09		17.80	J	0.0005	U	0.0242	J	0.005	U	0.539	J	0.01	U	0.12	J
UBM-TDMW2D-20100610	6/10/2010 3:28:00 PM	0.03	U	0.49		0.003	U	0.003	U	0.00008	U	0.00010	J	0.001	U	0.006	J	0.05	U	0.62	J	0.0005	U	0.0098	J	0.005	U	0.067	J	0.01	U	0.03	J
UBM-TDMW2S-20100610	6/10/2010 3:10:00 PM	0.03	U	0.06		0.003	U	0.003	U	0.00103		0.00184	J	0.001	U	0.005	J	0.05	U	0.57	J	0.0005	U	0.0068	J	3.75		7.380	J	1.82		2.67	J
UBM-TDMW3D-20100610	6/10/2010 4:38:00 PM	0.03	U	0.09		0.003	U	0.003	U	0.00008	U	0.00009	J	0.001	U	0.001	UJ	0.05	U	0.26	J	0.0005	U	0.0017	J	0.005	U	0.029	J	0.02		0.02	J
UBM-TDMW4D-20100610	6/10/2010 10:00:00 AM	0.03	U	1.76		0.003	U	0.005		0.00008	U	0.00014	J	0.001	U	0.033	J	0.05	U	2.86	J	0.0005	U	0.0105	J	0.016		0.103	J	0.01	U	0.03	J
UBM-TDMW01-20100913	9/13/2010 4:30:00 PM	0.03	U	0.03	U	0.003	U	0.003	U	0.00062		0.00061		0.001	U	0.001	U	0.05	U	0.05	U	0.0005	U	0.0006		0.005	U	0.005	U	0.25		0.25	
UBM-TDMW05-20100913	9/13/2010 11:30:00 AM	0.03	U	5.73		0.003	U	0.003	U	0.00008	U	0.00077		0.001		0.083		0.05	U	19.30		0.0005	U	0.0212		0.005	U	0.886		0.02		0.15	
UBM-TDMW2D-20100913	9/13/2010 5:30:00 PM	0.03	U	0.33		0.003	U	0.003	U	0.00008	U	0.00008	U	0.001	U	0.002		0.05	U	0.33		0.0005	U	0.0028		0.005	U	0.019		0.01	U	0.01	U
UBM-TDMW2S-20100913	9/13/2010 6:00:00 PM	0.03	U	0.25		0.003	U	0.006		0.00149		0.00230		0.001	U	0.012		0.05	U	2.05		0.0005	U	0.0602		4.32		7.840		1.96		2.48	
UBM-TDMW3D-20100913	9/13/2010 12:40:00 PM	0.03	U	0.27		0.003	U	0.003	U	0.00008		0.00013		0.001	U	0.001		0.05	U	0.64		0.0005	U	0.003		0.005	U	0.046		0.02		0.03	
UBM-TDMW4D-20100913	9/13/2010 10:15:00 AM	0.03	U	0.2		0.003	U	0.003	U	0.00008	U	0.00008	U	0.001	U	0.005		0.05	U	0.28		0.0005	U	0.0019		0.005	U	0.013		0.01	U	0.01	U
UBM-TDMW01-20101221	12/21/2010 11:00:00 AM	0.03	U	0.08		0.003	U	0.003	U	0.00066	J	0.00067		0.001	U	0.001		0.14		0.15		0.0005	U	0.0016		0.328		0.006		0.25		0.25	
UBM-TDMW2D-20101221	12/21/2010 11:45:00 AM	0.03	U	0.19		0.003	U	0.003	U	0.00008	UJ	0.00008	U	0.001	U	0.003		0.05	U	0.30		0.0005	U	0.0014		0.005	U	0.026		0.01	U	0.01	U
UBM-TDMW2S-20101221	12/21/2010 12:15:00 PM	0.03	U	0.09		0.003	U	0.003	U	0.0021	J	0.00376		0.001	U	0.008		0.05	U	0.82		0.0005	U	0.0331		4.19		8.960		1.72		2.86	
UBM-TDMW3D-20101220	12/20/2010 1:00:00 PM	0.03	U	1.09		0.003	U	0.007		0.00008	UJ	0.00034		0.001	U	0.004		0.05	U	4.63		0.0005	U	0.0232		0.005	U	0.370		0.01	U	0.04	
UBM-TDMW4D-20101220	12/20/2010 12:00:00 PM	0.03	U	1.17		0.003	U	0.004		0.00008	UJ	0.00012		0.001	U	0.043		0.05	U	2.36		0.0005	U	0.0102		0.013		0.121		0.01	U	0.02	
Groundwater Standards (mg/L)	**Human Health**	**--**				**0.01**				**0.005**				**1.3**				**0.3***				**0.015**				**0.05***				**2.0**			

Notes:
-- - indicates no standard
- concentrations exceed human health groundwater standard.
Flag Qualifiers:
J+ =high estimated concentration
J = estimated concentration
U = the analyte was not detected
* - Secondary maximum contaminant level based on taste, odor, and staining.

Appendix A

Surface Water

Appendix A1 (Report of Laboratory Analysis)

Appendix A2 (Surface Water Flow Summary)

ANALYTICAL SUMMARY REPORT

September 21, 2010

MT DEQ
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H10060160 Quote ID: H499 - Section 35 and UBMC

Project Name: UBMC-TO20 10013

Energy Laboratories Inc Helena MT received the following 12 samples for MT DEQ on 6/9/2010 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H10060160-001	UBM-BRSW01-20100608	06/08/10 10:00	06/09/10	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Anion - Cation Balance Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Metals Digestion by EPA 200.2 Preparation, Dissolved Filtration Preparation for TDS Preparation for TSS Solids, Total Dissolved Solids, Total Suspended
H10060160-002	UBM-BRSW22-20100608	06/08/10 11:45	06/09/10	Surface Water	Same As Above
H10060160-003	UBM-BRSW48-20100608	06/08/10 13:30	06/09/10	Surface Water	Same As Above
H10060160-004	UBM-BRSW23-20100608	06/08/10 13:45	06/09/10	Surface Water	Same As Above
H10060160-005	UBM-BRSW3A-20100608	06/08/10 14:00	06/09/10	Surface Water	Same As Above
H10060160-006	UBM-BRSW3B-20100608	06/08/10 14:15	06/09/10	Surface Water	Same As Above
H10060160-007	UBM-BRSW02-20100608	06/08/10 15:15	06/09/10	Surface Water	Same As Above
H10060160-008	UBM-BRSW29-20100608	06/08/10 15:45	06/09/10	Surface Water	Same As Above
H10060160-009	UBM-BRSW29-555-20100608	06/08/10 15:45	06/09/10	Surface Water	Same As Above
H10060160-010	UBM-BRSW38-333-20100608	06/08/10 16:43	06/09/10	Surface Water	Same As Above
H10060160-011	UBM-BRSW38-444-20100608	06/08/10 16:43	06/09/10	Surface Water	Same As Above
H10060160-012	UBM-BRSW38-20100608	06/08/10 17:00	06/09/10	Surface Water	Same As Above

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

CLIENT: MT DEQ
Project: UBMC-TO20 10013
Sample Delivery Group: H10060160

Revised Date: 09/21/10
Report Date: 06/22/10

CASE NARRATIVE

Investigation into the failing recovery for Manganese in the Matrix Spike/Matrix Spike Duplicate sample in metals batch R63037 revealed the wrong sample was referenced for the MS/MSD. The MS/MSD was originally labeled and referenced as H10060160-006D MS/MSD. The sample should have been H10060160-007D MS/MSD. The sample results were not affected by this error. The MS/MSD was digested according to method 200.2 along with the parent sample H10060160-007D. The sample ID and reference was corrected. In the revised report this sample is no longer referenced in batch R63037, but is reported in batch 8975. Abb 9/21/10

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW01-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-001
Collection Date: 06/08/10 10:00
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	8.2	s.u.		0.1		A4500-H B	06/10/10 20:38 / hm			MAN-TECH_100610C	93	R62984
Conductivity	160	umhos/cm		1		A2510 B	06/10/10 20:38 / hm			MAN-TECH_100610C	92	R62984
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	06/11/10 14:01 / WB	06/11/10 12:58	A2540 D	124 (14410200)_100611A	13	8984
Solids, Total Dissolved TDS @ 180 C	89	mg/L		10		A2540 C	06/11/10 13:35 / WB	06/11/10 12:51	A2540 C	124 (14410200)_100611B	15	8981
DISSOLVED INORGANICS												
Bicarbonate as HCO3	84	mg/L		4		A2320 B	06/21/10 11:34 / WB			TITTR_100621A	5	100621A-ALK-W
Carbonate as CO3	ND	mg/L		4		A2320 B	06/21/10 11:34 / WB			TITTR_100621A	5	100621A-ALK-W
Chloride	ND	mg/L		1		E300.0	06/16/10 07:50 / hm			IC101-H_100614A	154	R63069
Sulfate	3	mg/L		1		E300.0	06/16/10 07:50 / hm			IC101-H_100614A	154	R63069
INORGANICS												
Alkalinity, Total as CaCO3	71	mg/L		4		A2320 B	06/21/10 10:47 / WB			TITTR_100621A	3	100621A-ALK-W
Chloride	ND	mg/L		1		E300.0	06/16/10 07:34 / hm			IC101-H_100614A	153	R63069
Sulfate	3	mg/L		1		E300.0	06/16/10 07:34 / hm			IC101-H_100614A	153	R63069
Hardness as CaCO3	69	mg/L		1		A2340 B	06/22/10 13:00 / jdh			WATERCALC_110110A	11	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/16/10 04:22 / dck			ICPMS204-B_100615A	118	R63037
Arsenic	0.004	mg/L		0.003		E200.8	06/16/10 04:22 / dck			ICPMS204-B_100615A	118	R63037
Cadmium	ND	mg/L		0.00008		E200.8	06/16/10 04:22 / dck			ICPMS204-B_100615A	118	R63037
Calcium	14	mg/L		1		E200.7	06/10/10 17:14 / sld			ICP1-HE_100610B	28	R62964
Copper	ND	mg/L		0.001		E200.8	06/16/10 04:22 / dck			ICPMS204-B_100615A	118	R63037
Iron	ND	mg/L		0.05		E200.7	06/10/10 17:14 / sld			ICP1-HE_100610B	28	R62964
Lead	ND	mg/L		0.0005		E200.8	06/16/10 04:22 / dck			ICPMS204-B_100615A	118	R63037
Magnesium	8	mg/L		1		E200.7	06/10/10 17:14 / sld			ICP1-HE_100610B	28	R62964
Manganese	0.005	mg/L		0.005		E200.8	06/16/10 04:22 / dck			ICPMS204-B_100615A	118	R63037
Potassium	ND	mg/L		1		E200.7	06/10/10 17:14 / sld			ICP1-HE_100610B	28	R62964
Sodium	ND	mg/L		1		E200.7	06/10/10 17:14 / sld			ICP1-HE_100610B	28	R62964
Zinc	0.02	mg/L		0.01		E200.8	06/16/10 04:22 / dck			ICPMS204-B_100615A	118	R63037
METALS, TOTAL RECOVERABLE												
Aluminum	ND	mg/L		0.03		E200.8	06/16/10 04:28 / dck			ICPMS204-B_100615A	119	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 04:28 / dck			ICPMS204-B_100615A	119	R63037
Cadmium	ND	mg/L		0.00008		E200.8	06/16/10 04:28 / dck			ICPMS204-B_100615A	119	R63037
Copper	ND	mg/L		0.001		E200.8	06/16/10 04:28 / dck			ICPMS204-B_100615A	119	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW01-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-001
Collection Date: 06/08/10 10:00
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	ND	mg/L		0.05		E200.8	06/16/10 13:24 / dck			ICPMS204-B_100615A	151	R63037
Lead	ND	mg/L		0.0005		E200.8	06/16/10 04:28 / dck			ICPMS204-B_100615A	119	R63037
Manganese	ND	mg/L		0.005		E200.8	06/16/10 04:28 / dck			ICPMS204-B_100615A	119	R63037
Zinc	ND	mg/L		0.01		E200.8	06/16/10 04:28 / dck			ICPMS204-B_100615A	119	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW22-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-002
Collection Date: 06/08/10 11:45
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	8.3	s.u.		0.1		A4500-H B	06/10/10 20:45 / hm			MAN-TECH_100610C	96	R62984
Conductivity	172	umhos/cm		1		A2510 B	06/10/10 20:45 / hm			MAN-TECH_100610C	95	R62984
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	06/11/10 14:01 / WB	06/11/10 12:58	A2540 D	124 (14410200)_100611A	14	8984
Solids, Total Dissolved TDS @ 180 C	95	mg/L		10		A2540 C	06/11/10 13:36 / WB	06/11/10 12:51	A2540 C	124 (14410200)_100611B	16	8981
DISSOLVED INORGANICS												
Bicarbonate as HCO3	100	mg/L		4		A2320 B	06/10/10 23:57 / hm			MAN-TECH_100610C	167	R62984
Carbonate as CO3	ND	mg/L		4		A2320 B	06/10/10 23:57 / hm			MAN-TECH_100610C	167	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 09:33 / hm			IC101-H_100614A	158	R63069
Sulfate	7	mg/L		1		E300.0	06/16/10 09:33 / hm			IC101-H_100614A	158	R63069
INORGANICS												
Alkalinity, Total as CaCO3	86	mg/L		4		A2320 B	06/10/10 20:45 / hm			MAN-TECH_100610C	94	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 09:17 / hm			IC101-H_100614A	157	R63069
Sulfate	7	mg/L		1		E300.0	06/16/10 09:17 / hm			IC101-H_100614A	157	R63069
Hardness as CaCO3	88	mg/L		1		A2340 B	06/22/10 13:00 / jdh			WATERCALC_110110A	12	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/16/10 04:35 / dck			ICPMS204-B_100615A	120	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 04:35 / dck			ICPMS204-B_100615A	120	R63037
Cadmium	0.00073	mg/L		0.00008		E200.8	06/16/10 04:35 / dck			ICPMS204-B_100615A	120	R63037
Calcium	19	mg/L		1		E200.7	06/10/10 17:17 / sld			ICP1-HE_100610B	29	R62964
Copper	0.004	mg/L		0.001		E200.8	06/16/10 04:35 / dck			ICPMS204-B_100615A	120	R63037
Iron	ND	mg/L		0.05		E200.7	06/10/10 17:17 / sld			ICP1-HE_100610B	29	R62964
Lead	0.0013	mg/L		0.0005		E200.8	06/16/10 04:35 / dck			ICPMS204-B_100615A	120	R63037
Magnesium	10	mg/L		1		E200.7	06/10/10 17:17 / sld			ICP1-HE_100610B	29	R62964
Manganese	0.023	mg/L		0.005		E200.8	06/16/10 04:35 / dck			ICPMS204-B_100615A	120	R63037
Potassium	ND	mg/L		1		E200.7	06/10/10 17:17 / sld			ICP1-HE_100610B	29	R62964
Sodium	ND	mg/L		1		E200.7	06/10/10 17:17 / sld			ICP1-HE_100610B	29	R62964
Zinc	0.13	mg/L		0.01		E200.8	06/16/10 04:35 / dck			ICPMS204-B_100615A	120	R63037
METALS, TOTAL RECOVERABLE												
Aluminum	0.03	mg/L		0.03		E200.8	06/16/10 05:23 / dck			ICPMS204-B_100615A	127	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 05:23 / dck			ICPMS204-B_100615A	127	R63037
Cadmium	0.00097	mg/L		0.00008		E200.8	06/16/10 05:23 / dck			ICPMS204-B_100615A	127	R63037
Copper	0.007	mg/L		0.001		E200.8	06/16/10 05:23 / dck			ICPMS204-B_100615A	127	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW22-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-002
Collection Date: 06/08/10 11:45
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	ND	mg/L		0.05		E200.8	06/16/10 13:31 / dck			ICPMS204-B_100615A	152	R63037
Lead	0.0030	mg/L		0.0005		E200.8	06/16/10 05:23 / dck			ICPMS204-B_100615A	127	R63037
Manganese	0.034	mg/L		0.005		E200.8	06/16/10 05:23 / dck			ICPMS204-B_100615A	127	R63037
Zinc	0.18	mg/L		0.01		E200.8	06/16/10 05:23 / dck			ICPMS204-B_100615A	127	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW48-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-003
Collection Date: 06/08/10 13:30
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	8.1	s.u.		0.1		A4500-H B	06/10/10 20:59 / hm			MAN-TECH_100610C	102	R62984
Conductivity	191	umhos/cm		1		A2510 B	06/10/10 20:59 / hm			MAN-TECH_100610C	101	R62984
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	06/11/10 15:06 / WB	06/11/10 12:58	A2540 D	124 (14410200)_100611A	15	8984
Solids, Total Dissolved TDS @ 180 C	108	mg/L		10		A2540 C	06/11/10 13:37 / WB	06/11/10 12:51	A2540 C	124 (14410200)_100611B	19	8981
DISSOLVED INORGANICS												
Bicarbonate as HCO3	98	mg/L		4		A2320 B	06/11/10 00:04 / hm			MAN-TECH_100610C	169	R62984
Carbonate as CO3	ND	mg/L		4		A2320 B	06/11/10 00:04 / hm			MAN-TECH_100610C	169	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 10:06 / hm			IC101-H_100614A	160	R63069
Sulfate	16	mg/L		1		E300.0	06/16/10 10:06 / hm			IC101-H_100614A	160	R63069
INORGANICS												
Alkalinity, Total as CaCO3	84	mg/L		4		A2320 B	06/10/10 20:59 / hm			MAN-TECH_100610C	100	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 09:50 / hm			IC101-H_100614A	159	R63069
Sulfate	17	mg/L		1		E300.0	06/16/10 09:50 / hm			IC101-H_100614A	159	R63069
Hardness as CaCO3	100	mg/L		1		A2340 B	06/22/10 13:00 / jdh			WATERCALC_110110A	13	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/16/10 05:29 / dck			ICPMS204-B_100615A	128	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 05:29 / dck			ICPMS204-B_100615A	128	R63037
Cadmium	0.00170	mg/L		0.00008		E200.8	06/16/10 05:29 / dck			ICPMS204-B_100615A	128	R63037
Calcium	21	mg/L		1		E200.7	06/10/10 17:27 / sld			ICP1-HE_100610B	32	R62964
Copper	0.008	mg/L		0.001		E200.8	06/16/10 05:29 / dck			ICPMS204-B_100615A	128	R63037
Iron	0.13	mg/L		0.05		E200.7	06/10/10 17:27 / sld			ICP1-HE_100610B	32	R62964
Lead	0.0036	mg/L		0.0005		E200.8	06/16/10 05:29 / dck			ICPMS204-B_100615A	128	R63037
Magnesium	11	mg/L		1		E200.7	06/10/10 17:27 / sld			ICP1-HE_100610B	32	R62964
Manganese	0.305	mg/L		0.005		E200.8	06/16/10 05:29 / dck			ICPMS204-B_100615A	128	R63037
Potassium	ND	mg/L		1		E200.7	06/10/10 17:27 / sld			ICP1-HE_100610B	32	R62964
Sodium	ND	mg/L		1		E200.7	06/10/10 17:27 / sld			ICP1-HE_100610B	32	R62964
Zinc	0.34	mg/L		0.01		E200.8	06/16/10 05:29 / dck			ICPMS204-B_100615A	128	R63037
METALS, TOTAL RECOVERABLE												
Aluminum	0.08	mg/L		0.03		E200.8	06/16/10 13:38 / dck			ICPMS204-B_100615A	153	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 13:38 / dck			ICPMS204-B_100615A	153	R63037
Cadmium	0.00281	mg/L		0.00008		E200.8	06/16/10 13:38 / dck			ICPMS204-B_100615A	153	R63037
Copper	0.050	mg/L		0.001		E200.8	06/16/10 13:38 / dck			ICPMS204-B_100615A	153	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW48-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-003
Collection Date: 06/08/10 13:30
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	0.50	mg/L		0.05		E200.8	06/16/10 13:38 / dck			ICPMS204-B_100615A	153	R63037
Lead	0.0254	mg/L		0.0005		E200.8	06/16/10 13:38 / dck			ICPMS204-B_100615A	153	R63037
Manganese	0.365	mg/L		0.005		E200.8	06/16/10 13:38 / dck			ICPMS204-B_100615A	153	R63037
Zinc	0.52	mg/L		0.01		E200.8	06/16/10 13:38 / dck			ICPMS204-B_100615A	153	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW23-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-004
Collection Date: 06/08/10 13:45
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	8.1	s.u.		0.1		A4500-H B	06/10/10 21:06 / hm			MAN-TECH_100610C	105	R62984
Conductivity	191	umhos/cm		1		A2510 B	06/10/10 21:06 / hm			MAN-TECH_100610C	104	R62984
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	06/11/10 14:03 / WB	06/11/10 12:58	A2540 D	124 (14410200)_100611A	17	8984
Solids, Total Dissolved TDS @ 180 C	116	mg/L		10		A2540 C	06/11/10 13:38 / WB	06/11/10 12:51	A2540 C	124 (14410200)_100611B	21	8981
DISSOLVED INORGANICS												
Bicarbonate as HCO3	97	mg/L		4		A2320 B	06/11/10 00:10 / hm			MAN-TECH_100610C	171	R62984
Carbonate as CO3	ND	mg/L		4		A2320 B	06/11/10 00:10 / hm			MAN-TECH_100610C	171	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 11:12 / hm			IC101-H_100614A	164	R63069
Sulfate	18	mg/L		1		E300.0	06/16/10 11:12 / hm			IC101-H_100614A	164	R63069
INORGANICS												
Alkalinity, Total as CaCO3	82	mg/L		4		A2320 B	06/10/10 21:06 / hm			MAN-TECH_100610C	103	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 10:23 / hm			IC101-H_100614A	161	R63069
Sulfate	19	mg/L		1		E300.0	06/16/10 10:23 / hm			IC101-H_100614A	161	R63069
Hardness as CaCO3	91	mg/L		1		A2340 B	06/22/10 13:00 / jdh			WATERCALC_110110A	14	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/16/10 13:45 / dck			ICPMS204-B_100615A	154	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 13:45 / dck			ICPMS204-B_100615A	154	R63037
Cadmium	0.00175	mg/L		0.00008		E200.8	06/16/10 13:45 / dck			ICPMS204-B_100615A	154	R63037
Calcium	19	mg/L		1		E200.7	06/10/10 17:30 / sld			ICP1-HE_100610B	33	R62964
Copper	0.007	mg/L		0.001		E200.8	06/16/10 13:45 / dck			ICPMS204-B_100615A	154	R63037
Iron	ND	mg/L		0.05		E200.7	06/10/10 17:30 / sld			ICP1-HE_100610B	33	R62964
Lead	0.0014	mg/L		0.0005		E200.8	06/16/10 13:45 / dck			ICPMS204-B_100615A	154	R63037
Magnesium	11	mg/L		1		E200.7	06/10/10 17:30 / sld			ICP1-HE_100610B	33	R62964
Manganese	0.244	mg/L		0.005		E200.8	06/16/10 13:45 / dck			ICPMS204-B_100615A	154	R63037
Potassium	ND	mg/L		1		E200.7	06/10/10 17:30 / sld			ICP1-HE_100610B	33	R62964
Sodium	ND	mg/L		1		E200.7	06/10/10 17:30 / sld			ICP1-HE_100610B	33	R62964
Zinc	0.39	mg/L		0.01		E200.8	06/16/10 13:45 / dck			ICPMS204-B_100615A	154	R63037
METALS, TOTAL RECOVERABLE												
Aluminum	0.05	mg/L		0.03		E200.8	06/16/10 13:51 / dck			ICPMS204-B_100615A	155	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 13:51 / dck			ICPMS204-B_100615A	155	R63037
Cadmium	0.00195	mg/L		0.00008		E200.8	06/16/10 13:51 / dck			ICPMS204-B_100615A	155	R63037
Copper	0.011	mg/L		0.001		E200.8	06/16/10 13:51 / dck			ICPMS204-B_100615A	155	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW23-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-004
Collection Date: 06/08/10 13:45
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	0.43	mg/L		0.05		E200.8	06/16/10 13:51 / dck			ICPMS204-B_100615A	155	R63037
Lead	0.0057	mg/L		0.0005		E200.8	06/16/10 13:51 / dck			ICPMS204-B_100615A	155	R63037
Manganese	0.292	mg/L		0.005		E200.8	06/16/10 13:51 / dck			ICPMS204-B_100615A	155	R63037
Zinc	0.41	mg/L		0.01		E200.8	06/16/10 13:51 / dck			ICPMS204-B_100615A	155	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW3A-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-005
Collection Date: 06/08/10 14:00
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.6	s.u.		0.1		A4500-H B	06/10/10 21:30 / hm			MAN-TECH_100610C	110	R62984
Conductivity	419	umhos/cm		1		A2510 B	06/10/10 21:30 / hm			MAN-TECH_100610C	109	R62984
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	06/11/10 14:03 / WB	06/11/10 12:58	A2540 D	124 (14410200)_100611A	18	8984
Solids, Total Dissolved TDS @ 180 C	282	mg/L		10		A2540 C	06/11/10 13:39 / WB	06/11/10 12:51	A2540 C	124 (14410200)_100611B	22	8981
DISSOLVED INORGANICS												
Bicarbonate as HCO3	73	mg/L		4		A2320 B	06/11/10 00:23 / hm			MAN-TECH_100610C	176	R62984
Carbonate as CO3	ND	mg/L		4		A2320 B	06/11/10 00:23 / hm			MAN-TECH_100610C	176	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 11:45 / hm			IC101-H_100614A	166	R63069
Sulfate	150	mg/L		1		E300.0	06/16/10 11:45 / hm			IC101-H_100614A	166	R63069
INORGANICS												
Alkalinity, Total as CaCO3	62	mg/L		4		A2320 B	06/10/10 21:30 / hm			MAN-TECH_100610C	108	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 11:28 / hm			IC101-H_100614A	165	R63069
Sulfate	150	mg/L		1		E300.0	06/16/10 11:28 / hm			IC101-H_100614A	165	R63069
Hardness as CaCO3	184	mg/L		1		A2340 B	06/22/10 13:00 / jdh			WATERCALC_110110A	15	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/16/10 13:58 / dck			ICPMS204-B_100615A	156	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 13:58 / dck			ICPMS204-B_100615A	156	R63037
Cadmium	0.0111	mg/L		0.00008		E200.8	06/16/10 13:58 / dck			ICPMS204-B_100615A	156	R63037
Calcium	36	mg/L		1		E200.7	06/10/10 17:33 / sld			ICP1-HE_100610B	34	R62964
Copper	0.019	mg/L		0.001		E200.8	06/16/10 13:58 / dck			ICPMS204-B_100615A	156	R63037
Iron	ND	mg/L		0.05		E200.7	06/10/10 17:33 / sld			ICP1-HE_100610B	34	R62964
Lead	ND	mg/L		0.0005		E200.8	06/16/10 13:58 / dck			ICPMS204-B_100615A	156	R63037
Magnesium	23	mg/L		1		E200.7	06/10/10 17:33 / sld			ICP1-HE_100610B	34	R62964
Manganese	3.10	mg/L		0.005		E200.8	06/16/10 13:58 / dck			ICPMS204-B_100615A	156	R63037
Potassium	ND	mg/L		1		E200.7	06/10/10 17:33 / sld			ICP1-HE_100610B	34	R62964
Sodium	1	mg/L		1		E200.7	06/10/10 17:33 / sld			ICP1-HE_100610B	34	R62964
Zinc	2.86	mg/L		0.01		E200.8	06/16/10 13:58 / dck			ICPMS204-B_100615A	156	R63037
METALS, TOTAL RECOVERABLE												
Aluminum	0.15	mg/L		0.03		E200.8	06/16/10 14:05 / dck			ICPMS204-B_100615A	157	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 14:05 / dck			ICPMS204-B_100615A	157	R63037
Cadmium	0.0118	mg/L		0.00008		E200.8	06/16/10 14:05 / dck			ICPMS204-B_100615A	157	R63037
Copper	0.032	mg/L		0.001		E200.8	06/16/10 14:05 / dck			ICPMS204-B_100615A	157	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW3A-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-005
Collection Date: 06/08/10 14:00
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	0.18	mg/L		0.05		E200.8	06/16/10 14:05 / dck			ICPMS204-B_100615A	157	R63037
Lead	0.0013	mg/L		0.0005		E200.8	06/16/10 14:05 / dck			ICPMS204-B_100615A	157	R63037
Manganese	3.22	mg/L		0.005		E200.8	06/16/10 14:05 / dck			ICPMS204-B_100615A	157	R63037
Zinc	2.94	mg/L		0.01		E200.8	06/16/10 14:05 / dck			ICPMS204-B_100615A	157	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW3B-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-006
Collection Date: 06/08/10 14:15
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.6	s.u.		0.1		A4500-H B	06/10/10 21:36 / hm			MAN-TECH_100610C	113	R62984
Conductivity	370	umhos/cm		1		A2510 B	06/10/10 21:36 / hm			MAN-TECH_100610C	112	R62984
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	06/11/10 14:03 / WB	06/11/10 12:58	A2540 D	124 (14410200)_100611A	19	8984
Solids, Total Dissolved TDS @ 180 C	245	mg/L		10		A2540 C	06/11/10 13:39 / WB	06/11/10 12:51	A2540 C	124 (14410200)_100611B	23	8981
DISSOLVED INORGANICS												
Bicarbonate as HCO3	74	mg/L		4		A2320 B	06/11/10 00:30 / hm			MAN-TECH_100610C	178	R62984
Carbonate as CO3	ND	mg/L		4		A2320 B	06/11/10 00:30 / hm			MAN-TECH_100610C	178	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 12:50 / hm			IC101-H_100614A	170	R63069
Sulfate	120	mg/L		1		E300.0	06/16/10 12:50 / hm			IC101-H_100614A	170	R63069
INORGANICS												
Alkalinity, Total as CaCO3	62	mg/L		4		A2320 B	06/10/10 21:36 / hm			MAN-TECH_100610C	111	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 12:01 / hm			IC101-H_100614A	167	R63069
Sulfate	120	mg/L		1		E300.0	06/16/10 12:01 / hm			IC101-H_100614A	167	R63069
Hardness as CaCO3	162	mg/L		1		A2340 B	06/22/10 13:00 / jdh			WATERCALC_110110A	16	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/16/10 14:12 / dck			ICPMS204-B_100615A	158	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 14:12 / dck			ICPMS204-B_100615A	158	R63037
Cadmium	0.0134	mg/L		0.00008		E200.8	06/16/10 14:12 / dck			ICPMS204-B_100615A	158	R63037
Calcium	32	mg/L		1		E200.7	06/10/10 17:42 / sld			ICP1-HE_100610B	37	R62964
Copper	0.025	mg/L		0.001		E200.8	06/16/10 14:12 / dck			ICPMS204-B_100615A	158	R63037
Iron	ND	mg/L		0.05		E200.7	06/10/10 17:42 / sld			ICP1-HE_100610B	37	R62964
Lead	ND	mg/L		0.0005		E200.8	06/16/10 14:12 / dck			ICPMS204-B_100615A	158	R63037
Magnesium	20	mg/L		1		E200.7	06/10/10 17:42 / sld			ICP1-HE_100610B	37	R62964
Manganese	2.97	mg/L		0.005		E200.8	06/16/10 14:12 / dck			ICPMS204-B_100615A	158	R63037
Potassium	ND	mg/L		1		E200.7	06/10/10 17:42 / sld			ICP1-HE_100610B	37	R62964
Sodium	1	mg/L		1		E200.7	06/10/10 17:42 / sld			ICP1-HE_100610B	37	R62964
Zinc	3.06	mg/L		0.01		E200.8	06/16/10 14:12 / dck			ICPMS204-B_100615A	158	R63037
METALS, TOTAL RECOVERABLE												
Aluminum	0.21	mg/L		0.03		E200.8	06/16/10 14:46 / dck			ICPMS204-B_100615A	163	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 14:46 / dck			ICPMS204-B_100615A	163	R63037
Cadmium	0.0135	mg/L		0.00008		E200.8	06/16/10 14:46 / dck			ICPMS204-B_100615A	163	R63037
Copper	0.037	mg/L		0.001		E200.8	06/16/10 14:46 / dck			ICPMS204-B_100615A	163	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW3B-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-006
Collection Date: 06/08/10 14:15
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	0.11	mg/L		0.05		E200.8	06/16/10 14:46 / dck			ICPMS204-B_100615A	163	R63037
Lead	0.0009	mg/L		0.0005		E200.8	06/16/10 14:46 / dck			ICPMS204-B_100615A	163	R63037
Manganese	2.93	mg/L		0.005		E200.8	06/16/10 14:46 / dck			ICPMS204-B_100615A	163	R63037
Zinc	3.10	mg/L		0.01		E200.8	06/16/10 14:46 / dck			ICPMS204-B_100615A	163	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW02-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-007
Collection Date: 06/08/10 15:15
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.8	s.u.		0.1		A4500-H B	06/10/10 21:43 / hm			MAN-TECH_100610C	116	R62984
Conductivity	845	umhos/cm		1		A2510 B	06/10/10 21:43 / hm			MAN-TECH_100610C	115	R62984
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	06/11/10 14:04 / WB	06/11/10 12:58	A2540 D	124 (14410200)_100611A	20	8984
Solids, Total Dissolved TDS @ 180 C	642	mg/L		10		A2540 C	06/11/10 13:39 / WB	06/11/10 12:51	A2540 C	124 (14410200)_100611B	24	8981
DISSOLVED INORGANICS												
Bicarbonate as HCO3	53	mg/L		4		A2320 B	06/11/10 00:53 / hm			MAN-TECH_100610C	182	R62984
Carbonate as CO3	ND	mg/L		4		A2320 B	06/11/10 00:53 / hm			MAN-TECH_100610C	182	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 13:23 / hm			IC101-H_100614A	172	R63069
Sulfate	410	mg/L	D	2		E300.0	06/16/10 13:23 / hm			IC101-H_100614A	172	R63069
INORGANICS												
Alkalinity, Total as CaCO3	45	mg/L		4		A2320 B	06/10/10 21:43 / hm			MAN-TECH_100610C	114	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 13:07 / hm			IC101-H_100614A	171	R63069
Sulfate	420	mg/L	D	2		E300.0	06/16/10 13:07 / hm			IC101-H_100614A	171	R63069
Hardness as CaCO3	449	mg/L		1		A2340 B	06/22/10 13:00 / jdh			WATERCALC_110110A	17	R68443
METALS, DISSOLVED												
Aluminum	0.05	mg/L		0.03		E200.8	06/16/10 15:12 / dck			ICPMS204-B_100615A	167	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 15:12 / dck			ICPMS204-B_100615A	167	R63037
Cadmium	0.00238	mg/L		0.00008		E200.8	06/16/10 15:12 / dck			ICPMS204-B_100615A	167	R63037
Calcium	101	mg/L		1		E200.7	06/10/10 17:45 / sld			ICP1-HE_100610B	38	R62964
Copper	0.008	mg/L		0.001		E200.8	06/16/10 15:12 / dck			ICPMS204-B_100615A	167	R63037
Iron	ND	mg/L		0.05		E200.7	06/10/10 17:45 / sld			ICP1-HE_100610B	38	R62964
Lead	0.0008	mg/L		0.0005		E200.8	06/16/10 15:12 / dck			ICPMS204-B_100615A	167	R63037
Magnesium	48	mg/L		1		E200.7	06/10/10 17:45 / sld			ICP1-HE_100610B	38	R62964
Manganese	0.820	mg/L		0.005		E200.8	06/16/10 15:12 / dck			ICPMS204-B_100615A	167	R63037
Potassium	1	mg/L		1		E200.7	06/10/10 17:45 / sld			ICP1-HE_100610B	38	R62964
Sodium	ND	mg/L		1		E200.7	06/10/10 17:45 / sld			ICP1-HE_100610B	38	R62964
Zinc	0.38	mg/L		0.01		E200.8	06/16/10 15:12 / dck			ICPMS204-B_100615A	167	R63037
METALS, TOTAL RECOVERABLE												
Aluminum	0.10	mg/L		0.03		E200.8	06/16/10 15:19 / dck	06/15/10 09:18	E200.2	ICPMS204-B_100615A	168	8975
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 15:19 / dck	06/15/10 09:18	E200.2	ICPMS204-B_100615A	168	8975
Cadmium	0.00222	mg/L		0.00008		E200.8	06/16/10 15:19 / dck	06/15/10 09:18	E200.2	ICPMS204-B_100615A	168	8975
Copper	0.012	mg/L		0.001		E200.8	06/16/10 15:19 / dck	06/15/10 09:18	E200.2	ICPMS204-B_100615A	168	8975

Report Definitions:
RL - Analyte reporting limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW02-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-007
Collection Date: 06/08/10 15:15
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	0.27	mg/L		0.05		E200.8	06/16/10 15:19 / dck	06/15/10 09:18	E200.2	ICPMS204-B_100615A	168	8975
Lead	0.0269	mg/L		0.0005		E200.8	06/16/10 15:19 / dck	06/15/10 09:18	E200.2	ICPMS204-B_100615A	168	8975
Manganese	0.739	mg/L		0.005		E200.8	06/16/10 15:19 / dck	06/15/10 09:18	E200.2	ICPMS204-B_100615A	168	8975
Zinc	0.36	mg/L		0.01		E200.8	06/16/10 15:19 / dck	06/15/10 09:18	E200.2	ICPMS204-B_100615A	168	8975

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW29-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-008
Collection Date: 06/08/10 15:45
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	8.1	s.u.		0.1		A4500-H B	06/10/10 21:49 / hm			MAN-TECH_100610C	119	R62984
Conductivity	166	umhos/cm		1		A2510 B	06/10/10 21:49 / hm			MAN-TECH_100610C	118	R62984
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	06/11/10 14:05 / WB	06/11/10 12:58	A2540 D	124 (14410200)_100611A	21	8984
Solids, Total Dissolved TDS @ 180 C	103	mg/L		10		A2540 C	06/11/10 13:40 / WB	06/11/10 12:51	A2540 C	124 (14410200)_100611B	25	8981
DISSOLVED INORGANICS												
Bicarbonate as HCO3	88	mg/L		4		A2320 B	06/11/10 01:00 / hm			MAN-TECH_100610C	184	R62984
Carbonate as CO3	ND	mg/L		4		A2320 B	06/11/10 01:00 / hm			MAN-TECH_100610C	184	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 13:56 / hm			IC101-H_100614A	174	R63069
Sulfate	13	mg/L		1		E300.0	06/16/10 13:56 / hm			IC101-H_100614A	174	R63069
INORGANICS												
Alkalinity, Total as CaCO3	75	mg/L		4		A2320 B	06/10/10 21:49 / hm			MAN-TECH_100610C	117	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 13:40 / hm			IC101-H_100614A	173	R63069
Sulfate	13	mg/L		1		E300.0	06/16/10 13:40 / hm			IC101-H_100614A	173	R63069
Hardness as CaCO3	83	mg/L		1		A2340 B	06/22/10 13:00 / jdh			WATERCALC_110110A	18	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/16/10 15:26 / dck			ICPMS204-B_100615A	169	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 15:26 / dck			ICPMS204-B_100615A	169	R63037
Cadmium	0.00135	mg/L		0.00008		E200.8	06/16/10 15:26 / dck			ICPMS204-B_100615A	169	R63037
Calcium	19	mg/L		1		E200.7	06/10/10 17:48 / sld			ICP1-HE_100610B	39	R62964
Copper	0.004	mg/L		0.001		E200.8	06/16/10 15:26 / dck			ICPMS204-B_100615A	169	R63037
Iron	ND	mg/L		0.05		E200.7	06/10/10 17:48 / sld			ICP1-HE_100610B	39	R62964
Lead	0.0024	mg/L		0.0005		E200.8	06/16/10 15:26 / dck			ICPMS204-B_100615A	169	R63037
Magnesium	9	mg/L		1		E200.7	06/10/10 17:48 / sld			ICP1-HE_100610B	39	R62964
Manganese	0.177	mg/L		0.005		E200.8	06/16/10 15:26 / dck			ICPMS204-B_100615A	169	R63037
Potassium	ND	mg/L		1		E200.7	06/10/10 17:48 / sld			ICP1-HE_100610B	39	R62964
Sodium	ND	mg/L		1		E200.7	06/10/10 17:48 / sld			ICP1-HE_100610B	39	R62964
Zinc	0.31	mg/L		0.01		E200.8	06/16/10 15:26 / dck			ICPMS204-B_100615A	169	R63037
METALS, TOTAL RECOVERABLE												
Aluminum	0.04	mg/L		0.03		E200.8	06/16/10 15:33 / dck			ICPMS204-B_100615A	170	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 15:33 / dck			ICPMS204-B_100615A	170	R63037
Cadmium	0.00152	mg/L		0.00008		E200.8	06/16/10 15:33 / dck			ICPMS204-B_100615A	170	R63037
Copper	0.007	mg/L		0.001		E200.8	06/16/10 15:33 / dck			ICPMS204-B_100615A	170	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW29-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-008
Collection Date: 06/08/10 15:45
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	0.14	mg/L		0.05		E200.8	06/16/10 15:33 / dck			ICPMS204-B_100615A	170	R63037
Lead	0.0065	mg/L		0.0005		E200.8	06/16/10 15:33 / dck			ICPMS204-B_100615A	170	R63037
Manganese	0.181	mg/L		0.005		E200.8	06/16/10 15:33 / dck			ICPMS204-B_100615A	170	R63037
Zinc	0.31	mg/L		0.01		E200.8	06/16/10 15:33 / dck			ICPMS204-B_100615A	170	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW29-555-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-009
Collection Date: 06/08/10 15:45
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	8.1	s.u.		0.1		A4500-H B	06/10/10 21:56 / hm			MAN-TECH_100610C	122	R62984
Conductivity	165	umhos/cm		1		A2510 B	06/10/10 21:56 / hm			MAN-TECH_100610C	121	R62984
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	06/11/10 14:06 / WB	06/11/10 12:58	A2540 D	124 (14410200)_100611A	22	8984
Solids, Total Dissolved TDS @ 180 C	98	mg/L		10		A2540 C	06/11/10 13:40 / WB	06/11/10 12:51	A2540 C	124 (14410200)_100611B	26	8981
DISSOLVED INORGANICS												
Bicarbonate as HCO3	87	mg/L		4		A2320 B	06/11/10 01:07 / hm			MAN-TECH_100610C	186	R62984
Carbonate as CO3	ND	mg/L		4		A2320 B	06/11/10 01:07 / hm			MAN-TECH_100610C	186	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 15:35 / hm			IC101-H_100614A	180	R63069
Sulfate	12	mg/L		1		E300.0	06/16/10 15:35 / hm			IC101-H_100614A	180	R63069
INORGANICS												
Alkalinity, Total as CaCO3	74	mg/L		4		A2320 B	06/10/10 21:56 / hm			MAN-TECH_100610C	120	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 14:12 / hm			IC101-H_100614A	175	R63069
Sulfate	13	mg/L		1		E300.0	06/16/10 14:12 / hm			IC101-H_100614A	175	R63069
Hardness as CaCO3	89	mg/L		1		A2340 B	06/22/10 13:00 / jdh			WATERCALC_110110A	19	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/16/10 15:39 / dck			ICPMS204-B_100615A	171	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 15:39 / dck			ICPMS204-B_100615A	171	R63037
Cadmium	0.00137	mg/L		0.00008		E200.8	06/16/10 15:39 / dck			ICPMS204-B_100615A	171	R63037
Calcium	20	mg/L		1		E200.7	06/10/10 17:51 / sld			ICP1-HE_100610B	40	R62964
Copper	0.004	mg/L		0.001		E200.8	06/16/10 15:39 / dck			ICPMS204-B_100615A	171	R63037
Iron	ND	mg/L		0.05		E200.7	06/10/10 17:51 / sld			ICP1-HE_100610B	40	R62964
Lead	0.0023	mg/L		0.0005		E200.8	06/16/10 15:39 / dck			ICPMS204-B_100615A	171	R63037
Magnesium	9	mg/L		1		E200.7	06/10/10 17:51 / sld			ICP1-HE_100610B	40	R62964
Manganese	0.179	mg/L		0.005		E200.8	06/16/10 15:39 / dck			ICPMS204-B_100615A	171	R63037
Potassium	ND	mg/L		1		E200.7	06/10/10 17:51 / sld			ICP1-HE_100610B	40	R62964
Sodium	ND	mg/L		1		E200.7	06/10/10 17:51 / sld			ICP1-HE_100610B	40	R62964
Zinc	0.32	mg/L		0.01		E200.8	06/16/10 15:39 / dck			ICPMS204-B_100615A	171	R63037
METALS, TOTAL RECOVERABLE												
Aluminum	0.04	mg/L		0.03		E200.8	06/16/10 16:13 / dck			ICPMS204-B_100615A	176	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 16:13 / dck			ICPMS204-B_100615A	176	R63037
Cadmium	0.00141	mg/L		0.00008		E200.8	06/16/10 16:13 / dck			ICPMS204-B_100615A	176	R63037
Copper	0.007	mg/L		0.001		E200.8	06/16/10 16:13 / dck			ICPMS204-B_100615A	176	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW29-555-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-009
Collection Date: 06/08/10 15:45
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	0.15	mg/L		0.05		E200.8	06/16/10 16:13 / dck			ICPMS204-B_100615A	176	R63037
Lead	0.0064	mg/L		0.0005		E200.8	06/16/10 16:13 / dck			ICPMS204-B_100615A	176	R63037
Manganese	0.190	mg/L		0.005		E200.8	06/16/10 16:13 / dck			ICPMS204-B_100615A	176	R63037
Zinc	0.29	mg/L		0.01		E200.8	06/16/10 16:13 / dck			ICPMS204-B_100615A	176	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW38-333-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-010
Collection Date: 06/08/10 16:43
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	5.4	s.u.		0.1		A4500-H B	06/10/10 22:11 / hm			MAN-TECH_100610C	128	R62984
Conductivity	ND	umhos/cm		1		A2510 B	06/10/10 22:11 / hm			MAN-TECH_100610C	127	R62984
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	06/11/10 14:06 / WB	06/11/10 13:50	A2540 D	124 (14410200)_100611A	23	8984
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	06/11/10 13:40 / WB	06/11/10 12:51	A2540 C	124 (14410200)_100611B	27	8981
DISSOLVED INORGANICS												
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	06/11/10 01:13 / hm			MAN-TECH_100610C	188	R62984
Carbonate as CO3	ND	mg/L		4		A2320 B	06/11/10 01:13 / hm			MAN-TECH_100610C	188	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 15:51 / hm			IC101-H_100614A	181	R63069
Sulfate	ND	mg/L		1		E300.0	06/16/10 15:51 / hm			IC101-H_100614A	181	R63069
INORGANICS												
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	06/10/10 22:11 / hm			MAN-TECH_100610C	126	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 15:18 / hm			IC101-H_100614A	179	R63069
Sulfate	ND	mg/L		1		E300.0	06/16/10 15:18 / hm			IC101-H_100614A	179	R63069
Hardness as CaCO3	ND	mg/L		1		A2340 B	06/22/10 13:00 / jdh			WATERCALC_110110A	20	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/16/10 17:14 / dck			ICPMS204-B_100615A	180	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 17:14 / dck			ICPMS204-B_100615A	180	R63037
Cadmium	ND	mg/L		0.00008		E200.8	06/16/10 17:14 / dck			ICPMS204-B_100615A	180	R63037
Calcium	ND	mg/L		1		E200.7	06/10/10 17:54 / sld			ICP1-HE_100610B	41	R62964
Copper	ND	mg/L		0.001		E200.8	06/16/10 17:14 / dck			ICPMS204-B_100615A	180	R63037
Iron	ND	mg/L		0.05		E200.7	06/10/10 17:54 / sld			ICP1-HE_100610B	41	R62964
Lead	ND	mg/L		0.0005		E200.8	06/16/10 17:14 / dck			ICPMS204-B_100615A	180	R63037
Magnesium	ND	mg/L		1		E200.7	06/10/10 17:54 / sld			ICP1-HE_100610B	41	R62964
Manganese	ND	mg/L		0.005		E200.8	06/16/10 17:14 / dck			ICPMS204-B_100615A	180	R63037
Potassium	ND	mg/L		1		E200.7	06/10/10 17:54 / sld			ICP1-HE_100610B	41	R62964
Sodium	ND	mg/L		1		E200.7	06/10/10 17:54 / sld			ICP1-HE_100610B	41	R62964
Zinc	ND	mg/L		0.01		E200.8	06/16/10 17:14 / dck			ICPMS204-B_100615A	180	R63037
METALS, TOTAL RECOVERABLE												
Aluminum	ND	mg/L		0.03		E200.8	06/16/10 17:21 / dck			ICPMS204-B_100615A	181	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 17:21 / dck			ICPMS204-B_100615A	181	R63037
Cadmium	ND	mg/L		0.00008		E200.8	06/16/10 17:21 / dck			ICPMS204-B_100615A	181	R63037
Copper	ND	mg/L		0.001		E200.8	06/16/10 17:21 / dck			ICPMS204-B_100615A	181	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW38-333-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-010
Collection Date: 06/08/10 16:43
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	ND	mg/L		0.05		E200.8	06/16/10 17:21 / dck			ICPMS204-B_100615A	181	R63037
Lead	ND	mg/L		0.0005		E200.8	06/16/10 17:21 / dck			ICPMS204-B_100615A	181	R63037
Manganese	ND	mg/L		0.005		E200.8	06/16/10 17:21 / dck			ICPMS204-B_100615A	181	R63037
Zinc	ND	mg/L		0.01		E200.8	06/16/10 17:21 / dck			ICPMS204-B_100615A	181	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW38-444-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-011
Collection Date: 06/08/10 16:43
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	5.4	s.u.		0.1		A4500-H B	06/10/10 22:16 / hm			MAN-TECH_100610C	131	R62984
Conductivity	ND	umhos/cm		1		A2510 B	06/10/10 22:16 / hm			MAN-TECH_100610C	130	R62984
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	06/11/10 14:06 / WB	06/11/10 13:51	A2540 D	124 (14410200)_100611A	24	8984
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	06/11/10 13:42 / WB	06/11/10 12:51	A2540 C	124 (14410200)_100611B	28	8981
DISSOLVED INORGANICS												
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	06/11/10 01:18 / hm			MAN-TECH_100610C	190	R62984
Carbonate as CO3	ND	mg/L		4		A2320 B	06/11/10 01:18 / hm			MAN-TECH_100610C	190	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 16:24 / hm			IC101-H_100614A	183	R63069
Sulfate	ND	mg/L		1		E300.0	06/16/10 16:24 / hm			IC101-H_100614A	183	R63069
INORGANICS												
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	06/10/10 22:16 / hm			MAN-TECH_100610C	129	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 16:07 / hm			IC101-H_100614A	182	R63069
Sulfate	ND	mg/L		1		E300.0	06/16/10 16:07 / hm			IC101-H_100614A	182	R63069
Hardness as CaCO3	ND	mg/L		1		A2340 B	06/22/10 13:00 / jdh			WATERCALC_110110A	21	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/16/10 17:28 / dck			ICPMS204-B_100615A	182	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 17:28 / dck			ICPMS204-B_100615A	182	R63037
Cadmium	ND	mg/L		0.00008		E200.8	06/16/10 17:28 / dck			ICPMS204-B_100615A	182	R63037
Calcium	ND	mg/L		1		E200.7	06/10/10 17:57 / sld			ICP1-HE_100610B	42	R62964
Copper	ND	mg/L		0.001		E200.8	06/16/10 17:28 / dck			ICPMS204-B_100615A	182	R63037
Iron	ND	mg/L		0.05		E200.7	06/10/10 17:57 / sld			ICP1-HE_100610B	42	R62964
Lead	ND	mg/L		0.0005		E200.8	06/16/10 17:28 / dck			ICPMS204-B_100615A	182	R63037
Magnesium	ND	mg/L		1		E200.7	06/10/10 17:57 / sld			ICP1-HE_100610B	42	R62964
Manganese	ND	mg/L		0.005		E200.8	06/16/10 17:28 / dck			ICPMS204-B_100615A	182	R63037
Potassium	ND	mg/L		1		E200.7	06/10/10 17:57 / sld			ICP1-HE_100610B	42	R62964
Sodium	ND	mg/L		1		E200.7	06/10/10 17:57 / sld			ICP1-HE_100610B	42	R62964
Zinc	0.02	mg/L		0.01		E200.8	06/16/10 17:28 / dck			ICPMS204-B_100615A	182	R63037
METALS, TOTAL RECOVERABLE												
Aluminum	ND	mg/L		0.03		E200.8	06/16/10 17:35 / dck			ICPMS204-B_100615A	183	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 17:35 / dck			ICPMS204-B_100615A	183	R63037
Cadmium	ND	mg/L		0.00008		E200.8	06/16/10 17:35 / dck			ICPMS204-B_100615A	183	R63037
Copper	ND	mg/L		0.001		E200.8	06/16/10 17:35 / dck			ICPMS204-B_100615A	183	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW38-444-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-011
Collection Date: 06/08/10 16:43
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	ND	mg/L		0.05		E200.8	06/16/10 17:35 / dck			ICPMS204-B_100615A	183	R63037
Lead	ND	mg/L		0.0005		E200.8	06/16/10 17:35 / dck			ICPMS204-B_100615A	183	R63037
Manganese	ND	mg/L		0.005		E200.8	06/16/10 17:35 / dck			ICPMS204-B_100615A	183	R63037
Zinc	0.04	mg/L		0.01		E200.8	06/16/10 17:35 / dck			ICPMS204-B_100615A	183	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW38-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-012
Collection Date: 06/08/10 17:00
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	8.0	s.u.		0.1		A4500-H B	06/10/10 22:39 / hm			MAN-TECH_100610C	136	R62984
Conductivity	183	umhos/cm		1		A2510 B	06/10/10 22:39 / hm			MAN-TECH_100610C	135	R62984
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	06/14/10 10:50 / WB	06/14/10 09:54	A2540 D	124 (14410200)_100614A	34	8989
Solids, Total Dissolved TDS @ 180 C	113	mg/L		10		A2540 C	06/14/10 10:59 / WB	06/14/10 09:45	A2540 C	-124 (14410200)_100614B	3	8987
DISSOLVED INORGANICS												
Bicarbonate as HCO3	89	mg/L		4		A2320 B	06/11/10 12:18 / WB			MAN-TECH_100611A	6	R62975
Carbonate as CO3	ND	mg/L		4		A2320 B	06/11/10 12:18 / WB			MAN-TECH_100611A	6	R62975
Chloride	ND	mg/L		1		E300.0	06/16/10 16:57 / hm			IC101-H_100614A	185	R63069
Sulfate	20	mg/L		1		E300.0	06/16/10 16:57 / hm			IC101-H_100614A	185	R63069
INORGANICS												
Alkalinity, Total as CaCO3	76	mg/L		4		A2320 B	06/10/10 22:39 / hm			MAN-TECH_100610C	134	R62984
Chloride	ND	mg/L		1		E300.0	06/16/10 16:40 / hm			IC101-H_100614A	184	R63069
Sulfate	20	mg/L		1		E300.0	06/16/10 16:40 / hm			IC101-H_100614A	184	R63069
Hardness as CaCO3	87	mg/L		1		A2340 B	06/22/10 13:00 / jdh			WATERCALC_110110A	22	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/16/10 18:10 / dck			ICPMS204-B_100615A	188	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 18:10 / dck			ICPMS204-B_100615A	188	R63037
Cadmium	0.00261	mg/L		0.00008		E200.8	06/16/10 18:10 / dck			ICPMS204-B_100615A	188	R63037
Calcium	18	mg/L		1		E200.7	06/10/10 18:00 / sld			ICP1-HE_100610B	43	R62964
Copper	0.007	mg/L		0.001		E200.8	06/16/10 18:10 / dck			ICPMS204-B_100615A	188	R63037
Iron	0.08	mg/L		0.05		E200.7	06/10/10 18:00 / sld			ICP1-HE_100610B	43	R62964
Lead	0.0053	mg/L		0.0005		E200.8	06/16/10 18:10 / dck			ICPMS204-B_100615A	188	R63037
Magnesium	10	mg/L		1		E200.7	06/10/10 18:00 / sld			ICP1-HE_100610B	43	R62964
Manganese	0.298	mg/L		0.005		E200.8	06/16/10 18:10 / dck			ICPMS204-B_100615A	188	R63037
Potassium	ND	mg/L		1		E200.7	06/10/10 18:00 / sld			ICP1-HE_100610B	43	R62964
Sodium	ND	mg/L		1		E200.7	06/10/10 18:00 / sld			ICP1-HE_100610B	43	R62964
Zinc	0.55	mg/L		0.01		E200.8	06/16/10 18:10 / dck			ICPMS204-B_100615A	188	R63037
METALS, TOTAL RECOVERABLE												
Aluminum	0.06	mg/L		0.03		E200.8	06/16/10 18:37 / dck			ICPMS204-B_100615A	192	R63037
Arsenic	ND	mg/L		0.003		E200.8	06/16/10 18:37 / dck			ICPMS204-B_100615A	192	R63037
Cadmium	0.00274	mg/L		0.00008		E200.8	06/16/10 18:37 / dck			ICPMS204-B_100615A	192	R63037
Copper	0.012	mg/L		0.001		E200.8	06/16/10 18:37 / dck			ICPMS204-B_100615A	192	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW38-20100608
Project: UBMC-TO20 10013
Matrix: Surface Water

Lab ID: H10060160-012
Collection Date: 06/08/10 17:00
DateReceived: 06/09/10
Report Date: 06/22/10 **Revised Date:** 09/21/10

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	0.26	mg/L		0.05		E200.8	06/16/10 18:37 / dck			ICPMS204-B_100615A	192	R63037
Lead	0.0112	mg/L		0.0005		E200.8	06/16/10 18:37 / dck			ICPMS204-B_100615A	192	R63037
Manganese	0.387	mg/L		0.005		E200.8	06/16/10 18:37 / dck			ICPMS204-B_100615A	192	R63037
Zinc	0.55	mg/L		0.01		E200.8	06/16/10 18:37 / dck			ICPMS204-B_100615A	192	R63037

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 100621A-ALK-W

Date: *21-Sep-10*

Run ID :Run Order: **TITTR_100621A: 1** SampType: **Method Blank** Sample ID: **MBLK1_100621A** Method: **A2320 B**
Analysis Date: **06/21/10 10:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	2	1									

Associated samples: **H10060160-001A; H10060160-001B**

Run ID :Run Order: **TITTR_100621A: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS1_100621A** Method: **A2320 B**
Analysis Date: **06/21/10 10:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	590	4.0	600		99	90	110				

Associated samples: **H10060160-001A; H10060160-001B**

Run ID :Run Order: **TITTR_100621A: 4** SampType: **Sample Matrix Spike** Sample ID: **H10060160-001AMS** Method: **A2320 B**
Analysis Date: **06/21/10 11:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	620	4.0	600	70.7	92	90	110				

Associated samples: **H10060160-001A; H10060160-001B**

Run ID :Run Order: **TITTR_100621A: 6** SampType: **Sample Duplicate** Sample ID: **H10060160-001BDUP** Method: **A2320 B**
Analysis Date: **06/21/10 11:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	68	4.0						68.74	1.4	20	
Bicarbonate as HCO3	83	4.0						83.86	1.4	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10060160-001A; H10060160-001B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 8975

Date: *21-Sep-10*

Run ID :Run Order: **ICPMS204-B_100615A: 49** SampType: **Method Blank** Sample ID: **MB-8975** Method: **E200.8**
Analysis Date: **06/15/10 20:34** Units: **mg/L** **Prep Info:** Prep Date: **6/15/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.001	0.0008									
Arsenic	0.0003	4E-05									
Cadmium	ND	2E-05									
Copper	0.0010	0.0002									
Iron	ND	0.0009									
Lead	ND	2E-05									
Manganese	0.0002	3E-05									
Zinc	0.002	0.0007									

Associated samples: **H10060160-007D**

Run ID :Run Order: **ICPMS204-B_100615A: 50** SampType: **Laboratory Control Sample** Sample ID: **LCS-8975** Method: **E200.8**
Analysis Date: **06/15/10 20:40** Units: **mg/L** **Prep Info:** Prep Date: **6/15/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.55	0.10	2.5		102	85	115				
Arsenic	0.496	0.0050	0.5		99	85	115				
Cadmium	0.257	0.0010	0.25		103	85	115				
Copper	0.505	0.010	0.5		101	85	115				
Iron	2.53	0.030	2.5		101	85	115				
Lead	0.517	0.010	0.5		103	85	115				
Manganese	2.52	0.010	2.5		101	85	115				
Zinc	0.507	0.010	0.5		101	85	115				

Associated samples: **H10060160-007D**

Run ID :Run Order: **ICPMS204-B_100615A: 60** SampType: **Sample Matrix Spike** Sample ID: **H10060104-004CMS5** Method: **E200.8**
Analysis Date: **06/15/10 21:48** Units: **mg/L** **Prep Info:** Prep Date: **6/15/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5.69	0.10	5	0.432	105	70	130				
Arsenic	0.999	0.0050	1	0.003794	100	70	130				
Cadmium	0.513	0.0010	0.5		103	70	130				
Copper	1.02	0.010	1	0.00674	101	70	130				
Iron	6.24	0.030	5	1.065	104	70	130				
Lead	1.03	0.010	1	0.0004788	103	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 8975

Date: *21-Sep-10*

Run ID :Run Order: **ICPMS204-B_100615A: 60** SampType: **Sample Matrix Spike** Sample ID: **H10060104-004CMS5** Method: **E200.8**
Analysis Date: **06/15/10 21:48** Units: **mg/L** **Prep Info:** Prep Date: **6/15/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	5.10	0.010	5	0.0451	101	70	130				
Zinc	1.01	0.010	1	0.006228	100	70	130				

Associated samples: **H10060160-007D**

Run ID :Run Order: **ICPMS204-B_100615A: 61** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060104-004CMSD5** Method: **E200.8**
Analysis Date: **06/15/10 21:55** Units: **mg/L** **Prep Info:** Prep Date: **6/15/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5.60	0.10	5	0.432	103	70	130	5.686	1.6	20	
Arsenic	0.987	0.0050	1	0.003794	98	70	130	0.9992	1.3	20	
Cadmium	0.517	0.0010	0.5		103	70	130	0.5126	0.9	20	
Copper	1.01	0.010	1	0.00674	101	70	130	1.019	0.5	20	
Iron	6.16	0.030	5	1.065	102	70	130	6.242	1.3	20	
Lead	1.02	0.010	1	0.0004788	102	70	130	1.028	0.3	20	
Manganese	4.98	0.010	5	0.0451	99	70	130	5.098	2.3	20	
Zinc	0.997	0.010	1	0.006228	99	70	130	1.006	0.9	20	

Associated samples: **H10060160-007D**

Run ID :Run Order: **ICPMS204-B_100615A: 164** SampType: **Sample Matrix Spike** Sample ID: **H10060160-007DMS5** Method: **E200.8**
Analysis Date: **06/16/10 14:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.63	0.10	2.5	0.1029	101	70	130				
Arsenic	0.496	0.0050	0.5	0.002023	99	70	130				
Cadmium	0.258	0.0010	0.25	0.002217	102	70	130				
Copper	0.493	0.010	0.5	0.01246	96	70	130				
Iron	2.81	0.030	2.5	0.2745	102	70	130				
Lead	0.542	0.010	0.5	0.02694	103	70	130				
Manganese	3.17	0.010	2.5	0.7387	97	70	130				
Zinc	0.820	0.010	0.5	0.3604	92	70	130				

Associated samples: **H10060160-007D**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 8975

Date: *21-Sep-10*

Run ID :Run Order: **ICPMS204-B_100615A: 165** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060160-007DMSD5** Method: **E200.8**

Analysis Date: **06/16/10 14:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.57	0.10	2.5	0.1029	99	70	130	2.631	2.5	20	
Arsenic	0.500	0.0050	0.5	0.002023	100	70	130	0.4962	0.8	20	
Cadmium	0.259	0.0010	0.25	0.002217	103	70	130	0.2577	0.3	20	
Copper	0.493	0.010	0.5	0.01246	96	70	130	0.4935	0.1	20	
Iron	2.83	0.030	2.5	0.2745	102	70	130	2.812	0.5	20	
Lead	0.541	0.010	0.5	0.02694	103	70	130	0.5424	0.3	20	
Manganese	3.25	0.010	2.5	0.7387	100	70	130	3.173	2.3	20	
Zinc	0.815	0.010	0.5	0.3604	91	70	130	0.8195	0.5	20	

Associated samples: **H10060160-007D**

Run ID :Run Order: **ICPMS204-B_100622A: 108** SampType: **Sample Matrix Spike** Sample ID: **H10060160-007DMS5** Method: **E200.8**

Analysis Date: **06/22/10 13:54** Units: **mg/L** **Prep Info:** Prep Date: **6/15/2010** Prep Method: **E200.2**

Analytes 7	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.58	0.10	2.5	0.09826	99	70	130				
Arsenic	0.504	0.0010	0.5	0.001772	101	70	130				
Cadmium	0.261	0.0010	0.25	0.002219	104	70	130				
Copper	0.508	0.010	0.5	0.0124	99	70	130				
Lead	0.530	0.0010	0.5	0.02698	101	70	130				
Manganese	3.15	0.010	2.5	0.7215	97	70	130				
Zinc	0.831	0.010	0.5	0.3862	89	70	130				

Associated samples: **H10060160-007D**

Run ID :Run Order: **ICPMS204-B_100622A: 109** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060160-007DMSD5** Method: **E200.8**

Analysis Date: **06/22/10 13:59** Units: **mg/L** **Prep Info:** Prep Date: **6/15/2010** Prep Method: **E200.2**

Analytes 7	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.55	0.10	2.5	0.09826	98	70	130	2.578	1.2	20	
Arsenic	0.506	0.0010	0.5	0.001772	101	70	130	0.5043	0.4	20	
Cadmium	0.261	0.0010	0.25	0.002219	103	70	130	0.2613	0.3	20	
Copper	0.500	0.010	0.5	0.0124	98	70	130	0.5077	1.5	20	
Lead	0.533	0.0010	0.5	0.02698	101	70	130	0.5301	0.5	20	
Manganese	3.17	0.010	2.5	0.7215	98	70	130	3.148	0.7	20	
Zinc	0.831	0.010	0.5	0.3862	89	70	130	0.8311	0.0	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 8975

Date: *21-Sep-10*

Run ID :Run Order: **ICPMS204-B_100622A: 109** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060160-007DMSD5** Method: **E200.8**

Analysis Date: **06/22/10 13:59** Units: **mg/L** **Prep Info:** Prep Date: **6/15/2010** Prep Method: **E200.2**

Analytes 7	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10060160-007D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 8981

Date: *21-Sep-10*

Run ID :Run Order: **ACCU-124 (14410200)_100611B: 1** SampType: **Method Blank** Sample ID: **MB-8981** Method: **A2540 C**
Analysis Date: **06/11/10 13:29** Units: **mg/L** **Prep Info:** Prep Date: **6/11/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	5	1.0									

Associated samples: **H10060160-001A; H10060160-002A; H10060160-003A; H10060160-004A; H10060160-005A; H10060160-006A; H10060160-007A; H10060160-008A; H10060160-009A; H10060160-010A; H10060160-011A**

Run ID :Run Order: **ACCU-124 (14410200)_100611B: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS-8981** Method: **A2540 C**
Analysis Date: **06/11/10 13:29** Units: **mg/L** **Prep Info:** Prep Date: **6/11/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2020	10	2000		101	90	110				

Associated samples: **H10060160-001A; H10060160-002A; H10060160-003A; H10060160-004A; H10060160-005A; H10060160-006A; H10060160-007A; H10060160-008A; H10060160-009A; H10060160-010A; H10060160-011A**

Run ID :Run Order: **ACCU-124 (14410200)_100611B: 18** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060160-002AMSD** Method: **A2540 C**
Analysis Date: **06/11/10 13:37** Units: **mg/L** **Prep Info:** Prep Date: **6/11/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2080	10	2000	95	99	80	120	2062	1.1	5	

Associated samples: **H10060160-001A; H10060160-002A; H10060160-003A; H10060160-004A; H10060160-005A; H10060160-006A; H10060160-007A; H10060160-008A; H10060160-009A; H10060160-010A; H10060160-011A**

Run ID :Run Order: **ACCU-124 (14410200)_100611B: 20** SampType: **Sample Duplicate** Sample ID: **H10060160-003ADUP** Method: **A2540 C**
Analysis Date: **06/11/10 13:38** Units: **mg/L** **Prep Info:** Prep Date: **6/11/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	110	10						108	1.8	5	

Associated samples: **H10060160-001A; H10060160-002A; H10060160-003A; H10060160-004A; H10060160-005A; H10060160-006A; H10060160-007A; H10060160-008A; H10060160-009A; H10060160-010A; H10060160-011A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 8984

Date: *21-Sep-10*

Run ID :Run Order: **ACCU-124 (14410200)_100611A: 1** SampType: **Method Blank** Sample ID: **MB-8984** Method: **A2540 D**

Analysis Date: **06/11/10 13:56** Units: **mg/L** **Prep Info:** Prep Date: **6/11/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	1									

Associated samples: **H10060160-001A; H10060160-002A; H10060160-003A; H10060160-004A; H10060160-005A; H10060160-006A; H10060160-007A; H10060160-008A; H10060160-009A; H10060160-010A; H10060160-011A**

Run ID :Run Order: **ACCU-124 (14410200)_100611A: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS-8984** Method: **A2540 D**

Analysis Date: **06/11/10 13:56** Units: **mg/L** **Prep Info:** Prep Date: **6/11/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	1810	10	2000		91	70	130				

Associated samples: **H10060160-001A; H10060160-002A; H10060160-003A; H10060160-004A; H10060160-005A; H10060160-006A; H10060160-007A; H10060160-008A; H10060160-009A; H10060160-010A; H10060160-011A**

Run ID :Run Order: **ACCU-124 (14410200)_100611A: 16** SampType: **Sample Duplicate** Sample ID: **H10060160-003ADUP** Method: **A2540 D**

Analysis Date: **06/11/10 15:06** Units: **mg/L** **Prep Info:** Prep Date: **6/11/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	6.00	10									

Associated samples: **H10060160-001A; H10060160-002A; H10060160-003A; H10060160-004A; H10060160-005A; H10060160-006A; H10060160-007A; H10060160-008A; H10060160-009A; H10060160-010A; H10060160-011A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 8987

Date: *21-Sep-10*

Run ID :Run Order: **ACCU-124 (14410200)_100614B: 1** SampType: **Method Blank** Sample ID: **MB-8987** Method: **A2540 C**
Analysis Date: **06/14/10 10:58** Units: **mg/L** **Prep Info:** Prep Date: **6/14/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	4	1.0									

Associated samples: **H10060160-012A**

Run ID :Run Order: **ACCU-124 (14410200)_100614B: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS-8987** Method: **A2540 C**
Analysis Date: **06/14/10 10:59** Units: **mg/L** **Prep Info:** Prep Date: **6/14/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	1980	10	2000		99	90	110				

Associated samples: **H10060160-012A**

Run ID :Run Order: **ACCU-124 (14410200)_100614B: 7** SampType: **Sample Duplicate** Sample ID: **H10060180-001ADUP** Method: **A2540 C**
Analysis Date: **06/14/10 11:00** Units: **mg/L** **Prep Info:** Prep Date: **6/14/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	390	10						415	6.2	5	R

Associated samples: **H10060160-012A**

Run ID :Run Order: **ACCU-124 (14410200)_100614B: 10** SampType: **Sample Matrix Spike** Sample ID: **H10060180-003AMS** Method: **A2540 C**
Analysis Date: **06/14/10 11:02** Units: **mg/L** **Prep Info:** Prep Date: **6/14/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2280	10	2000	297	99	80	120				

Associated samples: **H10060160-012A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 8989

Date: *21-Sep-10*

Run ID :Run Order: **ACCU-124 (14410200)_100614A: 24** SampType: **Method Blank** Sample ID: **MB-8989** Method: **A2540 D**
Analysis Date: **06/14/10 10:45** Units: **mg/L** **Prep Info:** Prep Date: **6/14/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	1									

Associated samples: **H10060160-012A**

Run ID :Run Order: **ACCU-124 (14410200)_100614A: 25** SampType: **Laboratory Control Sample** Sample ID: **LCS-8989** Method: **A2540 D**
Analysis Date: **06/14/10 10:46** Units: **mg/L** **Prep Info:** Prep Date: **6/14/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	1820	10	2000		**91**	70	130				

Associated samples: **H10060160-012A**

Run ID :Run Order: **ACCU-124 (14410200)_100614A: 36** SampType: **Sample Duplicate** Sample ID: **H10060180-004ADUP** Method: **A2540 D**
Analysis Date: **06/14/10 10:51** Units: **mg/L** **Prep Info:** Prep Date: **6/14/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	14.0	10						14	**0.0**	5	

Associated samples: **H10060160-012A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R62964

Date: *21-Sep-10*

Run ID :Run Order: **ICP1-HE_100610B: 5** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV** Method: **E200.7**

Analysis Date: **06/10/10 16:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	38.4	1.0	40		96	95	105				
Iron	4.09	0.030	4		102	95	105				
Magnesium	40.7	1.0	40		102	95	105				
Potassium	38.6	1.0	40		97	95	105				
Sodium	41.9	1.0	40		105	95	105				

Associated samples: **H10060160-001C; H10060160-002C; H10060160-003C; H10060160-004C; H10060160-005C; H10060160-006C; H10060160-007C; H10060160-008C; H10060160-009C; H10060160-010C; H10060160-011C; H10060160-012C**

Run ID :Run Order: **ICP1-HE_100610B: 6** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-1** Method: **E200.7**

Analysis Date: **06/10/10 16:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	24.9	1.0	25		100	95	105				
Iron	2.51	0.030	2.5		100	95	105				
Magnesium	24.6	1.0	25		99	95	105				
Potassium	24.8	1.0	25		99	95	105				
Sodium	25.3	1.0	25		101	95	105				

Associated samples: **H10060160-001C; H10060160-002C; H10060160-003C; H10060160-004C; H10060160-005C; H10060160-006C; H10060160-007C; H10060160-008C; H10060160-009C; H10060160-010C; H10060160-011C; H10060160-012C**

Run ID :Run Order: **ICP1-HE_100610B: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.7**

Analysis Date: **06/10/10 16:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	501	1.0	500		100	80	120				
Iron	184	0.030	200		92	80	120				
Magnesium	532	1.0	500		106	80	120				
Potassium	0.0132	1.0				0	0				
Sodium	0.0362	1.0				0	0				

Associated samples: **H10060160-001C; H10060160-002C; H10060160-003C; H10060160-004C; H10060160-005C; H10060160-006C; H10060160-007C; H10060160-008C; H10060160-009C; H10060160-010C; H10060160-011C; H10060160-012C**

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R62964

Date: *21-Sep-10*

Run ID :Run Order: **ICP1-HE_100610B: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.7**

Analysis Date: **06/10/10 16:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	531	1.0	500		106	80	120				
Iron	196	0.030	200		98	80	120				
Magnesium	560	1.0	500		112	80	120				
Potassium	21.0	1.0	20		105	80	120				
Sodium	21.9	1.0	20		110	80	120				

Associated samples: **H10060160-001C; H10060160-002C; H10060160-003C; H10060160-004C; H10060160-005C; H10060160-006C; H10060160-007C; H10060160-008C; H10060160-009C; H10060160-010C; H10060160-011C; H10060160-012C**

Run ID :Run Order: **ICP1-HE_100610B: 13** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.7**

Analysis Date: **06/10/10 16:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.1									
Iron	ND	0.002									
Magnesium	ND	0.02									
Potassium	0.07	0.04									
Sodium	ND	0.1									

Associated samples: **H10060160-001C; H10060160-002C; H10060160-003C; H10060160-004C; H10060160-005C; H10060160-006C; H10060160-007C; H10060160-008C; H10060160-009C; H10060160-010C; H10060160-011C; H10060160-012C**

Run ID :Run Order: **ICP1-HE_100610B: 14** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.7**

Analysis Date: **06/10/10 16:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9.33	1.0	10		93	85	115				
Iron	0.983	0.030	1		98	85	115				
Magnesium	9.81	1.0	10		98	85	115				
Potassium	10.2	1.0	10	0.0662	102	85	115				
Sodium	9.91	1.0	10		99	85	115				

Associated samples: **H10060160-001C; H10060160-002C; H10060160-003C; H10060160-004C; H10060160-005C; H10060160-006C; H10060160-007C; H10060160-008C; H10060160-009C; H10060160-010C; H10060160-011C; H10060160-012C**

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R62964

Date: *21-Sep-10*

Run ID :Run Order: **ICP1-HE_100610B: 23** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **E200.7**

Analysis Date: **06/10/10 16:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	26.0	1.0	25		104	90	110				
Iron	2.63	0.030	2.5		105	90	110				
Magnesium	25.3	1.0	25		101	90	110				
Potassium	24.2	1.0	25		97	90	110				
Sodium	25.9	1.0	25		104	90	110				

Associated samples: **H10060160-001C; H10060160-002C; H10060160-003C; H10060160-004C; H10060160-005C**

Run ID :Run Order: **ICP1-HE_100610B: 30** SampType: **Sample Matrix Spike** Sample ID: **H10060160-002CMS2** Method: **E200.7**

Analysis Date: **06/10/10 17:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	40.9	1.0	20	18.94	110	70	130				
Iron	2.07	0.040	2		103	70	130				
Magnesium	30.2	1.0	20	9.92	101	70	130				
Potassium	20.6	1.0	20	0.3019	101	70	130				
Sodium	20.0	1.0	20	0.672	96	70	130				

Associated samples: **H10060160-001C; H10060160-002C; H10060160-003C; H10060160-004C; H10060160-005C; H10060160-006C; H10060160-007C; H10060160-008C; H10060160-009C; H10060160-010C; H10060160-011C; H10060160-012C**

Run ID :Run Order: **ICP1-HE_100610B: 31** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060160-002CMSD2** Method: **E200.7**

Analysis Date: **06/10/10 17:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	40.5	1.0	20	18.94	108	70	130	40.9	0.9	20	
Iron	2.07	0.040	2		104	70	130	2.068	0.2	20	
Magnesium	30.3	1.0	20	9.92	102	70	130	30.2	0.5	20	
Potassium	20.5	1.0	20	0.3019	101	70	130	20.56	0.3	20	
Sodium	19.6	1.0	20	0.672	95	70	130	19.96	1.7	20	

Associated samples: **H10060160-001C; H10060160-002C; H10060160-003C; H10060160-004C; H10060160-005C; H10060160-006C; H10060160-007C; H10060160-008C; H10060160-009C; H10060160-010C; H10060160-011C; H10060160-012C**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R62964

Date: *21-Sep-10*

Run ID :Run Order: **ICP1-HE_100610B: 35** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **E200.7**

Analysis Date: **06/10/10 17:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.8	1.0	25		103	90	110				
Iron	2.52	0.030	2.5		101	90	110				
Magnesium	25.0	1.0	25		100	90	110				
Potassium	24.2	1.0	25		97	90	110				
Sodium	24.7	1.0	25		99	90	110				

Associated samples: **H10060160-006C; H10060160-007C; H10060160-008C; H10060160-009C; H10060160-010C; H10060160-011C; H10060160-012C**

Run ID :Run Order: **ICP1-HE_100610B: 44** SampType: **Sample Matrix Spike** Sample ID: **H10060160-012CMS2** Method: **E200.7**

Analysis Date: **06/10/10 18:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	35.6	1.0	20	18.34	86	70	130				
Iron	2.06	0.040	2	0.0806	99	70	130				
Magnesium	28.9	1.0	20	9.92	95	70	130				
Potassium	20.5	1.0	20	0.3387	101	70	130				
Sodium	20.8	1.0	20	0.836	100	70	130				

Associated samples: **H10060160-001C; H10060160-002C; H10060160-003C; H10060160-004C; H10060160-005C; H10060160-006C; H10060160-007C; H10060160-008C; H10060160-009C; H10060160-010C; H10060160-011C; H10060160-012C**

Run ID :Run Order: **ICP1-HE_100610B: 45** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060160-012CMSD2** Method: **E200.7**

Analysis Date: **06/10/10 18:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	38.7	1.0	20	18.34	102	70	130	35.58	8.5	20	
Iron	2.11	0.040	2	0.0806	102	70	130	2.06	2.6	20	
Magnesium	29.8	1.0	20	9.92	99	70	130	28.86	3.3	20	
Potassium	21.1	1.0	20	0.3387	104	70	130	20.48	2.9	20	
Sodium	21.4	1.0	20	0.836	103	70	130	20.82	2.6	20	

Associated samples: **H10060160-001C; H10060160-002C; H10060160-003C; H10060160-004C; H10060160-005C; H10060160-006C; H10060160-007C; H10060160-008C; H10060160-009C; H10060160-010C; H10060160-011C; H10060160-012C**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R62964

Date: *21-Sep-10*

Run ID :Run Order: **ICP1-HE_100610B: 49** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.7**

Analysis Date: **06/10/10 18:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10.7	1.0	10		107	85	115				
Iron	1.00	0.030	1		100	85	115				
Magnesium	9.67	1.0	10		97	85	115				
Potassium	10.2	1.0	10		102	85	115				
Sodium	10.1	1.0	10		101	85	115				

Associated samples: **H10060160-001C; H10060160-002C; H10060160-003C; H10060160-004C; H10060160-005C; H10060160-006C; H10060160-007C; H10060160-008C; H10060160-009C; H10060160-010C; H10060160-011C; H10060160-012C**

Run ID :Run Order: **ICP1-HE_100610B: 109** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.7**

Analysis Date: **06/10/10 21:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	511	1.0	500		102	80	120				
Iron	194	0.030	200		97	80	120				
Magnesium	542	1.0	500		108	80	120				
Potassium	0.0170	1.0				0	0				
Sodium	0.0361	1.0				0	0				

Associated samples: **H10060160-001C; H10060160-002C; H10060160-003C; H10060160-004C; H10060160-005C; H10060160-006C; H10060160-007C; H10060160-008C; H10060160-009C; H10060160-010C; H10060160-011C; H10060160-012C**

Run ID :Run Order: **ICP1-HE_100610B: 110** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.7**

Analysis Date: **06/10/10 21:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	536	1.0	500		107	80	120				
Iron	189	0.030	200		94	80	120				
Magnesium	551	1.0	500		110	80	120				
Potassium	20.4	1.0	20		102	80	120				
Sodium	21.4	1.0	20		107	80	120				

Associated samples: **H10060160-001C; H10060160-002C; H10060160-003C; H10060160-004C; H10060160-005C; H10060160-006C; H10060160-007C; H10060160-008C; H10060160-009C; H10060160-010C; H10060160-011C; H10060160-012C**

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R62975

Date: *21-Sep-10*

Run ID :Run Order: **MAN-TECH_100611A: 1** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV-5202010** Method: **A2510 B**

Analysis Date: **06/11/10 11:53** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	720	1.0	717.5		100	90	110				

Associated samples: **H10060160-012B**

Run ID :Run Order: **MAN-TECH_100611A: 4** SampType: **Laboratory Control Sample** Sample ID: **LCS-6012010** Method: **A2510 B**

Analysis Date: **06/11/10 12:04** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1460	1.0	1412		104	90	110				

Associated samples:

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R62975

Date: *21-Sep-10*

Run ID :Run Order: **MAN-TECH_100611A: 2** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV-1483** Method: **A4500-H B**

Analysis Date: **06/11/10 11:56** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.99	0.10	7		100	99	101				

Associated samples: **H10060160-012B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R62984

Date: *21-Sep-10*

Run ID :Run Order: **MAN-TECH_100610C: 3** SampType: **Method Blank** Sample ID: **MBLK** Method: **A2320 B**

Analysis Date: **06/10/10 16:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	0.8	0.3									

Associated samples: **H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A**

Run ID :Run Order: **MAN-TECH_100610C: 5** SampType: **Laboratory Control Sample** Sample ID: **LCS -5062010** Method: **A2320 B**

Analysis Date: **06/10/10 16:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	600	4.0	600		99	90	110				

Associated samples: **H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A**

Run ID :Run Order: **MAN-TECH_100610C: 97** SampType: **Sample Duplicate** Sample ID: **H10060160-002ADUP** Method: **A2320 B**

Analysis Date: **06/10/10 20:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	86	4.0						86.1	0.3	20	
Bicarbonate as HCO3	100	4.0						104.8	0.7	20	
Carbonate as CO3	0.36	4.0						0.13		20	

Associated samples: **H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A**

Run ID :Run Order: **MAN-TECH_100610C: 106** SampType: **Sample Matrix Spike** Sample ID: **H10060160-004AMS** Method: **A2320 B**

Analysis Date: **06/10/10 21:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	660	4.0	600	81.69	97	90	110				

Associated samples: **H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R62984

Date: *21-Sep-10*

Run ID :Run Order: **MAN-TECH_100610C: 107** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060160-004AMSD** Method: **A2320 B**

Analysis Date: **06/10/10 21:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	670	4.0	600	81.69	98	90	110	661.9	0.9	20	

Associated samples: **H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A**

Run ID :Run Order: **MAN-TECH_100610C: 132** SampType: **Sample Matrix Spike** Sample ID: **H10060160-011AMS** Method: **A2320 B**

Analysis Date: **06/10/10 22:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	590	4.0	600		98	90	110				

Associated samples: **H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A**

Run ID :Run Order: **MAN-TECH_100610C: 133** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060160-011AMSD** Method: **A2320 B**

Analysis Date: **06/10/10 22:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	560	4.0	600		94	90	110	588.5	4.3	20	

Associated samples: **H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A**

Run ID :Run Order: **MAN-TECH_100610C: 173** SampType: **Sample Duplicate** Sample ID: **H10060160-004BDUP** Method: **A2320 B**

Analysis Date: **06/11/10 00:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	79	4.0						79.21	0.3	20	
Bicarbonate as HCO3	97	4.0						96.63	0.3	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R62984

Date: *21-Sep-10*

Run ID :Run Order: **MAN-TECH_100610C: 180** SampType: **Sample Matrix Spike** Sample ID: **H10060160-006BMS** Method: **A2320 B**

Analysis Date: **06/11/10 00:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	650	4.0	600	60.3	98	90	110				

Associated samples: **H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A**

Run ID :Run Order: **MAN-TECH_100610C: 181** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060160-006BMSD** Method: **A2320 B**

Analysis Date: **06/11/10 00:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	650	4.0	600	60.3	98	90	110	649.5	0.2	20	

Associated samples: **H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R62984

Date: *21-Sep-10*

Run ID :Run Order: **MAN-TECH_100610C: 1** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV-5202010** Method: **A2510 B**

Analysis Date: **06/10/10 16:17** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	714	1.0	717.5		99	90	110				

Associated samples: **H10060160-001A; H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A**

Run ID :Run Order: **MAN-TECH_100610C: 4** SampType: **Laboratory Control Sample** Sample ID: **LCS-6012010** Method: **A2510 B**

Analysis Date: **06/10/10 16:28** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1430	1.0	1412		101	90	110				

Associated samples: **H10060160-001A; H10060160-002A; H10060160-003A; H10060160-004A; H10060160-005A; H10060160-006A; H10060160-007A; H10060160-008A; H10060160-009A; H10060160-010A; H10060160-011A; H10060160-012A**

Run ID :Run Order: **MAN-TECH_100610C: 82** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-6082010** Method: **A2510 B**

Analysis Date: **06/10/10 20:05** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1430	1.0	1412		101	90	110				

Associated samples:

Run ID :Run Order: **MAN-TECH_100610C: 98** SampType: **Sample Duplicate** Sample ID: **H10060160-002ADUP** Method: **A2510 B**

Analysis Date: **06/10/10 20:52** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	173	1.0						172	0.3	10	

Associated samples: **H10060160-001A; H10060160-002A; H10060160-003A; H10060160-004A; H10060160-005A; H10060160-006A; H10060160-007A; H10060160-008A; H10060160-009A; H10060160-010A; H10060160-011A; H10060160-012A**

Run ID :Run Order: **MAN-TECH_100610C: 123** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-6082010** Method: **A2510 B**

Analysis Date: **06/10/10 21:58** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	714	1.0	718		99	90	110				

Associated samples:

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R62984

Date: *21-Sep-10*

Run ID :Run Order: **MAN-TECH_100610C: 164** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-6082010** Method: **A2510 B**

Analysis Date: **06/10/10 23:43** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	718	1.0	718		100	90	110				

Associated samples: **H10060160-002B; H10060160-003B; H10060160-004B; H10060160-005B; H10060160-006B; H10060160-007B; H10060160-008B; H10060160-009B; H10060160-010B; H10060160-011B**

Run ID :Run Order: **MAN-TECH_100610C: 174** SampType: **Sample Duplicate** Sample ID: **H10060160-004BDUP** Method: **A2510 B**

Analysis Date: **06/11/10 00:17** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	187	1.0						186.8	0.1	10	

Associated samples: **H10060160-001A; H10060160-002A; H10060160-003A; H10060160-004A; H10060160-005A; H10060160-006A; H10060160-007A; H10060160-008A; H10060160-009A; H10060160-010A; H10060160-011A; H10060160-012A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R62984

Date: *21-Sep-10*

Run ID :Run Order: **MAN-TECH_100610C: 2** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV-1483** Method: **A4500-H B**

Analysis Date: **06/10/10 16:20** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.00	0.10	7		100	99	101				

Associated samples: **H10060160-001A; H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A**

Run ID :Run Order: **MAN-TECH_100610C: 83** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-1249** Method: **A4500-H B**

Analysis Date: **06/10/10 20:08** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.02	0.10	7		100	99	101				

Associated samples: **H10060160-001A; H10060160-002A; H10060160-003A; H10060160-004A; H10060160-005A; H10060160-006A; H10060160-007A; H10060160-008A; H10060160-009A**

Run ID :Run Order: **MAN-TECH_100610C: 86** SampType: **Laboratory Control Sample** Sample ID: **LCS-1483** Method: **A4500-H B**

Analysis Date: **06/10/10 20:18** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.01	0.10	7		100	99	101				

Associated samples: **H10060160-001A; H10060160-002A; H10060160-003A; H10060160-004A; H10060160-005A; H10060160-006A; H10060160-007A; H10060160-008A; H10060160-009A; H10060160-010A; H10060160-011A; H10060160-012A**

Run ID :Run Order: **MAN-TECH_100610C: 99** SampType: **Sample Duplicate** Sample ID: **H10060160-002ADUP** Method: **A4500-H B**

Analysis Date: **06/10/10 20:52** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.30	0.10						8.3	0.0	2	

Associated samples: **H10060160-001A; H10060160-002A; H10060160-003A; H10060160-004A; H10060160-005A; H10060160-006A; H10060160-007A; H10060160-008A; H10060160-009A; H10060160-010A; H10060160-011A; H10060160-012A**

Run ID :Run Order: **MAN-TECH_100610C: 124** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-1249** Method: **A4500-H B**

Analysis Date: **06/10/10 22:00** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.02	0.10	7		100	99	101				

Associated samples: **H10060160-010A; H10060160-011A; H10060160-012A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63037

Date: *21-Sep-10*

Run ID :Run Order: **ICPMS204-B_100615A: 6** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**

Analysis Date: **06/15/10 14:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.262	0.10	0.25		105	90	110				
Arsenic	0.0506	0.0050	0.05		101	90	110				
Cadmium	0.0262	0.0010	0.025		105	90	110				
Copper	0.0510	0.010	0.05		102	90	110				
Iron	0.258	0.030	0.255		101	90	110				
Lead	0.0498	0.010	0.05		100	90	110				
Manganese	0.261	0.010	0.25		104	90	110				
Zinc	0.0520	0.010	0.05		104	90	110				

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-007D; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Run ID :Run Order: **ICPMS204-B_100615A: 7** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **06/15/10 14:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	41.4	0.10	40		104	70	130				
Arsenic	0.000224	0.0050									
Cadmium	0.000332	0.0010									
Copper	0.00189	0.010									
Iron	99.3	0.030	100		99	70	130				
Lead	8.70E-05	0.010									
Manganese	0.00238	0.010									
Zinc	0.00106	0.010									

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-007D; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Run ID :Run Order: **ICPMS204-B_100615A: 8** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **06/15/10 15:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	40.6	0.10	40		102	70	130				
Arsenic	0.0105	0.0050	0.01		105	70	130				
Cadmium	0.0102	0.0010	0.01		102	70	130				
Copper	0.0222	0.010	0.02		111	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63037

Date: *21-Sep-10*

Run ID :Run Order: **ICPMS204-B_100615A: 8** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **06/15/10 15:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	104	0.030	100		104	70	130				
Lead	8.00E-05	0.010				0	0				
Manganese	0.0236	0.010	0.02		118	70	130				
Zinc	0.0108	0.010	0.01		108	70	130				

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-007D; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Run ID :Run Order: **ICPMS204-B_100615A: 19** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**

Analysis Date: **06/15/10 17:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0006	0.0002									
Arsenic	ND	3E-05									
Cadmium	ND	1E-05									
Copper	0.00010	3E-05									
Iron	0.0004	0.0002									
Lead	1E-05	1E-05									
Manganese	0.0001	2E-05									
Zinc	0.0006	0.0006									

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Run ID :Run Order: **ICPMS204-B_100615A: 20** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**

Analysis Date: **06/15/10 17:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0492	0.10	0.05	0.0005747	97	85	115				
Arsenic	0.0475	0.0050	0.05		95	85	115				
Cadmium	0.0477	0.0010	0.05		95	85	115				
Copper	0.0480	0.010	0.05	0.0000952	96	85	115				
Iron	5.00	0.030	5	0.0004111	100	85	115				
Lead	0.0498	0.010	0.05	0.0000118	99	85	115				
Manganese	0.0506	0.010	0.05	0.0001094	101	85	115				
Zinc	0.0484	0.010	0.05	0.0006089	96	85	115				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63037

Date: *21-Sep-10*

Run ID :Run Order: **ICPMS204-B_100615A: 20** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**

Analysis Date: **06/15/10 17:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Run ID :Run Order: **ICPMS204-B_100615A: 121** SampType: **Sample Matrix Spike** Sample ID: **H10060160-002CMS** Method: **E200.8**

Analysis Date: **06/16/10 04:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 7	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0636	0.10	0.05	0.01354	100	70	130				
Arsenic	0.0449	0.0050	0.05	0.001038	88	70	130				
Cadmium	0.0492	0.0010	0.05	0.0007289	97	70	130				
Copper	0.0464	0.010	0.05	0.003942	85	70	130				
Lead	0.0508	0.010	0.05	0.001317	99	70	130				
Manganese	0.0716	0.010	0.05	0.023	97	70	130				
Zinc	0.163	0.010	0.05	0.1265	72	70	130				

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Run ID :Run Order: **ICPMS204-B_100615A: 122** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060160-002CMSD** Method: **E200.8**

Analysis Date: **06/16/10 04:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 7	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0633	0.10	0.05	0.01354	99	70	130	0.06356		20	
Arsenic	0.0459	0.0050	0.05	0.001038	90	70	130	0.0449	2.2	20	
Cadmium	0.0498	0.0010	0.05	0.0007289	98	70	130	0.04915	1.4	20	
Copper	0.0466	0.010	0.05	0.003942	85	70	130	0.04641	0.4	20	
Lead	0.0507	0.010	0.05	0.001317	99	70	130	0.05083	0.3	20	
Manganese	0.0725	0.010	0.05	0.023	99	70	130	0.07162	1.2	20	
Zinc	0.163	0.010	0.05	0.1265	73	70	130	0.1627	0.2	20	

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63037

Date: *21-Sep-10*

Run ID :Run Order: **ICPMS204-B_100615A: 123** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **06/16/10 04:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	40.7	0.10	40		102	70	130				
Arsenic	0.000206	0.0050									
Cadmium	0.000354	0.0010									
Copper	0.00161	0.010									
Iron	0.0200	0.030	100			70	130				S
Lead	8.70E-05	0.010									
Manganese	0.00252	0.010									
Zinc	0.00112	0.010									

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-007D; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Run ID :Run Order: **ICPMS204-B_100615A: 124** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **06/16/10 05:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 7	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	41.7	0.10	40		104	70	130				
Arsenic	0.0103	0.0050	0.01		103	70	130				
Cadmium	0.0102	0.0010	0.01		102	70	130				
Copper	0.0212	0.010	0.02		106	70	130				
Lead	6.80E-05	0.010				0	0				
Manganese	0.0233	0.010	0.02		117	70	130				
Zinc	0.0104	0.010	0.01		104	70	130				

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-007D; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Run ID :Run Order: **ICPMS204-B_100615A: 142** SampType: **Sample Matrix Spike** Sample ID: **H10060240-004AMS** Method: **E200.8**

Analysis Date: **06/16/10 12:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0495	0.10	0.05	0.001638	96	70	130				
Arsenic	0.0519	0.0050	0.05	0.0002872	103	70	130				
Cadmium	0.0476	0.0010	0.05	0.0002382	95	70	130				
Copper	0.0480	0.010	0.05	0.002481	91	70	130				
Iron	4.90	0.030	5	0.00733	98	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63037

Date: *21-Sep-10*

Run ID :Run Order: **ICPMS204-B_100615A: 142** SampType: **Sample Matrix Spike** Sample ID: **H10060240-004AMS** Method: **E200.8**

Analysis Date: **06/16/10 12:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0488	0.010	0.05	0.0000998	97	70	130				
Manganese	0.205	0.010	0.05	0.1576	94	70	130				
Zinc	0.0530	0.010	0.05	0.009914	86	70	130				

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Run ID :Run Order: **ICPMS204-B_100615A: 143** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060240-004AMSD** Method: **E200.8**

Analysis Date: **06/16/10 12:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0489	0.10	0.05	0.001638	95	70	130	0.04953		20	
Arsenic	0.0512	0.0050	0.05	0.0002872	102	70	130	0.05194	1.4	20	
Cadmium	0.0489	0.0010	0.05	0.0002382	97	70	130	0.04765	2.5	20	
Copper	0.0474	0.010	0.05	0.002481	90	70	130	0.04795	1.2	20	
Iron	4.87	0.030	5	0.00733	97	70	130	4.903	0.6	20	
Lead	0.0491	0.010	0.05	0.0000998	98	70	130	0.04882	0.6	20	
Manganese	0.201	0.010	0.05	0.1576	88	70	130	0.2047	1.6	20	
Zinc	0.0521	0.010	0.05	0.009914	84	70	130	0.053	1.8	20	

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Run ID :Run Order: **ICPMS204-B_100615A: 147** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **06/16/10 12:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	41.0	0.10	40		102	70	130				
Arsenic	0.000172	0.0050									
Cadmium	0.000378	0.0010									
Copper	0.00141	0.010									
Iron	102	0.030	100		102	70	130				
Lead	8.40E-05	0.010									
Manganese	0.00250	0.010									
Zinc	0.00114	0.010									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63037

Date: *21-Sep-10*

Run ID :Run Order: **ICPMS204-B_100615A: 147** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **06/16/10 12:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-007D; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Run ID :Run Order: **ICPMS204-B_100615A: 148** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **06/16/10 13:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	41.8	0.10	40		104	70	130				
Arsenic	0.0105	0.0050	0.01		105	70	130				
Cadmium	0.0102	0.0010	0.01		102	70	130				
Copper	0.0212	0.010	0.02		106	70	130				
Iron	105	0.030	100		105	70	130				
Lead	6.70E-05	0.010				0	0				
Manganese	0.0238	0.010	0.02		119	70	130				
Zinc	0.0101	0.010	0.01		101	70	130				

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-007D; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Run ID :Run Order: **ICPMS204-B_100615A: 177** SampType: **Sample Matrix Spike** Sample ID: **H10060160-009DMS** Method: **E200.8**

Analysis Date: **06/16/10 16:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0860	0.10	0.05	0.03698	98	70	130				
Arsenic	0.0484	0.0050	0.05	0.0005937	96	70	130				
Cadmium	0.0493	0.0010	0.05	0.001408	96	70	130				
Copper	0.0534	0.010	0.05	0.007155	93	70	130				
Iron	5.10	0.030	5	0.1464	99	70	130				
Lead	0.0556	0.010	0.05	0.00638	99	70	130				
Manganese	0.244	0.010	0.05	0.1902	107	70	130				
Zinc	0.312	0.010	0.05	0.2871		70	130				A

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-007D; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63037

Date: *21-Sep-10*

Run ID :Run Order: **ICPMS204-B_100615A: 178** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060160-009DMSD** Method: **E200.8**

Analysis Date: **06/16/10 17:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0835	0.10	0.05	0.03698	93	70	130	0.08598		20	
Arsenic	0.0481	0.0050	0.05	0.0005937	95	70	130	0.04842	0.6	20	
Cadmium	0.0498	0.0010	0.05	0.001408	97	70	130	0.0493	1.1	20	
Copper	0.0534	0.010	0.05	0.007155	93	70	130	0.05341	0.0	20	
Iron	5.04	0.030	5	0.1464	98	70	130	5.1	1.1	20	
Lead	0.0557	0.010	0.05	0.00638	99	70	130	0.05564	0.1	20	
Manganese	0.238	0.010	0.05	0.1902	96	70	130	0.2437	2.3	20	
Zinc	0.314	0.010	0.05	0.2871		70	130	0.3115	0.8	20	A

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Run ID :Run Order: **ICPMS204-B_100615A: 189** SampType: **Sample Matrix Spike** Sample ID: **H10060160-012CMS** Method: **E200.8**

Analysis Date: **06/16/10 18:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0762	0.10	0.05	0.02706	98	70	130				
Arsenic	0.0486	0.0050	0.05	0.0005075	96	70	130				
Cadmium	0.0515	0.0010	0.05	0.002611	98	70	130				
Copper	0.0536	0.010	0.05	0.007187	93	70	130				
Iron	5.02	0.030	5	0.09924	99	70	130				
Lead	0.0551	0.010	0.05	0.005303	100	70	130				
Manganese	0.340	0.010	0.05	0.2981		70	130				A
Zinc	0.559	0.010	0.05	0.5474		70	130				A

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Run ID :Run Order: **ICPMS204-B_100615A: 190** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060160-012CMSD** Method: **E200.8**

Analysis Date: **06/16/10 18:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0755	0.10	0.05	0.02706	97	70	130	0.07624		20	
Arsenic	0.0486	0.0050	0.05	0.0005075	96	70	130	0.04861	0.1	20	
Cadmium	0.0501	0.0010	0.05	0.002611	95	70	130	0.0515	2.7	20	
Copper	0.0532	0.010	0.05	0.007187	92	70	130	0.05356	0.8	20	

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63037

Date: *21-Sep-10*

Run ID :Run Order: **ICPMS204-B_100615A: 190** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060160-012CMSD** Method: **E200.8**

Analysis Date: **06/16/10 18:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	5.04	0.030	5	0.09924	99	70	130	5.025	0.2	20	
Lead	0.0542	0.010	0.05	0.005303	98	70	130	0.05511	1.7	20	
Manganese	0.342	0.010	0.05	0.2981		70	130	0.3399	0.6	20	A
Zinc	0.561	0.010	0.05	0.5474		70	130	0.5588	0.4	20	A

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Run ID :Run Order: **ICPMS204-B_100615A: 195** SampType: **Sample Matrix Spike** Sample ID: **H10060104-002BMS** Method: **E200.8**

Analysis Date: **06/16/10 18:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.144	0.10	0.05	0.064	160	70	130				S
Arsenic	0.0489	0.0050	0.05	0.002146	94	70	130				
Cadmium	0.0473	0.0010	0.05	0.0000233	95	70	130				
Copper	0.0474	0.010	0.05	0.001219	92	70	130				
Iron	4.91	0.030	5	0.04508	97	70	130				
Lead	0.0488	0.010	0.05	0.0003725	97	70	130				
Manganese	0.0501	0.010	0.05	0.0008019	99	70	130				
Zinc	0.0516	0.010	0.05	0.005649	92	70	130				

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Run ID :Run Order: **ICPMS204-B_100615A: 196** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060104-002BMSD** Method: **E200.8**

Analysis Date: **06/16/10 19:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.126	0.10	0.05	0.064	124	70	130	0.1438	13	20	
Arsenic	0.0492	0.0050	0.05	0.002146	94	70	130	0.04893	0.7	20	
Cadmium	0.0476	0.0010	0.05	0.0000233	95	70	130	0.04728	0.7	20	
Copper	0.0475	0.010	0.05	0.001219	93	70	130	0.04736	0.4	20	
Iron	4.83	0.030	5	0.04508	96	70	130	4.907	1.5	20	
Lead	0.0492	0.010	0.05	0.0003725	98	70	130	0.04877	0.9	20	
Manganese	0.0510	0.010	0.05	0.0008019	100	70	130	0.05008	1.9	20	
Zinc	0.0508	0.010	0.05	0.005649	90	70	130	0.05162	1.5	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63037

Date: *21-Sep-10*

Run ID :Run Order: **ICPMS204-B_100615A: 196** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060104-002BMSD** Method: **E200.8**

Analysis Date: **06/16/10 19:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10060160-001C; H10060160-001D; H10060160-002C; H10060160-002D; H10060160-003C; H10060160-003D; H10060160-004C; H10060160-004D; H10060160-005C; H10060160-005D; H10060160-006C; H10060160-006D; H10060160-007C; H10060160-008C; H10060160-008D; H10060160-009C; H10060160-009D; H10060160-010C; H10060160-010D; H10060160-011C; H10060160-011D; H10060160-012C; H10060160-012D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63069

Date: *21-Sep-10*

Run ID :Run Order: **IC101-H_100614A: 72** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV061410-12** Method: **E300.0**

Analysis Date: **06/15/10 09:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	12	1.0	12.5		95	90	110				
Sulfate	51	1.0	50		101	90	110				

Associated samples: **H10060160-001A; H10060160-001B; H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A; H10060160-012B**

Run ID :Run Order: **IC101-H_100614A: 73** SampType: **Method Blank** Sample ID: **ICB061410-13** Method: **E300.0**

Analysis Date: **06/15/10 09:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.2									
Sulfate	ND	0.07									

Associated samples: **H10060160-001A; H10060160-001B; H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A; H10060160-012B**

Run ID :Run Order: **IC101-H_100614A: 74** SampType: **Laboratory Fortified Blank** Sample ID: **LFB061410-14** Method: **E300.0**

Analysis Date: **06/15/10 09:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		95	90	110				
Sulfate	49	1.2	50		97	90	110				

Associated samples: **H10060160-001A; H10060160-001B; H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A; H10060160-012B**

Run ID :Run Order: **IC101-H_100614A: 75** SampType: **Laboratory Fortified Blank** Sample ID: **LFBD061410-14** Method: **E300.0**

Analysis Date: **06/15/10 10:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23	1.0	25		92	90	110	23.67			
Sulfate	47	1.2	50		95	90	110	48.66			

Associated samples: **H10060160-001A; H10060160-001B; H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A; H10060160-012B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63069

Date: *21-Sep-10*

Run ID :Run Order: **IC101-H_100614A: 148** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV061410-86** Method: **E300.0**

Analysis Date: **06/16/10 06:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		96	90	110				
Sulfate	48	1.0	50		96	90	110				

Associated samples: **H10060160-001A; H10060160-001B; H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A**

Run ID :Run Order: **IC101-H_100614A: 155** SampType: **Sample Matrix Spike** Sample ID: **H10060160-001BMS** Method: **E300.0**

Analysis Date: **06/16/10 08:06** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23	1.0	25	0.438	91	90	110				
Sulfate	52	1.2	50	3.497	96	90	110				

Associated samples: **H10060160-001A; H10060160-001B; H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A; H10060160-012B**

Run ID :Run Order: **IC101-H_100614A: 156** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060160-001BMSD** Method: **E300.0**

Analysis Date: **06/16/10 09:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25	0.438	93	90	110	23.29	1.9	20	
Sulfate	51	1.2	50	3.497	95	90	110	51.63	1.0	20	

Associated samples: **H10060160-001A; H10060160-001B; H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A; H10060160-012B**

Run ID :Run Order: **IC101-H_100614A: 162** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV061410-100** Method: **E300.0**

Analysis Date: **06/16/10 10:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		96	90	110				
Sulfate	48	1.0	50		97	90	110				

Associated samples: **H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63069

Date: *21-Sep-10*

Run ID :Run Order: **IC101-H_100614A: 168** SampType: **Sample Matrix Spike** Sample ID: **H10060160-006AMS** Method: **E300.0**

Analysis Date: **06/16/10 12:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25	0.476	94	90	110				
Sulfate	170	1.2	50	124.9	100	90	110				

Associated samples: **H10060160-001A; H10060160-001B; H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A; H10060160-012B**

Run ID :Run Order: **IC101-H_100614A: 169** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060160-006AMSD** Method: **E300.0**

Analysis Date: **06/16/10 12:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25	0.476	94	90	110	23.99	0.2	20	
Sulfate	180	1.2	50	124.9	101	90	110	174.8	0.3	20	

Associated samples: **H10060160-001A; H10060160-001B; H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A; H10060160-012B**

Run ID :Run Order: **IC101-H_100614A: 176** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV061410-114** Method: **E300.0**

Analysis Date: **06/16/10 14:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		96	90	110				
Sulfate	48	1.0	50		97	90	110				

Associated samples: **H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A; H10060160-012B**

Run ID :Run Order: **IC101-H_100614A: 186** SampType: **Sample Matrix Spike** Sample ID: **H10060160-012BMS** Method: **E300.0**

Analysis Date: **06/16/10 17:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25	0.291	95	90	110				
Sulfate	68	1.2	50	19.98	97	90	110				

Associated samples: **H10060160-001A; H10060160-001B; H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A; H10060160-012B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060160
Project: UBMC-TO20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63069

Date: *21-Sep-10*

Run ID :Run Order: **IC101-H_100614A: 187** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060160-012BMSD** Method: **E300.0**

Analysis Date: **06/16/10 17:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25	0.291	94	90	110	23.94	0.2	20	
Sulfate	69	1.2	50	19.98	98	90	110	68.48	0.6	20	

Associated samples: **H10060160-001A; H10060160-001B; H10060160-002A; H10060160-002B; H10060160-003A; H10060160-003B; H10060160-004A; H10060160-004B; H10060160-005A; H10060160-005B; H10060160-006A; H10060160-006B; H10060160-007A; H10060160-007B; H10060160-008A; H10060160-008B; H10060160-009A; H10060160-009B; H10060160-010A; H10060160-010B; H10060160-011A; H10060160-011B; H10060160-012A; H10060160-012B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Workorder Receipt Checklist

MT DEQ

H10060160

Login completed by: Amanda B. Blackburn

Date Received: 6/9/2010

Reviewed by: BL2000\wjohnson

Received by: rlt

Reviewed Date: 6/10/2010

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature:	2.3°C		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

Sample times indicated on sample bottles, but not on Chain of Custody. Abb

Terra Graphics
ENVIRONMENTAL ENGINEERING
302 N. LAST CHANCE GULCH
HELENA, MT 59601
(406) 441-5441 Fax (406) 441-5443

CHAIN OF CUSTODY RECORD

Data to: TerraGraphics
Invoice to: MDEQ
TO: Energy Lab

Project Name: UBMC - ~~[illegible]~~ TO 20
Project Code : ~~10014~~ 10013

Lab ID	Sample Date	Water	Soil	Dust	Other	Total Metals	Dissolved metals	Cations	Anions	Physicochem		Normal T.A.T. / REMARKS
UBM-BRSW01-20100608	06/08/10	X				X	X	X	X	X		
UBM-BRSW22-20100608	06/08/10	X				X	X	X	X	X		H100601160
UBM-BRSW48-20100608	06/08/10	X				X	X	X	X	X		
UBM-BRSW23-20100608	06/08/10	X				X	X	X	X	X		
UBM-BRSW34-20100608	06/08/10	X				X	X	X	X	X		
UBM-BRSW30-20100608	06/08/10	X				X	X	X	X	X		
UBM-BRSW02-20100608	06/08/10	X				X	X	X	X	X		
UBM-BRSW29-20100608	06/08/10	X				X	X	X	X	X		
UBM-BRSW29-555-20100608	06/08/10	X				X	X	X	X	X		
UBM-BRSW38-333-20100608	06/08/10	X				X	X	X	X	X		

Analysis (see SAP)

SAMPLE DESCRIPTION

REMARKS: Perform Matrix Spike and Lab Duplicate on last sample per batch

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
[signature]	06/08/10 18:20			6.9.10 12:31	[signature]
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time	Remarks	
				temp 2.3 on ice	

COC seal on cooler hand del

Terra Graphics
ENVIRONMENTAL ENGINEERING
302 N. LAST CHANCE GULCH
HELENA, MT 59601
(406) 441-5441 Fax (406) 441-5443

CHAIN OF CUSTODY RECORD

Data to: TerraGraphics
Invoice to: MDEQ

Project Name: UBMC - Section 35
Project Code : 10014

TO: Energy Lab

Normal T.A.T.

REMARKS
Perform Matrix Spike and Lab Duplicate on last sample per batch

Lab ID	Sample Date	SAMPLE DESCRIPTION: Water	Soil	Dust	Other	Analysis (see SAP): Total Metals	Dissolved Metals	Cations	Anions	Physical	
UBM-BRSW38-444-20100608	06/08/10	X				X	X	X	X	X	
UBM-BRSW38-20100608	06/08/10	X				X	X	X	X	X	

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
[signature]	06/08/10 18:20			6.9.10 12:31	[signature]
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time	Remarks	
				temp 2.3 on ice	

COC on cooler
[signature]

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

Quotation for Analytical Services # H499

Company:	MT DEQ	Submitted By:	Jonathan Hager
Contact:	Shellie Haaland	Project:	Section 35
Address:	PO Box 200901	TAT:	7 Working days
	Helena, MT 59620-0901	QC Level:	STD
Phone:	(406) 841-5033 Fax:	Quote Date:	03-Feb-10 Expires: 31-Dec-11

Matrix	Test Name	Test	Remarks	# Samp	Unit Price		Test Total
Schedule:	**GroundWater Sampling.**						
Aqueous	Alkalinity	A2320 B	Dissolved	1	$10.00	1	$10.00
	Alkalinity	A2320 B		1	$10.00	1	$10.00
	Hardness as CaCO3	A2340 B		1	$0.00	1	$0.00
	Conductivity	A2510 B		1	$10.00	1	$10.00
	pH	A4500-H B		1	$10.00	1	$10.00
	Metals Digestion by EPA 200.2	E200.2		1	$15.00	1	$15.00
	Metals by ICP/ICPMS, Total	E200.7_8		1	$170.00	1	$170.00
	Metals by ICP/ICPMS, Dissolved	E200.7_8		1	$200.00	1	$200.00
	Anions by Ion Chromatography	E300.0	Dissolved	1	$20.00	1	$20.00
	Preparation, Dissolved Filtration	MCAWW		1	$0.00	1	$0.00
			Schedule Sample Price:		**$445.00**		
			Schedule Total:				**$445.00**
Schedule:	**Surface Water Sampling**						
Aqueous	Acidity, Total as CaCO3	A2310 B	Will analyze only if pH is below 4.5	1	$15.00	1	$15.00
	Alkalinity	A2320 B	Dissolved	1	$10.00	1	$10.00
	Alkalinity	A2320 B		1	$10.00	1	$10.00
	Hardness as CaCO3	A2340 B		1	$0.00	1	$0.00
	Conductivity	A2510 B		1	$10.00	1	$10.00
	Preparation for TDS	A2540 C		1	$0.00	1	$0.00
	Solids, Total Dissolved	A2540 C		1	$10.00	1	$10.00
	Preparation for TSS	A2540 D		1	$0.00	1	$0.00
	Solids, Total Suspended	A2540 D		1	$10.00	1	$10.00
	pH	A4500-H B		1	$10.00	1	$10.00
	Metals Digestion by EPA 200.2	E200.2		1	$15.00	1	$15.00
	Metals by ICP/ICPMS, Dissolved	E200.7_8		1	$200.00	1	$200.00
	Metals by ICP/ICPMS, Tot. Rec.	E200.7_8		1	$170.00	1	$170.00
	Anions by Ion Chromatography	E300.0		1	$20.00	1	$20.00
	Anions by Ion Chromatography	E300.0	Dissolved.	1	$20.00	1	$20.00
	Preparation, Dissolved Filtration	MCAWW		1	$0.00	1	$0.00
			Schedule Sample Price:		**$500.00**		
			Schedule Total:				**$500.00**
Schedule:	**Mine Waste Soil sampling**						
Soil	Acid Base Potential w/Sulfur Forms	Test Group		1	$55.00	1	$55.00
	*Acid/Base Potential	Sobek Modified		1		1	
	*Sulfur Forms	Sobek Modified		1		1	
	*Lime Percentage	USDA23c		1		1	

To assure that the quoted analysis and pricing specifications are provided, please include the Quote ID number referenced above on the Chain of Custody or sample submittal documents .

* Methods and/or parameters included in the indicated test group.
Subcontracting of sample analyses to an outside laboratory may be required. If so, Energy Laboratories will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

Analyte Limits For Quote #: H-499

Schedule Name TestName	Analyte	Report Limit	Units
Surface Water Sampling			
Acidity, Total as CaCO3	Acidity, Total as CaCO3	4	mg/L
Alkalinity	Alkalinity, Total as CaCO3	4	mg/L
	Bicarbonate as HCO3	4	mg/L
	Carbonate as CO3	4	mg/L
Anions by Ion Chromatography	Chloride	1	mg/L
	Sulfate	1	mg/L
Conductivity	Conductivity	1	umhos/c
Metals by ICP/ICPMS, Dissolved	Aluminum	0.03	mg/L
	Arsenic	0.003	mg/L
	Cadmium	0.00008	mg/L
	Calcium	1	mg/L
	Copper	0.001	mg/L
	Iron	0.05	mg/L
	Lead	0.0005	mg/L
	Magnesium	1	mg/L
	Manganese	0.005	mg/L
	Potassium	1	mg/L
	Sodium	1	mg/L
	Zinc	0.01	mg/L
Metals by ICP/ICPMS, Tot. Rec.	Aluminum	0.03	mg/L
	Arsenic	0.003	mg/L
	Cadmium	0.00008	mg/L
	Copper	0.001	mg/L
	Iron	0.05	mg/L
	Lead	0.0005	mg/L
	Manganese	0.005	mg/L
	Zinc	0.01	mg/L
pH	pH	0.1	s.u.
Solids, Total Dissolved	Solids, Total Dissolved TDS @ 180 C	10	mg/L
Solids, Total Suspended	Solids, Total Suspended TSS @ 105 C	10	mg/L

ANALYTICAL SUMMARY REPORT

September 28, 2010

MT DEQ
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H10090233 Quote ID: H499 - Section 35 and UBMC

Project Name: TO20-UBMC Monitoring

Energy Laboratories Inc received the following 12 samples for MT DEQ on 9/15/2010 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H10090233-001	UBM-BRSW01-20100908	09/08/10 12:45	09/15/10	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Metals Digestion by EPA 200.2 Preparation for TDS Preparation for TSS Solids, Total Dissolved Solids, Total Suspended
H10090233-002	UBM-BRSW01-555-20100908	09/08/10 14:45	09/15/10	Aqueous	Same As Above
H10090233-003	UBM-BRSW02-20100908	09/08/10 14:15	09/15/10	Aqueous	Same As Above
H10090233-004	UBM-BRSW02-444-20100908	09/08/10 14:15	09/15/10	Aqueous	Same As Above
H10090233-005	UBM-BRSW3A-20100908	09/08/10 17:10	09/15/10	Aqueous	Same As Above
H10090233-006	UBM-BRSW22-20100908	09/08/10 13:45	09/15/10	Aqueous	Same As Above
H10090233-007	UBM-BRSW23-20100908	09/08/10 16:30	09/15/10	Aqueous	Same As Above
H10090233-008	UBM-BRSW48-20100908	09/08/10 15:45	09/15/10	Aqueous	Same As Above
H10090233-009	UBM-BRSW38-20100910	09/10/10 11:30	09/15/10	Aqueous	Same As Above
H10090233-010	UBM-BRSW3B-20100910	09/10/10 10:00	09/15/10	Aqueous	Same As Above
H10090233-011	UBM-BRSW29-333-20100910	09/10/10 11:00	09/15/10	Aqueous	Same As Above
H10090233-012	UBM-BRSW29-20100910	09/10/10 11:00	09/15/10	Aqueous	Same As Above

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

CLIENT: MT DEQ
Project: TO20-UBMC Monitoring
Sample Delivery Group: H10090233

Report Date: 09/28/10

CASE NARRATIVE

Prep Comments for Sample H10090233-001A, Test PRP-TSS-W: The prep hold time was exceeded by 1.07 days.
Prep Comments for Sample H10090233-002A, Test PRP-TSS-W: The prep hold time was exceeded by 0.990 days.
Prep Comments for Sample H10090233-003A, Test PRP-TSS-W: The prep hold time was exceeded by 1.01 days.
Prep Comments for Sample H10090233-004A, Test PRP-TSS-W: The prep hold time was exceeded by 1.01 days.
Prep Comments for Sample H10090233-005A, Test PRP-TSS-W: The prep hold time was exceeded by 0.890 days.
Prep Comments for Sample H10090233-006A, Test PRP-TSS-W: The prep hold time was exceeded by 1.03 days.
Prep Comments for Sample H10090233-007A, Test PRP-TSS-W: The prep hold time was exceeded by 0.917 days.
Prep Comments for Sample H10090233-008A, Test PRP-TSS-W: The prep hold time was exceeded by 0.949 days.
Prep Comments for Sample H10090233-001A, Test PRP-TDS-W: The prep hold time was exceeded by 1.08 days.
Prep Comments for Sample H10090233-002A, Test PRP-TDS-W: The prep hold time was exceeded by 0.993 days.
Prep Comments for Sample H10090233-003A, Test PRP-TDS-W: The prep hold time was exceeded by 1.01 days.
Prep Comments for Sample H10090233-004A, Test PRP-TDS-W: The prep hold time was exceeded by 1.01 days.
Prep Comments for Sample H10090233-005A, Test PRP-TDS-W: The prep hold time was exceeded by 0.892 days.
Prep Comments for Sample H10090233-006A, Test PRP-TDS-W: The prep hold time was exceeded by 1.03 days.
Prep Comments for Sample H10090233-007A, Test PRP-TDS-W: The prep hold time was exceeded by 0.920 days.
Prep Comments for Sample H10090233-008A, Test PRP-TDS-W: The prep hold time was exceeded by 0.951 days.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW01-20100908
Lab ID: H10090233-001
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/08/10 12:45 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.2	s.u.		0.1		A4500-H B	09/16/10 13:23 / zeg		MAN-TECH_100916A	10	R65382
Conductivity	203	umhos/cm		1		A2510 B	09/16/10 13:23 / zeg		MAN-TECH_100916A	9	R65382
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	09/16/10 15:07 / glj	09/16/10 14:31	J-124 (14410200)_100816A	3	9898
Solids, Total Dissolved TDS @ 180 C	116	mg/L	H	10		A2540 C	09/20/10 15:42 / glj	09/16/10 14:34	J-124 (14410200)_100920A	4	9946
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	09/16/10 16:53 / zeg		MAN-TECH_100916A	104	R65382
Carbonate as CO3	ND	mg/L		4		A2320 B	09/16/10 16:53 / zeg		MAN-TECH_100916A	104	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 15:06 / zeg		IC101-H_100921B	17	R65547
Sulfate	4	mg/L		1		E300.0	09/22/10 15:06 / zeg		IC101-H_100921B	17	R65547
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	09/16/10 13:23 / zeg		MAN-TECH_100916A	8	R65382
Chloride	ND	mg/L		1		E300.0	09/21/10 14:48 / zeg		IC101-H_100921A	30	R65507
Sulfate	5	mg/L		1		E300.0	09/21/10 14:48 / zeg		IC101-H_100921A	30	R65507
Hardness as CaCO3	104	mg/L		1		A2340 B	09/19/10 13:32 / sld		WATERCALC_100919A	29	R65416
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 16:57 / dck		ICPMS204-B_100915A	196	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 16:57 / dck		ICPMS204-B_100915A	196	R65380
Cadmium	ND	mg/L		0.00008		E200.8	09/16/10 16:57 / dck		ICPMS204-B_100915A	196	R65380
Calcium	20	mg/L		1		E200.8	09/16/10 16:57 / dck		ICPMS204-B_100915A	196	R65380
Copper	ND	mg/L		0.001		E200.8	09/16/10 16:57 / dck		ICPMS204-B_100915A	196	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 16:57 / dck		ICPMS204-B_100915A	196	R65380
Lead	ND	mg/L		0.0005		E200.8	09/16/10 16:57 / dck		ICPMS204-B_100915A	196	R65380
Magnesium	13	mg/L		1		E200.8	09/16/10 16:57 / dck		ICPMS204-B_100915A	196	R65380
Manganese	ND	mg/L		0.005		E200.8	09/16/10 16:57 / dck		ICPMS204-B_100915A	196	R65380
Potassium	ND	mg/L		1		E200.8	09/16/10 16:57 / dck		ICPMS204-B_100915A	196	R65380
Sodium	1	mg/L		1		E200.8	09/16/10 16:57 / dck		ICPMS204-B_100915A	196	R65380
Zinc	0.03	mg/L		0.01		E200.8	09/16/10 16:57 / dck		ICPMS204-B_100915A	196	R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW01-20100908
Lab ID: H10090233-001
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/08/10 12:45 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 17:03 / dck		ICPMS204-B_100915A	197	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 17:03 / dck		ICPMS204-B_100915A	197	R65380
Cadmium	ND	mg/L		0.00008		E200.8	09/16/10 17:03 / dck		ICPMS204-B_100915A	197	R65380
Copper	ND	mg/L		0.001		E200.8	09/16/10 17:03 / dck		ICPMS204-B_100915A	197	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 17:03 / dck		ICPMS204-B_100915A	197	R65380
Lead	ND	mg/L		0.0005		E200.8	09/16/10 17:03 / dck		ICPMS204-B_100915A	197	R65380
Manganese	ND	mg/L		0.005		E200.8	09/16/10 17:03 / dck		ICPMS204-B_100915A	197	R65380
Zinc	ND	mg/L		0.01		E200.8	09/16/10 17:03 / dck		ICPMS204-B_100915A	197	R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW01-555-20100908
Lab ID: H10090233-002
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/08/10 14:45 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.2	s.u.		0.1		A4500-H B	09/16/10 13:30 / zeg		MAN-TECH_100916A	13	R65382
Conductivity	204	umhos/cm		1		A2510 B	09/16/10 13:30 / zeg		MAN-TECH_100916A	12	R65382
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	09/16/10 15:07 / glj	09/16/10 14:31	J-124 (14410200)_100816A	4	9898
Solids, Total Dissolved TDS @ 180 C	110	mg/L	H	10		A2540 C	09/20/10 15:42 / glj	09/16/10 14:34	J-124 (14410200)_100920A	5	9946
DISSOLVED INORGANICS											
Bicarbonate as HCO3	140	mg/L		4		A2320 B	09/16/10 17:00 / zeg		MAN-TECH_100916A	106	R65382
Carbonate as CO3	ND	mg/L		4		A2320 B	09/16/10 17:00 / zeg		MAN-TECH_100916A	106	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 15:48 / zeg		IC101-H_100921B	19	R65547
Sulfate	4	mg/L		1		E300.0	09/22/10 15:48 / zeg		IC101-H_100921B	19	R65547
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	09/16/10 13:30 / zeg		MAN-TECH_100916A	11	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 15:31 / zeg		IC101-H_100921B	18	R65547
Sulfate	4	mg/L		1		E300.0	09/22/10 15:31 / zeg		IC101-H_100921B	18	R65547
Hardness as CaCO3	104	mg/L		1		A2340 B	09/19/10 13:32 / sld		WATERCALC_100919A	30	R65416
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 17:38 / dck		ICPMS204-B_100915A	202	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 17:38 / dck		ICPMS204-B_100915A	202	R65380
Cadmium	ND	mg/L		0.00008		E200.8	09/16/10 17:38 / dck		ICPMS204-B_100915A	202	R65380
Calcium	21	mg/L		1		E200.8	09/16/10 17:38 / dck		ICPMS204-B_100915A	202	R65380
Copper	ND	mg/L		0.001		E200.8	09/16/10 17:38 / dck		ICPMS204-B_100915A	202	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 17:38 / dck		ICPMS204-B_100915A	202	R65380
Lead	ND	mg/L		0.0005		E200.8	09/16/10 17:38 / dck		ICPMS204-B_100915A	202	R65380
Magnesium	13	mg/L		1		E200.8	09/16/10 17:38 / dck		ICPMS204-B_100915A	202	R65380
Manganese	ND	mg/L		0.005		E200.8	09/16/10 17:38 / dck		ICPMS204-B_100915A	202	R65380
Potassium	ND	mg/L		1		E200.8	09/16/10 17:38 / dck		ICPMS204-B_100915A	202	R65380
Sodium	1	mg/L		1		E200.8	09/16/10 17:38 / dck		ICPMS204-B_100915A	202	R65380
Zinc	0.05	mg/L		0.01		E200.8	09/16/10 17:38 / dck		ICPMS204-B_100915A	202	R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW01-555-20100908
Lab ID: H10090233-002
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/08/10 14:45 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 18:06 / dck		ICPMS204-B_100915A	206	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 18:06 / dck		ICPMS204-B_100915A	206	R65380
Cadmium	ND	mg/L		0.00008		E200.8	09/16/10 18:06 / dck		ICPMS204-B_100915A	206	R65380
Copper	ND	mg/L		0.001		E200.8	09/16/10 18:06 / dck		ICPMS204-B_100915A	206	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 18:06 / dck		ICPMS204-B_100915A	206	R65380
Lead	ND	mg/L		0.0005		E200.8	09/16/10 18:06 / dck		ICPMS204-B_100915A	206	R65380
Manganese	ND	mg/L		0.005		E200.8	09/16/10 18:06 / dck		ICPMS204-B_100915A	206	R65380
Zinc	ND	mg/L		0.01		E200.8	09/16/10 18:06 / dck		ICPMS204-B_100915A	206	R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW02-20100908
Lab ID: H10090233-003
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/08/10 14:15 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.1	s.u.		0.1		A4500-H B	09/16/10 13:35 / zeg		MAN-TECH_100916A	16	R65382
Conductivity	3420	umhos/cm		1		A2510 B	09/16/10 13:35 / zeg		MAN-TECH_100916A	15	R65382
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	09/16/10 15:07 / glj	09/16/10 14:31	J-124 (14410200)_100816A	5	9898
Solids, Total Dissolved TDS @ 180 C	3580	mg/L	H	10		A2540 C	09/20/10 15:42 / glj	09/16/10 14:34	J-124 (14410200)_100920A	6	9946
DISSOLVED INORGANICS											
Bicarbonate as HCO3	13	mg/L		4		A2320 B	09/16/10 17:13 / zeg		MAN-TECH_100916A	111	R65382
Carbonate as CO3	ND	mg/L		4		A2320 B	09/16/10 17:13 / zeg		MAN-TECH_100916A	111	R65382
Chloride	ND	mg/L	D	2		E300.0	09/22/10 17:10 / zeg		IC101-H_100921B	24	R65547
Sulfate	2600	mg/L	D	10		E300.0	09/22/10 17:10 / zeg		IC101-H_100921B	24	R65547
INORGANICS											
Alkalinity, Total as CaCO3	10	mg/L		4		A2320 B	09/16/10 13:35 / zeg		MAN-TECH_100916A	14	R65382
Chloride	ND	mg/L	D	2		E300.0	09/22/10 16:37 / zeg		IC101-H_100921B	22	R65547
Sulfate	2600	mg/L	D	10		E300.0	09/22/10 16:37 / zeg		IC101-H_100921B	22	R65547
Hardness as CaCO3	2510	mg/L		1		A2340 B	09/24/10 13:12 / wjj		WATERCALC_100924A	22	R65603
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 18:12 / dck		ICPMS204-B_100915A	207	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 18:12 / dck		ICPMS204-B_100915A	207	R65380
Cadmium	0.0114	mg/L		0.00008		E200.8	09/16/10 18:12 / dck		ICPMS204-B_100915A	207	R65380
Calcium	526	mg/L		1		E200.8	09/21/10 01:46 / dck		ICPMS204-B_100920A	89	R65467
Copper	0.008	mg/L		0.001		E200.8	09/16/10 18:12 / dck		ICPMS204-B_100915A	207	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 18:12 / dck		ICPMS204-B_100915A	207	R65380
Lead	ND	mg/L		0.0005		E200.8	09/16/10 18:12 / dck		ICPMS204-B_100915A	207	R65380
Magnesium	290	mg/L		1		E200.8	09/16/10 18:12 / dck		ICPMS204-B_100915A	207	R65380
Manganese	3.23	mg/L		0.005		E200.8	09/16/10 18:12 / dck		ICPMS204-B_100915A	207	R65380
Potassium	5	mg/L		1		E200.8	09/16/10 18:12 / dck		ICPMS204-B_100915A	207	R65380
Sodium	2	mg/L		1		E200.8	09/16/10 18:12 / dck		ICPMS204-B_100915A	207	R65380
Zinc	0.94	mg/L		0.01		E200.8	09/16/10 18:12 / dck		ICPMS204-B_100915A	207	R65380

Report Definitions:
RL - Analyte reporting limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
H - Analysis performed past recommended holding time.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW02-20100908
Lab ID: H10090233-003
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/08/10 14:15
DateReceived: 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.03	mg/L		0.03		E200.8	09/16/10 18:19 / dck		ICPMS204-B_100915A	208	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 18:19 / dck		ICPMS204-B_100915A	208	R65380
Cadmium	0.0117	mg/L		0.00008		E200.8	09/16/10 18:19 / dck		ICPMS204-B_100915A	208	R65380
Copper	0.009	mg/L		0.001		E200.8	09/16/10 18:19 / dck		ICPMS204-B_100915A	208	R65380
Iron	0.43	mg/L		0.05		E200.8	09/16/10 18:19 / dck		ICPMS204-B_100915A	208	R65380
Lead	0.0108	mg/L		0.0005		E200.8	09/16/10 18:19 / dck		ICPMS204-B_100915A	208	R65380
Manganese	3.24	mg/L		0.005		E200.8	09/16/10 18:19 / dck		ICPMS204-B_100915A	208	R65380
Zinc	0.92	mg/L		0.01		E200.8	09/16/10 18:19 / dck		ICPMS204-B_100915A	208	R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW02-444-20100908
Lab ID: H10090233-004
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/08/10 14:15 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.5	s.u.		0.1		A4500-H B	09/16/10 13:40 / zeg		MAN-TECH_100916A	19	R65382
Conductivity	ND	umhos/cm		1		A2510 B	09/16/10 13:40 / zeg		MAN-TECH_100916A	18	R65382
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	09/16/10 15:08 / glj	09/16/10 14:31	J-124 (14410200)_100816A	6	9898
Solids, Total Dissolved TDS @ 180 C	22	mg/L	H	10		A2540 C	09/20/10 15:42 / glj	09/16/10 14:34	J-124 (14410200)_100920A	7	9946
DISSOLVED INORGANICS											
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	09/16/10 17:18 / zeg		MAN-TECH_100916A	113	R65382
Carbonate as CO3	ND	mg/L		4		A2320 B	09/16/10 17:18 / zeg		MAN-TECH_100916A	113	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 17:43 / zeg		IC101-H_100921B	26	R65547
Sulfate	ND	mg/L		1		E300.0	09/22/10 17:43 / zeg		IC101-H_100921B	26	R65547
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	09/16/10 13:40 / zeg		MAN-TECH_100916A	17	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 17:26 / zeg		IC101-H_100921B	25	R65547
Sulfate	ND	mg/L		1		E300.0	09/22/10 17:26 / zeg		IC101-H_100921B	25	R65547
Hardness as CaCO3	ND	mg/L		1		A2340 B	09/19/10 13:32 / sld		WATERCALC_100919A	31	R65416
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 18:26 / dck		ICPMS204-B_100915A	209	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 18:26 / dck		ICPMS204-B_100915A	209	R65380
Cadmium	ND	mg/L		0.00008		E200.8	09/16/10 18:26 / dck		ICPMS204-B_100915A	209	R65380
Calcium	ND	mg/L		1		E200.8	09/16/10 18:26 / dck		ICPMS204-B_100915A	209	R65380
Copper	ND	mg/L		0.001		E200.8	09/16/10 18:26 / dck		ICPMS204-B_100915A	209	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 18:26 / dck		ICPMS204-B_100915A	209	R65380
Lead	ND	mg/L		0.0005		E200.8	09/16/10 18:26 / dck		ICPMS204-B_100915A	209	R65380
Magnesium	ND	mg/L		1		E200.8	09/16/10 18:26 / dck		ICPMS204-B_100915A	209	R65380
Manganese	ND	mg/L		0.005		E200.8	09/16/10 18:26 / dck		ICPMS204-B_100915A	209	R65380
Potassium	ND	mg/L		1		E200.8	09/16/10 18:26 / dck		ICPMS204-B_100915A	209	R65380
Sodium	ND	mg/L		1		E200.8	09/16/10 18:26 / dck		ICPMS204-B_100915A	209	R65380
Zinc	0.01	mg/L		0.01		E200.8	09/16/10 18:26 / dck		ICPMS204-B_100915A	209	R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW02-444-20100908
Lab ID: H10090233-004
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/08/10 14:15
DateReceived: 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 18:33 / dck		ICPMS204-B_100915A	210	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 18:33 / dck		ICPMS204-B_100915A	210	R65380
Cadmium	ND	mg/L		0.00008		E200.8	09/16/10 18:33 / dck		ICPMS204-B_100915A	210	R65380
Copper	ND	mg/L		0.001		E200.8	09/16/10 18:33 / dck		ICPMS204-B_100915A	210	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 18:33 / dck		ICPMS204-B_100915A	210	R65380
Lead	ND	mg/L		0.0005		E200.8	09/16/10 18:33 / dck		ICPMS204-B_100915A	210	R65380
Manganese	ND	mg/L		0.005		E200.8	09/16/10 18:33 / dck		ICPMS204-B_100915A	210	R65380
Zinc	0.02	mg/L		0.01		E200.8	09/16/10 18:33 / dck		ICPMS204-B_100915A	210	R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW3A-20100908
Lab ID: H10090233-005
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/08/10 17:10 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.8	s.u.		0.1		A4500-H B	09/16/10 13:47 / zeg		MAN-TECH_100916A	22	R65382
Conductivity	296	umhos/cm		1		A2510 B	09/16/10 13:47 / zeg		MAN-TECH_100916A	21	R65382
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	09/16/10 15:08 / glj	09/16/10 14:31	J-124 (14410200)_100816A	8	9898
Solids, Total Dissolved TDS @ 180 C	182	mg/L	H	10		A2540 C	09/20/10 15:43 / glj	09/16/10 14:34	J-124 (14410200)_100920A	8	9946
DISSOLVED INORGANICS											
Bicarbonate as HCO3	120	mg/L		4		A2320 B	09/16/10 17:24 / zeg		MAN-TECH_100916A	115	R65382
Carbonate as CO3	ND	mg/L		4		A2320 B	09/16/10 17:24 / zeg		MAN-TECH_100916A	115	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 18:15 / zeg		IC101-H_100921B	28	R65547
Sulfate	54	mg/L		1		E300.0	09/22/10 18:15 / zeg		IC101-H_100921B	28	R65547
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	09/16/10 13:47 / zeg		MAN-TECH_100916A	20	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 17:59 / zeg		IC101-H_100921B	27	R65547
Sulfate	55	mg/L		1		E300.0	09/22/10 17:59 / zeg		IC101-H_100921B	27	R65547
Hardness as CaCO3	142	mg/L		1		A2340 B	09/19/10 13:32 / sld		WATERCALC_100919A	32	R65416
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 19:08 / dck		ICPMS204-B_100915A	215	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 19:08 / dck		ICPMS204-B_100915A	215	R65380
Cadmium	0.00072	mg/L		0.00008		E200.8	09/16/10 19:08 / dck		ICPMS204-B_100915A	215	R65380
Calcium	29	mg/L		1		E200.8	09/16/10 19:08 / dck		ICPMS204-B_100915A	215	R65380
Copper	0.002	mg/L		0.001		E200.8	09/16/10 19:08 / dck		ICPMS204-B_100915A	215	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 19:08 / dck		ICPMS204-B_100915A	215	R65380
Lead	ND	mg/L		0.0005		E200.8	09/16/10 19:08 / dck		ICPMS204-B_100915A	215	R65380
Magnesium	17	mg/L		1		E200.8	09/16/10 19:08 / dck		ICPMS204-B_100915A	215	R65380
Manganese	0.148	mg/L		0.005		E200.8	09/16/10 19:08 / dck		ICPMS204-B_100915A	215	R65380
Potassium	ND	mg/L		1		E200.8	09/16/10 19:08 / dck		ICPMS204-B_100915A	215	R65380
Sodium	1	mg/L		1		E200.8	09/16/10 19:08 / dck		ICPMS204-B_100915A	215	R65380
Zinc	0.29	mg/L		0.01		E200.8	09/16/10 19:08 / dck		ICPMS204-B_100915A	215	R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW3A-20100908
Lab ID: H10090233-005
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/08/10 17:10
DateReceived: 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.05	mg/L		0.03		E200.8	09/16/10 19:15 / dck		ICPMS204-B_100915A	216	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 19:15 / dck		ICPMS204-B_100915A	216	R65380
Cadmium	0.00071	mg/L		0.00008		E200.8	09/16/10 19:15 / dck		ICPMS204-B_100915A	216	R65380
Copper	0.007	mg/L		0.001		E200.8	09/16/10 19:15 / dck		ICPMS204-B_100915A	216	R65380
Iron	0.10	mg/L		0.05		E200.8	09/16/10 19:15 / dck		ICPMS204-B_100915A	216	R65380
Lead	0.0006	mg/L		0.0005		E200.8	09/16/10 19:15 / dck		ICPMS204-B_100915A	216	R65380
Manganese	0.256	mg/L		0.005		E200.8	09/16/10 19:15 / dck		ICPMS204-B_100915A	216	R65380
Zinc	0.28	mg/L		0.01		E200.8	09/16/10 19:15 / dck		ICPMS204-B_100915A	216	R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW22-20100908
Lab ID: H10090233-006
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/08/10 13:45 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.1	s.u.		0.1		A4500-H B	09/16/10 14:01 / zeg		MAN-TECH_100916A	28	R65382
Conductivity	304	umhos/cm		1		A2510 B	09/16/10 14:01 / zeg		MAN-TECH_100916A	27	R65382
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	09/16/10 15:08 / glj	09/16/10 14:31	J-124 (14410200)_100816A	9	9898
Solids, Total Dissolved TDS @ 180 C	180	mg/L	H	10		A2540 C	09/20/10 15:43 / glj	09/16/10 14:34	J-124 (14410200)_100920A	9	9946
DISSOLVED INORGANICS											
Bicarbonate as HCO3	110	mg/L		4		A2320 B	09/16/10 17:31 / zeg		MAN-TECH_100916A	117	R65382
Carbonate as CO3	ND	mg/L		4		A2320 B	09/16/10 17:31 / zeg		MAN-TECH_100916A	117	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 20:10 / zeg		IC101-H_100922A	22	R65568
Sulfate	70	mg/L		1		E300.0	09/22/10 20:10 / zeg		IC101-H_100922A	22	R65568
INORGANICS											
Alkalinity, Total as CaCO3	89	mg/L		4		A2320 B	09/16/10 14:01 / zeg		MAN-TECH_100916A	26	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 19:54 / zeg		IC101-H_100922A	21	R65568
Sulfate	70	mg/L		1		E300.0	09/22/10 19:54 / zeg		IC101-H_100922A	21	R65568
Hardness as CaCO3	145	mg/L		1		A2340 B	09/19/10 13:32 / sld		WATERCALC_100919A	33	R65416
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 19:21 / dck		ICPMS204-B_100915A	217	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 19:21 / dck		ICPMS204-B_100915A	217	R65380
Cadmium	0.00860	mg/L		0.00008		E200.8	09/16/10 19:21 / dck		ICPMS204-B_100915A	217	R65380
Calcium	34	mg/L		1		E200.8	09/16/10 19:21 / dck		ICPMS204-B_100915A	217	R65380
Copper	0.033	mg/L		0.001		E200.8	09/16/10 19:21 / dck		ICPMS204-B_100915A	217	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 19:21 / dck		ICPMS204-B_100915A	217	R65380
Lead	0.0018	mg/L		0.0005		E200.8	09/16/10 19:21 / dck		ICPMS204-B_100915A	217	R65380
Magnesium	15	mg/L		1		E200.8	09/16/10 19:21 / dck		ICPMS204-B_100915A	217	R65380
Manganese	0.187	mg/L		0.005		E200.8	09/16/10 19:21 / dck		ICPMS204-B_100915A	217	R65380
Potassium	ND	mg/L		1		E200.8	09/16/10 19:21 / dck		ICPMS204-B_100915A	217	R65380
Sodium	ND	mg/L		1		E200.8	09/16/10 19:21 / dck		ICPMS204-B_100915A	217	R65380
Zinc	1.22	mg/L		0.01		E200.8	09/16/10 19:21 / dck		ICPMS204-B_100915A	217	R65380

Report Definitions:
RL - Analyte reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW22-20100908
Lab ID: H10090233-006
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/08/10 13:45 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 19:28 / dck		ICPMS204-B_100915A : 218		R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 19:28 / dck		ICPMS204-B_100915A : 218		R65380
Cadmium	0.00864	mg/L		0.00008		E200.8	09/16/10 19:28 / dck		ICPMS204-B_100915A : 218		R65380
Copper	0.042	mg/L		0.001		E200.8	09/16/10 19:28 / dck		ICPMS204-B_100915A : 218		R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 19:28 / dck		ICPMS204-B_100915A : 218		R65380
Lead	0.0058	mg/L		0.0005		E200.8	09/16/10 19:28 / dck		ICPMS204-B_100915A : 218		R65380
Manganese	0.189	mg/L		0.005		E200.8	09/16/10 19:28 / dck		ICPMS204-B_100915A : 218		R65380
Zinc	1.24	mg/L		0.01		E200.8	09/16/10 19:28 / dck		ICPMS204-B_100915A : 218		R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW23-20100908
Lab ID: H10090233-007
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/08/10 16:30 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.1	s.u.		0.1		A4500-H B	09/16/10 14:07 / zeg		MAN-TECH_100916A	31	R65382
Conductivity	245	umhos/cm		1		A2510 B	09/16/10 14:07 / zeg		MAN-TECH_100916A	30	R65382
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	09/16/10 15:09 / glj	09/16/10 14:31	-124 (14410200)_100816A	10	9898
Solids, Total Dissolved TDS @ 180 C	138	mg/L	H	10		A2540 C	09/20/10 15:43 / glj	09/16/10 14:34	-124 (14410200)_100920A	11	9946
DISSOLVED INORGANICS											
Bicarbonate as HCO3	120	mg/L		4		A2320 B	09/16/10 17:38 / zeg		MAN-TECH_100916A	119	R65382
Carbonate as CO3	ND	mg/L		4		A2320 B	09/16/10 17:38 / zeg		MAN-TECH_100916A	119	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 20:43 / zeg		IC101-H_100922A	24	R65568
Sulfate	28	mg/L		1		E300.0	09/22/10 20:43 / zeg		IC101-H_100922A	24	R65568
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	09/16/10 14:07 / zeg		MAN-TECH_100916A	29	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 20:27 / zeg		IC101-H_100922A	23	R65568
Sulfate	28	mg/L		1		E300.0	09/22/10 20:27 / zeg		IC101-H_100922A	23	R65568
Hardness as CaCO3	119	mg/L		1		A2340 B	09/19/10 13:32 / sld		WATERCALC_100919A	34	R65416
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 19:35 / dck		ICPMS204-B_100915A	219	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 19:35 / dck		ICPMS204-B_100915A	219	R65380
Cadmium	0.00141	mg/L		0.00008		E200.8	09/16/10 19:35 / dck		ICPMS204-B_100915A	219	R65380
Calcium	24	mg/L		1		E200.8	09/16/10 19:35 / dck		ICPMS204-B_100915A	219	R65380
Copper	0.003	mg/L		0.001		E200.8	09/16/10 19:35 / dck		ICPMS204-B_100915A	219	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 19:35 / dck		ICPMS204-B_100915A	219	R65380
Lead	ND	mg/L		0.0005		E200.8	09/16/10 19:35 / dck		ICPMS204-B_100915A	219	R65380
Magnesium	14	mg/L		1		E200.8	09/16/10 19:35 / dck		ICPMS204-B_100915A	219	R65380
Manganese	0.234	mg/L		0.005		E200.8	09/16/10 19:35 / dck		ICPMS204-B_100915A	219	R65380
Potassium	ND	mg/L		1		E200.8	09/16/10 19:35 / dck		ICPMS204-B_100915A	219	R65380
Sodium	1	mg/L		1		E200.8	09/16/10 19:35 / dck		ICPMS204-B_100915A	219	R65380
Zinc	0.30	mg/L		0.01		E200.8	09/16/10 19:35 / dck		ICPMS204-B_100915A	219	R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW23-20100908
Lab ID: H10090233-007
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/08/10 16:30
DateReceived: 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 19:42 / dck		ICPMS204-B_100915A	220	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 19:42 / dck		ICPMS204-B_100915A	220	R65380
Cadmium	0.00147	mg/L		0.00008		E200.8	09/16/10 19:42 / dck		ICPMS204-B_100915A	220	R65380
Copper	0.005	mg/L		0.001		E200.8	09/16/10 19:42 / dck		ICPMS204-B_100915A	220	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 19:42 / dck		ICPMS204-B_100915A	220	R65380
Lead	0.0027	mg/L		0.0005		E200.8	09/16/10 19:42 / dck		ICPMS204-B_100915A	220	R65380
Manganese	0.223	mg/L		0.005		E200.8	09/16/10 19:42 / dck		ICPMS204-B_100915A	220	R65380
Zinc	0.29	mg/L		0.01		E200.8	09/16/10 19:42 / dck		ICPMS204-B_100915A	220	R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW48-20100908
Lab ID: H10090233-008
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/08/10 15:45 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.1	s.u.		0.1		A4500-H B	09/16/10 14:14 / zeg		MAN-TECH_100916A	34	R65382
Conductivity	259	umhos/cm		1		A2510 B	09/16/10 14:14 / zeg		MAN-TECH_100916A	33	R65382
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	09/16/10 15:09 / glj	09/16/10 14:31	-124 (14410200)_100816A	11	9898
Solids, Total Dissolved TDS @ 180 C	148	mg/L	H	10		A2540 C	09/20/10 15:43 / glj	09/16/10 14:34	-124 (14410200)_100920A	12	9946
DISSOLVED INORGANICS											
Bicarbonate as HCO3	120	mg/L		4		A2320 B	09/16/10 17:45 / zeg		MAN-TECH_100916A	121	R65382
Carbonate as CO3	ND	mg/L		4		A2320 B	09/16/10 17:45 / zeg		MAN-TECH_100916A	121	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 21:16 / zeg		IC101-H_100922A	26	R65568
Sulfate	38	mg/L		1		E300.0	09/22/10 21:16 / zeg		IC101-H_100922A	26	R65568
INORGANICS											
Alkalinity, Total as CaCO3	99	mg/L		4		A2320 B	09/16/10 14:14 / zeg		MAN-TECH_100916A	32	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 21:00 / zeg		IC101-H_100922A	25	R65568
Sulfate	38	mg/L		1		E300.0	09/22/10 21:00 / zeg		IC101-H_100922A	25	R65568
Hardness as CaCO3	128	mg/L		1		A2340 B	09/19/10 13:32 / sld		WATERCALC_100919A	35	R65416
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 19:49 / dck		ICPMS204-B_100915A	221	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 19:49 / dck		ICPMS204-B_100915A	221	R65380
Cadmium	0.00187	mg/L		0.00008		E200.8	09/16/10 19:49 / dck		ICPMS204-B_100915A	221	R65380
Calcium	26	mg/L		1		E200.8	09/16/10 19:49 / dck		ICPMS204-B_100915A	221	R65380
Copper	0.002	mg/L		0.001		E200.8	09/16/10 19:49 / dck		ICPMS204-B_100915A	221	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 19:49 / dck		ICPMS204-B_100915A	221	R65380
Lead	ND	mg/L		0.0005		E200.8	09/16/10 19:49 / dck		ICPMS204-B_100915A	221	R65380
Magnesium	16	mg/L		1		E200.8	09/16/10 19:49 / dck		ICPMS204-B_100915A	221	R65380
Manganese	0.813	mg/L		0.005		E200.8	09/16/10 19:49 / dck		ICPMS204-B_100915A	221	R65380
Potassium	ND	mg/L		1		E200.8	09/16/10 19:49 / dck		ICPMS204-B_100915A	221	R65380
Sodium	1	mg/L		1		E200.8	09/16/10 19:49 / dck		ICPMS204-B_100915A	221	R65380
Zinc	0.36	mg/L		0.01		E200.8	09/16/10 19:49 / dck		ICPMS204-B_100915A	221	R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW48-20100908
Lab ID: H10090233-008
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/08/10 15:45 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.03	mg/L		0.03		E200.8	09/16/10 19:56 / dck		ICPMS204-B_100915A : 222		R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 19:56 / dck		ICPMS204-B_100915A : 222		R65380
Cadmium	0.00239	mg/L		0.00008		E200.8	09/16/10 19:56 / dck		ICPMS204-B_100915A : 222		R65380
Copper	0.008	mg/L		0.001		E200.8	09/16/10 19:56 / dck		ICPMS204-B_100915A : 222		R65380
Iron	0.52	mg/L		0.05		E200.8	09/16/10 19:56 / dck		ICPMS204-B_100915A : 222		R65380
Lead	0.0133	mg/L		0.0005		E200.8	09/16/10 19:56 / dck		ICPMS204-B_100915A : 222		R65380
Manganese	0.816	mg/L		0.005		E200.8	09/16/10 19:56 / dck		ICPMS204-B_100915A : 222		R65380
Zinc	0.44	mg/L		0.01		E200.8	09/16/10 19:56 / dck		ICPMS204-B_100915A : 222		R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW38-20100910
Lab ID: H10090233-009
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/10/10 11:30 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.9	s.u.		0.1		A4500-H B	09/16/10 14:21 / zeg		MAN-TECH_100916A	37	R65382
Conductivity	282	umhos/cm		1		A2510 B	09/16/10 14:21 / zeg		MAN-TECH_100916A	36	R65382
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	09/16/10 15:09 / glj	09/16/10 14:31	-124 (14410200)_100816A	12	9898
Solids, Total Dissolved TDS @ 180 C	170	mg/L	H	10		A2540 C	09/20/10 15:44 / glj	09/16/10 14:34	-124 (14410200)_100920A	13	9946
DISSOLVED INORGANICS											
Bicarbonate as HCO3	110	mg/L		4		A2320 B	09/16/10 17:58 / zeg		MAN-TECH_100916A	126	R65382
Carbonate as CO3	ND	mg/L		4		A2320 B	09/16/10 17:58 / zeg		MAN-TECH_100916A	126	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 22:22 / zeg		IC101-H_100922A	30	R65568
Sulfate	60	mg/L		1		E300.0	09/22/10 22:22 / zeg		IC101-H_100922A	30	R65568
INORGANICS											
Alkalinity, Total as CaCO3	88	mg/L		4		A2320 B	09/16/10 14:21 / zeg		MAN-TECH_100916A	35	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 21:32 / zeg		IC101-H_100922A	27	R65568
Sulfate	59	mg/L		1		E300.0	09/22/10 21:32 / zeg		IC101-H_100922A	27	R65568
Hardness as CaCO3	132	mg/L		1		A2340 B	09/19/10 13:32 / sld		WATERCALC_100919A	36	R65416
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 20:03 / dck		ICPMS204-B_100915A	223	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 20:03 / dck		ICPMS204-B_100915A	223	R65380
Cadmium	0.00482	mg/L		0.00008		E200.8	09/16/10 20:03 / dck		ICPMS204-B_100915A	223	R65380
Calcium	27	mg/L		1		E200.8	09/16/10 20:03 / dck		ICPMS204-B_100915A	223	R65380
Copper	0.003	mg/L		0.001		E200.8	09/16/10 20:03 / dck		ICPMS204-B_100915A	223	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 20:03 / dck		ICPMS204-B_100915A	223	R65380
Lead	ND	mg/L		0.0005		E200.8	09/16/10 20:03 / dck		ICPMS204-B_100915A	223	R65380
Magnesium	16	mg/L		1		E200.8	09/16/10 20:03 / dck		ICPMS204-B_100915A	223	R65380
Manganese	1.10	mg/L		0.005		E200.8	09/16/10 20:03 / dck		ICPMS204-B_100915A	223	R65380
Potassium	ND	mg/L		1		E200.8	09/16/10 20:03 / dck		ICPMS204-B_100915A	223	R65380
Sodium	1	mg/L		1		E200.8	09/16/10 20:03 / dck		ICPMS204-B_100915A	223	R65380
Zinc	0.94	mg/L		0.01		E200.8	09/16/10 20:03 / dck		ICPMS204-B_100915A	223	R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW38-20100910
Lab ID: H10090233-009
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/10/10 11:30 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.06	mg/L		0.03		E200.8	09/16/10 20:44 / dck		ICPMS204-B_100915A : 229		R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 20:44 / dck		ICPMS204-B_100915A : 229		R65380
Cadmium	0.00521	mg/L		0.00008		E200.8	09/16/10 20:44 / dck		ICPMS204-B_100915A : 229		R65380
Copper	0.011	mg/L		0.001		E200.8	09/16/10 20:44 / dck		ICPMS204-B_100915A : 229		R65380
Iron	0.44	mg/L		0.05		E200.8	09/16/10 20:44 / dck		ICPMS204-B_100915A : 229		R65380
Lead	0.0146	mg/L		0.0005		E200.8	09/16/10 20:44 / dck		ICPMS204-B_100915A : 229		R65380
Manganese	1.10	mg/L		0.005		E200.8	09/16/10 20:44 / dck		ICPMS204-B_100915A : 229		R65380
Zinc	1.00	mg/L		0.01		E200.8	09/16/10 20:44 / dck		ICPMS204-B_100915A : 229		R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW3B-20100910
Lab ID: H10090233-010
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/10/10 10:00 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.8	s.u.		0.1		A4500-H B	09/16/10 14:28 / zeg		MAN-TECH_100916A	40	R65382
Conductivity	304	umhos/cm		1		A2510 B	09/16/10 14:28 / zeg		MAN-TECH_100916A	39	R65382
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	09/16/10 15:09 / glj	09/16/10 14:31	-124 (14410200)_100816A	13	9898
Solids, Total Dissolved TDS @ 180 C	186	mg/L	H	10		A2540 C	09/20/10 15:44 / glj	09/16/10 14:34	-124 (14410200)_100920A	14	9946
DISSOLVED INORGANICS											
Bicarbonate as HCO3	120	mg/L		4		A2320 B	09/16/10 18:05 / zeg		MAN-TECH_100916A	128	R65382
Carbonate as CO3	ND	mg/L		4		A2320 B	09/16/10 18:05 / zeg		MAN-TECH_100916A	128	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 22:55 / zeg		IC101-H_100922A	32	R65568
Sulfate	61	mg/L		1		E300.0	09/22/10 22:55 / zeg		IC101-H_100922A	32	R65568
INORGANICS											
Alkalinity, Total as CaCO3	99	mg/L		4		A2320 B	09/16/10 14:28 / zeg		MAN-TECH_100916A	38	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 22:38 / zeg		IC101-H_100922A	31	R65568
Sulfate	61	mg/L		1		E300.0	09/22/10 22:38 / zeg		IC101-H_100922A	31	R65568
Hardness as CaCO3	145	mg/L		1		A2340 B	09/19/10 13:32 / sld		WATERCALC_100919A	37	R65416
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 20:58 / dck		ICPMS204-B_100915A	231	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 20:58 / dck		ICPMS204-B_100915A	231	R65380
Cadmium	0.00089	mg/L		0.00008		E200.8	09/16/10 20:58 / dck		ICPMS204-B_100915A	231	R65380
Calcium	29	mg/L		1		E200.8	09/16/10 20:58 / dck		ICPMS204-B_100915A	231	R65380
Copper	0.002	mg/L		0.001		E200.8	09/16/10 20:58 / dck		ICPMS204-B_100915A	231	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 20:58 / dck		ICPMS204-B_100915A	231	R65380
Lead	ND	mg/L		0.0005		E200.8	09/16/10 20:58 / dck		ICPMS204-B_100915A	231	R65380
Magnesium	18	mg/L		1		E200.8	09/16/10 20:58 / dck		ICPMS204-B_100915A	231	R65380
Manganese	0.230	mg/L		0.005		E200.8	09/16/10 20:58 / dck		ICPMS204-B_100915A	231	R65380
Potassium	ND	mg/L		1		E200.8	09/16/10 20:58 / dck		ICPMS204-B_100915A	231	R65380
Sodium	1	mg/L		1		E200.8	09/16/10 20:58 / dck		ICPMS204-B_100915A	231	R65380
Zinc	0.39	mg/L		0.01		E200.8	09/16/10 20:58 / dck		ICPMS204-B_100915A	231	R65380

Report Definitions:
RL - Analyte reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW3B-20100910
Lab ID: H10090233-010
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/10/10 10:00
DateReceived: 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 21:05 / dck		ICPMS204-B_100915A	232	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 21:05 / dck		ICPMS204-B_100915A	232	R65380
Cadmium	0.00087	mg/L		0.00008		E200.8	09/16/10 21:05 / dck		ICPMS204-B_100915A	232	R65380
Copper	0.003	mg/L		0.001		E200.8	09/16/10 21:05 / dck		ICPMS204-B_100915A	232	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 21:05 / dck		ICPMS204-B_100915A	232	R65380
Lead	ND	mg/L		0.0005		E200.8	09/16/10 21:05 / dck		ICPMS204-B_100915A	232	R65380
Manganese	0.230	mg/L		0.005		E200.8	09/16/10 21:05 / dck		ICPMS204-B_100915A	232	R65380
Zinc	0.35	mg/L		0.01		E200.8	09/16/10 21:05 / dck		ICPMS204-B_100915A	232	R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW29-333-20100910
Lab ID: H10090233-011
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/10/10 11:00 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.5	s.u.		0.1		A4500-H B	09/16/10 14:32 / zeg		MAN-TECH_100916A	43	R65382
Conductivity	ND	umhos/cm		1		A2510 B	09/16/10 14:32 / zeg		MAN-TECH_100916A	42	R65382
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	09/16/10 15:10 / glj	09/16/10 14:31	-124 (14410200)_100816A	14	9898
Solids, Total Dissolved TDS @ 180 C	12	mg/L	H	10		A2540 C	09/20/10 15:44 / glj	09/16/10 14:34	-124 (14410200)_100920A	15	9946
DISSOLVED INORGANICS											
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	09/16/10 18:10 / zeg		MAN-TECH_100916A	130	R65382
Carbonate as CO3	ND	mg/L		4		A2320 B	09/16/10 18:10 / zeg		MAN-TECH_100916A	130	R65382
Chloride	ND	mg/L		1		E300.0	09/23/10 00:00 / zeg		IC101-H_100922A	36	R65568
Sulfate	ND	mg/L		1		E300.0	09/23/10 00:00 / zeg		IC101-H_100922A	36	R65568
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	09/16/10 14:32 / zeg		MAN-TECH_100916A	41	R65382
Chloride	ND	mg/L		1		E300.0	09/22/10 23:44 / zeg		IC101-H_100922A	35	R65568
Sulfate	ND	mg/L		1		E300.0	09/22/10 23:44 / zeg		IC101-H_100922A	35	R65568
Hardness as CaCO3	ND	mg/L		1		A2340 B	09/19/10 13:32 / sld		WATERCALC_100919A	38	R65416
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 22:41 / dck		ICPMS204-B_100915A	246	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 22:41 / dck		ICPMS204-B_100915A	246	R65380
Cadmium	ND	mg/L		0.00008		E200.8	09/16/10 22:41 / dck		ICPMS204-B_100915A	246	R65380
Calcium	ND	mg/L		1		E200.8	09/16/10 22:41 / dck		ICPMS204-B_100915A	246	R65380
Copper	ND	mg/L		0.001		E200.8	09/16/10 22:41 / dck		ICPMS204-B_100915A	246	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 22:41 / dck		ICPMS204-B_100915A	246	R65380
Lead	ND	mg/L		0.0005		E200.8	09/16/10 22:41 / dck		ICPMS204-B_100915A	246	R65380
Magnesium	ND	mg/L		1		E200.8	09/16/10 22:41 / dck		ICPMS204-B_100915A	246	R65380
Manganese	ND	mg/L		0.005		E200.8	09/16/10 22:41 / dck		ICPMS204-B_100915A	246	R65380
Potassium	ND	mg/L		1		E200.8	09/16/10 22:41 / dck		ICPMS204-B_100915A	246	R65380
Sodium	ND	mg/L		1		E200.8	09/16/10 22:41 / dck		ICPMS204-B_100915A	246	R65380
Zinc	ND	mg/L		0.01		E200.8	09/16/10 22:41 / dck		ICPMS204-B_100915A	246	R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW29-333-20100910
Lab ID: H10090233-011
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/10/10 11:00
DateReceived: 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 22:48 / dck		ICPMS204-B_100915A : 247		R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 22:48 / dck		ICPMS204-B_100915A : 247		R65380
Cadmium	ND	mg/L		0.00008		E200.8	09/16/10 22:48 / dck		ICPMS204-B_100915A : 247		R65380
Copper	ND	mg/L		0.001		E200.8	09/16/10 22:48 / dck		ICPMS204-B_100915A : 247		R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 22:48 / dck		ICPMS204-B_100915A : 247		R65380
Lead	ND	mg/L		0.0005		E200.8	09/16/10 22:48 / dck		ICPMS204-B_100915A : 247		R65380
Manganese	ND	mg/L		0.005		E200.8	09/16/10 22:48 / dck		ICPMS204-B_100915A : 247		R65380
Zinc	ND	mg/L		0.01		E200.8	09/16/10 22:48 / dck		ICPMS204-B_100915A : 247		R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW29-20100910
Lab ID: H10090233-012
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/10/10 11:00 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.0	s.u.		0.1		A4500-H B	09/16/10 14:39 / zeg		MAN-TECH_100916A	46	R65382
Conductivity	228	umhos/cm		1		A2510 B	09/16/10 14:39 / zeg		MAN-TECH_100916A	45	R65382
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	09/16/10 15:10 / glj	09/16/10 14:31	-124 (14410200)_100816A	15	9898
Solids, Total Dissolved TDS @ 180 C	128	mg/L	H	10		A2540 C	09/20/10 15:49 / glj	09/16/10 14:34	-124 (14410200)_100920A	16	9946
DISSOLVED INORGANICS											
Bicarbonate as HCO3	110	mg/L		4		A2320 B	09/16/10 18:17 / zeg		MAN-TECH_100916A	132	R65382
Carbonate as CO3	ND	mg/L		4		A2320 B	09/16/10 18:17 / zeg		MAN-TECH_100916A	132	R65382
Chloride	ND	mg/L		1		E300.0	09/23/10 00:33 / zeg		IC101-H_100922A	38	R65568
Sulfate	32	mg/L		1		E300.0	09/23/10 00:33 / zeg		IC101-H_100922A	38	R65568
INORGANICS											
Alkalinity, Total as CaCO3	90	mg/L		4		A2320 B	09/16/10 14:39 / zeg		MAN-TECH_100916A	44	R65382
Chloride	ND	mg/L		1		E300.0	09/23/10 00:17 / zeg		IC101-H_100922A	37	R65568
Sulfate	32	mg/L		1		E300.0	09/23/10 00:17 / zeg		IC101-H_100922A	37	R65568
Hardness as CaCO3	109	mg/L		1		A2340 B	09/19/10 13:32 / sld		WATERCALC_100919A	39	R65416
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/16/10 22:55 / dck		ICPMS204-B_100915A	248	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 22:55 / dck		ICPMS204-B_100915A	248	R65380
Cadmium	0.00257	mg/L		0.00008		E200.8	09/16/10 22:55 / dck		ICPMS204-B_100915A	248	R65380
Calcium	23	mg/L		1		E200.8	09/16/10 22:55 / dck		ICPMS204-B_100915A	248	R65380
Copper	0.003	mg/L		0.001		E200.8	09/16/10 22:55 / dck		ICPMS204-B_100915A	248	R65380
Iron	ND	mg/L		0.05		E200.8	09/16/10 22:55 / dck		ICPMS204-B_100915A	248	R65380
Lead	0.0005	mg/L		0.0005		E200.8	09/16/10 22:55 / dck		ICPMS204-B_100915A	248	R65380
Magnesium	12	mg/L		1		E200.8	09/16/10 22:55 / dck		ICPMS204-B_100915A	248	R65380
Manganese	0.516	mg/L		0.005		E200.8	09/16/10 22:55 / dck		ICPMS204-B_100915A	248	R65380
Potassium	ND	mg/L		1		E200.8	09/16/10 22:55 / dck		ICPMS204-B_100915A	248	R65380
Sodium	1	mg/L		1		E200.8	09/16/10 22:55 / dck		ICPMS204-B_100915A	248	R65380
Zinc	0.57	mg/L		0.01		E200.8	09/16/10 22:55 / dck		ICPMS204-B_100915A	248	R65380

Report Definitions:
RL - Analyte reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-BRSW29-20100910
Lab ID: H10090233-012
Matrix: Aqueous

Project: TO20-UBMC Monitoring
Collection Date: 09/10/10 11:00 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.03	mg/L		0.03		E200.8	09/16/10 23:50 / dck		ICPMS204-B_100915A	256	R65380
Arsenic	ND	mg/L		0.003		E200.8	09/16/10 23:50 / dck		ICPMS204-B_100915A	256	R65380
Cadmium	0.00292	mg/L		0.00008		E200.8	09/16/10 23:50 / dck		ICPMS204-B_100915A	256	R65380
Copper	0.006	mg/L		0.001		E200.8	09/16/10 23:50 / dck		ICPMS204-B_100915A	256	R65380
Iron	0.24	mg/L		0.05		E200.8	09/16/10 23:50 / dck		ICPMS204-B_100915A	256	R65380
Lead	0.0061	mg/L		0.0005		E200.8	09/16/10 23:50 / dck		ICPMS204-B_100915A	256	R65380
Manganese	0.524	mg/L		0.005		E200.8	09/16/10 23:50 / dck		ICPMS204-B_100915A	256	R65380
Zinc	0.59	mg/L		0.01		E200.8	09/16/10 23:50 / dck		ICPMS204-B_100915A	256	R65380

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: 9898

Date: *28-Sep-10*

Run ID :Run Order: **ACCU-124 (14410200)_100816A: 1** SampType: **Method Blank** Sample ID: **MB-9898** Method: **A2540 D**
Analysis Date: **09/16/10 15:06** Units: **mg/L** **Prep Info:** Prep Date: **9/16/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	1									

Associated samples: **H10090233-001A; H10090233-002A; H10090233-003A; H10090233-004A; H10090233-005A; H10090233-006A; H10090233-007A; H10090233-008A; H10090233-009A; H10090233-010A; H10090233-011A; H10090233-012A**

Run ID :Run Order: **ACCU-124 (14410200)_100816A: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS-9898** Method: **A2540 D**
Analysis Date: **09/16/10 15:07** Units: **mg/L** **Prep Info:** Prep Date: **9/16/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	1780	10	2000		89	70	130				

Associated samples: **H10090233-001A; H10090233-002A; H10090233-003A; H10090233-004A; H10090233-005A; H10090233-006A; H10090233-007A; H10090233-008A; H10090233-009A; H10090233-010A; H10090233-011A; H10090233-012A**

Run ID :Run Order: **ACCU-124 (14410200)_100816A: 7** SampType: **Sample Duplicate** Sample ID: **H10090233-004ADUP** Method: **A2540 D**
Analysis Date: **09/16/10 15:08** Units: **mg/L** **Prep Info:** Prep Date: **9/16/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	10								5	

Associated samples: **H10090233-001A; H10090233-002A; H10090233-003A; H10090233-004A; H10090233-005A; H10090233-006A; H10090233-007A; H10090233-008A; H10090233-009A; H10090233-010A; H10090233-011A; H10090233-012A**

Run ID :Run Order: **ACCU-124 (14410200)_100816A: 21** SampType: **Sample Duplicate** Sample ID: **H10090234-005ADUP** Method: **A2540 D**
Analysis Date: **09/16/10 15:13** Units: **mg/L** **Prep Info:** Prep Date: **9/16/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	2.00	10						2		5	

Associated samples: **H10090233-001A; H10090233-002A; H10090233-003A; H10090233-004A; H10090233-005A; H10090233-006A; H10090233-007A; H10090233-008A; H10090233-009A; H10090233-010A; H10090233-011A; H10090233-012A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: 9946

Date: *28-Sep-10*

Run ID :Run Order: **ACCU-124 (14410200)_100920A: 1** SampType: **Method Blank** Sample ID: **MB-9946** Method: **A2540 C**
Analysis Date: **09/20/10 15:41** Units: **mg/L** **Prep Info:** Prep Date: **9/20/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	3	1.0									

Associated samples: **H10090233-001A; H10090233-002A; H10090233-003A; H10090233-004A; H10090233-005A; H10090233-006A; H10090233-007A; H10090233-008A; H10090233-009A; H10090233-010A; H10090233-011A; H10090233-012A**

Run ID :Run Order: **ACCU-124 (14410200)_100920A: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS-9946** Method: **A2540 C**
Analysis Date: **09/20/10 15:41** Units: **mg/L** **Prep Info:** Prep Date: **9/20/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2010	10	2000	3	100	90	110				

Associated samples: **H10090233-001A; H10090233-002A; H10090233-003A; H10090233-004A; H10090233-005A; H10090233-006A; H10090233-007A; H10090233-008A; H10090233-009A; H10090233-010A; H10090233-011A; H10090233-012A**

Run ID :Run Order: **ACCU-124 (14410200)_100920A: 10** SampType: **Sample Duplicate** Sample ID: **H10090233-006ADUP** Method: **A2540 C**
Analysis Date: **09/20/10 15:43** Units: **mg/L** **Prep Info:** Prep Date: **9/20/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	182	10						180	1.1	5	

Associated samples: **H10090233-001A; H10090233-002A; H10090233-003A; H10090233-004A; H10090233-005A; H10090233-006A; H10090233-007A; H10090233-008A; H10090233-009A; H10090233-010A; H10090233-011A; H10090233-012A**

Run ID :Run Order: **ACCU-124 (14410200)_100920A: 17** SampType: **Sample Matrix Spike** Sample ID: **H10090233-012AMS** Method: **A2540 C**
Analysis Date: **09/20/10 15:49** Units: **mg/L** **Prep Info:** Prep Date: **9/20/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2100	10	2000	128	98	80	120				

Associated samples: **H10090233-001A; H10090233-002A; H10090233-003A; H10090233-004A; H10090233-005A; H10090233-006A; H10090233-007A; H10090233-008A; H10090233-009A; H10090233-010A; H10090233-011A; H10090233-012A**

Run ID :Run Order: **ACCU-124 (14410200)_100920A: 21** SampType: **Sample Duplicate** Sample ID: **H10090234-003ADUP** Method: **A2540 C**
Analysis Date: **09/20/10 15:50** Units: **mg/L** **Prep Info:** Prep Date: **9/20/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	4.00	10						4		5	

Associated samples: **H10090233-001A; H10090233-002A; H10090233-003A; H10090233-004A; H10090233-005A; H10090233-006A; H10090233-007A; H10090233-008A; H10090233-009A; H10090233-010A; H10090233-011A; H10090233-012A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65380

Date: *28-Sep-10*

Run ID :Run Order: **ICPMS204-B_100915A: 8** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**

Analysis Date: **09/15/10 19:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.257	0.10	0.25		103	90	110				
Arsenic	0.0495	0.0050	0.05		99	90	110				
Cadmium	0.0262	0.0010	0.025		105	90	110				
Calcium	2.54	0.50	2.5		101	90	110				
Copper	0.0504	0.010	0.05		101	90	110				
Iron	0.249	0.030	0.255		98	90	110				
Lead	0.0469	0.010	0.05		94	90	110				
Magnesium	2.54	0.50	2.5		102	90	110				
Manganese	0.242	0.010	0.25		97	90	110				
Potassium	2.52	0.50	2.5		101	90	110				
Sodium	2.51	0.50	2.5		100	90	110				
Zinc	0.0512	0.010	0.05		102	90	110				

Associated samples: **H10090233-001C; H10090233-001D; H10090233-002C; H10090233-002D; H10090233-003C; H10090233-003D; H10090233-004C; H10090233-004D; H10090233-005C; H10090233-005D; H10090233-006C; H10090233-006D; H10090233-007C; H10090233-007D; H10090233-008C; H10090233-008D; H10090233-009C; H10090233-009D; H10090233-010C; H10090233-010D; H10090233-011C; H10090233-011D; H10090233-012C; H10090233-012D**

Run ID :Run Order: **ICPMS204-B_100915A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **09/15/10 19:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	44.4	0.10	40		111	70	130				
Arsenic	0.000164	0.0050									
Cadmium	0.000319	0.0010									
Calcium	128	0.50									
Copper	0.00149	0.010									
Iron	110	0.030	100		110	70	130				
Lead	0.000193	0.010									
Magnesium	44.6	0.50									
Manganese	0.00242	0.010									
Potassium	42.4	0.50									
Sodium	112	0.50									
Zinc	0.00137	0.010									

Associated samples: **H10090233-001C; H10090233-001D; H10090233-002C; H10090233-002D; H10090233-003C; H10090233-003D; H10090233-004C; H10090233-004D; H10090233-005C; H10090233-005D; H10090233-006C; H10090233-006D; H10090233-007C; H10090233-007D; H10090233-008C; H10090233-008D; H10090233-009C; H10090233-009D; H10090233-010C; H10090233-010D; H10090233-011C; H10090233-011D; H10090233-012C; H10090233-012D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65380

Date: *28-Sep-10*

Run ID :Run Order: **ICPMS204-B_100915A: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **09/15/10 19:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	44.1	0.10	40		110	70	130				
Arsenic	0.0114	0.0050	0.01		114	70	130				
Cadmium	0.0114	0.0010	0.01		114	70	130				
Calcium	127	0.50	120		106	70	130				
Copper	0.0230	0.010	0.02		115	70	130				
Iron	111	0.030	100		111	70	130				
Lead	0.000169	0.010				0	0				
Magnesium	45.6	0.50	40		114	70	130				
Manganese	0.0243	0.010	0.02		122	70	130				
Potassium	42.6	0.50	40		106	70	130				
Sodium	114	0.50	100		114	70	130				
Zinc	0.0119	0.010	0.01		119	70	130				

Associated samples: **H10090233-001C; H10090233-001D; H10090233-002C; H10090233-002D; H10090233-003C; H10090233-003D; H10090233-004C; H10090233-004D; H10090233-005C; H10090233-005D; H10090233-006C; H10090233-006D; H10090233-007C; H10090233-007D; H10090233-008C; H10090233-008D; H10090233-009C; H10090233-009D; H10090233-010C; H10090233-010D; H10090233-011C; H10090233-011D; H10090233-012C; H10090233-012D**

Run ID :Run Order: **ICPMS204-B_100915A: 16** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**

Analysis Date: **09/15/10 20:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0003	0.0002									
Arsenic	ND	3E-05									
Cadmium	ND	1E-05									
Calcium	ND	0.006									
Copper	ND	3E-05									
Iron	0.0007	0.0002									
Lead	ND	1E-05									
Magnesium	ND	0.0010									
Manganese	ND	2E-05									
Potassium	ND	0.02									
Sodium	ND	0.02									
Zinc	ND	0.0006									

Associated samples: **H10090233-001C; H10090233-001D; H10090233-002C; H10090233-002D; H10090233-003C; H10090233-003D; H10090233-004C; H10090233-004D; H10090233-005C; H10090233-005D; H10090233-006C; H10090233-006D; H10090233-007C; H10090233-007D; H10090233-008C; H10090233-008D; H10090233-009C; H10090233-009D; H10090233-010C; H10090233-010D; H10090233-011C; H10090233-011D; H10090233-012C; H10090233-012D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65380

Date: *28-Sep-10*

Run ID :Run Order: **ICPMS204-B_100915A: 17** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**

Analysis Date: **09/15/10 20:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0490	0.10	0.05	0.0002943	97	85	115				
Arsenic	0.0494	0.0050	0.05		99	85	115				
Cadmium	0.0497	0.0010	0.05		99	85	115				
Calcium	47.4	0.50	50		95	85	115				
Copper	0.0474	0.010	0.05		95	85	115				
Iron	5.02	0.030	5	0.0006934	100	85	115				
Lead	0.0501	0.010	0.05		100	85	115				
Magnesium	48.5	0.50	50		97	85	115				
Manganese	0.0494	0.010	0.05		99	85	115				
Potassium	47.2	0.50	50		94	85	115				
Sodium	48.9	0.50	50		98	85	115				
Zinc	0.0502	0.010	0.05		100	85	115				

Associated samples: **H10090233-001C; H10090233-001D; H10090233-002C; H10090233-002D; H10090233-003C; H10090233-003D; H10090233-004C; H10090233-004D; H10090233-005C; H10090233-005D; H10090233-006C; H10090233-006D; H10090233-007C; H10090233-007D; H10090233-008C; H10090233-008D; H10090233-009C; H10090233-009D; H10090233-010C; H10090233-010D; H10090233-011C; H10090233-011D; H10090233-012C; H10090233-012D**

Run ID :Run Order: **ICPMS204-B_100915A: 51** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**

Analysis Date: **09/16/10 00:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.258	0.10	0.25		103	90	110				
Arsenic	0.0494	0.0050	0.05		99	90	110				
Cadmium	0.0260	0.0010	0.025		104	90	110				
Calcium	2.52	0.50	2.5		101	90	110				
Copper	0.0508	0.010	0.05		102	90	110				
Iron	0.248	0.030	0.255		97	90	110				
Lead	0.0477	0.010	0.05		95	90	110				
Magnesium	2.54	0.50	2.5		101	90	110				
Manganese	0.250	0.010	0.25		100	90	110				
Potassium	2.55	0.50	2.5		102	90	110				
Sodium	2.49	0.50	2.5		100	90	110				
Zinc	0.0501	0.010	0.05		100	90	110				

Associated samples: **H10090233-001C; H10090233-001D; H10090233-002C; H10090233-002D; H10090233-003C; H10090233-003D; H10090233-004C; H10090233-004D; H10090233-005C; H10090233-005D; H10090233-006C; H10090233-006D; H10090233-007C; H10090233-007D; H10090233-008C; H10090233-008D; H10090233-009C; H10090233-009D; H10090233-010C; H10090233-010D; H10090233-011C; H10090233-011D; H10090233-012C; H10090233-012D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65380

Date: *28-Sep-10*

Run ID :Run Order: **ICPMS204-B_100915A: 203** SampType: **Sample Matrix Spike** Sample ID: **H10090233-002CMS** Method: **E200.8**

Analysis Date: **09/16/10 17:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0498	0.10	0.05	0.00116	97	70	130				
Arsenic	0.0494	0.0050	0.05	0.0003064	98	70	130				
Cadmium	0.0473	0.0010	0.05		95	70	130				
Calcium	65.5	1.0	50	20.68	90	70	130				
Copper	0.0459	0.010	0.05	0.0001325	92	70	130				
Iron	4.92	0.030	5	0.002276	98	70	130				
Lead	0.0484	0.010	0.05		97	70	130				
Magnesium	58.4	1.0	50	12.74	91	70	130				
Manganese	0.0489	0.010	0.05	0.0004592	97	70	130				
Potassium	46.2	1.0	50	0.3322	92	70	130				
Sodium	47.2	1.0	50	1.099	92	70	130				
Zinc	0.0906	0.010	0.05	0.04689	88	70	130				

Associated samples: **H10090233-001C; H10090233-001D; H10090233-002C; H10090233-002D; H10090233-003C; H10090233-003D; H10090233-004C; H10090233-004D; H10090233-005C; H10090233-005D; H10090233-006C; H10090233-006D; H10090233-007C; H10090233-007D; H10090233-008C; H10090233-008D; H10090233-009C; H10090233-009D; H10090233-010C; H10090233-010D; H10090233-011C; H10090233-011D; H10090233-012C; H10090233-012D**

Run ID :Run Order: **ICPMS204-B_100915A: 204** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10090233-002CMSD** Method: **E200.8**

Analysis Date: **09/16/10 17:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0501	0.10	0.05	0.00116	98	70	130	0.04981		20	
Arsenic	0.0487	0.0050	0.05	0.0003064	97	70	130	0.04936	1.3	20	
Cadmium	0.0475	0.0010	0.05		95	70	130	0.04733	0.3	20	
Calcium	66.2	1.0	50	20.68	91	70	130	65.48	1.1	20	
Copper	0.0463	0.010	0.05	0.0001325	92	70	130	0.04594	0.7	20	
Iron	4.89	0.030	5	0.002276	98	70	130	4.915	0.4	20	
Lead	0.0488	0.010	0.05		98	70	130	0.04844	0.7	20	
Magnesium	58.6	1.0	50	12.74	92	70	130	58.35	0.5	20	
Manganese	0.0493	0.010	0.05	0.0004592	98	70	130	0.04893	0.7	20	
Potassium	47.1	1.0	50	0.3322	93	70	130	46.18	1.9	20	
Sodium	47.9	1.0	50	1.099	94	70	130	47.16	1.6	20	
Zinc	0.0907	0.010	0.05	0.04689	88	70	130	0.09065	0.1	20	

Associated samples: **H10090233-001C; H10090233-001D; H10090233-002C; H10090233-002D; H10090233-003C; H10090233-003D; H10090233-004C; H10090233-004D; H10090233-005C; H10090233-005D; H10090233-006C; H10090233-006D; H10090233-007C; H10090233-007D; H10090233-008C; H10090233-008D; H10090233-009C; H10090233-009D; H10090233-010C; H10090233-010D; H10090233-011C; H10090233-011D; H10090233-012C; H10090233-012D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65380

Date: *28-Sep-10*

Run ID :Run Order: **ICPMS204-B_100915A: 249** SampType: **Sample Matrix Spike** Sample ID: **H10090233-012CMS** Method: **E200.8**

Analysis Date: **09/16/10 23:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0599	0.10	0.05	0.01269	94	70	130				
Arsenic	0.0481	0.0050	0.05	0.0002371	96	70	130				
Cadmium	0.0487	0.0010	0.05	0.002567	92	70	130				
Calcium	67.5	1.0	50	22.94	89	70	130				
Copper	0.0473	0.010	0.05	0.002609	89	70	130				
Iron	4.75	0.030	5	0.01957	95	70	130				
Lead	0.0474	0.010	0.05	0.0005191	94	70	130				
Magnesium	57.7	1.0	50	12.47	90	70	130				
Manganese	0.557	0.010	0.05	0.5165		70	130				A
Potassium	46.5	1.0	50	0.376	92	70	130				
Sodium	46.7	1.0	50	1.252	91	70	130				
Zinc	0.591	0.010	0.05	0.5726		70	130				A

Associated samples: **H10090233-001C; H10090233-001D; H10090233-002C; H10090233-002D; H10090233-003C; H10090233-003D; H10090233-004C; H10090233-004D; H10090233-005C; H10090233-005D; H10090233-006C; H10090233-006D; H10090233-007C; H10090233-007D; H10090233-008C; H10090233-008D; H10090233-009C; H10090233-009D; H10090233-010C; H10090233-010D; H10090233-011C; H10090233-011D; H10090233-012C; H10090233-012D**

Run ID :Run Order: **ICPMS204-B_100915A: 254** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10090233-012CMSD** Method: **E200.8**

Analysis Date: **09/16/10 23:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0602	0.10	0.05	0.01269	95	70	130	0.05991		20	
Arsenic	0.0479	0.0050	0.05	0.0002371	95	70	130	0.0481	0.5	20	
Cadmium	0.0483	0.0010	0.05	0.002567	91	70	130	0.04869	0.9	20	
Calcium	67.3	1.0	50	22.94	89	70	130	67.47	0.3	20	
Copper	0.0478	0.010	0.05	0.002609	90	70	130	0.04732	1	20	
Iron	4.77	0.030	5	0.01957	95	70	130	4.747	0.5	20	
Lead	0.0471	0.010	0.05	0.0005191	93	70	130	0.04743	0.7	20	
Magnesium	57.3	1.0	50	12.47	90	70	130	57.66	0.6	20	
Manganese	0.561	0.010	0.05	0.5165		70	130	0.5571	0.7	20	A
Potassium	45.7	1.0	50	0.376	91	70	130	46.51	1.7	20	
Sodium	46.4	1.0	50	1.252	90	70	130	46.74	0.7	20	
Zinc	0.587	0.010	0.05	0.5726		70	130	0.5912	0.7	20	A

Associated samples: **H10090233-001C; H10090233-001D; H10090233-002C; H10090233-002D; H10090233-003C; H10090233-003D; H10090233-004C; H10090233-004D; H10090233-005C; H10090233-005D; H10090233-006C; H10090233-006D; H10090233-007C; H10090233-007D; H10090233-008C; H10090233-008D; H10090233-009C; H10090233-009D; H10090233-010C; H10090233-010D; H10090233-011C; H10090233-011D; H10090233-012C; H10090233-012D**

Qualifiers:
ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65380

Date: *28-Sep-10*

Run ID :Run Order: **ICPMS204-B_100915A: 257** SampType: **Sample Matrix Spike** Sample ID: **H10090233-012DMS** Method: **E200.8**

Analysis Date: **09/16/10 23:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0796	0.10	0.05	0.0339	91	70	130				
Arsenic	0.0481	0.0050	0.05	0.0004016	95	70	130				
Cadmium	0.0488	0.0010	0.05	0.002925	92	70	130				
Calcium	67.0	1.0	50	22.75	88	70	130				
Copper	0.0515	0.010	0.05	0.006309	90	70	130				
Iron	5.01	0.030	5	0.237	96	70	130				
Lead	0.0531	0.010	0.05	0.006142	94	70	130				
Magnesium	57.4	1.0	50	12.59	90	70	130				
Manganese	0.564	0.010	0.05	0.5241		70	130				A
Potassium	46.2	1.0	50	0.3822	92	70	130				
Sodium	47.0	1.0	50	1.283	91	70	130				
Zinc	0.614	0.010	0.05	0.592		70	130				A

Associated samples: **H10090233-001C; H10090233-001D; H10090233-002C; H10090233-002D; H10090233-003C; H10090233-003D; H10090233-004C; H10090233-004D; H10090233-005C; H10090233-005D; H10090233-006C; H10090233-006D; H10090233-007C; H10090233-007D; H10090233-008C; H10090233-008D; H10090233-009C; H10090233-009D; H10090233-010C; H10090233-010D; H10090233-011C; H10090233-011D; H10090233-012C; H10090233-012D**

Run ID :Run Order: **ICPMS204-B_100915A: 258** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10090233-012DMSD** Method: **E200.8**

Analysis Date: **09/17/10 00:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0809	0.10	0.05	0.0339	94	70	130	0.07964		20	
Arsenic	0.0481	0.0050	0.05	0.0004016	95	70	130	0.04814	0.1	20	
Cadmium	0.0489	0.0010	0.05	0.002925	92	70	130	0.04875	0.2	20	
Calcium	67.3	1.0	50	22.75	89	70	130	66.97	0.5	20	
Copper	0.0518	0.010	0.05	0.006309	91	70	130	0.05148	0.6	20	
Iron	5.01	0.030	5	0.237	95	70	130	5.013	0.1	20	
Lead	0.0531	0.010	0.05	0.006142	94	70	130	0.05311	0.1	20	
Magnesium	58.0	1.0	50	12.59	91	70	130	57.36	1.1	20	
Manganese	0.568	0.010	0.05	0.5241		70	130	0.5639	0.7	20	A
Potassium	46.2	1.0	50	0.3822	92	70	130	46.23	0.2	20	
Sodium	47.3	1.0	50	1.283	92	70	130	46.98	0.6	20	
Zinc	0.607	0.010	0.05	0.592		70	130	0.6135	1	20	A

Associated samples: **H10090233-001C; H10090233-001D; H10090233-002C; H10090233-002D; H10090233-003C; H10090233-003D; H10090233-004C; H10090233-004D; H10090233-005C; H10090233-005D; H10090233-006C; H10090233-006D; H10090233-007C; H10090233-007D; H10090233-008C; H10090233-008D; H10090233-009C; H10090233-009D; H10090233-010C; H10090233-010D; H10090233-011C; H10090233-011D; H10090233-012C; H10090233-012D**

Qualifiers:
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Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65382

Date: *28-Sep-10*

Run ID :Run Order: **MAN-TECH_100916A: 3** SampType: **Method Blank** Sample ID: **MBLK** Method: **A2320 B**
Analysis Date: **09/16/10 13:06** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	0.8	0.3									

Associated samples: **H10090233-001A; H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B; H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Run ID :Run Order: **MAN-TECH_100916A: 6** SampType: **Laboratory Control Sample** Sample ID: **LCS-83110** Method: **A2320 B**
Analysis Date: **09/16/10 13:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	620	4.0	600	0.77	103	90	110				

Associated samples: **H10090233-001A; H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B; H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Run ID :Run Order: **MAN-TECH_100916A: 23** SampType: **Sample Duplicate** Sample ID: **H10090233-005ADUP** Method: **A2320 B**
Analysis Date: **09/16/10 13:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	100	4.0						99.54	0.4	20	
Bicarbonate as HCO3	120	4.0						121.4	0.4	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10090233-001A; H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B; H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Run ID :Run Order: **MAN-TECH_100916A: 50** SampType: **Sample Matrix Spike** Sample ID: **H10090234-001AMS** Method: **A2320 B**
Analysis Date: **09/16/10 14:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	700	4.0	600	95.24	100	90	110				

Associated samples: **H10090233-001A; H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B; H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Run ID :Run Order: **MAN-TECH_100916A: 59** SampType: **Sample Duplicate** Sample ID: **H10090234-003ADUP** Method: **A2320 B**
Analysis Date: **09/16/10 15:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	1.2	4.0						1.26		20	

Qualifiers:
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A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65382

Date: *28-Sep-10*

Run ID :Run Order: **MAN-TECH_100916A: 59** SampType: **Sample Duplicate** Sample ID: **H10090234-003ADUP** Method: **A2320 B**
Analysis Date: **09/16/10 15:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bicarbonate as HCO3	1.5	4.0						1.53		20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10090233-001A; H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B; H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Run ID :Run Order: **MAN-TECH_100916A: 101** SampType: **Sample Matrix Spike** Sample ID: **H10090241-006AMS** Method: **A2320 B**
Analysis Date: **09/16/10 16:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	610	4.0	600	1.13	101	90	110				

Associated samples: **H10090233-001A; H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B; H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Run ID :Run Order: **MAN-TECH_100916A: 108** SampType: **Sample Duplicate** Sample ID: **H10090233-002BDUP** Method: **A2320 B**
Analysis Date: **09/16/10 17:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	110	4.0						111	0.2	20	
Bicarbonate as HCO3	140	4.0						135.4	0.2	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10090233-001A; H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B; H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Run ID :Run Order: **MAN-TECH_100916A: 123** SampType: **Sample Duplicate** Sample ID: **H10090233-008BDUP** Method: **A2320 B**
Analysis Date: **09/16/10 17:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	99	4.0						99.72	0.8	20	
Bicarbonate as HCO3	120	4.0						121.6	0.8	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10090233-001A; H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B; H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65382

Date: *28-Sep-10*

Run ID :Run Order: **MAN-TECH_100916A: 1** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV-1707** Method: **A2510 B**
Analysis Date: **09/16/10 12:58** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1010	1.0	1000		101	90	110				

Associated samples: **H10090233-001A; H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B; H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Run ID :Run Order: **MAN-TECH_100916A: 5** SampType: **Laboratory Control Sample** Sample ID: **LCS-91010** Method: **A2510 B**
Analysis Date: **09/16/10 13:08** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1440	1.0	1412		102	90	110				

Associated samples: **H10090233-001A; H10090233-002A; H10090233-003A; H10090233-004A; H10090233-005A; H10090233-006A; H10090233-007A; H10090233-008A; H10090233-009A; H10090233-010A; H10090233-011A; H10090233-012A**

Run ID :Run Order: **MAN-TECH_100916A: 24** SampType: **Sample Duplicate** Sample ID: **H10090233-005ADUP** Method: **A2510 B**
Analysis Date: **09/16/10 13:54** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	296	1.0						295.9	0	10	

Associated samples: **H10090233-001A; H10090233-002A; H10090233-003A; H10090233-004A; H10090233-005A; H10090233-006A; H10090233-007A; H10090233-008A; H10090233-009A; H10090233-010A; H10090233-011A; H10090233-012A**

Run ID :Run Order: **MAN-TECH_100916A: 77** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-91510** Method: **A2510 B**
Analysis Date: **09/16/10 15:44** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	716	1.0	718		100	90	110				

Associated samples:

Run ID :Run Order: **MAN-TECH_100916A: 109** SampType: **Sample Duplicate** Sample ID: **H10090233-002BDUP** Method: **A2510 B**
Analysis Date: **09/16/10 17:07** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	203	1.0						202	0.5	10	

Associated samples: **H10090233-001A; H10090233-002A; H10090233-003A; H10090233-004A; H10090233-005A; H10090233-006A; H10090233-007A; H10090233-008A; H10090233-009A; H10090233-010A; H10090233-011A; H10090233-012A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65382

Date: *28-Sep-10*

Run ID :Run Order: **MAN-TECH_100916A: 124** SampType: **Sample Duplicate** Sample ID: **H10090233-008BDUP** Method: **A2510 B**

Analysis Date: **09/16/10 17:51** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	261	1.0						260	**0.4**	10	

Associated samples: **H10090233-001A; H10090233-002A; H10090233-003A; H10090233-004A; H10090233-005A; H10090233-006A; H10090233-007A; H10090233-008A; H10090233-009A; H10090233-010A; H10090233-011A; H10090233-012A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65382

Date: *28-Sep-10*

Run ID :Run Order: **MAN-TECH_100916A: 2** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV-1632** Method: **A4500-H B**
Analysis Date: **09/16/10 13:01** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.98	0.10	7		100	99	101				

Associated samples: **H10090233-001A; H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B; H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Run ID :Run Order: **MAN-TECH_100916A: 25** SampType: **Sample Duplicate** Sample ID: **H10090233-005ADUP** Method: **A4500-H B**
Analysis Date: **09/16/10 13:54** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.80	0.10						7.77	0.4	2	

Associated samples: **H10090233-001A; H10090233-002A; H10090233-003A; H10090233-004A; H10090233-005A; H10090233-006A; H10090233-007A; H10090233-008A; H10090233-009A; H10090233-010A; H10090233-011A; H10090233-012A**

Run ID :Run Order: **MAN-TECH_100916A: 110** SampType: **Sample Duplicate** Sample ID: **H10090233-002BDUP** Method: **A4500-H B**
Analysis Date: **09/16/10 17:07** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.27	0.10									

Associated samples: **H10090233-001A; H10090233-002A; H10090233-003A; H10090233-004A; H10090233-005A; H10090233-006A; H10090233-007A; H10090233-008A; H10090233-009A; H10090233-010A; H10090233-011A; H10090233-012A**

Run ID :Run Order: **MAN-TECH_100916A: 125** SampType: **Sample Duplicate** Sample ID: **H10090233-008BDUP** Method: **A4500-H B**
Analysis Date: **09/16/10 17:51** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.15	0.10									

Associated samples: **H10090233-001A; H10090233-002A; H10090233-003A; H10090233-004A; H10090233-005A; H10090233-006A; H10090233-007A; H10090233-008A; H10090233-009A; H10090233-010A; H10090233-011A; H10090233-012A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65467

Date: *28-Sep-10*

Run ID :Run Order: **ICPMS204-B_100920A: 8** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **09/20/10 16:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	2.54	0.50	2.5		102	90	110				

Associated samples: **H10090233-003C**

Run ID :Run Order: **ICPMS204-B_100920A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**
Analysis Date: **09/20/10 16:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	121	0.50									

Associated samples: **H10090233-003C**

Run ID :Run Order: **ICPMS204-B_100920A: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**
Analysis Date: **09/20/10 16:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	118	0.50	120		99	70	130				

Associated samples: **H10090233-003C**

Run ID :Run Order: **ICPMS204-B_100920A: 16** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**
Analysis Date: **09/20/10 17:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.006									

Associated samples: **H10090233-003C**

Run ID :Run Order: **ICPMS204-B_100920A: 17** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**
Analysis Date: **09/20/10 17:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	48.4	0.50	50		97	85	115				

Associated samples: **H10090233-003C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65467

Date: *28-Sep-10*

Run ID :Run Order: **ICPMS204-B_100920A: 36** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **09/20/10 19:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	2.53	0.50	2.5		101	90	110				

Associated samples: **H10090233-003C**

Run ID :Run Order: **ICPMS204-B_100920A: 75** SampType: **Sample Matrix Spike** Sample ID: **H10090152-004DMS** Method: **E200.8**
Analysis Date: **09/21/10 00:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	89.8	1.0	50	55.66	68	70	130				S

Associated samples: **H10090233-003C**

Run ID :Run Order: **ICPMS204-B_100920A: 76** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10090152-004DMSD** Method: **E200.8**
Analysis Date: **09/21/10 00:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	89.4	1.0	50	55.66	67	70	130	89.85	0.5	20	S

Associated samples: **H10090233-003C**

Run ID :Run Order: **ICPMS204-B_100920A: 239** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**
Analysis Date: **09/21/10 19:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	118	0.50									

Associated samples: **H10090233-003C**

Run ID :Run Order: **ICPMS204-B_100920A: 240** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**
Analysis Date: **09/21/10 19:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	121	0.50	120		101	70	130				

Associated samples: **H10090233-003C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65507

Date: *28-Sep-10*

Run ID :Run Order: **IC101-H_100921A: 12** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV092010-12** Method: **E300.0**
Analysis Date: **09/21/10 09:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		101	90	110				
Sulfate	100	1.0	100		103	90	110				

Associated samples: **H10090233-001A**

Run ID :Run Order: **IC101-H_100921A: 13** SampType: **Method Blank** Sample ID: **ICB092010-13** Method: **E300.0**
Analysis Date: **09/21/10 09:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.2									
Sulfate	ND	0.07									

Associated samples: **H10090233-001A**

Run ID :Run Order: **IC101-H_100921A: 14** SampType: **Laboratory Fortified Blank** Sample ID: **LFB092010-14** Method: **E300.0**
Analysis Date: **09/21/10 09:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	27	1.0	25		107	90	110				
Sulfate	110	1.0	100		106	90	110				

Associated samples: **H10090233-001A**

Run ID :Run Order: **IC101-H_100921A: 15** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV092010-15** Method: **E300.0**
Analysis Date: **09/21/10 10:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		101	90	110				
Sulfate	100	1.0	100		101	90	110				

Associated samples: **H10090233-001A**

Run ID :Run Order: **IC101-H_100921A: 23** SampType: **Sample Matrix Spike** Sample ID: **H10090206-007AMS** Method: **E300.0**
Analysis Date: **09/21/10 12:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	26	1.0	25	1.688	97	90	110				
Sulfate	110	1.0	100	6.707	99	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65507

Date: *28-Sep-10*

Run ID :Run Order: **IC101-H_100921A: 23** SampType: **Sample Matrix Spike** Sample ID: **H10090206-007AMS** Method: **E300.0**

Analysis Date: **09/21/10 12:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10090233-001A**

Run ID :Run Order: **IC101-H_100921A: 24** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10090206-007AMSD** Method: **E300.0**

Analysis Date: **09/21/10 13:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25	1.688	92	90	110	26.03	5.7	20	
Sulfate	100	1.0	100	6.707	96	90	110	105.7	3.1	20	

Associated samples: **H10090233-001A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65547

Date: *28-Sep-10*

Run ID :Run Order: **IC101-H_100921B: 11** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV092210-12** Method: **E300.0**

Analysis Date: **09/22/10 12:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		98	90	110				
Sulfate	100	1.0	100		100	90	110				

Associated samples: **H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B**

Run ID :Run Order: **IC101-H_100921B: 12** SampType: **Method Blank** Sample ID: **ICB092210-13** Method: **E300.0**

Analysis Date: **09/22/10 12:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.2									
Sulfate	ND	0.07									

Associated samples: **H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B**

Run ID :Run Order: **IC101-H_100921B: 13** SampType: **Laboratory Fortified Blank** Sample ID: **LFB092210-14** Method: **E300.0**

Analysis Date: **09/22/10 12:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		102	90	110				
Sulfate	100	1.1	100		103	90	110				

Associated samples: **H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B**

Run ID :Run Order: **IC101-H_100921B: 14** SampType: **Laboratory Fortified Blank** Sample ID: **LFB092210-14** Method: **E300.0**

Analysis Date: **09/22/10 13:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23	1.0	25		94	90	110				
Sulfate	93	1.1	100		93	90	110				

Associated samples: **H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B**

Run ID :Run Order: **IC101-H_100921B: 15** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV092210-15** Method: **E300.0**

Analysis Date: **09/22/10 13:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		96	90	110				
Sulfate	96	1.0	100		96	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65547

Date: *28-Sep-10*

Run ID :Run Order: **IC101-H_100921B: 15** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV092210-15** Method: **E300.0**

Analysis Date: **09/22/10 13:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B**

Run ID :Run Order: **IC101-H_100921B: 20** SampType: **Sample Matrix Spike** Sample ID: **H10090233-002BMS** Method: **E300.0**

Analysis Date: **09/22/10 16:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		96	90	110				
Sulfate	100	1.1	100	4.301	98	90	110				

Associated samples: **H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B**

Run ID :Run Order: **IC101-H_100921B: 21** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10090233-002BMSD** Method: **E300.0**

Analysis Date: **09/22/10 16:20** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		96	90	110	24.07	0.3	20	
Sulfate	100	1.1	100	4.301	99	90	110	102.8	0	20	

Associated samples: **H10090233-001B; H10090233-002A; H10090233-002B; H10090233-003A; H10090233-003B; H10090233-004A; H10090233-004B; H10090233-005A; H10090233-005B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65568

Date: *28-Sep-10*

Run ID :Run Order: **IC101-H_100922A: 13** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV092210-12** Method: **E300.0**

Analysis Date: **09/22/10 12:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		98	90	110				
Sulfate	100	1.0	100		100	90	110				

Associated samples: **H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Run ID :Run Order: **IC101-H_100922A: 14** SampType: **Method Blank** Sample ID: **ICB092210-13** Method: **E300.0**

Analysis Date: **09/22/10 12:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.2									
Sulfate	ND	0.07									

Associated samples: **H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Run ID :Run Order: **IC101-H_100922A: 15** SampType: **Laboratory Fortified Blank** Sample ID: **LFB092210-14** Method: **E300.0**

Analysis Date: **09/22/10 12:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		102	90	110				
Sulfate	100	1.1	100		103	90	110				

Associated samples: **H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Run ID :Run Order: **IC101-H_100922A: 16** SampType: **Laboratory Fortified Blank** Sample ID: **LFB092210-14** Method: **E300.0**

Analysis Date: **09/22/10 13:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23	1.0	25		94	90	110				
Sulfate	93	1.1	100		93	90	110				

Associated samples: **H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Run ID :Run Order: **IC101-H_100922A: 19** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV092210-30** Method: **E300.0**

Analysis Date: **09/22/10 19:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		97	90	110				
Sulfate	98	1.0	100		98	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65568

Date: *28-Sep-10*

Run ID :Run Order: **IC101-H_100922A: 19** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV092210-30** Method: **E300.0**
Analysis Date: **09/22/10 19:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B**

Run ID :Run Order: **IC101-H_100922A: 28** SampType: **Sample Matrix Spike** Sample ID: **H10090233-009AMS** Method: **E300.0**
Analysis Date: **09/22/10 21:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25	0.288	97	90	110				
Sulfate	170	1.1	100	59.34	109	90	110				

Associated samples: **H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Run ID :Run Order: **IC101-H_100922A: 29** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10090233-009AMSD** Method: **E300.0**
Analysis Date: **09/22/10 22:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25	0.288	97	90	110	24.62	0.1	20	
Sulfate	170	1.1	100	59.34	108	90	110	168.3	0.4	20	

Associated samples: **H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Run ID :Run Order: **IC101-H_100922A: 33** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV092210-44** Method: **E300.0**
Analysis Date: **09/22/10 23:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		99	90	110				
Sulfate	100	1.0	100		100	90	110				

Associated samples: **H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Run ID :Run Order: **IC101-H_100922A: 41** SampType: **Sample Matrix Spike** Sample ID: **H10090234-001BMS** Method: **E300.0**
Analysis Date: **09/23/10 01:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25	0.243	98	90	110				
Sulfate	100	1.1	100	0.622	100	90	110				

Associated samples: **H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090233
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65568

Date: *28-Sep-10*

Run ID :Run Order: **IC101-H_100922A: 42** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10090234-001BMSD** Method: **E300.0**

Analysis Date: **09/23/10 01:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25	0.243	99	90	110	24.75	0.7	20	
Sulfate	100	1.1	100	0.622	100	90	110	101	0.3	20	

Associated samples: **H10090233-006A; H10090233-006B; H10090233-007A; H10090233-007B; H10090233-008A; H10090233-008B; H10090233-009A; H10090233-009B; H10090233-010A; H10090233-010B; H10090233-011A; H10090233-011B; H10090233-012A; H10090233-012B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Workorder Receipt Checklist

MT DEQ

H10090233

Login completed by: Wanda Johnson

Date Received: 9/15/2010

Reviewed by: BL2000\ablackburn

Received by: wjj

Reviewed Date: 9/20/2010

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☐	No ☑	
Container/Temp Blank temperature:	4.9°C		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

All samples received past hold time for TDS/TSS. Custody Seal on cooler & on garbage bag holding the samples inside the cooler. Contacted Jeremy Mickey re: hold times stated to analyze the TDS/TSS even though past hold time. Wj 9/16/10

Terra Graphics
ENVIRONMENTAL ENGINEERING
302 N. LAST CHANCE GULCH
HELENA, MT 59601
(406) 441-5441 Fax (406) 441-5443

CHAIN OF CUSTODY RECORD

Data to: TerraGraphics
Invoice to: MDEQ
Project Name: TO20- UBMC Monitoring
Project Location : UBMC
Quote # H499
TO: Energy Lab

Lab ID	Sample Date	Sample Time	Soil	GW	SW	Analysis (see Quote)
UBM-BRSW01-20100908	9/8/2010	12:45			X	H100 90233
UBM-BRSW01-555-20100908	9/8/2010	14:45			X	
UBM-BRSW02-20100908	9/8/2010	14:15			X	
UBM-BRSW02-444-20100908	9/8/2010	14:15			X	
UBM-BRSW3A-20100908	9/8/2010	17:10			X	
UBM-BRSW22-20100908	9/8/2010	13:45			X	
UBM-BRSW23-20100908	9/8/2010	16:30			X	
UBM-BRSW48-20100908	9/8/2010	15:45			X	
UBM-BRSW38-20100910	9/10/2010	11:30			X	
UBM-BRSW3B-20100910	9/10/2010	10:00			X	
UBM-BRSW29-333-20100910	9/10/2010	11:00			X	
UBM-BRSW29-20100910	9/10/2010	11:00			X	

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Shana Stone	9-15-10 1428	Wahl	9-15-10 1428
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time

Normal T.A.T.

REMARKS: Perform Lab QA/QC on last sample per batch

temp 4.9

Quotation for Analytical Services # H499

Company:	MT DEQ	Submitted By:	Jonathan Hager
Contact:	Shellie Haaland	Project:	Section 35 and UBMC
Address:	PO Box 200901	TAT:	7 Working days
	Helena, MT 59620-0901	QC Level:	STD
Phone:	(406) 841-5033 Fax:	Quote Date:	03-Feb-10 Expires: 31-Dec-11

Matrix	Test Name	Test	Remarks	# Samp	Unit Price		Test Total
Schedule:	**GroundWater Sampling.**						
Aqueous	Alkalinity	A2320 B	Dissolved	1	$10.00	1	$10.00
	Alkalinity	A2320 B		1	$10.00	1	$10.00
	Hardness as CaCO3	A2340 B		1	$0.00	1	$0.00
	Conductivity	A2510 B		1	$10.00	1	$10.00
	pH	A4500-H B		1	$10.00	1	$10.00
	Metals Digestion by EPA 200.2	E200.2		1	$15.00	1	$15.00
	Metals by ICP/ICPMS, Total	E200.7_8		1	$170.00	1	$170.00
	Metals by ICP/ICPMS, Dissolved	E200.7_8		1	$200.00	1	$200.00
	Anions by Ion Chromatography	E300.0	Dissolved	1	$20.00	1	$20.00
	Preparation, Dissolved Filtration	MCAWW		1	$0.00	1	$0.00
			Schedule Sample Price:		**$445.00**		
			Schedule Total:				**$445.00**
Schedule:	**Surface Water Sampling**						
Aqueous	Acidity, Total as CaCO3	A2310 B	Will analyze only if pH is below 4.5	1	$15.00	1	$15.00
	Alkalinity	A2320 B	Dissolved	1	$10.00	1	$10.00
	Alkalinity	A2320 B		1	$10.00	1	$10.00
	Hardness as CaCO3	A2340 B		1	$0.00	1	$0.00
	Conductivity	A2510 B		1	$10.00	1	$10.00
	Preparation for TDS	A2540 C		1	$0.00	1	$0.00
	Solids, Total Dissolved	A2540 C		1	$10.00	1	$10.00
	Preparation for TSS	A2540 D		1	$0.00	1	$0.00
	Solids, Total Suspended	A2540 D		1	$10.00	1	$10.00
	pH	A4500-H B		1	$10.00	1	$10.00
	Metals Digestion by EPA 200.2	E200.2		1	$15.00	1	$15.00
	Metals by ICP/ICPMS, Dissolved	E200.7_8		1	$200.00	1	$200.00
	Metals by ICP/ICPMS, Tot. Rec.	E200.7_8		1	$170.00	1	$170.00
	Anions by Ion Chromatography	E300.0		1	$20.00	1	$20.00
	Anions by Ion Chromatography	E300.0	Dissolved.	1	$20.00	1	$20.00
	Preparation, Dissolved Filtration	MCAWW		1	$0.00	1	$0.00
			Schedule Sample Price:		**$500.00**		
			Schedule Total:				**$500.00**
Schedule:	**Mine Waste Soil sampling**						
Soil	Acid Base Potential w/Sulfur Forms	Test Group		1	$55.00	1	$55.00
	*Acid/Base Potential	Sobek Modified		1		1	
	*Sulfur Forms	Sobek Modified		1		1	
	*Lime Percentage	USDA23c		1		1	

To assure that the quoted analysis and pricing specifications are provided, please include the Quote ID number referenced above on the Chain of Custody or sample submittal documents .

* Methods and/or parameters included in the indicated test group.
Subcontracting of sample analyses to an outside laboratory may be required. If so, Energy Laboratories will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.

Quotation for Analytical Services # H499

Company:	MT DEQ	Submitted By:	Jonathan Hager
Contact:	Shellie Haaland	Project:	Section 35 and UBMC
Address:	PO Box 200901	TAT:	7 Working days
	Helena, MT 59620-0901	QC Level:	STD
Phone:	(406) 841-5033 Fax:	Quote Date:	03-Feb-10 Expires: 31-Dec-11

Matrix	Test Name	Test	Remarks	# Samp	Unit Price		Test Total
Schedule:	**Mine Waste Soil sampling**						
	Conductivity	ASA10-3		1	$15.00	1	$15.00
	Lime Requirement, SMP Buffer	ASA12-3		1	$25.00	1	$25.00
	Saturated Paste pH	ASAM10-3.2		1	$15.00	1	$15.00
	Metals by ICP/ICPMS, Total	E6010.20		1	$80.00	1	$80.00
	Metals by ICP/ICPMS, Total	E6010.20		1	$80.00	1	$80.00
	Total Carbon	Leco		1	$30.00	1	$30.00
	SPLP Extraction, Regular	SW1312		1	$75.00	1	$75.00
	Digestion, Total Metals	SW3050 B		1	$25.00	1	$25.00
	Saturated Paste Extraction	USDA2		1	$0.00	1	$0.00
	Lime as CaCO3, %	USDA23c		1	$10.00	1	$10.00
			Schedule Sample Price:	**$410.00**			
			Schedule Total:				**$410.00**

Quote Comments:

Quote Sub Total:	$1,355.00
Misc:	$0.00
Discount:	30.00%
WO Adjustment:	$0.00
QUOTE TOTAL:	**$948.50**

General Comments:

To assure that the quoted analysis and pricing specifications are provided, please include the Quote ID number referenced above on the Chain of Custody or sample submittal documents .

* Methods and/or parameters included in the indicated test group.
Subcontracting of sample analyses to an outside laboratory may be required. If so, Energy Laboratories will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.

Analyte Limits For Quote #: H-499

Schedule Name TestName	Analyte	Report Limit	Units
Surface Water Sampling			
Acidity, Total as CaCO3	Acidity, Total as CaCO3	4	mg/L
Alkalinity	Alkalinity, Total as CaCO3	4	mg/L
	Bicarbonate as HCO3	4	mg/L
	Carbonate as CO3	4	mg/L
Anions by Ion Chromatography	Chloride	1	mg/L
	Sulfate	1	mg/L
Conductivity	Conductivity	1	umhos/c
Metals by ICP/ICPMS, Dissolved	Aluminum	0.03	mg/L
	Arsenic	0.003	mg/L
	Cadmium	0.00008	mg/L
	Calcium	1	mg/L
	Copper	0.001	mg/L
	Iron	0.05	mg/L
	Lead	0.0005	mg/L
	Magnesium	1	mg/L
	Manganese	0.005	mg/L
	Potassium	1	mg/L
	Sodium	1	mg/L
	Zinc	0.01	mg/L
Metals by ICP/ICPMS, Tot. Rec.	Aluminum	0.03	mg/L
	Arsenic	0.003	mg/L
	Cadmium	0.00008	mg/L
	Copper	0.001	mg/L
	Iron	0.05	mg/L
	Lead	0.0005	mg/L
	Manganese	0.005	mg/L
	Zinc	0.01	mg/L
pH	pH	0.1	s.u.
Solids, Total Dissolved	Solids, Total Dissolved TDS @ 180 C	10	mg/L
Solids, Total Suspended	Solids, Total Suspended TSS @ 105 C	10	mg/L

ANALYTICAL SUMMARY REPORT

January 10, 2011

MT DEQ
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H10030257 Quote ID: H499 - Section 35 and UBMC

Project Name: UBMC TO 20

Energy Laboratories Inc Helena MT received the following 10 samples for MT DEQ on 3/22/2010 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H10030257-001	UBM-BRSW01-20100318	03/18/10 11:46	03/22/10	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Metals Digestion by EPA 200.2 Preparation, Dissolved Filtration Preparation for TDS Preparation for TSS Solids, Total Dissolved Solids, Total Suspended
H10030257-002	UBM-Trench-20100318	03/18/10 12:30	03/22/10	Aqueous	Same As Above
H10030257-003	UBM-BRSW48-20100318	03/18/10 14:19	03/22/10	Aqueous	Same As Above
H10030257-004	UBM-BRSW23-20100318	03/18/10 14:50	03/22/10	Aqueous	Same As Above
H10030257-005	UBM-BRSW3A-20100318	03/18/10 15:15	03/22/10	Aqueous	Same As Above
H10030257-006	UBM-BRSW3B-20100318	03/18/10 15:35	03/22/10	Aqueous	Same As Above
H10030257-007	UBM-BRSW29-20100318	03/18/10 16:27	03/22/10	Aqueous	Same As Above
H10030257-008	UBM-BRSW29-333-20100318	03/18/10 16:27	03/22/10	Aqueous	Same As Above
H10030257-009	UBM-BRSW29-444-20100318	03/18/10 16:27	03/22/10	Aqueous	Same As Above
H10030257-010	UBM-BRSW38-20100318	03/18/10 17:05	03/22/10	Aqueous	Same As Above

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

CLIENT: MT DEQ
Project: UBMC TO 20
Sample Delivery Group: H10030257

Revised Date: 01/10/11
Report Date: 04/08/10

CASE NARRATIVE

The dissolved Mn and Zn detects were confirmed for sample UBM-BRSW01-20100318. Abb 4/8/10

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW01-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-001
Collection Date: 03/18/10 11:46
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	8.1	s.u.		0.1		A4500-H B	03/23/10 18:33 / hm			MAN-TECH_100323A	16	R61050
Conductivity	147	umhos/cm		1		A2510 B	03/23/10 18:33 / hm			MAN-TECH_100323A	15	R61050
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/24/10 12:48 / hm	03/24/10 12:28	A2540 D	I-124 (14410200)_100324A	3	8310
Solids, Total Dissolved TDS @ 180 C	102	mg/L		10		A2540 C	03/24/10 12:39 / hm	03/24/10 12:23	A2540 C	I-124 (14410200)_100324B	6	8309
DISSOLVED INORGANICS												
Bicarbonate as HCO3	84	mg/L		4		A2320 B	03/30/10 15:11 / hm			MAN-TECH_100330A	42	R61218
Carbonate as CO3	ND	mg/L		4		A2320 B	03/30/10 15:11 / hm			MAN-TECH_100330A	42	R61218
Chloride	ND	mg/L		1		E300.0	04/02/10 18:43 / hm			IC101-H_100402A	14	R61322
Sulfate	3	mg/L		1		E300.0	04/02/10 18:43 / hm			IC101-H_100402A	14	R61322
INORGANICS												
Alkalinity, Total as CaCO3	73	mg/L		4		A2320 B	03/23/10 18:33 / hm			MAN-TECH_100323A	14	R61050
Chloride	ND	mg/L		1		E300.0	03/25/10 02:37 / hm			IC101-H_100324A	50	R61169
Sulfate	3	mg/L		1		E300.0	03/25/10 02:37 / hm			IC101-H_100324A	50	R61169
Hardness as CaCO3	74	mg/L		1		A2340 B	04/09/10 13:00 / jdh			WATERCALC_110110A	1	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	03/29/10 16:24 / dck			ICPMS204-B_100329A	50	R61200
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 16:24 / dck			ICPMS204-B_100329A	50	R61200
Cadmium	ND	mg/L		0.00008		E200.8	03/29/10 16:24 / dck			ICPMS204-B_100329A	50	R61200
Calcium	16	mg/L		1		E200.7	03/25/10 15:11 / sld			ICP1-HE_100325C	22	R61166
Copper	ND	mg/L		0.001		E200.8	03/29/10 16:24 / dck			ICPMS204-B_100329A	50	R61200
Iron	ND	mg/L		0.05		E200.7	03/25/10 15:11 / sld			ICP1-HE_100325C	22	R61166
Lead	ND	mg/L		0.0005		E200.8	03/29/10 16:24 / dck			ICPMS204-B_100329A	50	R61200
Magnesium	9	mg/L		1		E200.7	03/25/10 15:11 / sld			ICP1-HE_100325C	22	R61166
Manganese	0.006	mg/L		0.005		E200.8	03/29/10 16:24 / dck			ICPMS204-B_100329A	50	R61200
Potassium	ND	mg/L		1		E200.7	03/25/10 15:11 / sld			ICP1-HE_100325C	22	R61166
Sodium	1	mg/L		1		E200.7	03/25/10 15:11 / sld			ICP1-HE_100325C	22	R61166
Zinc	0.02	mg/L		0.01		E200.8	03/29/10 16:24 / dck			ICPMS204-B_100329A	50	R61200
METALS, TOTAL RECOVERABLE												
Aluminum	0.07	mg/L		0.03		E200.8	03/29/10 16:52 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	54	8313
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 16:52 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	54	8313
Cadmium	ND	mg/L		0.00008		E200.8	03/29/10 16:52 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	54	8313
Copper	ND	mg/L		0.001		E200.8	03/29/10 16:52 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	54	8313

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW01-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-001
Collection Date: 03/18/10 11:46
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	ND	mg/L		0.05		E200.8	03/29/10 16:52 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	54	8313
Lead	ND	mg/L		0.0005		E200.8	03/29/10 16:52 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	54	8313
Manganese	ND	mg/L		0.005		E200.8	03/29/10 16:52 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	54	8313
Zinc	ND	mg/L		0.01		E200.8	03/29/10 16:52 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	54	8313

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-Trench-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-002
Collection Date: 03/18/10 12:30
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	8.0	s.u.		0.1		A4500-H B	03/23/10 18:40 / hm			MAN-TECH_100323A	19	R61050
Conductivity	172	umhos/cm		1		A2510 B	03/23/10 18:40 / hm			MAN-TECH_100323A	18	R61050
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/24/10 12:48 / hm	03/24/10 12:28	A2540 D	I-124 (14410200)_100324A	4	8310
Solids, Total Dissolved TDS @ 180 C	124	mg/L		10		A2540 C	03/24/10 12:39 / hm	03/24/10 12:23	A2540 C	I-124 (14410200)_100324B	7	8309
DISSOLVED INORGANICS												
Bicarbonate as HCO3	92	mg/L		4		A2320 B	03/30/10 15:18 / hm			MAN-TECH_100330A	44	R61218
Carbonate as CO3	ND	mg/L		4		A2320 B	03/30/10 15:18 / hm			MAN-TECH_100330A	44	R61218
Chloride	ND	mg/L		1		E300.0	04/02/10 19:32 / hm			IC101-H_100402A	17	R61322
Sulfate	7	mg/L		1		E300.0	04/02/10 19:32 / hm			IC101-H_100402A	17	R61322
INORGANICS												
Alkalinity, Total as CaCO3	80	mg/L		4		A2320 B	03/23/10 18:40 / hm			MAN-TECH_100323A	17	R61050
Chloride	ND	mg/L		1		E300.0	03/25/10 03:10 / hm			IC101-H_100324A	52	R61169
Sulfate	7	mg/L		1		E300.0	03/25/10 03:10 / hm			IC101-H_100324A	52	R61169
Hardness as CaCO3	96	mg/L		1		A2340 B	04/09/10 13:00 / jdh			WATERCALC_110110A	2	R68443
METALS, DISSOLVED												
Aluminum	0.03	mg/L		0.03		E200.8	03/29/10 17:26 / dck			ICPMS204-B_100329A	59	R61200
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 17:26 / dck			ICPMS204-B_100329A	59	R61200
Cadmium	ND	mg/L		0.00008		E200.8	03/29/10 17:26 / dck			ICPMS204-B_100329A	59	R61200
Calcium	20	mg/L		1		E200.7	03/25/10 15:20 / sld			ICP1-HE_100325C	25	R61166
Copper	ND	mg/L		0.001		E200.8	03/29/10 17:26 / dck			ICPMS204-B_100329A	59	R61200
Iron	ND	mg/L		0.05		E200.7	03/25/10 15:20 / sld			ICP1-HE_100325C	25	R61166
Lead	ND	mg/L		0.0005		E200.8	03/29/10 17:26 / dck			ICPMS204-B_100329A	59	R61200
Magnesium	11	mg/L		1		E200.7	03/25/10 15:20 / sld			ICP1-HE_100325C	25	R61166
Manganese	0.010	mg/L		0.005		E200.8	03/29/10 17:26 / dck			ICPMS204-B_100329A	59	R61200
Potassium	ND	mg/L		1		E200.7	03/25/10 15:20 / sld			ICP1-HE_100325C	25	R61166
Sodium	1	mg/L		1		E200.7	03/25/10 15:20 / sld			ICP1-HE_100325C	25	R61166
Zinc	0.06	mg/L		0.01		E200.8	03/29/10 17:26 / dck			ICPMS204-B_100329A	59	R61200
METALS, TOTAL RECOVERABLE												
Aluminum	0.50	mg/L		0.03		E200.8	03/29/10 17:33 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	60	8313
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 17:33 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	60	8313
Cadmium	ND	mg/L		0.00008		E200.8	03/29/10 17:33 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	60	8313
Copper	0.004	mg/L		0.001		E200.8	03/29/10 17:33 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	60	8313

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-Trench-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-002
Collection Date: 03/18/10 12:30
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	0.51	mg/L		0.05		E200.8	03/29/10 17:33 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	60	8313
Lead	0.0050	mg/L		0.0005		E200.8	03/29/10 17:33 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	60	8313
Manganese	0.018	mg/L		0.005		E200.8	03/29/10 17:33 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	60	8313
Zinc	0.05	mg/L		0.01		E200.8	03/29/10 17:33 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	60	8313

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW48-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-003
Collection Date: 03/18/10 14:19
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.9	s.u.		0.1		A4500-H B	03/23/10 18:46 / hm			MAN-TECH_100323A	22	R61050
Conductivity	247	umhos/cm		1		A2510 B	03/23/10 18:46 / hm			MAN-TECH_100323A	21	R61050
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/24/10 12:48 / hm	03/24/10 12:28	A2540 D	I-124 (14410200)_100324A	5	8310
Solids, Total Dissolved TDS @ 180 C	166	mg/L		10		A2540 C	03/24/10 12:40 / hm	03/24/10 12:23	A2540 C	I-124 (14410200)_100324B	8	8309
DISSOLVED INORGANICS												
Bicarbonate as HCO3	83	mg/L		4		A2320 B	03/30/10 15:25 / hm			MAN-TECH_100330A	46	R61218
Carbonate as CO3	ND	mg/L		4		A2320 B	03/30/10 15:25 / hm			MAN-TECH_100330A	46	R61218
Chloride	ND	mg/L		1		E300.0	04/02/10 19:48 / hm			IC101-H_100402A	18	R61322
Sulfate	54	mg/L		1		E300.0	04/02/10 19:48 / hm			IC101-H_100402A	18	R61322
INORGANICS												
Alkalinity, Total as CaCO3	71	mg/L		4		A2320 B	03/23/10 18:46 / hm			MAN-TECH_100323A	20	R61050
Chloride	ND	mg/L		1		E300.0	03/25/10 04:15 / hm			IC101-H_100324A	56	R61169
Sulfate	53	mg/L		1		E300.0	03/25/10 04:15 / hm			IC101-H_100324A	56	R61169
Hardness as CaCO3	128	mg/L		1		A2340 B	04/09/10 13:00 / jdh			WATERCALC_110110A	3	R68443
METALS, DISSOLVED												
Aluminum	0.04	mg/L		0.03		E200.8	03/29/10 17:40 / dck			ICPMS204-B_100329A	61	R61200
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 17:40 / dck			ICPMS204-B_100329A	61	R61200
Cadmium	0.00302	mg/L		0.00008		E200.8	03/29/10 17:40 / dck			ICPMS204-B_100329A	61	R61200
Calcium	27	mg/L		1		E200.7	03/25/10 15:23 / sld			ICP1-HE_100325C	26	R61166
Copper	0.008	mg/L		0.001		E200.8	03/29/10 17:40 / dck			ICPMS204-B_100329A	61	R61200
Iron	0.23	mg/L		0.05		E200.7	03/25/10 15:23 / sld			ICP1-HE_100325C	26	R61166
Lead	0.0036	mg/L		0.0005		E200.8	03/29/10 17:40 / dck			ICPMS204-B_100329A	61	R61200
Magnesium	15	mg/L		1		E200.7	03/25/10 15:23 / sld			ICP1-HE_100325C	26	R61166
Manganese	0.816	mg/L		0.005		E200.8	03/29/10 17:40 / dck			ICPMS204-B_100329A	61	R61200
Potassium	ND	mg/L		1		E200.7	03/25/10 15:23 / sld			ICP1-HE_100325C	26	R61166
Sodium	1	mg/L		1		E200.7	03/25/10 15:23 / sld			ICP1-HE_100325C	26	R61166
Zinc	0.70	mg/L		0.01		E200.8	03/29/10 17:40 / dck			ICPMS204-B_100329A	61	R61200
METALS, TOTAL RECOVERABLE												
Aluminum	0.11	mg/L		0.03		E200.8	03/29/10 17:48 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	62	8313
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 17:48 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	62	8313
Cadmium	0.00344	mg/L		0.00008		E200.8	03/29/10 17:48 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	62	8313
Copper	0.015	mg/L		0.001		E200.8	03/29/10 17:48 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	62	8313

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW48-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-003
Collection Date: 03/18/10 14:19
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	0.81	mg/L		0.05		E200.8	03/29/10 17:48 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	62	8313
Lead	0.0175	mg/L		0.0005		E200.8	03/29/10 17:48 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	62	8313
Manganese	0.886	mg/L		0.005		E200.8	03/29/10 17:48 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	62	8313
Zinc	0.75	mg/L		0.01		E200.8	03/29/10 17:48 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	62	8313

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW23-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-004
Collection Date: 03/18/10 14:50
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	8.0	s.u.		0.1		A4500-H B	03/23/10 18:53 / hm			MAN-TECH_100323A	25	R61050
Conductivity	234	umhos/cm		1		A2510 B	03/23/10 18:53 / hm			MAN-TECH_100323A	24	R61050
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/24/10 12:48 / hm	03/24/10 12:28	A2540 D	I-124 (14410200)_100324A	6	8310
Solids, Total Dissolved TDS @ 180 C	154	mg/L		10		A2540 C	03/24/10 12:40 / hm	03/24/10 12:23	A2540 C	I-124 (14410200)_100324B	9	8309
DISSOLVED INORGANICS												
Bicarbonate as HCO3	100	mg/L		4		A2320 B	03/30/10 15:32 / hm			MAN-TECH_100330A	48	R61218
Carbonate as CO3	ND	mg/L		4		A2320 B	03/30/10 15:32 / hm			MAN-TECH_100330A	48	R61218
Chloride	ND	mg/L		1		E300.0	04/02/10 20:05 / hm			IC101-H_100402A	19	R61322
Sulfate	44	mg/L		1		E300.0	04/02/10 20:05 / hm			IC101-H_100402A	19	R61322
INORGANICS												
Alkalinity, Total as CaCO3	73	mg/L		4		A2320 B	03/23/10 18:53 / hm			MAN-TECH_100323A	23	R61050
Chloride	ND	mg/L		1		E300.0	03/25/10 04:48 / hm			IC101-H_100324A	58	R61169
Sulfate	44	mg/L		1		E300.0	03/25/10 04:48 / hm			IC101-H_100324A	58	R61169
Hardness as CaCO3	117	mg/L		1		A2340 B	04/09/10 13:00 / jdh			WATERCALC_110110A	4	R68443
METALS, DISSOLVED												
Aluminum	0.04	mg/L		0.03		E200.8	03/29/10 17:55 / dck			ICPMS204-B_100329A	63	R61200
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 17:55 / dck			ICPMS204-B_100329A	63	R61200
Cadmium	0.00214	mg/L		0.00008		E200.8	03/29/10 17:55 / dck			ICPMS204-B_100329A	63	R61200
Calcium	25	mg/L		1		E200.7	03/25/10 15:26 / sld			ICP1-HE_100325C	27	R61166
Copper	0.003	mg/L		0.001		E200.8	03/29/10 17:55 / dck			ICPMS204-B_100329A	63	R61200
Iron	ND	mg/L		0.05		E200.7	03/25/10 15:26 / sld			ICP1-HE_100325C	27	R61166
Lead	0.0014	mg/L		0.0005		E200.8	03/29/10 17:55 / dck			ICPMS204-B_100329A	63	R61200
Magnesium	13	mg/L		1		E200.7	03/25/10 15:26 / sld			ICP1-HE_100325C	27	R61166
Manganese	0.102	mg/L		0.005		E200.8	03/29/10 17:55 / dck			ICPMS204-B_100329A	63	R61200
Potassium	ND	mg/L		1		E200.7	03/25/10 15:26 / sld			ICP1-HE_100325C	27	R61166
Sodium	1	mg/L		1		E200.7	03/25/10 15:26 / sld			ICP1-HE_100325C	27	R61166
Zinc	0.56	mg/L		0.01		E200.8	03/29/10 17:55 / dck			ICPMS204-B_100329A	63	R61200
METALS, TOTAL RECOVERABLE												
Aluminum	0.08	mg/L		0.03		E200.8	03/29/10 18:02 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	64	8313
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 18:02 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	64	8313
Cadmium	0.00230	mg/L		0.00008		E200.8	03/29/10 18:02 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	64	8313
Copper	0.006	mg/L		0.001		E200.8	03/29/10 18:02 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	64	8313

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW23-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-004
Collection Date: 03/18/10 14:50
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	0.11	mg/L		0.05		E200.8	03/29/10 18:02 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	64	8313
Lead	0.0065	mg/L		0.0005		E200.8	03/29/10 18:02 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	64	8313
Manganese	0.118	mg/L		0.005		E200.8	03/29/10 18:02 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	64	8313
Zinc	0.58	mg/L		0.01		E200.8	03/29/10 18:02 / dck	03/25/10 08:38	E200.2	ICPMS204-B_100329A	64	8313

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW3A-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-005
Collection Date: 03/18/10 15:15
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	8.0	s.u.		0.1		A4500-H B	03/23/10 18:59 / hm			MAN-TECH_100323A	28	R61050
Conductivity	287	umhos/cm		1		A2510 B	03/23/10 18:59 / hm			MAN-TECH_100323A	27	R61050
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/24/10 12:49 / hm	03/24/10 12:28	A2540 D	-124 (14410200)_100324A	7	8310
Solids, Total Dissolved TDS @ 180 C	182	mg/L		10		A2540 C	03/24/10 12:40 / hm	03/24/10 12:23	A2540 C	124 (14410200)_100324B	10	8309
DISSOLVED INORGANICS												
Bicarbonate as HCO3	110	mg/L		4		A2320 B	03/30/10 15:39 / hm			MAN-TECH_100330A	50	R61218
Carbonate as CO3	ND	mg/L		4		A2320 B	03/30/10 15:39 / hm			MAN-TECH_100330A	50	R61218
Chloride	ND	mg/L		1		E300.0	04/02/10 20:21 / hm			IC101-H_100402A	20	R61322
Sulfate	51	mg/L		1		E300.0	04/02/10 20:21 / hm			IC101-H_100402A	20	R61322
INORGANICS												
Alkalinity, Total as CaCO3	95	mg/L		4		A2320 B	03/23/10 18:59 / hm			MAN-TECH_100323A	26	R61050
Chloride	ND	mg/L		1		E300.0	03/25/10 05:21 / hm			IC101-H_100324A	60	R61169
Sulfate	52	mg/L		1		E300.0	03/25/10 05:21 / hm			IC101-H_100324A	60	R61169
Hardness as CaCO3	151	mg/L		1		A2340 B	04/09/10 13:00 / jdh			WATERCALC_110110A	5	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	03/29/10 21:35 / dck			ICPMS204-B_100329A	95	R61200
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 21:35 / dck			ICPMS204-B_100329A	95	R61200
Cadmium	0.00030	mg/L		0.00008		E200.8	03/29/10 21:35 / dck			ICPMS204-B_100329A	95	R61200
Calcium	33	mg/L		1		E200.7	03/25/10 15:29 / sld			ICP1-HE_100325C	28	R61166
Copper	0.003	mg/L		0.001		E200.8	03/29/10 21:35 / dck			ICPMS204-B_100329A	95	R61200
Iron	ND	mg/L		0.05		E200.7	03/25/10 15:29 / sld			ICP1-HE_100325C	28	R61166
Lead	ND	mg/L		0.0005		E200.8	03/29/10 21:35 / dck			ICPMS204-B_100329A	95	R61200
Magnesium	17	mg/L		1		E200.7	03/25/10 15:29 / sld			ICP1-HE_100325C	28	R61166
Manganese	0.083	mg/L		0.005		E200.8	03/29/10 21:35 / dck			ICPMS204-B_100329A	95	R61200
Potassium	ND	mg/L		1		E200.7	03/25/10 15:29 / sld			ICP1-HE_100325C	28	R61166
Sodium	1	mg/L		1		E200.7	03/25/10 15:29 / sld			ICP1-HE_100325C	28	R61166
Zinc	0.15	mg/L		0.01		E200.8	03/29/10 21:35 / dck			ICPMS204-B_100329A	95	R61200
METALS, TOTAL RECOVERABLE												
Aluminum	0.04	mg/L		0.03		E200.8	03/29/10 21:42 / dck			ICPMS204-B_100329A	96	R61200
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 21:42 / dck			ICPMS204-B_100329A	96	R61200
Cadmium	0.00032	mg/L		0.00008		E200.8	03/29/10 21:42 / dck			ICPMS204-B_100329A	96	R61200
Copper	0.004	mg/L		0.001		E200.8	03/29/10 21:42 / dck			ICPMS204-B_100329A	96	R61200

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW3A-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-005
Collection Date: 03/18/10 15:15
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	ND	mg/L		0.05		E200.8	03/29/10 21:42 / dck			ICPMS204-B_100329A	96	R61200
Lead	ND	mg/L		0.0005		E200.8	03/29/10 21:42 / dck			ICPMS204-B_100329A	96	R61200
Manganese	0.082	mg/L		0.005		E200.8	03/29/10 21:42 / dck			ICPMS204-B_100329A	96	R61200
Zinc	0.14	mg/L		0.01		E200.8	03/29/10 21:42 / dck			ICPMS204-B_100329A	96	R61200

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW3B-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-006
Collection Date: 03/18/10 15:35
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.9	s.u.		0.1		A4500-H B	03/23/10 19:22 / hm			MAN-TECH_100323A	33	R61050
Conductivity	277	umhos/cm		1		A2510 B	03/23/10 19:22 / hm			MAN-TECH_100323A	32	R61050
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/24/10 12:49 / hm	03/24/10 12:28	A2540 D	-124 (14410200)_100324A	8	8310
Solids, Total Dissolved TDS @ 180 C	174	mg/L		10		A2540 C	03/24/10 12:40 / hm	03/24/10 12:23	A2540 C	124 (14410200)_100324B	11	8309
DISSOLVED INORGANICS												
Bicarbonate as HCO3	100	mg/L		4		A2320 B	03/31/10 17:35 / hm			MAN-TECH_100331A	57	R61261
Carbonate as CO3	ND	mg/L		4		A2320 B	03/31/10 17:35 / hm			MAN-TECH_100331A	57	R61261
Chloride	1	mg/L		1		E300.0	04/02/10 21:10 / hm			IC101-H_100402A	23	R61322
Sulfate	37	mg/L		1		E300.0	04/02/10 21:10 / hm			IC101-H_100402A	23	R61322
INORGANICS												
Alkalinity, Total as CaCO3	95	mg/L		4		A2320 B	03/23/10 19:22 / hm			MAN-TECH_100323A	31	R61050
Chloride	ND	mg/L		1		E300.0	03/25/10 06:27 / hm			IC101-H_100324A	64	R61169
Sulfate	46	mg/L		1		E300.0	03/25/10 06:27 / hm			IC101-H_100324A	64	R61169
Hardness as CaCO3	138	mg/L		1		A2340 B	04/09/10 13:00 / jdh			WATERCALC_110110A	6	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	03/29/10 22:10 / dck			ICPMS204-B_100329A	100	R61200
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 22:10 / dck			ICPMS204-B_100329A	100	R61200
Cadmium	0.00028	mg/L		0.00008		E200.8	03/29/10 22:10 / dck			ICPMS204-B_100329A	100	R61200
Calcium	30	mg/L		1		E200.7	03/25/10 15:39 / sld			ICP1-HE_100325C	31	R61166
Copper	0.001	mg/L		0.001		E200.8	03/29/10 22:10 / dck			ICPMS204-B_100329A	100	R61200
Iron	ND	mg/L		0.05		E200.7	03/25/10 15:39 / sld			ICP1-HE_100325C	31	R61166
Lead	ND	mg/L		0.0005		E200.8	03/29/10 22:10 / dck			ICPMS204-B_100329A	100	R61200
Magnesium	16	mg/L		1		E200.7	03/25/10 15:39 / sld			ICP1-HE_100325C	31	R61166
Manganese	0.023	mg/L		0.005		E200.8	03/29/10 22:10 / dck			ICPMS204-B_100329A	100	R61200
Potassium	ND	mg/L		1		E200.7	03/25/10 15:39 / sld			ICP1-HE_100325C	31	R61166
Sodium	1	mg/L		1		E200.7	03/25/10 15:39 / sld			ICP1-HE_100325C	31	R61166
Zinc	0.13	mg/L		0.01		E200.8	03/29/10 22:10 / dck			ICPMS204-B_100329A	100	R61200
METALS, TOTAL RECOVERABLE												
Aluminum	ND	mg/L		0.03		E200.8	03/29/10 22:17 / dck			ICPMS204-B_100329A	101	R61200
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 22:17 / dck			ICPMS204-B_100329A	101	R61200
Cadmium	0.00030	mg/L		0.00008		E200.8	03/29/10 22:17 / dck			ICPMS204-B_100329A	101	R61200
Copper	0.001	mg/L		0.001		E200.8	03/29/10 22:17 / dck			ICPMS204-B_100329A	101	R61200

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW3B-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-006
Collection Date: 03/18/10 15:35
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	ND	mg/L		0.05		E200.8	03/29/10 22:17 / dck			ICPMS204-B_100329A	101	R61200
Lead	ND	mg/L		0.0005		E200.8	03/29/10 22:17 / dck			ICPMS204-B_100329A	101	R61200
Manganese	0.028	mg/L		0.005		E200.8	03/29/10 22:17 / dck			ICPMS204-B_100329A	101	R61200
Zinc	0.13	mg/L		0.01		E200.8	03/29/10 22:17 / dck			ICPMS204-B_100329A	101	R61200

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW29-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-007
Collection Date: 03/18/10 16:27
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	8.0	s.u.		0.1		A4500-H B	03/23/10 19:29 / hm			MAN-TECH_100323A	36	R61050
Conductivity	202	umhos/cm		1		A2510 B	03/23/10 19:29 / hm			MAN-TECH_100323A	35	R61050
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/24/10 12:50 / hm	03/24/10 12:28	A2540 D	-124 (14410200)_100324A	9	8310
Solids, Total Dissolved TDS @ 180 C	140	mg/L		10		A2540 C	03/24/10 12:41 / hm	03/24/10 12:23	A2540 C	124 (14410200)_100324B	12	8309
DISSOLVED INORGANICS												
Bicarbonate as HCO3	82	mg/L		4		A2320 B	03/30/10 15:58 / hm			MAN-TECH_100330A	58	R61218
Carbonate as CO3	ND	mg/L		4		A2320 B	03/30/10 15:58 / hm			MAN-TECH_100330A	58	R61218
Chloride	ND	mg/L		1		E300.0	04/02/10 21:27 / hm			IC101-H_100402A	24	R61322
Sulfate	30	mg/L		1		E300.0	04/02/10 21:27 / hm			IC101-H_100402A	24	R61322
INORGANICS												
Alkalinity, Total as CaCO3	72	mg/L		4		A2320 B	03/23/10 19:29 / hm			MAN-TECH_100323A	34	R61050
Chloride	ND	mg/L		1		E300.0	03/25/10 07:32 / hm			IC101-H_100324A	68	R61169
Sulfate	29	mg/L		1		E300.0	03/25/10 07:32 / hm			IC101-H_100324A	68	R61169
Hardness as CaCO3	105	mg/L		1		A2340 B	04/09/10 13:00 / jdh			WATERCALC_110110A	7	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	03/29/10 22:24 / dck			ICPMS204-B_100329A	102	R61200
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 22:24 / dck			ICPMS204-B_100329A	102	R61200
Cadmium	0.00174	mg/L		0.00008		E200.8	03/29/10 22:24 / dck			ICPMS204-B_100329A	102	R61200
Calcium	23	mg/L		1		E200.7	03/25/10 15:42 / sld			ICP1-HE_100325C	32	R61166
Copper	0.003	mg/L		0.001		E200.8	03/29/10 22:24 / dck			ICPMS204-B_100329A	102	R61200
Iron	ND	mg/L		0.05		E200.7	03/25/10 15:42 / sld			ICP1-HE_100325C	32	R61166
Lead	0.0008	mg/L		0.0005		E200.8	03/29/10 22:24 / dck			ICPMS204-B_100329A	102	R61200
Magnesium	11	mg/L		1		E200.7	03/25/10 15:42 / sld			ICP1-HE_100325C	32	R61166
Manganese	0.295	mg/L		0.005		E200.8	03/29/10 22:24 / dck			ICPMS204-B_100329A	102	R61200
Potassium	ND	mg/L		1		E200.7	03/25/10 15:42 / sld			ICP1-HE_100325C	32	R61166
Sodium	1	mg/L		1		E200.7	03/25/10 15:42 / sld			ICP1-HE_100325C	32	R61166
Zinc	0.44	mg/L		0.01		E200.8	03/29/10 22:24 / dck			ICPMS204-B_100329A	102	R61200
METALS, TOTAL RECOVERABLE												
Aluminum	0.04	mg/L		0.03		E200.8	03/29/10 22:58 / dck			ICPMS204-B_100329A	107	R61200
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 22:58 / dck			ICPMS204-B_100329A	107	R61200
Cadmium	0.00185	mg/L		0.00008		E200.8	03/29/10 22:58 / dck			ICPMS204-B_100329A	107	R61200
Copper	0.007	mg/L		0.001		E200.8	03/29/10 22:58 / dck			ICPMS204-B_100329A	107	R61200

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW29-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-007
Collection Date: 03/18/10 16:27
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	0.28	mg/L		0.05		E200.8	03/29/10 22:58 / dck			ICPMS204-B_100329A	107	R61200
Lead	0.0070	mg/L		0.0005		E200.8	03/29/10 22:58 / dck			ICPMS204-B_100329A	107	R61200
Manganese	0.296	mg/L		0.005		E200.8	03/29/10 22:58 / dck			ICPMS204-B_100329A	107	R61200
Zinc	0.44	mg/L		0.01		E200.8	03/29/10 22:58 / dck			ICPMS204-B_100329A	107	R61200

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW29-333-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-008
Collection Date: 03/18/10 16:27
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	5.5	s.u.		0.1		A4500-H B	03/23/10 19:34 / hm			MAN-TECH_100323A	39	R61050
Conductivity	ND	umhos/cm		1		A2510 B	03/23/10 19:34 / hm			MAN-TECH_100323A	38	R61050
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/24/10 12:50 / hm	03/24/10 12:28	A2540 D	124 (14410200)_100324A	10	8310
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	03/24/10 12:41 / hm	03/24/10 12:23	A2540 C	124 (14410200)_100324B	13	8309
DISSOLVED INORGANICS												
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	03/30/10 16:03 / hm			MAN-TECH_100330A	60	R61218
Carbonate as CO3	ND	mg/L		4		A2320 B	03/30/10 16:03 / hm			MAN-TECH_100330A	60	R61218
Chloride	ND	mg/L		1		E300.0	04/02/10 22:16 / hm			IC101-H_100402A	27	R61322
Sulfate	ND	mg/L		1		E300.0	04/02/10 22:16 / hm			IC101-H_100402A	27	R61322
INORGANICS												
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	03/23/10 19:34 / hm			MAN-TECH_100323A	37	R61050
Chloride	ND	mg/L		1		E300.0	03/25/10 08:05 / hm			IC101-H_100324A	70	R61169
Sulfate	ND	mg/L		1		E300.0	03/25/10 08:05 / hm			IC101-H_100324A	70	R61169
Hardness as CaCO3	ND	mg/L		1		A2340 B	04/09/10 13:00 / jdh			WATERCALC_110110A	8	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	03/29/10 23:05 / dck			ICPMS204-B_100329A	108	R61200
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 23:05 / dck			ICPMS204-B_100329A	108	R61200
Cadmium	ND	mg/L		0.00008		E200.8	03/29/10 23:05 / dck			ICPMS204-B_100329A	108	R61200
Calcium	ND	mg/L		1		E200.7	03/25/10 15:45 / sld			ICP1-HE_100325C	33	R61166
Copper	ND	mg/L		0.001		E200.8	03/29/10 23:05 / dck			ICPMS204-B_100329A	108	R61200
Iron	ND	mg/L		0.05		E200.7	03/25/10 15:45 / sld			ICP1-HE_100325C	33	R61166
Lead	ND	mg/L		0.0005		E200.8	03/29/10 23:05 / dck			ICPMS204-B_100329A	108	R61200
Magnesium	ND	mg/L		1		E200.7	03/25/10 15:45 / sld			ICP1-HE_100325C	33	R61166
Manganese	ND	mg/L		0.005		E200.8	03/29/10 23:05 / dck			ICPMS204-B_100329A	108	R61200
Potassium	ND	mg/L		1		E200.7	03/25/10 15:45 / sld			ICP1-HE_100325C	33	R61166
Sodium	ND	mg/L		1		E200.7	03/25/10 15:45 / sld			ICP1-HE_100325C	33	R61166
Zinc	ND	mg/L		0.01		E200.8	03/29/10 23:05 / dck			ICPMS204-B_100329A	108	R61200
METALS, TOTAL RECOVERABLE												
Aluminum	ND	mg/L		0.03		E200.8	03/29/10 23:12 / dck			ICPMS204-B_100329A	109	R61200
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 23:12 / dck			ICPMS204-B_100329A	109	R61200
Cadmium	ND	mg/L		0.00008		E200.8	03/29/10 23:12 / dck			ICPMS204-B_100329A	109	R61200
Copper	ND	mg/L		0.001		E200.8	03/29/10 23:12 / dck			ICPMS204-B_100329A	109	R61200

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW29-333-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-008
Collection Date: 03/18/10 16:27
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	ND	mg/L		0.05		E200.8	03/29/10 23:12 / dck			ICPMS204-B_100329A	109	R61200
Lead	ND	mg/L		0.0005		E200.8	03/29/10 23:12 / dck			ICPMS204-B_100329A	109	R61200
Manganese	ND	mg/L		0.005		E200.8	03/29/10 23:12 / dck			ICPMS204-B_100329A	109	R61200
Zinc	ND	mg/L		0.01		E200.8	03/29/10 23:12 / dck			ICPMS204-B_100329A	109	R61200

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW29-444-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-009
Collection Date: 03/18/10 16:27
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	5.5	s.u.		0.1		A4500-H B	03/23/10 19:58 / hm			MAN-TECH_100323A	46	R61050
Conductivity	ND	umhos/cm		1		A2510 B	03/23/10 19:58 / hm			MAN-TECH_100323A	45	R61050
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/24/10 12:50 / hm	03/24/10 12:28	A2540 D	124 (14410200)_100324A	11	8310
Solids, Total Dissolved TDS @ 180 C	ND	mg/L		10		A2540 C	03/24/10 12:41 / hm	03/24/10 12:23	A2540 C	124 (14410200)_100324B	14	8309
DISSOLVED INORGANICS												
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	03/30/10 16:08 / hm			MAN-TECH_100330A	62	R61218
Carbonate as CO3	ND	mg/L		4		A2320 B	03/30/10 16:08 / hm			MAN-TECH_100330A	62	R61218
Chloride	ND	mg/L		1		E300.0	04/02/10 22:32 / hm			IC101-H_100402A	28	R61322
Sulfate	ND	mg/L		1		E300.0	04/02/10 22:32 / hm			IC101-H_100402A	28	R61322
INORGANICS												
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	03/23/10 19:58 / hm			MAN-TECH_100323A	44	R61050
Chloride	ND	mg/L		1		E300.0	03/25/10 08:38 / hm			IC101-H_100324A	72	R61169
Sulfate	ND	mg/L		1		E300.0	03/25/10 08:38 / hm			IC101-H_100324A	72	R61169
Hardness as CaCO3	ND	mg/L		1		A2340 B	04/09/10 13:00 / jdh			WATERCALC_110110A	9	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	03/29/10 23:19 / dck			ICPMS204-B_100329A	110	R61200
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 23:19 / dck			ICPMS204-B_100329A	110	R61200
Cadmium	ND	mg/L		0.00008		E200.8	03/29/10 23:19 / dck			ICPMS204-B_100329A	110	R61200
Calcium	ND	mg/L		1		E200.7	03/25/10 15:48 / sld			ICP1-HE_100325C	34	R61166
Copper	ND	mg/L		0.001		E200.8	03/29/10 23:19 / dck			ICPMS204-B_100329A	110	R61200
Iron	ND	mg/L		0.05		E200.7	03/25/10 15:48 / sld			ICP1-HE_100325C	34	R61166
Lead	ND	mg/L		0.0005		E200.8	03/29/10 23:19 / dck			ICPMS204-B_100329A	110	R61200
Magnesium	ND	mg/L		1		E200.7	03/25/10 15:48 / sld			ICP1-HE_100325C	34	R61166
Manganese	ND	mg/L		0.005		E200.8	03/29/10 23:19 / dck			ICPMS204-B_100329A	110	R61200
Potassium	ND	mg/L		1		E200.7	03/25/10 15:48 / sld			ICP1-HE_100325C	34	R61166
Sodium	ND	mg/L		1		E200.7	03/25/10 15:48 / sld			ICP1-HE_100325C	34	R61166
Zinc	ND	mg/L		0.01		E200.8	03/29/10 23:19 / dck			ICPMS204-B_100329A	110	R61200
METALS, TOTAL RECOVERABLE												
Aluminum	ND	mg/L		0.03		E200.8	03/29/10 23:26 / dck			ICPMS204-B_100329A	111	R61200
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 23:26 / dck			ICPMS204-B_100329A	111	R61200
Cadmium	ND	mg/L		0.00008		E200.8	03/29/10 23:26 / dck			ICPMS204-B_100329A	111	R61200
Copper	ND	mg/L		0.001		E200.8	03/29/10 23:26 / dck			ICPMS204-B_100329A	111	R61200

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW29-444-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-009
Collection Date: 03/18/10 16:27
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	ND	mg/L		0.05		E200.8	03/29/10 23:26 / dck			ICPMS204-B_100329A	111	R61200
Lead	ND	mg/L		0.0005		E200.8	03/29/10 23:26 / dck			ICPMS204-B_100329A	111	R61200
Manganese	ND	mg/L		0.005		E200.8	03/29/10 23:26 / dck			ICPMS204-B_100329A	111	R61200
Zinc	ND	mg/L		0.01		E200.8	03/29/10 23:26 / dck			ICPMS204-B_100329A	111	R61200

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW38-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-010
Collection Date: 03/18/10 17:05
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.8	s.u.		0.1		A4500-H B	03/23/10 20:04 / hm			MAN-TECH_100323A	49	R61050
Conductivity	241	umhos/cm		1		A2510 B	03/23/10 20:04 / hm			MAN-TECH_100323A	48	R61050
Solids, Total Suspended TSS @ 105 C	ND	mg/L		10		A2540 D	03/24/10 12:50 / hm	03/24/10 12:28	A2540 D	124 (14410200)_100324A	12	8310
Solids, Total Dissolved TDS @ 180 C	164	mg/L		10		A2540 C	03/24/10 12:41 / hm	03/24/10 12:23	A2540 C	124 (14410200)_100324B	15	8309
DISSOLVED INORGANICS												
Bicarbonate as HCO3	77	mg/L		4		A2320 B	03/30/10 16:15 / hm			MAN-TECH_100330A	64	R61218
Carbonate as CO3	ND	mg/L		4		A2320 B	03/30/10 16:15 / hm			MAN-TECH_100330A	64	R61218
Chloride	ND	mg/L		1		E300.0	04/02/10 22:49 / hm			IC101-H_100402A	29	R61322
Sulfate	56	mg/L		1		E300.0	04/02/10 22:49 / hm			IC101-H_100402A	29	R61322
INORGANICS												
Alkalinity, Total as CaCO3	69	mg/L		4		A2320 B	03/23/10 20:04 / hm			MAN-TECH_100323A	47	R61050
Chloride	ND	mg/L		1		E300.0	03/25/10 09:11 / hm			IC101-H_100324A	74	R61169
Sulfate	52	mg/L		1		E300.0	03/25/10 09:11 / hm			IC101-H_100324A	74	R61169
Hardness as CaCO3	123	mg/L		1		A2340 B	04/09/10 13:00 / jdh			WATERCALC_110110A	10	R68443
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	03/29/10 23:33 / dck			ICPMS204-B_100329A	112	R61200
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 23:33 / dck			ICPMS204-B_100329A	112	R61200
Cadmium	0.00325	mg/L		0.00008		E200.8	03/29/10 23:33 / dck			ICPMS204-B_100329A	112	R61200
Calcium	26	mg/L		1		E200.7	03/25/10 15:57 / sld			ICP1-HE_100325C	37	R61166
Copper	0.004	mg/L		0.001		E200.8	03/29/10 23:33 / dck			ICPMS204-B_100329A	112	R61200
Iron	ND	mg/L		0.05		E200.7	03/25/10 15:57 / sld			ICP1-HE_100325C	37	R61166
Lead	0.0010	mg/L		0.0005		E200.8	03/29/10 23:33 / dck			ICPMS204-B_100329A	112	R61200
Magnesium	14	mg/L		1		E200.7	03/25/10 15:57 / sld			ICP1-HE_100325C	37	R61166
Manganese	0.594	mg/L		0.005		E200.8	03/29/10 23:33 / dck			ICPMS204-B_100329A	112	R61200
Potassium	ND	mg/L		1		E200.7	03/25/10 15:57 / sld			ICP1-HE_100325C	37	R61166
Sodium	1	mg/L		1		E200.7	03/25/10 15:57 / sld			ICP1-HE_100325C	37	R61166
Zinc	0.82	mg/L		0.01		E200.8	03/29/10 23:33 / dck			ICPMS204-B_100329A	112	R61200
METALS, TOTAL RECOVERABLE												
Aluminum	0.06	mg/L		0.03		E200.8	03/29/10 23:40 / dck			ICPMS204-B_100329A	113	R61200
Arsenic	ND	mg/L		0.003		E200.8	03/29/10 23:40 / dck			ICPMS204-B_100329A	113	R61200
Cadmium	0.00359	mg/L		0.00008		E200.8	03/29/10 23:40 / dck			ICPMS204-B_100329A	113	R61200
Copper	0.011	mg/L		0.001		E200.8	03/29/10 23:40 / dck			ICPMS204-B_100329A	113	R61200

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-BRSW38-20100318
Project: UBMC TO 20
Matrix: Aqueous

Lab ID: H10030257-010
Collection Date: 03/18/10 17:05
DateReceived: 03/22/10
Report Date: 04/08/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE												
Iron	0.48	mg/L		0.05		E200.8	03/29/10 23:40 / dck			ICPMS204-B_100329A	113	R61200
Lead	0.0116	mg/L		0.0005		E200.8	03/29/10 23:40 / dck			ICPMS204-B_100329A	113	R61200
Manganese	0.604	mg/L		0.005		E200.8	03/29/10 23:40 / dck			ICPMS204-B_100329A	113	R61200
Zinc	0.86	mg/L		0.01		E200.8	03/29/10 23:40 / dck			ICPMS204-B_100329A	113	R61200

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 8309

Date: *10-Jan-11*

Run ID :Run Order: **ACCU-124 (14410200)_100324B: 1** SampType: **Method Blank** Sample ID: **MB-8309** Method: **A2540 C**
Analysis Date: **03/24/10 12:37** Units: **mg/L** **Prep Info:** Prep Date: **3/24/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	ND	1									

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **ACCU-124 (14410200)_100324B: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS-8309** Method: **A2540 C**
Analysis Date: **03/24/10 12:38** Units: **mg/L** **Prep Info:** Prep Date: **3/24/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2010	10	2000		101	90	110				

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **ACCU-124 (14410200)_100324B: 5** SampType: **Sample Matrix Spike** Sample ID: **H10030252-001AMS** Method: **A2540 C**
Analysis Date: **03/24/10 12:39** Units: **mg/L** **Prep Info:** Prep Date: **3/24/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2160	10	2000	238	96	80	120				

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **ACCU-124 (14410200)_100324B: 17** SampType: **Sample Duplicate** Sample ID: **H10030263-001ADUP** Method: **A2540 C**
Analysis Date: **03/24/10 12:42** Units: **mg/L** **Prep Info:** Prep Date: **3/24/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	312	10						312	0.0	5	

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **ACCU-124 (14410200)_100324B: 19** SampType: **Sample Matrix Spike** Sample ID: **H10030265-001AMS** Method: **A2540 C**
Analysis Date: **03/24/10 12:43** Units: **mg/L** **Prep Info:** Prep Date: **3/24/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2160	10	2000	204	98	80	120				

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 8309

Date: *10-Jan-11*

Run ID :Run Order: **ACCU-124 (14410200)_100324B: 21** SampType: **Sample Duplicate** Sample ID: **H10030266-003ADUP** Method: **A2540 C**

Analysis Date: **03/24/10 12:43** Units: **mg/L** **Prep Info:** Prep Date: **3/24/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	124	10						130	**4.7**	5	

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 8310

Date: *10-Jan-11*

Run ID :Run Order: **ACCU-124 (14410200)_100324A: 1** SampType: **Method Blank** Sample ID: **MB-8310** Method: **A2540 D**
Analysis Date: **03/24/10 12:47** Units: **mg/L** **Prep Info:** Prep Date: **3/24/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	1									

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **ACCU-124 (14410200)_100324A: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS-8310** Method: **A2540 D**
Analysis Date: **03/24/10 12:47** Units: **mg/L** **Prep Info:** Prep Date: **3/24/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	2110	10	2000		106	70	130				

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **ACCU-124 (14410200)_100324A: 21** SampType: **Sample Duplicate** Sample ID: **H10030270-002ADUP** Method: **A2540 D**
Analysis Date: **03/24/10 12:54** Units: **mg/L** **Prep Info:** Prep Date: **3/24/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	7.00	10						7		5	

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **ACCU-124 (14410200)_100324A: 23** SampType: **Sample Duplicate** Sample ID: **H10030276-001BDUP** Method: **A2540 D**
Analysis Date: **03/24/10 12:54** Units: **mg/L** **Prep Info:** Prep Date: **3/24/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	17.0	10						17		5	

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 8313

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100329A: 37** SampType: **Method Blank** Sample ID: **MB-8313** Method: **E200.8**
Analysis Date: **03/29/10 14:54** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.001	0.0008									
Arsenic	0.0002	4E-05									
Cadmium	ND	2E-05									
Copper	ND	0.0002									
Iron	0.001	0.0009									
Lead	ND	2E-05									
Manganese	9E-05	3E-05									
Zinc	0.002	0.0007									

Associated samples: **H10030257-001D; H10030257-002D; H10030257-003D; H10030257-004D**

Run ID :Run Order: **ICPMS204-B_100329A: 38** SampType: **Laboratory Control Sample** Sample ID: **LCS-8313** Method: **E200.8**
Analysis Date: **03/29/10 15:01** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.59	0.10	2.5	0.001376	104	85	115				
Arsenic	0.495	0.0050	0.5	0.0001718	99	85	115				
Cadmium	0.268	0.0010	0.25		107	85	115				
Copper	0.484	0.010	0.5		97	85	115				
Iron	2.60	0.030	2.5	0.001403	104	85	115				
Lead	0.515	0.010	0.5		103	85	115				
Manganese	2.59	0.010	2.5	0.0000855	104	85	115				
Zinc	0.510	0.010	0.5	0.001644	102	85	115				

Associated samples: **H10030257-001D; H10030257-002D; H10030257-003D; H10030257-004D**

Run ID :Run Order: **ICPMS204-B_100329A: 46** SampType: **Sample Matrix Spike** Sample ID: **H10030240-001AMS5** Method: **E200.8**
Analysis Date: **03/29/10 15:56** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5.29	0.10	5	0.2118	101	70	130				
Arsenic	0.982	0.0050	1	0.000417	98	70	130				
Cadmium	0.529	0.0010	0.5	0.0000496	106	70	130				
Copper	0.960	0.010	1		96	70	130				
Iron	5.40	0.030	5	0.204	104	70	130				
Lead	1.03	0.010	1	0.0001598	103	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 8313

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100329A: 46** SampType: **Sample Matrix Spike** Sample ID: **H10030240-001AMS5** Method: **E200.8**

Analysis Date: **03/29/10 15:56** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	5.20	0.010	5	0.008334	104	70	130				
Zinc	1.00	0.010	1	0.004886	100	70	130				

Associated samples: **H10030257-001D; H10030257-002D; H10030257-003D; H10030257-004D**

Run ID :Run Order: **ICPMS204-B_100329A: 47** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030240-001AMSD5** Method: **E200.8**

Analysis Date: **03/29/10 16:03** Units: **mg/L** **Prep Info:** Prep Date: **3/25/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5.43	0.10	5	0.2118	104	70	130	5.286	2.7	20	
Arsenic	0.990	0.0050	1	0.000417	99	70	130	0.9818	0.8	20	
Cadmium	0.526	0.0010	0.5	0.0000496	105	70	130	0.5288	0.5	20	
Copper	0.960	0.010	1		96	70	130	0.9596	0.0	20	
Iron	5.40	0.030	5	0.204	104	70	130	5.4	0.0	20	
Lead	1.03	0.010	1	0.0001598	103	70	130	1.028	0.1	20	
Manganese	5.20	0.010	5	0.008334	104	70	130	5.196	0.2	20	
Zinc	1.00	0.010	1	0.004886	100	70	130	1.004	0.2	20	

Associated samples: **H10030257-001D; H10030257-002D; H10030257-003D; H10030257-004D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61050

Date: *10-Jan-11*

Run ID :Run Order: **MAN-TECH_100323A: 3** SampType: **Method Blank** Sample ID: **MBLK** Method: **A2320 B**
Analysis Date: **03/23/10 17:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	0.9									

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **MAN-TECH_100323A: 5** SampType: **Laboratory Control Sample** Sample ID: **LCS** Method: **A2320 B**
Analysis Date: **03/23/10 18:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	580	4.0	600		96	90	110				

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **MAN-TECH_100323A: 11** SampType: **Sample Duplicate** Sample ID: **H10030255-001ADUP** Method: **A2320 B**
Analysis Date: **03/23/10 18:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	270	4.0						267	0.2	20	

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **MAN-TECH_100323A: 29** SampType: **Sample Matrix Spike** Sample ID: **H10030257-005BMS** Method: **A2320 B**
Analysis Date: **03/23/10 19:08** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	730	4.0	600	94.93	106	90	110				

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **MAN-TECH_100323A: 30** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030257-005BMSD** Method: **A2320 B**
Analysis Date: **03/23/10 19:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	730	4.0	600	94.93	106	90	110	728.1	0.5	20	

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61050

Date: *10-Jan-11*

Run ID :Run Order: **MAN-TECH_100323A: 62** SampType: **Sample Matrix Spike** Sample ID: **H10030266-003AMS** Method: **A2320 B**

Analysis Date: **03/23/10 20:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	740	4.0	600	96.73	**107**	90	110				

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **MAN-TECH_100323A: 63** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030266-003AMSD** Method: **A2320 B**

Analysis Date: **03/23/10 20:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	740	4.0	600	96.73	**107**	90	110	738.6	**0.3**	20	

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61050

Date: *10-Jan-11*

Run ID :Run Order: **MAN-TECH_100323A: 1** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV** Method: **A2510 B**
Analysis Date: **03/23/10 17:46** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	720	1.0	717.5		100	90	110				

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **MAN-TECH_100323A: 4** SampType: **Laboratory Control Sample** Sample ID: **LCS** Method: **A2510 B**
Analysis Date: **03/23/10 17:57** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1430	1.0	1412		101	90	110				

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **MAN-TECH_100323A: 12** SampType: **Sample Duplicate** Sample ID: **H10030255-001ADUP** Method: **A2510 B**
Analysis Date: **03/23/10 18:26** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	531	1.0						531.7	0.2	10	

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **MAN-TECH_100323A: 40** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **A2510 B**
Analysis Date: **03/23/10 19:36** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	716	1.0	718		100	90	110				

Associated samples:

Run ID :Run Order: **MAN-TECH_100323A: 54** SampType: **Sample Duplicate** Sample ID: **H10030263-001ADUP** Method: **A2510 B**
Analysis Date: **03/23/10 20:18** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	482	1.0						481.8	0.0	10	

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61050

Date: *10-Jan-11*

Run ID :Run Order: **MAN-TECH_100323A: 13** SampType: **Sample Duplicate** Sample ID: **H10030255-001ADUP** Method: **A4500-H B**

Analysis Date: **03/23/10 18:26** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.89	0.10						7.89	0.0	2	

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **MAN-TECH_100323A: 55** SampType: **Sample Duplicate** Sample ID: **H10030263-001ADUP** Method: **A4500-H B**

Analysis Date: **03/23/10 20:18** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.78	0.10						7.77	0.1	2	

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61166

Date: *10-Jan-11*

Run ID :Run Order: **ICP1-HE_100325C: 4** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV** Method: **E200.7**

Analysis Date: **03/25/10 14:09** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	41.9	1.0	40		105	95	105				
Iron	4.14	0.030	4		103	95	105				
Magnesium	40.3	1.0	40		101	95	105				
Potassium	39.9	1.0	40		100	95	105				
Sodium	41.2	1.0	40		103	95	105				

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-006C; H10030257-007C; H10030257-008C; H10030257-009C; H10030257-010C**

Run ID :Run Order: **ICP1-HE_100325C: 6** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-1** Method: **E200.7**

Analysis Date: **03/25/10 14:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	24.8	1.0	25		99	95	105				
Iron	2.63	0.030	2.5		105	95	105				
Magnesium	25.6	1.0	25		102	95	105				
Potassium	24.4	1.0	25		98	95	105				
Sodium	25.4	1.0	25		102	95	105				

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-006C; H10030257-007C; H10030257-008C; H10030257-009C; H10030257-010C**

Run ID :Run Order: **ICP1-HE_100325C: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.7**

Analysis Date: **03/25/10 14:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	544	1.0	500		109	80	120				
Iron	203	0.030	200		101	80	120				
Magnesium	574	1.0	500		115	80	120				
Potassium	0.0191	1.0				0	0				
Sodium	0.0436	1.0				0	0				

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-006C; H10030257-007C; H10030257-008C; H10030257-009C; H10030257-010C**

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61166

Date: *10-Jan-11*

Run ID :Run Order: **ICP1-HE_100325C: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.7**

Analysis Date: **03/25/10 14:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	530	1.0	500		106	80	120				
Iron	195	0.030	200		98	80	120				
Magnesium	559	1.0	500		112	80	120				
Potassium	21.1	1.0	20		106	80	120				
Sodium	22.6	1.0	20		113	80	120				

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-006C; H10030257-007C; H10030257-008C; H10030257-009C; H10030257-010C**

Run ID :Run Order: **ICP1-HE_100325C: 11** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **E200.7**

Analysis Date: **03/25/10 14:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.3	1.0	25		101	90	110				
Iron	2.63	0.030	2.5		105	90	110				
Magnesium	25.4	1.0	25		102	90	110				
Potassium	24.4	1.0	25		98	90	110				
Sodium	25.8	1.0	25		103	90	110				

Associated samples: **H10030257-001C**

Run ID :Run Order: **ICP1-HE_100325C: 13** SampType: **Method Blank** Sample ID: **MBLK** Method: **E200.7**

Analysis Date: **03/25/10 14:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.1									
Iron	ND	0.002									
Magnesium	ND	0.02									
Potassium	ND	0.04									
Sodium	ND	0.1									

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-006C; H10030257-007C; H10030257-008C; H10030257-009C; H10030257-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61166

Date: *10-Jan-11*

Run ID :Run Order: **ICP1-HE_100325C: 14** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.7**

Analysis Date: **03/25/10 14:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9.47	1.0	10		95	85	115				
Iron	1.07	0.030	1		107	85	115				
Magnesium	10.0	1.0	10		100	85	115				
Potassium	10.3	1.0	10		103	85	115				
Sodium	10.6	1.0	10		106	85	115				

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-006C; H10030257-007C; H10030257-008C; H10030257-009C; H10030257-010C**

Run ID :Run Order: **ICP1-HE_100325C: 15** SampType: **Laboratory Control Sample** Sample ID: **LCS** Method: **E200.7**

Analysis Date: **03/25/10 14:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	19.6	1.0	20		98	90	110				
Iron	1.99	0.030	2		100	90	110				
Magnesium	19.4	1.0	20		97	90	110				
Potassium	19.8	1.0	20		99	90	110				
Sodium	20.2	1.0	20		101	90	110				

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-006C; H10030257-007C; H10030257-008C; H10030257-009C; H10030257-010C**

Run ID :Run Order: **ICP1-HE_100325C: 23** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **E200.7**

Analysis Date: **03/25/10 15:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	24.0	1.0	25		96	90	110				
Iron	2.49	0.030	2.5		100	90	110				
Magnesium	24.4	1.0	25		98	90	110				
Potassium	24.9	1.0	25		100	90	110				
Sodium	25.7	1.0	25		103	90	110				

Associated samples: **H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-006C; H10030257-007C; H10030257-008C; H10030257-009C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61166

Date: *10-Jan-11*

Run ID :Run Order: **ICP1-HE_100325C: 29** SampType: **Sample Matrix Spike** Sample ID: **H10030257-005CMS2** Method: **E200.7**

Analysis Date: **03/25/10 15:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	53.2	1.0	20	32.68	103	70	130				
Iron	2.16	0.030	2	0.0055	108	70	130				
Magnesium	37.4	1.0	20	16.97	102	70	130				
Potassium	21.5	1.0	20	0.633	105	70	130				
Sodium	21.8	1.0	20	1.401	102	70	130				

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-006C; H10030257-007C; H10030257-008C; H10030257-009C; H10030257-010C**

Run ID :Run Order: **ICP1-HE_100325C: 30** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030257-005CMSD2** Method: **E200.7**

Analysis Date: **03/25/10 15:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	52.8	1.0	20	32.68	100	70	130	53.24	0.9	20	
Iron	2.08	0.030	2	0.0055	104	70	130	2.158	3.8	20	
Magnesium	36.8	1.0	20	16.97	99	70	130	37.4	1.6	20	
Potassium	21.8	1.0	20	0.633	106	70	130	21.54	1.4	20	
Sodium	22.5	1.0	20	1.401	106	70	130	21.76	3.4	20	

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-006C; H10030257-007C; H10030257-008C; H10030257-009C; H10030257-010C**

Run ID :Run Order: **ICP1-HE_100325C: 35** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **E200.7**

Analysis Date: **03/25/10 15:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	23.3	1.0	25		93	90	110				
Iron	2.54	0.030	2.5		102	90	110				
Magnesium	24.6	1.0	25		98	90	110				
Potassium	25.1	1.0	25		100	90	110				
Sodium	25.8	1.0	25		103	90	110				

Associated samples: **H10030257-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61166

Date: *10-Jan-11*

Run ID :Run Order: **ICP1-HE_100325C: 42** SampType: **Sample Matrix Spike** Sample ID: **H10030290-004CMS2** Method: **E200.7**

Analysis Date: **03/25/10 16:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	67.0	1.0	20	43.27	119	70	130				
Iron	2.24	0.030	2	0.2025	102	70	130				
Magnesium	29.9	1.0	20	10.08	99	70	130				
Potassium	25.9	1.0	20	6	100	70	130				
Sodium	45.9	1.0	20	24.95	105	70	130				

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-006C; H10030257-007C; H10030257-008C; H10030257-009C; H10030257-010C**

Run ID :Run Order: **ICP1-HE_100325C: 43** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030290-004CMSD2** Method: **E200.7**

Analysis Date: **03/25/10 16:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	65.4	1.0	20	43.27	110	70	130	67.02	2.5	20	
Iron	2.33	0.030	2	0.2025	106	70	130	2.236	4.1	20	
Magnesium	30.4	1.0	20	10.08	102	70	130	29.86	1.9	20	
Potassium	25.8	1.0	20	6	99	70	130	25.9	0.4	20	
Sodium	44.1	1.0	20	24.95	96	70	130	45.88	4.0	20	

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-006C; H10030257-007C; H10030257-008C; H10030257-009C; H10030257-010C**

Run ID :Run Order: **ICP1-HE_100325C: 45** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.7**

Analysis Date: **03/25/10 16:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9.95	1.0	10		99	85	115				
Iron	1.00	0.030	1		100	85	115				
Magnesium	9.50	1.0	10		95	85	115				
Potassium	10.3	1.0	10		103	85	115				
Sodium	10.3	1.0	10		103	85	115				

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-006C; H10030257-007C; H10030257-008C; H10030257-009C; H10030257-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61166

Date: *10-Jan-11*

Run ID :Run Order: **ICP1-HE_100325C: 79** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.7**

Analysis Date: **03/25/10 18:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9.91	1.0	10		99	85	115				
Iron	1.03	0.030	1		103	85	115				
Magnesium	9.75	1.0	10		98	85	115				
Potassium	10.3	1.0	10		103	85	115				
Sodium	10.3	1.0	10		103	85	115				

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-006C; H10030257-007C; H10030257-008C; H10030257-009C; H10030257-010C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61169

Date: *10-Jan-11*

Run ID :Run Order: **IC101-H_100324A: 1** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV032410-12** Method: **E300.0**

Analysis Date: **03/24/10 13:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	12	1.0	12.5		94	90	110				
Sulfate	52	1.0	50		104	90	110				

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **IC101-H_100324A: 2** SampType: **Method Blank** Sample ID: **ICB032410-13** Method: **E300.0**

Analysis Date: **03/24/10 13:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.05									
Sulfate	ND	0.1									

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **IC101-H_100324A: 3** SampType: **Laboratory Fortified Blank** Sample ID: **LFB032410-14** Method: **E300.0**

Analysis Date: **03/24/10 13:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		95	90	110				
Sulfate	51	1.0	50		103	90	110				

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **IC101-H_100324A: 47** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV032410-58** Method: **E300.0**

Analysis Date: **03/25/10 01:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23	1.0	25		92	90	110				
Sulfate	49	1.0	50		99	90	110				

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B**

Run ID :Run Order: **IC101-H_100324A: 53** SampType: **Sample Matrix Spike** Sample ID: **H10030257-002BMS** Method: **E300.0**

Analysis Date: **03/25/10 03:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25	0.461	92	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61169

Date: *10-Jan-11*

Run ID :Run Order: **IC101-H_100324A: 53** SampType: **Sample Matrix Spike** Sample ID: **H10030257-002BMS** Method: **E300.0**
Analysis Date: **03/25/10 03:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	58	1.0	50	6.962	102	90	110				

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **IC101-H_100324A: 54** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030257-002BMSD** Method: **E300.0**
Analysis Date: **03/25/10 03:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23	1.0	25	0.461	91	90	110	23.57	1.1	20	
Sulfate	57	1.0	50	6.962	101	90	110	57.97	1.0	20	

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **IC101-H_100324A: 61** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV032410-72** Method: **E300.0**
Analysis Date: **03/25/10 05:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23	1.0	25		94	90	110				
Sulfate	50	1.0	50		100	90	110				

Associated samples: **H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **IC101-H_100324A: 66** SampType: **Sample Matrix Spike** Sample ID: **H10030257-007AMS** Method: **E300.0**
Analysis Date: **03/25/10 07:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23	1.0	25	0.433	90	90	110				
Sulfate	79	1.0	50	28.36	102	90	110				

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **IC101-H_100324A: 67** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030257-007AMSD** Method: **E300.0**
Analysis Date: **03/25/10 07:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23	1.0	25	0.433	90	90	110	22.97	0.2	20	
Sulfate	79	1.0	50	28.36	101	90	110	79.39	0.7	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61169

Date: *10-Jan-11*

Run ID :Run Order: **IC101-H_100324A: 67** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030257-007AMSD** Method: **E300.0**

Analysis Date: **03/25/10 07:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **IC101-H_100324A: 79** SampType: **Sample Matrix Spike** Sample ID: **H10030265-001AMS** Method: **E300.0**

Analysis Date: **03/25/10 10:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25	1.382	91	90	110				
Sulfate	76	1.0	50	25.28	101	90	110				

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Run ID :Run Order: **IC101-H_100324A: 80** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030265-001AMSD** Method: **E300.0**

Analysis Date: **03/25/10 10:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25	1.382	90	90	110	24.18	1.6	20	
Sulfate	76	1.0	50	25.28	102	90	110	76.02	0.5	20	

Associated samples: **H10030257-001B; H10030257-002B; H10030257-003B; H10030257-004B; H10030257-005B; H10030257-006B; H10030257-007B; H10030257-008B; H10030257-009B; H10030257-010B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61200

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100329A: 8** SampType: **Initial Calibration Verification Standard** Sample ID: **QCS STD** Method: **E200.8**

Analysis Date: **03/29/10 11:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.253	0.10	0.25		101	90	110				
Arsenic	0.0505	0.0050	0.05		101	90	110				
Cadmium	0.0262	0.0010	0.025		105	90	110				
Copper	0.0522	0.010	0.05		104	90	110				
Iron	0.255	0.030	0.255		100	90	110				
Lead	0.0495	0.010	0.05		99	90	110				
Manganese	0.250	0.010	0.25		100	90	110				
Zinc	0.0527	0.010	0.05		105	90	110				

Associated samples: **H10030257-001C; H10030257-001D; H10030257-002C; H10030257-002D; H10030257-003C; H10030257-003D; H10030257-004C; H10030257-004D; H10030257-005C; H10030257-005D; H10030257-006C; H10030257-006D; H10030257-007C; H10030257-007D; H10030257-008C; H10030257-008D; H10030257-009C; H10030257-009D; H10030257-010C; H10030257-010D**

Run ID :Run Order: **ICPMS204-B_100329A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **03/29/10 11:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	42.1	0.10	40		105	70	130				
Arsenic	0.000186	0.0050									
Cadmium	0.000720	0.0010									
Copper	0.00195	0.010									
Iron	103	0.030	100		103	70	130				
Lead	7.30E-05	0.010									
Manganese	0.00231	0.010									
Zinc	0.00125	0.010									

Associated samples: **H10030257-001C; H10030257-001D; H10030257-002C; H10030257-002D; H10030257-003C; H10030257-003D; H10030257-004C; H10030257-004D; H10030257-005C; H10030257-005D; H10030257-006C; H10030257-006D; H10030257-007C; H10030257-007D; H10030257-008C; H10030257-008D; H10030257-009C; H10030257-009D; H10030257-010C; H10030257-010D**

Run ID :Run Order: **ICPMS204-B_100329A: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **03/29/10 11:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	42.7	0.10	40		107	70	130				
Arsenic	0.0103	0.0050	0.01		103	70	130				
Cadmium	0.0107	0.0010	0.01		107	70	130				
Copper	0.0224	0.010	0.02		112	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61200

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100329A: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **03/29/10 11:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	103	0.030	100		103	70	130				
Lead	6.60E-05	0.010				0	0				
Manganese	0.0238	0.010	0.02		119	70	130				
Zinc	0.0110	0.010	0.01		110	70	130				

Associated samples: **H10030257-001C; H10030257-001D; H10030257-002C; H10030257-002D; H10030257-003C; H10030257-003D; H10030257-004C; H10030257-004D; H10030257-005C; H10030257-005D; H10030257-006C; H10030257-006D; H10030257-007C; H10030257-007D; H10030257-008C; H10030257-008D; H10030257-009C; H10030257-009D; H10030257-010C; H10030257-010D**

Run ID :Run Order: **ICPMS204-B_100329A: 34** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**

Analysis Date: **03/29/10 14:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.0002									
Arsenic	ND	3E-05									
Cadmium	ND	1E-05									
Copper	ND	3E-05									
Iron	ND	0.0002									
Lead	ND	1E-05									
Manganese	3E-05	2E-05									
Zinc	0.0009	0.0006									

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-005D; H10030257-006C; H10030257-006D; H10030257-007C; H10030257-007D; H10030257-008C; H10030257-008D; H10030257-009C; H10030257-009D; H10030257-010C; H10030257-010D**

Run ID :Run Order: **ICPMS204-B_100329A: 35** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**

Analysis Date: **03/29/10 14:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0490	0.10	0.05	-0.0001246	98	85	115				
Arsenic	0.0474	0.0050	0.05	0.0000149	95	85	115				
Cadmium	0.0489	0.0010	0.05	0.0000076	98	85	115				
Copper	0.0469	0.010	0.05	-0.0001008	94	85	115				
Iron	4.92	0.030	5	0.000028	98	85	115				
Lead	0.0501	0.010	0.05	0.0000042	100	85	115				
Manganese	0.0512	0.010	0.05	0.0000261	102	85	115				
Zinc	0.0502	0.010	0.05	0.0008519	99	85	115				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61200

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100329A: 35** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**

Analysis Date: **03/29/10 14:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-005D; H10030257-006C; H10030257-006D; H10030257-007C; H10030257-007D; H10030257-008C; H10030257-008D; H10030257-009C; H10030257-009D; H10030257-010C; H10030257-010D**

Run ID :Run Order: **ICPMS204-B_100329A: 51** SampType: **Sample Matrix Spike** Sample ID: **H10030257-001CMS** Method: **E200.8**

Analysis Date: **03/29/10 16:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0719	0.10	0.05	0.02452	95	70	130				
Arsenic	0.0485	0.0050	0.05	0.0003264	96	70	130				
Cadmium	0.0494	0.0010	0.05		99	70	130				
Copper	0.0462	0.010	0.05	0.0006326	91	70	130				
Iron	4.93	0.030	5	0.01595	98	70	130				
Lead	0.0497	0.010	0.05	0.0000542	99	70	130				
Manganese	0.0563	0.010	0.05	0.005554	102	70	130				
Zinc	0.0651	0.010	0.05	0.01823	94	70	130				

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-005D; H10030257-006C; H10030257-006D; H10030257-007C; H10030257-007D; H10030257-008C; H10030257-008D; H10030257-009C; H10030257-009D; H10030257-010C; H10030257-010D**

Run ID :Run Order: **ICPMS204-B_100329A: 52** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030257-001CMSD** Method: **E200.8**

Analysis Date: **03/29/10 16:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0731	0.10	0.05	0.02452	97	70	130	0.07192		20	
Arsenic	0.0483	0.0050	0.05	0.0003264	96	70	130	0.04849	0.4	20	
Cadmium	0.0493	0.0010	0.05		99	70	130	0.04936	0.2	20	
Copper	0.0467	0.010	0.05	0.0006326	92	70	130	0.04625	1.0	20	
Iron	4.97	0.030	5	0.01595	99	70	130	4.93	0.8	20	
Lead	0.0500	0.010	0.05	0.0000542	100	70	130	0.0497	0.6	20	
Manganese	0.0561	0.010	0.05	0.005554	101	70	130	0.05631	0.4	20	
Zinc	0.0643	0.010	0.05	0.01823	92	70	130	0.06513	1.3	20	

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-005D; H10030257-006C; H10030257-006D; H10030257-007C; H10030257-007D; H10030257-008C; H10030257-008D; H10030257-009C; H10030257-009D; H10030257-010C; H10030257-010D**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61200

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100329A: 75** SampType: **Initial Calibration Verification Standard** Sample ID: **QCS STD** Method: **E200.8**

Analysis Date: **03/29/10 19:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.253	0.10	0.25		101	90	110				
Arsenic	0.0498	0.0050	0.05		100	90	110				
Cadmium	0.0258	0.0010	0.025		103	90	110				
Copper	0.0504	0.010	0.05		101	90	110				
Iron	0.256	0.030	0.255		101	90	110				
Lead	0.0496	0.010	0.05		99	90	110				
Manganese	0.255	0.010	0.25		102	90	110				
Zinc	0.0499	0.010	0.05		100	90	110				

Associated samples: **H10030257-001C; H10030257-001D; H10030257-002C; H10030257-002D; H10030257-003C; H10030257-003D; H10030257-004C; H10030257-004D; H10030257-005C; H10030257-005D; H10030257-006C; H10030257-006D; H10030257-007C; H10030257-007D; H10030257-008C; H10030257-008D; H10030257-009C; H10030257-009D; H10030257-010C; H10030257-010D**

Run ID :Run Order: **ICPMS204-B_100329A: 97** SampType: **Sample Matrix Spike** Sample ID: **H10030257-005DMS** Method: **E200.8**

Analysis Date: **03/29/10 21:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0890	0.10	0.05	0.04285	92	70	130				
Arsenic	0.0491	0.0050	0.05	0.0002518	98	70	130				
Cadmium	0.0488	0.0010	0.05	0.000318	97	70	130				
Copper	0.0508	0.010	0.05	0.004232	93	70	130				
Iron	4.99	0.030	5	0.04307	99	70	130				
Lead	0.0498	0.010	0.05	0.0002766	99	70	130				
Manganese	0.129	0.010	0.05	0.08181	95	70	130				
Zinc	0.181	0.010	0.05	0.1399	82	70	130				

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-005D; H10030257-006C; H10030257-006D; H10030257-007C; H10030257-007D; H10030257-008C; H10030257-008D; H10030257-009C; H10030257-009D; H10030257-010C; H10030257-010D**

Run ID :Run Order: **ICPMS204-B_100329A: 98** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030257-005DMSD** Method: **E200.8**

Analysis Date: **03/29/10 21:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0897	0.10	0.05	0.04285	94	70	130	0.089		20	
Arsenic	0.0499	0.0050	0.05	0.0002518	99	70	130	0.04911	1.6	20	
Cadmium	0.0483	0.0010	0.05	0.000318	96	70	130	0.04875	0.9	20	
Copper	0.0511	0.010	0.05	0.004232	94	70	130	0.0508	0.6	20	
Iron	5.01	0.030	5	0.04307	99	70	130	4.992	0.4	20	

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61200

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100329A: 98** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030257-005DMSD** Method: **E200.8**

Analysis Date: **03/29/10 21:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0491	0.010	0.05	0.0002766	98	70	130	0.04977	1.3	20	
Manganese	0.131	0.010	0.05	0.08181	98	70	130	0.1291	1.2	20	
Zinc	0.181	0.010	0.05	0.1399	81	70	130	0.1808	0.1	20	

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-005D; H10030257-006C; H10030257-006D; H10030257-007C; H10030257-007D; H10030257-008C; H10030257-008D; H10030257-009C; H10030257-009D; H10030257-010C; H10030257-010D**

Run ID :Run Order: **ICPMS204-B_100329A: 118** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **E200.8**

Analysis Date: **03/30/10 00:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0516	0.10	0.05		103	90	110				
Arsenic	0.0493	0.0050	0.05		99	90	110				
Cadmium	0.0497	0.0010	0.05		99	90	110				
Copper	0.0495	0.010	0.05		99	90	110				
Iron	1.33	0.030	1.3		102	90	110				
Lead	0.0495	0.010	0.05		99	90	110				
Manganese	0.0507	0.010	0.05		101	90	110				
Zinc	0.0509	0.010	0.05		102	90	110				

Associated samples:

Run ID :Run Order: **ICPMS204-B_100329A: 123** SampType: **Sample Matrix Spike** Sample ID: **H10030265-001EMS** Method: **E200.8**

Analysis Date: **03/30/10 00:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0508	0.10	0.05		102	70	130				
Arsenic	0.0513	0.0050	0.05	0.0002736	102	70	130				
Cadmium	0.0492	0.0010	0.05		98	70	130				
Copper	0.0539	0.010	0.05	0.007632	92	70	130				
Iron	4.93	0.030	5	0.002731	99	70	130				
Lead	0.0491	0.010	0.05	0.0001564	98	70	130				
Manganese	0.0502	0.010	0.05	0.0002037	100	70	130				
Zinc	0.0376	0.010	0.05	0.002022	71	70	130				

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-005D; H10030257-006C; H10030257-006D; H10030257-007C; H10030257-007D; H10030257-008C; H10030257-008D; H10030257-009C; H10030257-009D; H10030257-010C; H10030257-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61200

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100329A: 124** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030265-001EMSD** Method: **E200.8**

Analysis Date: **03/30/10 00:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0498	0.10	0.05		100	70	130	0.05079		20	
Arsenic	0.0539	0.0050	0.05	0.0002736	107	70	130	0.05129	5.0	20	
Cadmium	0.0512	0.0010	0.05		102	70	130	0.04918	3.9	20	
Copper	0.0535	0.010	0.05	0.007632	92	70	130	0.05388	0.7	20	
Iron	5.43	0.030	5	0.002731	109	70	130	4.931	9.7	20	
Lead	0.0483	0.010	0.05	0.0001564	96	70	130	0.0491	1.7	20	
Manganese	0.0490	0.010	0.05	0.0002037	98	70	130	0.05019	2.4	20	
Zinc	0.0394	0.010	0.05	0.002022	75	70	130	0.03758	4.8	20	

Associated samples: **H10030257-001C; H10030257-002C; H10030257-003C; H10030257-004C; H10030257-005C; H10030257-005D; H10030257-006C; H10030257-006D; H10030257-007C; H10030257-007D; H10030257-008C; H10030257-008D; H10030257-009C; H10030257-009D; H10030257-010C; H10030257-010D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61218

Date: *10-Jan-11*

Run ID :Run Order: **MAN-TECH_100330A: 3** SampType: **Method Blank** Sample ID: **MBLK** Method: **A2320 B**
Analysis Date: **03/30/10 12:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	0.9									

Associated samples: **H10030257-001A; H10030257-002A; H10030257-003A; H10030257-004A; H10030257-005A; H10030257-007A; H10030257-008A; H10030257-009A; H10030257-010A**

Run ID :Run Order: **MAN-TECH_100330A: 5** SampType: **Laboratory Control Sample** Sample ID: **LCS** Method: **A2320 B**
Analysis Date: **03/30/10 12:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	570	4.0	600		96	90	110				

Associated samples: **H10030257-001A; H10030257-002A; H10030257-003A; H10030257-004A; H10030257-005A; H10030257-007A; H10030257-008A; H10030257-009A; H10030257-010A**

Run ID :Run Order: **MAN-TECH_100330A: 40** SampType: **Sample Matrix Spike** Sample ID: **H10030358-006BMS** Method: **A2320 B**
Analysis Date: **03/30/10 14:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	700	4.0	600	75.9	105	90	110				

Associated samples: **H10030257-001A; H10030257-002A; H10030257-003A; H10030257-004A; H10030257-005A; H10030257-007A; H10030257-008A; H10030257-009A; H10030257-010A**

Run ID :Run Order: **MAN-TECH_100330A: 41** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030358-006BMSD** Method: **A2320 B**
Analysis Date: **03/30/10 15:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	710	4.0	600	75.9	106	90	110	704.5	1.2	20	

Associated samples: **H10030257-001A; H10030257-002A; H10030257-003A; H10030257-004A; H10030257-005A; H10030257-007A; H10030257-008A; H10030257-009A; H10030257-010A**

Run ID :Run Order: **MAN-TECH_100330A: 53** SampType: **Sample Duplicate** Sample ID: **H10030257-005ADUP** Method: **A2320 B**
Analysis Date: **03/30/10 15:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bicarbonate as HCO3	110	4.0						100.2	9.0	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10030257-001A; H10030257-002A; H10030257-003A; H10030257-004A; H10030257-005A; H10030257-007A; H10030257-008A; H10030257-009A; H10030257-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61261

Date: *10-Jan-11*

Run ID :Run Order: **MAN-TECH_100331A: 3** SampType: **Method Blank** Sample ID: **MBLK** Method: **A2320 B**
Analysis Date: **03/31/10 14:12** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	0.9									

Associated samples: **H10030257-006A**

Run ID :Run Order: **MAN-TECH_100331A: 5** SampType: **Laboratory Control Sample** Sample ID: **LCS** Method: **A2320 B**
Analysis Date: **03/31/10 14:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	570	4.0	600		96	90	110				

Associated samples: **H10030257-006A**

Run ID :Run Order: **MAN-TECH_100331A: 46** SampType: **Sample Matrix Spike** Sample ID: **H10030384-005BMS** Method: **A2320 B**
Analysis Date: **03/31/10 16:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	730	4.0	600	89.45	107	90	110				

Associated samples: **H10030257-006A**

Run ID :Run Order: **MAN-TECH_100331A: 47** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030384-005BMSD** Method: **A2320 B**
Analysis Date: **03/31/10 17:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	710	4.0	600	89.45	104	90	110	729.9	2.1	20	

Associated samples: **H10030257-006A**

Run ID :Run Order: **MAN-TECH_100331A: 54** SampType: **Sample Duplicate** Sample ID: **H10030392-001ADUP** Method: **A2320 B**
Analysis Date: **03/31/10 17:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bicarbonate as HCO3	360	4.0						357.1	0.3	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10030257-006A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61322

Date: *10-Jan-11*

Run ID :Run Order: **IC101-H_100402A: 1** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV040210-12** Method: **E300.0**

Analysis Date: **04/02/10 15:09** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	12	1.0	12.5		96	90	110				
Sulfate	52	1.0	50		103	90	110				

Associated samples: **H10030257-001A; H10030257-002A; H10030257-003A; H10030257-004A; H10030257-005A; H10030257-006A; H10030257-007A; H10030257-008A; H10030257-009A; H10030257-010A**

Run ID :Run Order: **IC101-H_100402A: 2** SampType: **Method Blank** Sample ID: **ICB040210-13** Method: **E300.0**

Analysis Date: **04/02/10 15:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.05									
Sulfate	ND	0.1									

Associated samples: **H10030257-001A; H10030257-002A; H10030257-003A; H10030257-004A; H10030257-005A; H10030257-006A; H10030257-007A; H10030257-008A; H10030257-009A; H10030257-010A**

Run ID :Run Order: **IC101-H_100402A: 3** SampType: **Laboratory Fortified Blank** Sample ID: **LFB040210-14** Method: **E300.0**

Analysis Date: **04/02/10 15:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		97	90	110				
Sulfate	52	1.0	50		104	90	110				

Associated samples: **H10030257-001A; H10030257-002A; H10030257-003A; H10030257-004A; H10030257-005A; H10030257-006A; H10030257-007A; H10030257-008A; H10030257-009A; H10030257-010A**

Run ID :Run Order: **IC101-H_100402A: 4** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV040210-15** Method: **E300.0**

Analysis Date: **04/02/10 15:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		97	90	110				
Sulfate	51	1.0	50		103	90	110				

Associated samples: **H10030257-001A; H10030257-002A; H10030257-003A; H10030257-004A; H10030257-005A**

Run ID :Run Order: **IC101-H_100402A: 15** SampType: **Sample Matrix Spike** Sample ID: **H10030257-001AMS** Method: **E300.0**

Analysis Date: **04/02/10 18:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25	0.397	97	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61322

Date: *10-Jan-11*

Run ID :Run Order: **IC101-H_100402A: 15** SampType: **Sample Matrix Spike** Sample ID: **H10030257-001AMS** Method: **E300.0**
Analysis Date: **04/02/10 18:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	56	1.0	50	3.414	106	90	110				

Associated samples: **H10030257-001A; H10030257-002A; H10030257-003A; H10030257-004A; H10030257-005A; H10030257-006A; H10030257-007A; H10030257-008A; H10030257-009A; H10030257-010A**

Run ID :Run Order: **IC101-H_100402A: 16** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030257-001AMSD** Method: **E300.0**
Analysis Date: **04/02/10 19:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25	0.397	97	90	110	24.77	0.3	20	
Sulfate	56	1.0	50	3.414	106	90	110	56.36	0.1	20	

Associated samples: **H10030257-001A; H10030257-002A; H10030257-003A; H10030257-004A; H10030257-005A; H10030257-006A; H10030257-007A; H10030257-008A; H10030257-009A; H10030257-010A**

Run ID :Run Order: **IC101-H_100402A: 21** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV040210-32** Method: **E300.0**
Analysis Date: **04/02/10 20:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		100	90	110				
Sulfate	53	1.0	50		106	90	110				

Associated samples: **H10030257-006A; H10030257-007A; H10030257-008A; H10030257-009A; H10030257-010A**

Run ID :Run Order: **IC101-H_100402A: 25** SampType: **Sample Matrix Spike** Sample ID: **H10030257-007AMS** Method: **E300.0**
Analysis Date: **04/02/10 21:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25	0.429	97	90	110				
Sulfate	83	1.0	50	29.87	107	90	110				

Associated samples: **H10030257-001A; H10030257-002A; H10030257-003A; H10030257-004A; H10030257-005A; H10030257-006A; H10030257-007A; H10030257-008A; H10030257-009A; H10030257-010A**

Run ID :Run Order: **IC101-H_100402A: 26** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030257-007AMSD** Method: **E300.0**
Analysis Date: **04/02/10 22:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25	0.429	96	90	110	24.71	1.2	20	
Sulfate	83	1.0	50	29.87	107	90	110	83.36	0.1	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10030257
Project: UBMC TO 20

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R61322

Date: *10-Jan-11*

Run ID :Run Order: **IC101-H_100402A: 26** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10030257-007AMSD** Method: **E300.0**

Analysis Date: **04/02/10 22:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10030257-001A; H10030257-002A; H10030257-003A; H10030257-004A; H10030257-005A; H10030257-006A; H10030257-007A; H10030257-008A; H10030257-009A; H10030257-010A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Workorder Receipt Checklist

MT DEQ

H10030257

Login completed by: Tracy L. Lorash

Date Received: 3/22/2010

Reviewed by: BL2000\wjohnson

Received by: rlt

Reviewed Date: 3/30/2010

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature:	-1.6°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

No collection times on any containers - took from COC. BRSW3B-20100318 rcv'd with a hole in the container. L/M w/ Jeremy whether he wants us to analyze or not. Per Jeremy, run Anions first, if there is enough sample run TDS/TSS. TI

Chain of Custody and Analytical Request Record

Page ____ of ____

PLEASE PRINT- Provide as much information as possible.

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
Tetra Tech	UBML TO 20	State: MT	Yes ☐ No ☒
Report Mail Address:	**Contact Name:** Phone/Fax:	**Email:**	**Sampler: (Please Print)**
302 N. Last Chance Gulch, Suite 409	Jeremy Mickey 406-441-5441	jeremy.mickey@tetratech.com	JM
Invoice Address:	**Invoice Contact & Phone:**	**Purchase Order:**	**Quote/Bottle Order:**
MDEQ	MDEQ - Shellie Hallowand		499 ED

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

- ☐ DW
- ☐ GSA
- ☐ POTW/WWTP
- ☐ State: _____
- ☐ Other: _____
- ☐ A2LA
- ☒ EDD/EDT (Electronic Data) Format: _____
- ☐ LEVEL IV
- ☐ NELAC

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other)	Total Metals	Dissolved Metals	Common Cations	Common Anions	Physicochemical					SEE ATTACHED	Normal Turnaround (TAT)	RUSH	Comments
1 UBM-BRSW01-20100318	03/18/10	11:46	4-W	X	X	X	X	X						X		
2 UBM-Trench-20100318	03/18/10	12:30	4-W													
3 UBM-BRSW48-20100318	03/18/10	14:19	4-W													
4 UBM-BRSW23-20100318	03/18/10	14:50	4-W													
5 UBM-BRSW3A-20100318	03/18/10	15:15	4-W													
6 UBM-BRSW3B-20100318	03/18/10	15:35	4-W													
7 UBM-BRSW129-20100318	03/18/10	16:27	4-W													
8 UBM-BRSW29-333-20100318	03/18/10	16:27	4-W													
9 UBM-BRSW29-444-20100318	03/18/10	16:27	4-W													
10 UBM-BRSW38-20100318	03/18/10	17:05	4-W													

Contact ELI prior to **RUSH** sample submittal for charges and scheduling – See Instruction Page

Shipped by: hand

Cooler ID(s): —

Receipt Temp: -1.6 °C

On Ice: Yes No

Custody Seal: A N

Bottles/Coolers: B C

Intact: A N

Signature Match: Y N

LABORATORY USE ONLY: H10030257

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Jeremy Mickey	03/18/10 17:15	[signature]			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory: Roxanne Dennis	Date/Time: 3.22.10 15:29	Signature: [signature]

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

Quotation for Analytical Services # H499

Company:	MT DEQ	Submitted By:	Jonathan Hager
Contact:	Shellie Haaland	Project:	Section 35
Address:	PO Box 200901	TAT:	10 Working days
	Helena, MT 59620-0901	QC Level:	STD
Phone:	(406) 841-5033 Fax:	Quote Date:	03-Feb-10 Expires: 31-Dec-11

Matrix	Test Name	Test	Remarks	# Samp	Unit Price		Test Total
Schedule:	**GroundWater Sampling.**						
Aqueous	Alkalinity	A2320 B	Dissolved	1	$10.00	1	$10.00
	Alkalinity	A2320 B		1	$10.00	1	$10.00
	Hardness as CaCO3	A2340 B		1	$0.00	1	$0.00
	Conductivity	A2510 B		1	$10.00	1	$10.00
	pH	A4500-H B		1	$10.00	1	$10.00
	Metals Digestion by EPA 200.2	E200.2		1	$15.00	1	$15.00
	Metals by ICP/ICPMS, Total	E200.7_8		1	$170.00	1	$170.00
	Metals by ICP/ICPMS, Dissolved	E200.7_8		1	$200.00	1	$200.00
	Anions by Ion Chromatography	E300.0	Dissolved	1	$20.00	1	$20.00
	Preparation, Dissolved Filtration	MCAWW		1	$0.00	1	$0.00
			Schedule Sample Price:	**$445.00**			
			Schedule Total:				**$445.00**
Schedule:	**Surface Water Sampling**						
Aqueous	Acidity, Total as CaCO3	A2310 B	Will analyze only if pH is below 4.5	1	$15.00	1	$15.00
	Alkalinity	A2320 B	Dissolved	1	$10.00	1	$10.00
	Alkalinity	A2320 B		1	$10.00	1	$10.00
	Hardness as CaCO3	A2340 B		1	$0.00	1	$0.00
	Conductivity	A2510 B		1	$10.00	1	$10.00
	Preparation for TDS	A2540 C		1	$0.00	1	$0.00
	Solids, Total Dissolved	A2540 C		1	$10.00	1	$10.00
	Preparation for TSS	A2540 D		1	$0.00	1	$0.00
	Solids, Total Suspended	A2540 D		1	$10.00	1	$10.00
	pH	A4500-H B		1	$10.00	1	$10.00
	Metals Digestion by EPA 200.2	E200.2		1	$15.00	1	$15.00
	Metals by ICP/ICPMS, Dissolved	E200.7_8		1	$200.00	1	$200.00
	Metals by ICP/ICPMS, Tot. Rec.	E200.7_8		1	$170.00	1	$170.00
	Anions by Ion Chromatography	E300.0		1	$20.00	1	$20.00
	Anions by Ion Chromatography	E300.0	Dissolved.	1	$20.00	1	$20.00
	Preparation, Dissolved Filtration	MCAWW		1	$0.00	1	$0.00
			Schedule Sample Price:	**$500.00**			
			Schedule Total:				**$500.00**
Schedule:	**Mine Waste Soil sampling**						
Soil	Acid Base Potential w/Sulfur Forms	Test Group		1	$55.00	1	$55.00
	*Acid/Base Potential	Sobek Modified		1		1	
	*Sulfur Forms	Sobek Modified		1		1	
	*Lime Percentage	USDA23c		1		1	

To assure that the quoted analysis and pricing specifications are provided, please include the Quote ID number referenced above on the Chain of Custody or sample submittal documents .

* Methods and/or parameters included in the indicated test group.
Subcontracting of sample analyses to an outside laboratory may be required. If so, Energy Laboratories will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

Analyte Limits For Quote #: H-499

Schedule Name TestName	Analyte	Report Limit	Units
Surface Water Sampling			
Acidity, Total as CaCO3	Acidity, Total as CaCO3	4	mg/L
Alkalinity	Alkalinity, Total as CaCO3	4	mg/L
	Bicarbonate as HCO3	4	mg/L
	Carbonate as CO3	4	mg/L
Anions by Ion Chromatography	Chloride	1	mg/L
	Sulfate	1	mg/L
Conductivity	Conductivity	1	umhos/c
Metals by ICP/ICPMS, Dissolved	Aluminum	0.03	mg/L
	Arsenic	0.003	mg/L
	Cadmium	0.00008	mg/L
	Calcium	1	mg/L
	Copper	0.001	mg/L
	Iron	0.05	mg/L
	Lead	0.0005	mg/L
	Magnesium	1	mg/L
	Manganese	0.005	mg/L
	Potassium	1	mg/L
	Sodium	1	mg/L
	Zinc	0.01	mg/L
Metals by ICP/ICPMS, Tot. Rec.	Aluminum	0.03	mg/L
	Arsenic	0.003	mg/L
	Cadmium	0.00008	mg/L
	Copper	0.001	mg/L
	Iron	0.05	mg/L
	Lead	0.0005	mg/L
	Manganese	0.005	mg/L
	Zinc	0.01	mg/L
pH	pH	0.1	s.u.
Solids, Total Dissolved	Solids, Total Dissolved TDS @ 180 C	10	mg/L
Solids, Total Suspended	Solids, Total Suspended TSS @ 105 C	10	mg/L

ANALYTICAL SUMMARY REPORT

January 12, 2011

MT DEQ-Site Response
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H10120314 Quote ID: H499 - Section 35 and UBMC

Project Name: TO20 - UBMC Monitoring

Energy Laboratories Inc Helena MT received the following 18 samples for MT DEQ-Site Response on 12/23/2010 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H10120314-001	UBM-BRSW01-20101215	12/15/10 13:00	12/23/10	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Metals Digestion by EPA 200.2 Preparation for TDS Preparation for TSS Solids, Total Dissolved Solids, Total Suspended
H10120314-002	UBM-BRSW01-555-20101215	12/15/10 13:15	12/23/10	Surface Water	Same As Above
H10120314-003	UBM-BRSW23-20101216	12/16/10 13:46	12/23/10	Surface Water	Same As Above
H10120314-004	UBM-BRSW48-20101216	12/16/10 13:00	12/23/10	Surface Water	Same As Above
H10120314-005	UBM-BRSW3A-20101215	12/15/10 14:20	12/23/10	Surface Water	Same As Above
H10120314-006	UBM-BRSW3B-20101215	12/15/10 14:00	12/23/10	Surface Water	Same As Above
H10120314-007	UBM-BRSW38-20101216	12/16/10 15:45	12/23/10	Surface Water	Same As Above
H10120314-008	UBM-BRSW29-20101216	12/16/10 15:00	12/23/10	Surface Water	Same As Above
H10120314-009	UBM-BRSW29-333-20101216	12/16/10 15:10	12/23/10	Surface Water	Metals by ICP/ICPMS, Tot. Rec. Metals Digestion by EPA 200.2
H10120314-010	UBM-BRSW29-444-20101216	12/16/10 15:15	12/23/10	Surface Water	Same As Above
H10120314-011	UBM-TDMW4D-20101220	12/20/10 12:00	12/23/10	Groundwater	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Metals Digestion by EPA 200.2
H10120314-012	UBM-TDMW2S-20101221	12/21/10 12:15	12/23/10	Groundwater	Same As Above
H10120314-013	UBM-TDMW01-555-20101221	12/21/10 11:00	12/23/10	Groundwater	Same As Above
H10120314-014	UBM-TDMW2D-20101221	12/21/10 11:45	12/23/10	Groundwater	Same As Above
H10120314-015	UBM-TDMW01-20101221	12/21/10 11:00	12/23/10	Groundwater	Same As Above
H10120314-016	UBM-TDMW3D-20101220	12/21/10 13:00	12/23/10	Groundwater	Same As Above

ANALYTICAL SUMMARY REPORT

H10120314-017	UBM-TDMW01-333-20101221	12/21/10 11:05 12/23/10	Groundwater	Metals by ICP/ICPMS, Total Metals Digestion by EPA 200.2
H10120314-018	UBM-TDMW01-444-20101221	12/21/10 11:05 12/23/10	Groundwater	Same As Above

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

CLIENT: MT DEQ-Site Response
Project: TO20 - UBMC Monitoring
Sample Delivery Group: H10120314

Report Date: 01/12/11

CASE NARRATIVE

Prep Comments for Sample H10120314-001B, Test PRP-TDS-W: The prep hold time was exceeded by 5.01 days.
Prep Comments for Sample H10120314-002B, Test PRP-TDS-W: The prep hold time was exceeded by 5.00 days.
Prep Comments for Sample H10120314-003B, Test PRP-TDS-W: The prep hold time was exceeded by 3.98 days.
Prep Comments for Sample H10120314-004B, Test PRP-TDS-W: The prep hold time was exceeded by 4.01 days.
Prep Comments for Sample H10120314-005B, Test PRP-TDS-W: The prep hold time was exceeded by 4.96 days.
Prep Comments for Sample H10120314-006B, Test PRP-TDS-W: The prep hold time was exceeded by 4.97 days.
Prep Comments for Sample H10120314-007B, Test PRP-TDS-W: The prep hold time was exceeded by 3.90 days.
Prep Comments for Sample H10120314-008B, Test PRP-TDS-W: The prep hold time was exceeded by 3.93 days.
Prep Comments for Sample H10120314-001B, Test PRP-TSS-W: The prep hold time was exceeded by 5.01 days.
Prep Comments for Sample H10120314-002B, Test PRP-TSS-W: The prep hold time was exceeded by 5.00 days.
Prep Comments for Sample H10120314-003B, Test PRP-TSS-W: The prep hold time was exceeded by 3.98 days.
Prep Comments for Sample H10120314-004B, Test PRP-TSS-W: The prep hold time was exceeded by 4.01 days.
Prep Comments for Sample H10120314-005B, Test PRP-TSS-W: The prep hold time was exceeded by 4.96 days.
Prep Comments for Sample H10120314-006B, Test PRP-TSS-W: The prep hold time was exceeded by 4.97 days.
Prep Comments for Sample H10120314-007B, Test PRP-TSS-W: The prep hold time was exceeded by 3.90 days.
Prep Comments for Sample H10120314-008B, Test PRP-TSS-W: The prep hold time was exceeded by 3.93 days.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW01-20101215
Lab ID: H10120314-001
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/15/10 13:00 **DateReceived:** 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.2	s.u.		0.1		A4500-H B	12/27/10 14:05 / zeg		MAN-TECH_101227B	12	R68140
Conductivity	207	umhos/cm		1		A2510 B	12/28/10 09:51 / zeg		COND_101228A	801228A	COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	12/27/10 13:51 / glj	12/27/10 13:19	J-124 (14410200)_101227A	4	11043
Solids, Total Dissolved TDS @ 180 C	104	mg/L	H	10		A2540 C	12/27/10 13:58 / glj	12/27/10 13:18	J-124 (14410200)_101227B	6	11042
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/27/10 15:58 / zeg		MAN-TECH_101227B	43	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 15:58 / zeg		MAN-TECH_101227B	43	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 23:46 / zeg		IC101-H_101230A	25	R68259
Sulfate	5	mg/L		1		E300.0	12/30/10 23:46 / zeg		IC101-H_101230A	25	R68259
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	12/27/10 14:05 / zeg		MAN-TECH_101227B	11	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 12:51 / zeg		IC101-H_101229A	20	R68286
Sulfate	5	mg/L		1		E300.0	12/30/10 12:51 / zeg		IC101-H_101229A	20	R68286
Hardness as CaCO3	96	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	1	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Calcium	20	mg/L		1		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Magnesium	11	mg/L		1		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Sodium	1	mg/L		1		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Zinc	0.04	mg/L		0.01		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW01-20101215
Lab ID: H10120314-001
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/15/10 13:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 16:48 / dck		ICPMS204-B_101229A	48	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 16:48 / dck		ICPMS204-B_101229A	48	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 16:48 / dck		ICPMS204-B_101229A	48	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 16:48 / dck		ICPMS204-B_101229A	48	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 16:48 / dck		ICPMS204-B_101229A	48	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 16:48 / dck		ICPMS204-B_101229A	48	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 16:48 / dck		ICPMS204-B_101229A	48	R68216
Zinc	ND	mg/L		0.01		E200.8	12/29/10 16:48 / dck		ICPMS204-B_101229A	48	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW01-555-20101215
Lab ID: H10120314-002
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/15/10 13:15
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.2	s.u.		0.1		A4500-H B	12/27/10 14:13 / zeg		MAN-TECH_101227B	14	R68140
Conductivity	207	umhos/cm		1		A2510 B	12/28/10 09:52 / zeg		COND_101228A	901228A	COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	12/27/10 13:51 / glj	12/27/10 13:19	J-124 (14410200)_101227A	5	11043
Solids, Total Dissolved TDS @ 180 C	104	mg/L	H	10		A2540 C	12/27/10 13:58 / glj	12/27/10 13:18	J-124 (14410200)_101227B	7	11042
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/27/10 16:12 / zeg		MAN-TECH_101227B	46	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 16:12 / zeg		MAN-TECH_101227B	46	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 13:01 / zeg		IC101-H_101229A	21	R68286
Sulfate	4	mg/L		1		E300.0	12/30/10 13:01 / zeg		IC101-H_101229A	21	R68286
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	12/27/10 14:13 / zeg		MAN-TECH_101227B	13	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 13:30 / zeg		IC101-H_101229A	24	R68286
Sulfate	5	mg/L		1		E300.0	12/30/10 13:30 / zeg		IC101-H_101229A	24	R68286
Hardness as CaCO3	105	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	2	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Calcium	21	mg/L		1		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Magnesium	13	mg/L		1		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Sodium	1	mg/L		1		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Zinc	0.03	mg/L		0.01		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW01-555-20101215
Lab ID: H10120314-002
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/15/10 13:15 **DateReceived:** 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.06	mg/L		0.03		E200.8	12/29/10 17:37 / dck	12/27/10 09:48	ICPMS204-B_101229A	59	11038
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 17:37 / dck	12/27/10 09:48	ICPMS204-B_101229A	59	11038
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 17:37 / dck	12/27/10 09:48	ICPMS204-B_101229A	59	11038
Copper	0.001	mg/L		0.001		E200.8	01/10/11 14:59 / dck	01/04/11 10:53	ICPMS204-B_110110A	16	11108
Iron	0.09	mg/L		0.05		E200.8	12/29/10 17:37 / dck	12/27/10 09:48	ICPMS204-B_101229A	59	11038
Lead	0.0006	mg/L		0.0005		E200.8	12/29/10 17:37 / dck	12/27/10 09:48	ICPMS204-B_101229A	59	11038
Manganese	0.008	mg/L		0.005		E200.8	12/29/10 17:37 / dck	12/27/10 09:48	ICPMS204-B_101229A	59	11038
Zinc	0.01	mg/L		0.01		E200.8	12/29/10 17:37 / dck	12/27/10 09:48	ICPMS204-B_101229A	59	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW23-20101216
Lab ID: H10120314-003
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 13:46
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.1	s.u.		0.1		A4500-H B	12/27/10 14:20 / zeg		MAN-TECH_101227B	16	R68140
Conductivity	304	umhos/cm		1		A2510 B	12/28/10 09:55 / zeg		COND_101228A	1	1101228A-COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	12/27/10 13:51 / glj	12/27/10 13:19	J-124 (14410200)_101227A	6	11043
Solids, Total Dissolved TDS @ 180 C	176	mg/L	H	10		A2540 C	12/27/10 13:58 / glj	12/27/10 13:18	J-124 (14410200)_101227B	8	11042
DISSOLVED INORGANICS											
Bicarbonate as HCO3	120	mg/L		4		A2320 B	12/27/10 16:20 / zeg		MAN-TECH_101227B	47	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 16:20 / zeg		MAN-TECH_101227B	47	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 13:39 / zeg		IC101-H_101229A	25	R68286
Sulfate	56	mg/L		1		E300.0	12/30/10 13:39 / zeg		IC101-H_101229A	25	R68286
INORGANICS											
Alkalinity, Total as CaCO3	99	mg/L		4		A2320 B	12/27/10 14:20 / zeg		MAN-TECH_101227B	15	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 13:49 / zeg		IC101-H_101229A	26	R68286
Sulfate	56	mg/L		1		E300.0	12/30/10 13:49 / zeg		IC101-H_101229A	26	R68286
Hardness as CaCO3	146	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	3	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Cadmium	0.00233	mg/L		0.00008		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Calcium	29	mg/L		1		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Copper	0.005	mg/L		0.001		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Lead	0.0013	mg/L		0.0005		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Magnesium	18	mg/L		1		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Manganese	0.424	mg/L		0.005		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Sodium	1	mg/L		1		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Zinc	0.72	mg/L		0.01		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216

Report Definitions:
RL - Analyte reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW23-20101216
Lab ID: H10120314-003
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 13:46
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.03	mg/L		0.03		E200.8	12/29/10 17:45 / dck		ICPMS204-B_101229A	61	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 17:45 / dck		ICPMS204-B_101229A	61	R68216
Cadmium	0.00240	mg/L		0.00008		E200.8	12/29/10 17:45 / dck		ICPMS204-B_101229A	61	R68216
Copper	0.006	mg/L		0.001		E200.8	12/29/10 17:45 / dck		ICPMS204-B_101229A	61	R68216
Iron	0.10	mg/L		0.05		E200.8	12/29/10 17:45 / dck		ICPMS204-B_101229A	61	R68216
Lead	0.0036	mg/L		0.0005		E200.8	12/29/10 17:45 / dck		ICPMS204-B_101229A	61	R68216
Manganese	0.408	mg/L		0.005		E200.8	12/29/10 17:45 / dck		ICPMS204-B_101229A	61	R68216
Zinc	0.71	mg/L		0.01		E200.8	12/29/10 17:45 / dck		ICPMS204-B_101229A	61	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW48-20101216
Lab ID: H10120314-004
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 13:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.0	s.u.		0.1		A4500-H B	12/27/10 14:34 / zeg		MAN-TECH_101227B	20	R68140
Conductivity	323	umhos/cm		1		A2510 B	12/28/10 09:56 / zeg		COND_101228A	1	1201228A-COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	12/27/10 13:52 / glj	12/27/10 13:19	J-124 (14410200)_101227A	7	11043
Solids, Total Dissolved TDS @ 180 C	194	mg/L	H	10		A2540 C	12/27/10 13:59 / glj	12/27/10 13:18	J-124 (14410200)_101227B	9	11042
DISSOLVED INORGANICS											
Bicarbonate as HCO3	110	mg/L		4		A2320 B	12/27/10 16:27 / zeg		MAN-TECH_101227B	48	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 16:27 / zeg		MAN-TECH_101227B	48	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 13:59 / zeg		IC101-H_101229A	27	R68286
Sulfate	68	mg/L		1		E300.0	12/30/10 13:59 / zeg		IC101-H_101229A	27	R68286
INORGANICS											
Alkalinity, Total as CaCO3	96	mg/L		4		A2320 B	12/27/10 14:34 / zeg		MAN-TECH_101227B	19	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 14:08 / zeg		IC101-H_101229A	28	R68286
Sulfate	68	mg/L		1		E300.0	12/30/10 14:08 / zeg		IC101-H_101229A	28	R68286
Hardness as CaCO3	151	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	4	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Cadmium	0.00342	mg/L		0.00008		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Calcium	30	mg/L		1		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Copper	0.006	mg/L		0.001		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Iron	0.40	mg/L		0.05		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Lead	0.0056	mg/L		0.0005		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Magnesium	18	mg/L		1		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Manganese	1.26	mg/L		0.005		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Sodium	1	mg/L		1		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Zinc	0.91	mg/L		0.01		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216

Report Definitions:
RL - Analyte reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW48-20101216
Lab ID: H10120314-004
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 13:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.07	mg/L		0.03		E200.8	12/29/10 17:54 / dck		ICPMS204-B_101229A	63	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 17:54 / dck		ICPMS204-B_101229A	63	R68216
Cadmium	0.00383	mg/L		0.00008		E200.8	12/29/10 17:54 / dck		ICPMS204-B_101229A	63	R68216
Copper	0.017	mg/L		0.001		E200.8	12/29/10 17:54 / dck		ICPMS204-B_101229A	63	R68216
Iron	0.98	mg/L		0.05		E200.8	12/29/10 17:54 / dck		ICPMS204-B_101229A	63	R68216
Lead	0.0298	mg/L		0.0005		E200.8	12/29/10 17:54 / dck		ICPMS204-B_101229A	63	R68216
Manganese	1.28	mg/L		0.005		E200.8	12/29/10 17:54 / dck		ICPMS204-B_101229A	63	R68216
Zinc	0.98	mg/L		0.01		E200.8	12/29/10 17:54 / dck		ICPMS204-B_101229A	63	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW3A-20101215
Lab ID: H10120314-005
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/15/10 14:20
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.0	s.u.		0.1		A4500-H B	12/27/10 14:41 / zeg		MAN-TECH_101227B	22	R68140
Conductivity	312	umhos/cm		1		A2510 B	12/28/10 09:57 / zeg		COND_101228A	1	1301228A-COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	12/27/10 13:53 / glj	12/27/10 13:19	J-124 (14410200)_101227A	9	11043
Solids, Total Dissolved TDS @ 180 C	192	mg/L	H	10		A2540 C	12/27/10 14:00 / glj	12/27/10 13:18	-124 (14410200)_101227B	11	11042
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/27/10 16:34 / zeg		MAN-TECH_101227B	49	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 16:34 / zeg		MAN-TECH_101227B	49	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 14:18 / zeg		IC101-H_101229A	29	R68286
Sulfate	53	mg/L		1		E300.0	12/30/10 14:18 / zeg		IC101-H_101229A	29	R68286
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	12/27/10 14:41 / zeg		MAN-TECH_101227B	21	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 14:47 / zeg		IC101-H_101229A	32	R68286
Sulfate	53	mg/L		1		E300.0	12/30/10 14:47 / zeg		IC101-H_101229A	32	R68286
Hardness as CaCO3	152	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	5	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Cadmium	0.00064	mg/L		0.00008		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Calcium	29	mg/L		1		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Copper	0.002	mg/L		0.001		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Iron	0.09	mg/L		0.05		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Magnesium	19	mg/L		1		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Manganese	0.564	mg/L		0.005		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Sodium	1	mg/L		1		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Zinc	0.48	mg/L		0.01		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216

Report Definitions:
RL - Analyte reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW3A-20101215
Lab ID: H10120314-005
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/15/10 14:20
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.21	mg/L		0.03		E200.8	12/29/10 18:20 / dck	12/27/10 09:48	ICPMS204-B_101229A	69	11038
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:20 / dck	12/27/10 09:48	ICPMS204-B_101229A	69	11038
Cadmium	0.00339	mg/L		0.00008		E200.8	12/29/10 18:20 / dck	12/27/10 09:48	ICPMS204-B_101229A	69	11038
Copper	0.040	mg/L		0.001		E200.8	12/29/10 18:20 / dck	12/27/10 09:48	ICPMS204-B_101229A	69	11038
Iron	1.31	mg/L		0.05		E200.8	12/29/10 18:20 / dck	12/27/10 09:48	ICPMS204-B_101229A	69	11038
Lead	0.0097	mg/L		0.0005		E200.8	12/29/10 18:20 / dck	12/27/10 09:48	ICPMS204-B_101229A	69	11038
Manganese	0.755	mg/L		0.005		E200.8	12/29/10 18:20 / dck	12/27/10 09:48	ICPMS204-B_101229A	69	11038
Zinc	0.62	mg/L		0.01		E200.8	12/29/10 18:20 / dck	12/27/10 09:48	ICPMS204-B_101229A	69	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW3B-20101215
Lab ID: H10120314-006
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/15/10 14:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.9	s.u.		0.1		A4500-H B	12/27/10 14:56 / zeg		MAN-TECH_101227B	26	R68140
Conductivity	304	umhos/cm		1		A2510 B	12/28/10 09:58 / zeg		COND_101228A	1401228A	COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	12/27/10 13:53 / glj	12/27/10 13:19	-124 (14410200)_101227A	10	11043
Solids, Total Dissolved TDS @ 180 C	176	mg/L	H	10		A2540 C	12/27/10 14:00 / glj	12/27/10 13:18	-124 (14410200)_101227B	12	11042
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/27/10 16:41 / zeg		MAN-TECH_101227B	50	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 16:41 / zeg		MAN-TECH_101227B	50	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 14:56 / zeg		IC101-H_101229A	33	R68286
Sulfate	48	mg/L		1		E300.0	12/30/10 14:56 / zeg		IC101-H_101229A	33	R68286
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	12/27/10 14:56 / zeg		MAN-TECH_101227B	25	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 15:06 / zeg		IC101-H_101229A	34	R68286
Sulfate	48	mg/L		1		E300.0	12/30/10 15:06 / zeg		IC101-H_101229A	34	R68286
Hardness as CaCO3	138	mg/L		1		A2340 B	12/29/10 18:25 / abb		CALC_110104A	410	R68293
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Cadmium	0.00091	mg/L		0.00008		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Calcium	28	mg/L		1		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Copper	0.003	mg/L		0.001		E200.8	01/03/11 22:51 / dck		ICPMS204-B_110103A	72	R68292
Iron	ND	mg/L		0.05		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Magnesium	17	mg/L		1		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Manganese	0.192	mg/L		0.005		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Sodium	1	mg/L		1		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Zinc	0.35	mg/L		0.01		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216

Report Definitions:
RL - Analyte reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW3B-20101215
Lab ID: H10120314-006
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/15/10 14:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.09	mg/L		0.03		E200.8	12/29/10 18:29 / dck	12/27/10 09:48	ICPMS204-B_101229A	71	11038
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:29 / dck	12/27/10 09:48	ICPMS204-B_101229A	71	11038
Cadmium	0.00120	mg/L		0.00008		E200.8	12/29/10 18:29 / dck	12/27/10 09:48	ICPMS204-B_101229A	71	11038
Copper	0.008	mg/L		0.001		E200.8	01/10/11 15:03 / dck	01/04/11 10:53	ICPMS204-B_110110A	17	11108
Iron	0.07	mg/L		0.05		E200.8	12/29/10 18:29 / dck	12/27/10 09:48	ICPMS204-B_101229A	71	11038
Lead	0.0007	mg/L		0.0005		E200.8	12/29/10 18:29 / dck	12/27/10 09:48	ICPMS204-B_101229A	71	11038
Manganese	0.311	mg/L		0.005		E200.8	12/29/10 18:29 / dck	12/27/10 09:48	ICPMS204-B_101229A	71	11038
Zinc	0.40	mg/L		0.01		E200.8	12/29/10 18:29 / dck	12/27/10 09:48	ICPMS204-B_101229A	71	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW38-20101216
Lab ID: H10120314-007
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 15:45
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.9	s.u.		0.1		A4500-H B	12/27/10 15:03 / zeg		MAN-TECH_101227B	28	R68140
Conductivity	329	umhos/cm		1		A2510 B	12/28/10 09:59 / zeg		COND_101228A	1501228A	COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	12/27/10 13:53 / glj	12/27/10 13:19	-124 (14410200)_101227A	11	11043
Solids, Total Dissolved TDS @ 180 C	200	mg/L	H	10		A2540 C	12/27/10 14:01 / glj	12/27/10 13:18	-124 (14410200)_101227B	13	11042
DISSOLVED INORGANICS											
Bicarbonate as HCO3	99	mg/L		4		A2320 B	12/27/10 17:03 / zeg		MAN-TECH_101227B	56	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 17:03 / zeg		MAN-TECH_101227B	56	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 15:16 / zeg		IC101-H_101229A	35	R68286
Sulfate	81	mg/L		1		E300.0	12/30/10 15:16 / zeg		IC101-H_101229A	35	R68286
INORGANICS											
Alkalinity, Total as CaCO3	81	mg/L		4		A2320 B	12/27/10 15:03 / zeg		MAN-TECH_101227B	27	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 15:25 / zeg		IC101-H_101229A	36	R68286
Sulfate	81	mg/L		1		E300.0	12/30/10 15:25 / zeg		IC101-H_101229A	36	R68286
Hardness as CaCO3	147	mg/L		1		A2340 B	12/29/10 18:33 / abb		CALC_110104A	432	R68293
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Cadmium	0.00533	mg/L		0.00008		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Calcium	30	mg/L		1		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Copper	0.004	mg/L		0.001		E200.8	01/03/11 22:55 / dck		ICPMS204-B_110103A	73	R68292
Iron	ND	mg/L		0.05		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Lead	0.0008	mg/L		0.0005		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Magnesium	18	mg/L		1		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Manganese	0.929	mg/L		0.005		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Sodium	1	mg/L		1		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Zinc	1.30	mg/L		0.01		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216

Report Definitions:
RL - Analyte reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW38-20101216
Lab ID: H10120314-007
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 15:45
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.06	mg/L		0.03		E200.8	12/29/10 18:38 / dck	12/27/10 09:48	ICPMS204-B_101229A	73	11038
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:38 / dck	12/27/10 09:48	ICPMS204-B_101229A	73	11038
Cadmium	0.00588	mg/L		0.00008		E200.8	12/29/10 18:38 / dck	12/27/10 09:48	ICPMS204-B_101229A	73	11038
Copper	0.016	mg/L		0.001		E200.8	01/10/11 15:08 / dck	01/04/11 10:53	ICPMS204-B_110110A	18	11108
Iron	0.67	mg/L		0.05		E200.8	12/29/10 18:38 / dck	12/27/10 09:48	ICPMS204-B_101229A	73	11038
Lead	0.0214	mg/L		0.0005		E200.8	12/29/10 18:38 / dck	12/27/10 09:48	ICPMS204-B_101229A	73	11038
Manganese	0.981	mg/L		0.005		E200.8	12/29/10 18:38 / dck	12/27/10 09:48	ICPMS204-B_101229A	73	11038
Zinc	1.41	mg/L		0.01		E200.8	12/29/10 18:38 / dck	12/27/10 09:48	ICPMS204-B_101229A	73	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW29-20101216
Lab ID: H10120314-008
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 15:00 **DateReceived:** 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.9	s.u.		0.1		A4500-H B	12/27/10 15:10 / zeg		MAN-TECH_101227B	30	R68140
Conductivity	264	umhos/cm		1		A2510 B	12/28/10 10:01 / zeg		COND_101228A	1	1701228A-COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	12/27/10 13:54 / glj	12/27/10 13:19	-124 (14410200)_101227A	12	11043
Solids, Total Dissolved TDS @ 180 C	160	mg/L	H	10		A2540 C	12/27/10 14:01 / glj	12/27/10 13:18	-124 (14410200)_101227B	14	11042
DISSOLVED INORGANICS											
Bicarbonate as HCO3	98	mg/L		4		A2320 B	12/27/10 17:10 / zeg		MAN-TECH_101227B	57	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 17:10 / zeg		MAN-TECH_101227B	57	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 15:54 / zeg		IC101-H_101229A	39	R68286
Sulfate	48	mg/L		1		E300.0	12/30/10 15:54 / zeg		IC101-H_101229A	39	R68286
INORGANICS											
Alkalinity, Total as CaCO3	84	mg/L		4		A2320 B	12/27/10 15:10 / zeg		MAN-TECH_101227B	29	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 16:04 / zeg		IC101-H_101229A	40	R68286
Sulfate	48	mg/L		1		E300.0	12/30/10 16:04 / zeg		IC101-H_101229A	40	R68286
Hardness as CaCO3	116	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	6	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Cadmium	0.00338	mg/L		0.00008		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Calcium	24	mg/L		1		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Copper	0.004	mg/L		0.001		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Iron	0.06	mg/L		0.05		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Lead	0.0006	mg/L		0.0005		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Magnesium	14	mg/L		1		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Manganese	0.450	mg/L		0.005		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Sodium	2	mg/L		1		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Zinc	0.92	mg/L		0.01		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW29-20101216
Lab ID: H10120314-008
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 15:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.06	mg/L		0.03		E200.8	12/29/10 18:46 / dck	12/27/10 09:48	ICPMS204-B_101229A	75	11038
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:46 / dck	12/27/10 09:48	ICPMS204-B_101229A	75	11038
Cadmium	0.00374	mg/L		0.00008		E200.8	12/29/10 18:46 / dck	12/27/10 09:48	ICPMS204-B_101229A	75	11038
Copper	0.012	mg/L		0.001		E200.8	01/10/11 15:12 / dck	01/04/11 10:53	ICPMS204-B_110110A	19	11108
Iron	0.44	mg/L		0.05		E200.8	12/29/10 18:46 / dck	12/27/10 09:48	ICPMS204-B_101229A	75	11038
Lead	0.0112	mg/L		0.0005		E200.8	12/29/10 18:46 / dck	12/27/10 09:48	ICPMS204-B_101229A	75	11038
Manganese	0.473	mg/L		0.005		E200.8	12/29/10 18:46 / dck	12/27/10 09:48	ICPMS204-B_101229A	75	11038
Zinc	0.94	mg/L		0.01		E200.8	12/29/10 18:46 / dck	12/27/10 09:48	ICPMS204-B_101229A	75	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW29-333-20101216
Lab ID: H10120314-009
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 15:10
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 18:51 / dck		ICPMS204-B_101229A	76	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:51 / dck		ICPMS204-B_101229A	76	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 18:51 / dck		ICPMS204-B_101229A	76	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 18:51 / dck		ICPMS204-B_101229A	76	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 18:51 / dck		ICPMS204-B_101229A	76	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 18:51 / dck		ICPMS204-B_101229A	76	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 18:51 / dck		ICPMS204-B_101229A	76	R68216
Zinc	ND	mg/L		0.01		E200.8	12/29/10 18:51 / dck		ICPMS204-B_101229A	76	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW29-444-20101216
Lab ID: H10120314-010
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 15:15
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 19:13 / dck		ICPMS204-B_101229A	81	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 19:13 / dck		ICPMS204-B_101229A	81	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 19:13 / dck		ICPMS204-B_101229A	81	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 19:13 / dck		ICPMS204-B_101229A	81	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 19:13 / dck		ICPMS204-B_101229A	81	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 19:13 / dck		ICPMS204-B_101229A	81	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 19:13 / dck		ICPMS204-B_101229A	81	R68216
Zinc	ND	mg/L		0.01		E200.8	12/29/10 19:13 / dck		ICPMS204-B_101229A	81	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW4D-20101220
Lab ID: H10120314-011
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/20/10 12:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.0	s.u.		0.1		A4500-H B	12/27/10 15:16 / zeg		MAN-TECH_101227B	32	R68140
Conductivity	210	umhos/cm		1		A2510 B	12/28/10 10:02 / zeg		COND_101228A	1801228A	-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	120	mg/L		4		A2320 B	12/27/10 17:17 / zeg		MAN-TECH_101227B	58	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 17:17 / zeg		MAN-TECH_101227B	58	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 16:14 / zeg		IC101-H_101229A	41	R68286
Sulfate	13	mg/L		1		E300.0	12/30/10 16:14 / zeg		IC101-H_101229A	41	R68286
INORGANICS											
Alkalinity, Total as CaCO3	94	mg/L		4		A2320 B	12/27/10 15:16 / zeg		MAN-TECH_101227B	31	R68140
Hardness as CaCO3	100	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	7	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Calcium	21	mg/L		1		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Magnesium	11	mg/L		1		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Manganese	0.013	mg/L		0.005		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Sodium	2	mg/L		1		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Zinc	ND	mg/L		0.01		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
METALS, TOTAL											
Aluminum	1.17	mg/L		0.03		E200.8	12/29/10 19:22 / dck	12/27/10 09:48	ICPMS204-B_101229A	83	11038
Arsenic	0.004	mg/L		0.003		E200.8	12/29/10 19:22 / dck	12/27/10 09:48	ICPMS204-B_101229A	83	11038
Cadmium	0.00012	mg/L		0.00008		E200.8	12/29/10 19:22 / dck	12/27/10 09:48	ICPMS204-B_101229A	83	11038
Copper	0.043	mg/L		0.001		E200.8	12/29/10 19:22 / dck	12/27/10 09:48	ICPMS204-B_101229A	83	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW4D-20101220
Lab ID: H10120314-011
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/20/10 12:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	2.36	mg/L		0.05		E200.8	12/29/10 19:22 / dck	12/27/10 09:48	ICPMS204-B_101229A	83	11038
Lead	0.0102	mg/L		0.0005		E200.8	12/29/10 19:22 / dck	12/27/10 09:48	ICPMS204-B_101229A	83	11038
Manganese	0.121	mg/L		0.005		E200.8	12/29/10 19:22 / dck	12/27/10 09:48	ICPMS204-B_101229A	83	11038
Zinc	0.02	mg/L		0.01		E200.8	12/29/10 19:22 / dck	12/27/10 09:48	ICPMS204-B_101229A	83	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW2S-20101221
Lab ID: H10120314-012
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 12:15
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.		0.1		A4500-H B	12/27/10 15:23 / zeg		MAN-TECH_101227B	34	R68140
Conductivity	499	umhos/cm		1		A2510 B	12/28/10 10:03 / zeg		COND_101228A	1	901228A-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/27/10 17:32 / zeg		MAN-TECH_101227B	61	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 17:32 / zeg		MAN-TECH_101227B	61	R68140
Chloride	ND	mg/L		1		E300.0	01/11/11 17:31 / zeg		IC101-H_110111A	36	R68488
Sulfate	150	mg/L		1		E300.0	01/11/11 17:31 / zeg		IC101-H_110111A	36	R68488
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	12/27/10 15:23 / zeg		MAN-TECH_101227B	33	R68140
Hardness as CaCO3	192	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	8	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Cadmium	0.00210	mg/L		0.00008		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Calcium	42	mg/L		1		E200.8	01/11/11 13:42 / dck		ICPMS204-B_110111A	31	R68475
Copper	ND	mg/L		0.001		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Magnesium	25	mg/L		1		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Manganese	4.19	mg/L		0.005		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Sodium	2	mg/L		1		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Zinc	1.72	mg/L		0.01		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
METALS, TOTAL											
Aluminum	0.09	mg/L		0.03		E200.8	12/29/10 19:31 / dck	12/27/10 09:48	ICPMS204-B_101229A	85	11038
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 19:31 / dck	12/27/10 09:48	ICPMS204-B_101229A	85	11038
Cadmium	0.00376	mg/L		0.00008		E200.8	12/29/10 19:31 / dck	12/27/10 09:48	ICPMS204-B_101229A	85	11038
Copper	0.008	mg/L		0.001		E200.8	01/10/11 15:16 / dck	01/04/11 10:53	ICPMS204-B_110110A	20	11108

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW2S-20101221
Lab ID: H10120314-012
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 12:15
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	0.82	mg/L		0.05		E200.8	12/29/10 19:31 / dck	12/27/10 09:48	ICPMS204-B_101229A	85	11038
Lead	0.0331	mg/L		0.0005		E200.8	12/29/10 19:31 / dck	12/27/10 09:48	ICPMS204-B_101229A	85	11038
Manganese	8.96	mg/L		0.005		E200.8	01/03/11 23:09 / dck	12/27/10 09:48	ICPMS204-B_110103A	76	11038
Zinc	2.86	mg/L		0.01		E200.8	12/29/10 19:31 / dck	12/27/10 09:48	ICPMS204-B_101229A	85	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW01-555-20101221
Lab ID: H10120314-013
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 11:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.		0.1		A4500-H B	12/27/10 15:30 / zeg		MAN-TECH_101227B	36	R68140
Conductivity	457	umhos/cm		1		A2510 B	12/28/10 10:04 / zeg		COND_101228A	2001228A	-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/27/10 17:39 / zeg		MAN-TECH_101227B	62	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 17:39 / zeg		MAN-TECH_101227B	62	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 16:33 / zeg		IC101-H_101229A	43	R68286
Sulfate	130	mg/L		1		E300.0	12/30/10 16:33 / zeg		IC101-H_101229A	43	R68286
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	12/27/10 15:30 / zeg		MAN-TECH_101227B	35	R68140
Hardness as CaCO3	213	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	9	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Cadmium	0.00066	mg/L		0.00008		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Calcium	39	mg/L		1		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Lead	0.0005	mg/L		0.0005		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Magnesium	28	mg/L		1		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Manganese	0.008	mg/L		0.005		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Potassium	1	mg/L		1		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Sodium	2	mg/L		1		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Zinc	0.25	mg/L		0.01		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
METALS, TOTAL											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 20:10 / dck		ICPMS204-B_101229A	94	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 20:10 / dck		ICPMS204-B_101229A	94	R68216
Cadmium	0.00067	mg/L		0.00008		E200.8	12/29/10 20:10 / dck		ICPMS204-B_101229A	94	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 20:10 / dck		ICPMS204-B_101229A	94	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW01-555-20101221
Lab ID: H10120314-013
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 11:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	ND	mg/L		0.05		E200.8	12/29/10 20:10 / dck		ICPMS204-B_101229A	94	R68216
Lead	0.0008	mg/L		0.0005		E200.8	12/29/10 20:10 / dck		ICPMS204-B_101229A	94	R68216
Manganese	0.005	mg/L		0.005		E200.8	12/29/10 20:10 / dck		ICPMS204-B_101229A	94	R68216
Zinc	0.25	mg/L		0.01		E200.8	12/29/10 20:10 / dck		ICPMS204-B_101229A	94	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW2D-20101221
Lab ID: H10120314-014
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 11:45 **DateReceived:** 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.9	s.u.		0.1		A4500-H B	12/27/10 15:37 / zeg		MAN-TECH_101227B	38	R68140
Conductivity	240	umhos/cm		1		A2510 B	12/28/10 10:05 / zeg		COND_101228A	2	101228A-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/27/10 17:46 / zeg		MAN-TECH_101227B	63	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 17:46 / zeg		MAN-TECH_101227B	63	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 17:02 / zeg		IC101-H_101229A	46	R68286
Sulfate	17	mg/L		1		E300.0	12/30/10 17:02 / zeg		IC101-H_101229A	46	R68286
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	12/27/10 15:37 / zeg		MAN-TECH_101227B	37	R68140
Hardness as CaCO3	114	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	10	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Calcium	24	mg/L		1		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Magnesium	13	mg/L		1		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Sodium	1	mg/L		1		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Zinc	ND	mg/L		0.01		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
METALS, TOTAL											
Aluminum	0.19	mg/L		0.03		E200.8	12/29/10 20:19 / dck	12/27/10 09:48	ICPMS204-B_101229A	96	11038
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 20:19 / dck	12/27/10 09:48	ICPMS204-B_101229A	96	11038
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 20:19 / dck	12/27/10 09:48	ICPMS204-B_101229A	96	11038
Copper	0.003	mg/L		0.001		E200.8	01/10/11 15:21 / dck	01/04/11 10:53	ICPMS204-B_110110A	21	11108

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW2D-20101221
Lab ID: H10120314-014
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 11:45
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	0.30	mg/L		0.05		E200.8	12/29/10 20:19 / dck	12/27/10 09:48	ICPMS204-B_101229A	96	11038
Lead	0.0014	mg/L		0.0005		E200.8	12/29/10 20:19 / dck	12/27/10 09:48	ICPMS204-B_101229A	96	11038
Manganese	0.026	mg/L		0.005		E200.8	12/29/10 20:19 / dck	12/27/10 09:48	ICPMS204-B_101229A	96	11038
Zinc	ND	mg/L		0.01		E200.8	12/29/10 20:19 / dck	12/27/10 09:48	ICPMS204-B_101229A	96	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW01-20101221
Lab ID: H10120314-015
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 11:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.		0.1		A4500-H B	12/27/10 15:44 / zeg		MAN-TECH_101227B	40	R68140
Conductivity	458	umhos/cm		1		A2510 B	12/28/10 10:06 / zeg		COND_101228A	2201228A-COND-PROBI	
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/27/10 17:53 / zeg		MAN-TECH_101227B	64	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 17:53 / zeg		MAN-TECH_101227B	64	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 17:12 / zeg		IC101-H_101229A	47	R68286
Sulfate	130	mg/L		1		E300.0	12/30/10 17:12 / zeg		IC101-H_101229A	47	R68286
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	12/27/10 15:44 / zeg		MAN-TECH_101227B	39	R68140
Hardness as CaCO3	211	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	11	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Cadmium	0.00052	mg/L		0.00008		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Calcium	39	mg/L		1		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Iron	0.14	mg/L		0.05		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Magnesium	28	mg/L		1		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Manganese	0.328	mg/L		0.005		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Potassium	1	mg/L		1		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Sodium	2	mg/L		1		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Zinc	0.21	mg/L		0.01		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
METALS, TOTAL											
Aluminum	0.08	mg/L		0.03		E200.8	12/29/10 20:28 / dck	12/27/10 09:48	ICPMS204-B_101229A	98	11038
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 20:28 / dck	12/27/10 09:48	ICPMS204-B_101229A	98	11038
Cadmium	0.00066	mg/L		0.00008		E200.8	12/29/10 20:28 / dck	12/27/10 09:48	ICPMS204-B_101229A	98	11038
Copper	0.001	mg/L		0.001		E200.8	01/10/11 15:25 / dck	01/04/11 10:53	ICPMS204-B_110110A	22	11108

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW01-20101221
Lab ID: H10120314-015
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 11:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	0.15	mg/L		0.05		E200.8	12/29/10 20:28 / dck	12/27/10 09:48	ICPMS204-B_101229A	98	11038
Lead	0.0016	mg/L		0.0005		E200.8	12/29/10 20:28 / dck	12/27/10 09:48	ICPMS204-B_101229A	98	11038
Manganese	0.006	mg/L		0.005		E200.8	12/29/10 20:28 / dck	12/27/10 09:48	ICPMS204-B_101229A	98	11038
Zinc	0.25	mg/L		0.01		E200.8	12/29/10 20:28 / dck	12/27/10 09:48	ICPMS204-B_101229A	98	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW3D-20101220
Lab ID: H10120314-016
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 13:00 **DateReceived:** 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.9	s.u.		0.1		A4500-H B	12/27/10 15:51 / zeg		MAN-TECH_101227B	42	R68140
Conductivity	299	umhos/cm		1		A2510 B	12/28/10 10:07 / zeg		COND_101228A	2401228A	-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	79	mg/L		4		A2320 B	12/27/10 18:07 / zeg		MAN-TECH_101227B	67	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 18:07 / zeg		MAN-TECH_101227B	67	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 17:21 / zeg		IC101-H_101229A	48	R68286
Sulfate	78	mg/L		1		E300.0	12/30/10 17:21 / zeg		IC101-H_101229A	48	R68286
INORGANICS											
Alkalinity, Total as CaCO3	65	mg/L		4		A2320 B	12/27/10 15:51 / zeg		MAN-TECH_101227B	41	R68140
Hardness as CaCO3	126	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	12	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Calcium	29	mg/L		1		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Magnesium	13	mg/L		1		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Sodium	2	mg/L		1		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Zinc	ND	mg/L		0.01		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
METALS, TOTAL											
Aluminum	1.09	mg/L		0.03		E200.8	12/29/10 20:36 / dck	12/27/10 09:48	ICPMS204-B_101229A	100	11038
Arsenic	0.007	mg/L		0.003		E200.8	12/29/10 20:36 / dck	12/27/10 09:48	ICPMS204-B_101229A	100	11038
Cadmium	0.00034	mg/L		0.00008		E200.8	12/29/10 20:36 / dck	12/27/10 09:48	ICPMS204-B_101229A	100	11038
Copper	0.004	mg/L		0.001		E200.8	01/10/11 15:29 / dck	01/04/11 10:53	ICPMS204-B_110110A	23	11108

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW3D-20101220
Lab ID: H10120314-016
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 13:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	4.63	mg/L		0.05		E200.8	12/29/10 20:36 / dck	12/27/10 09:48	ICPMS204-B_101229A	100	11038
Lead	0.0232	mg/L		0.0005		E200.8	12/29/10 20:36 / dck	12/27/10 09:48	ICPMS204-B_101229A	100	11038
Manganese	0.370	mg/L		0.005		E200.8	12/29/10 20:36 / dck	12/27/10 09:48	ICPMS204-B_101229A	100	11038
Zinc	0.04	mg/L		0.01		E200.8	12/29/10 20:36 / dck	12/27/10 09:48	ICPMS204-B_101229A	100	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW01-333-20101221
Lab ID: H10120314-017
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 11:05
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 21:10 / dck		ICPMS204-B_101229A	108	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 21:10 / dck		ICPMS204-B_101229A	108	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 21:10 / dck		ICPMS204-B_101229A	108	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 21:10 / dck		ICPMS204-B_101229A	108	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 21:10 / dck		ICPMS204-B_101229A	108	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 21:10 / dck		ICPMS204-B_101229A	108	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 21:10 / dck		ICPMS204-B_101229A	108	R68216
Zinc	ND	mg/L		0.01		E200.8	12/29/10 21:10 / dck		ICPMS204-B_101229A	108	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW01-444-20101221
Lab ID: H10120314-018
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 11:05
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 21:14 / dck		ICPMS204-B_101229A	109	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 21:14 / dck		ICPMS204-B_101229A	109	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 21:14 / dck		ICPMS204-B_101229A	109	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 21:14 / dck		ICPMS204-B_101229A	109	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 21:14 / dck		ICPMS204-B_101229A	109	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 21:14 / dck		ICPMS204-B_101229A	109	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 21:14 / dck		ICPMS204-B_101229A	109	R68216
Zinc	ND	mg/L		0.01		E200.8	12/29/10 21:14 / dck		ICPMS204-B_101229A	109	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 101228A-COND-PROBE

Date: *12-Jan-11*

Run ID :Run Order: **COND_101228A: 6** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV1_101228A** Method: **A2510 B**
Analysis Date: **12/28/10 09:48** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	986	1.0	1000		99	90	110				

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Run ID :Run Order: **COND_101228A: 7** SampType: **Laboratory Control Sample** Sample ID: **LCS2_101228A** Method: **A2510 B**
Analysis Date: **12/28/10 09:49** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1410	1.0	1412		100	90	110				

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Run ID :Run Order: **COND_101228A: 10** SampType: **Sample Duplicate** Sample ID: **H10120314-002BDUP** Method: **A2510 B**
Analysis Date: **12/28/10 09:53** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	207	1.0						206.7	0.0	10	

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Run ID :Run Order: **COND_101228A: 16** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV6_101228A** Method: **A2510 B**
Analysis Date: **12/28/10 09:59** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1410	1.0	1412		100	90	110				

Associated samples: **H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Run ID :Run Order: **COND_101228A: 23** SampType: **Sample Duplicate** Sample ID: **H10120314-015BDUP** Method: **A2510 B**
Analysis Date: **12/28/10 10:06** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	456	1.0						458.4	0.6	10	

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 101228A-COND-PROBE

Date: *12-Jan-11*

Run ID :Run Order: **COND_101228A: 32** SampType: **Sample Duplicate** Sample ID: **H10120315-006ADUP** Method: **A2510 B**

Analysis Date: **12/28/10 10:17** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	614	1.0						616	0.3	10	

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 11038

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101228A: 46** SampType: **Laboratory Control Sample** Sample ID: **LCS-11038** Method: **E200.8**
Analysis Date: **12/28/10 18:13** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.52	0.10	2.5	0.003863	101	85	115				
Arsenic	0.495	0.0050	0.5		99	85	115				
Cadmium	0.266	0.0010	0.25		106	85	115				
Copper	0.505	0.010	0.5	0.003206	100	85	115				
Iron	2.59	0.030	2.5	0.0008818	104	85	115				
Lead	0.509	0.010	0.5	0.000049	102	85	115				
Manganese	2.55	0.010	2.5		102	85	115				
Zinc	0.511	0.010	0.5		102	85	115				

Associated samples: **H10120314-002D; H10120314-005D; H10120314-006D; H10120314-007D; H10120314-008D; H10120314-011D; H10120314-012D; H10120314-014D; H10120314-015D; H10120314-016D**

Run ID :Run Order: **ICPMS204-B_101228A: 50** SampType: **Sample Matrix Spike** Sample ID: **H10120215-012FMS3** Method: **E200.8**
Analysis Date: **12/28/10 18:30** Units: **mg/L** **Prep Info:** Prep Date: **12/29/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	3.93	0.10	2.5	1.033	116	70	130				
Arsenic	0.517	0.0050	0.5	0.01398	101	70	130				
Cadmium	0.257	0.0010	0.25	0.00154	102	70	130				
Copper	0.652	0.010	0.5	0.158	99	70	130				
Iron	4.27	0.030	2.5	1.53	110	70	130				
Lead	0.568	0.010	0.5	0.04814	104	70	130				
Manganese	2.75	0.010	2.5	0.2535	100	70	130				
Zinc	0.857	0.010	0.5	0.3597	99	70	130				

Associated samples: **H10120314-002D; H10120314-005D; H10120314-006D; H10120314-007D; H10120314-008D; H10120314-011D; H10120314-012D; H10120314-014D; H10120314-015D; H10120314-016D**

Run ID :Run Order: **ICPMS204-B_101228A: 51** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120215-012FMSD3** Method: **E200.8**
Analysis Date: **12/28/10 18:34** Units: **mg/L** **Prep Info:** Prep Date: **12/29/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	3.88	0.10	2.5	1.033	114	70	130	3.929	1.3	20	
Arsenic	0.513	0.0050	0.5	0.01398	100	70	130	0.5175	0.8	20	
Cadmium	0.261	0.0010	0.25	0.00154	104	70	130	0.2571	1.4	20	
Copper	0.648	0.010	0.5	0.158	98	70	130	0.6522	0.6	20	
Iron	4.22	0.030	2.5	1.53	108	70	130	4.273	1.2	20	

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 11038

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101228A: 51** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120215-012FMSD3** Method: **E200.8**

Analysis Date: **12/28/10 18:34** Units: **mg/L** **Prep Info:** Prep Date: **12/29/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.556	0.010	0.5	0.04814	102	70	130	0.5682	2.2	20	
Manganese	2.77	0.010	2.5	0.2535	101	70	130	2.754	0.5	20	
Zinc	0.841	0.010	0.5	0.3597	96	70	130	0.857	1.9	20	

Associated samples: **H10120314-002D; H10120314-005D; H10120314-006D; H10120314-007D; H10120314-008D; H10120314-011D; H10120314-012D; H10120314-014D; H10120314-015D; H10120314-016D**

Run ID :Run Order: **ICPMS204-B_101229A: 58** SampType: **Method Blank** Sample ID: **MB-11038** Method: **E200.8**

Analysis Date: **12/29/10 17:32** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.004	0.0008									
Arsenic	ND	4E-05									
Cadmium	ND	2E-05									
Copper	0.003	0.0002									
Iron	ND	0.0009									
Lead	4E-05	2E-05									
Manganese	ND	3E-05									
Zinc	0.0009	0.0007									

Associated samples: **H10120314-002D; H10120314-005D; H10120314-006D; H10120314-007D; H10120314-008D; H10120314-011D; H10120314-012D; H10120314-014D; H10120314-015D; H10120314-016D**

Run ID :Run Order: **ICPMS204-B_110103A: 75** SampType: **Method Blank** Sample ID: **MB-11038** Method: **E200.8**

Analysis Date: **01/03/11 23:04** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.004	0.0008									
Arsenic	ND	4E-05									
Cadmium	ND	2E-05									
Copper	0.002	0.0002									
Iron	ND	0.0009									
Lead	4E-05	2E-05									
Manganese	0.0001	3E-05									
Zinc	0.0010	0.0007									

Associated samples: **H10120314-002D; H10120314-005D; H10120314-006D; H10120314-007D; H10120314-008D; H10120314-011D; H10120314-012D; H10120314-014D; H10120314-015D; H10120314-016D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 11038

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_110111A: 149** SampType: **Method Blank** Sample ID: **MB-11038** Method: **E200.8**

Analysis Date: **01/11/11 22:45** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.005	0.0008									
Arsenic	6E-05	4E-05									
Cadmium	ND	2E-05									
Copper	0.0009	0.0002									
Iron	ND	0.0009									
Lead	6E-05	2E-05									
Manganese	0.0006	3E-05									
Zinc	0.001	0.0007									

Associated samples: **H10120314-002D; H10120314-005D; H10120314-006D; H10120314-007D; H10120314-008D; H10120314-011D; H10120314-012D; H10120314-014D; H10120314-015D; H10120314-016D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 11042

Date: *12-Jan-11*

Run ID :Run Order: **ACCU-124 (14410200)_101227B: 1** SampType: **Method Blank** Sample ID: **MB-11042** Method: **A2540 C**
Analysis Date: **12/27/10 13:55** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2	1.0									

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B**

Run ID :Run Order: **ACCU-124 (14410200)_101227B: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS-11042** Method: **A2540 C**
Analysis Date: **12/27/10 13:56** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	1930	10	2000	2	96	90	110				

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B**

Run ID :Run Order: **ACCU-124 (14410200)_101227B: 10** SampType: **Sample Duplicate** Sample ID: **H10120314-004BDUP** Method: **A2540 C**
Analysis Date: **12/27/10 13:59** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	196	10						194	1.0	5	

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B**

Run ID :Run Order: **ACCU-124 (14410200)_101227B: 15** SampType: **Sample Matrix Spike** Sample ID: **H10120314-008BMS** Method: **A2540 C**
Analysis Date: **12/27/10 14:01** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2140	10	2000	160	99	80	120				

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 11043

Date: *12-Jan-11*

Run ID :Run Order: **ACCU-124 (14410200)_101227A: 1** SampType: **Method Blank** Sample ID: **MB-11043** Method: **A2540 D**
Analysis Date: **12/27/10 13:50** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	1									

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B**

Run ID :Run Order: **ACCU-124 (14410200)_101227A: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS-11043** Method: **A2540 D**
Analysis Date: **12/27/10 13:50** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	1850	10	2000		92	70	130				

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B**

Run ID :Run Order: **ACCU-124 (14410200)_101227A: 8** SampType: **Sample Duplicate** Sample ID: **H10120314-004BDUP** Method: **A2540 D**
Analysis Date: **12/27/10 13:52** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	6.00	10						6		5	

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 11108

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_110106A: 26** SampType: **Laboratory Control Sample** Sample ID: **LCS-11108** Method: **E200.8**
Analysis Date: **01/06/11 14:00** Units: **mg/L** **Prep Info:** Prep Date: **1/4/2011** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.489	0.010	0.5	0.003926	97	85	115				

Associated samples: **H10120314-002E; H10120314-006E; H10120314-007E; H10120314-008E; H10120314-012E; H10120314-014E; H10120314-015E; H10120314-016E**

Run ID :Run Order: **ICPMS204-B_110106A: 30** SampType: **Sample Matrix Spike** Sample ID: **H10120314-002EMS3** Method: **E200.8**
Analysis Date: **01/06/11 14:17** Units: **mg/L** **Prep Info:** Prep Date: **1/4/2011** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.483	0.010	0.5	0.003492	96	70	130				

Associated samples: **H10120314-002E; H10120314-006E; H10120314-007E; H10120314-008E; H10120314-012E; H10120314-014E; H10120314-015E; H10120314-016E**

Run ID :Run Order: **ICPMS204-B_110106A: 35** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120314-002EMSD3** Method: **E200.8**
Analysis Date: **01/06/11 14:39** Units: **mg/L** **Prep Info:** Prep Date: **1/4/2011** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.488	0.010	0.5	0.003492	97	70	130	0.483	1.1	20	

Associated samples: **H10120314-002E; H10120314-006E; H10120314-007E; H10120314-008E; H10120314-012E; H10120314-014E; H10120314-015E; H10120314-016E**

Run ID :Run Order: **ICPMS204-B_110110A: 15** SampType: **Method Blank** Sample ID: **MB-11108** Method: **E200.8**
Analysis Date: **01/10/11 14:55** Units: **mg/L** **Prep Info:** Prep Date: **1/4/2011** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0003	0.0002									

Associated samples: **H10120314-002E; H10120314-006E; H10120314-007E; H10120314-008E; H10120314-012E; H10120314-014E; H10120314-015E; H10120314-016E**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68140

Date: *12-Jan-11*

Run ID :Run Order: **MAN-TECH_101227B: 7** SampType: **Method Blank** Sample ID: **MBLK** Method: **A2320 B**

Analysis Date: **12/27/10 13:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	1	0.6									

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 9** SampType: **Laboratory Control Sample** Sample ID: **LCS-12202010** Method: **A2320 B**

Analysis Date: **12/27/10 13:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	620	4.0	600	1.33	103	90	110				

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 17** SampType: **Sample Duplicate** Sample ID: **H10120314-003BDUP** Method: **A2320 B**

Analysis Date: **12/27/10 14:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	99	4.0						99.31	0.1	20	
Bicarbonate as HCO3	120	4.0						121.2	0.1	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 23** SampType: **Sample Matrix Spike** Sample ID: **H10120314-005BMS** Method: **A2320 B**

Analysis Date: **12/27/10 14:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	630	4.0	600	104.1	88	90	110				S

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68140

Date: *12-Jan-11*

Run ID :Run Order: **MAN-TECH_101227B: 44** SampType: **Sample Duplicate** Sample ID: **H10120314-001ADUP** Method: **A2320 B**

Analysis Date: **12/27/10 16:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	110	4.0						106.6	0.2	20	
Bicarbonate as HCO3	130	4.0						130	0.2	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 59** SampType: **Sample Matrix Spike** Sample ID: **H10120314-011AMS** Method: **A2320 B**

Analysis Date: **12/27/10 17:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	680	4.0	600	95.13	98	90	110				

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 65** SampType: **Sample Duplicate** Sample ID: **H10120314-015ADUP** Method: **A2320 B**

Analysis Date: **12/27/10 18:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	100	4.0						103.4	0.1	20	
Bicarbonate as HCO3	130	4.0						126.2	0.1	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68140

Date: *12-Jan-11*

Run ID :Run Order: **MAN-TECH_101227B: 1** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV1-1631** Method: **A4500-H B**

Analysis Date: **12/27/10 13:33** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	3.92	0.10	4		98	98	102				

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 2** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-1777** Method: **A4500-H B**

Analysis Date: **12/27/10 13:36** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.95	0.10	7		99	98	102				

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 3** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV2-1664** Method: **A4500-H B**

Analysis Date: **12/27/10 13:38** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	9.95	0.10	10		99	98	102				

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 4** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV-1846** Method: **A4500-H B**

Analysis Date: **12/27/10 13:41** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.96	0.10	7		99	99	101				

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68140

Date: *12-Jan-11*

Run ID :Run Order: **MAN-TECH_101227B: 18** SampType: **Sample Duplicate** Sample ID: **H10120314-003BDUP** Method: **A4500-H B**

Analysis Date: **12/27/10 14:27** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.09	0.10						8.09	0.0	3	

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 45** SampType: **Sample Duplicate** Sample ID: **H10120314-001ADUP** Method: **A4500-H B**

Analysis Date: **12/27/10 16:05** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.23	0.10									

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 66** SampType: **Sample Duplicate** Sample ID: **H10120314-015ADUP** Method: **A4500-H B**

Analysis Date: **12/27/10 18:00** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.68	0.10									

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68216

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101229A: 8** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**

Analysis Date: **12/29/10 13:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.248	0.10	0.25		99	90	110				
Arsenic	0.0495	0.0050	0.05		99	90	110				
Cadmium	0.0261	0.0010	0.025		105	90	110				
Calcium	2.65	0.50	2.5		106	90	110				
Copper	0.0507	0.010	0.05		101	90	110				
Iron	0.261	0.030	0.255		102	90	110				
Lead	0.0506	0.010	0.05		101	90	110				
Magnesium	2.58	0.50	2.5		103	90	110				
Manganese	0.245	0.010	0.25		98	90	110				
Potassium	2.59	0.50	2.5		104	90	110				
Sodium	2.49	0.50	2.5		100	90	110				
Zinc	0.0506	0.010	0.05		101	90	110				

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-002D; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-005D; H10120314-006C; H10120314-006D; H10120314-007C; H10120314-007D; H10120314-008C; H10120314-008D; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-011D; H10120314-012C; H10120314-012D; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-014D; H10120314-015C; H10120314-015D; H10120314-016C; H10120314-016D; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **12/29/10 13:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	37.9	0.10	40		95	70	130				
Arsenic	0.000128	0.0050									
Cadmium	0.000446	0.0010									
Calcium	115	0.50									
Copper	0.00157	0.010									
Iron	96.9	0.030	100		97	70	130				
Lead	0.000108	0.010									
Magnesium	39.9	0.50									
Manganese	0.00173	0.010									
Potassium	39.5	0.50									
Sodium	99.0	0.50									
Zinc	0.00108	0.010									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68216

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101229A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **12/29/10 13:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-002D; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-005D; H10120314-006C; H10120314-006D; H10120314-007C; H10120314-007D; H10120314-008C; H10120314-008D; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-011D; H10120314-012C; H10120314-012D; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-014D; H10120314-015C; H10120314-015D; H10120314-016C; H10120314-016D; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **12/29/10 13:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	37.8	0.10	40		94	70	130				
Arsenic	0.0102	0.0050	0.01		102	70	130				
Cadmium	0.00984	0.0010	0.01		98	70	130				
Calcium	117	0.50	120		98	70	130				
Copper	0.0209	0.010	0.02		105	70	130				
Iron	99.3	0.030	100		99	70	130				
Lead	9.40E-05	0.010				0	0				
Magnesium	40.4	0.50	40		101	70	130				
Manganese	0.0211	0.010	0.02		106	70	130				
Potassium	39.9	0.50	40		100	70	130				
Sodium	99.8	0.50	100		100	70	130				
Zinc	0.0106	0.010	0.01		106	70	130				

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-002D; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-005D; H10120314-006C; H10120314-006D; H10120314-007C; H10120314-007D; H10120314-008C; H10120314-008D; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-011D; H10120314-012C; H10120314-012D; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-014D; H10120314-015C; H10120314-015D; H10120314-016C; H10120314-016D; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 21** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**

Analysis Date: **12/29/10 14:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.0002									
Arsenic	ND	3E-05									
Cadmium	ND	1E-05									
Calcium	ND	0.006									
Copper	ND	3E-05									
Iron	0.0005	0.0002									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68216

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101229A: 21** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**

Analysis Date: **12/29/10 14:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1E-05									
Magnesium	ND	0.0010									
Manganese	ND	2E-05									
Potassium	ND	0.02									
Sodium	ND	0.02									
Zinc	ND	0.0006									

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 22** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**

Analysis Date: **12/29/10 14:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0483	0.10	0.05		97	85	115				
Arsenic	0.0480	0.0050	0.05		96	85	115				
Cadmium	0.0487	0.0010	0.05		97	85	115				
Calcium	47.3	0.50	50		95	85	115				
Copper	0.0459	0.010	0.05		92	85	115				
Iron	4.88	0.030	5	0.0005152	97	85	115				
Lead	0.0492	0.010	0.05		98	85	115				
Magnesium	47.9	0.50	50		96	85	115				
Manganese	0.0461	0.010	0.05		92	85	115				
Potassium	48.2	0.50	50		97	85	115				
Sodium	47.4	0.50	50		95	85	115				
Zinc	0.0491	0.010	0.05		98	85	115				

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 36** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**

Analysis Date: **12/29/10 15:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.245	0.10	0.25		98	90	110				
Arsenic	0.0497	0.0050	0.05		99	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68216

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101229A: 36** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**

Analysis Date: **12/29/10 15:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.0252	0.0010	0.025		101	90	110				
Calcium	2.69	0.50	2.5		107	90	110				
Copper	0.0508	0.010	0.05		102	90	110				
Iron	0.262	0.030	0.255		103	90	110				
Lead	0.0504	0.010	0.05		101	90	110				
Magnesium	2.58	0.50	2.5		103	90	110				
Manganese	0.243	0.010	0.25		97	90	110				
Potassium	2.56	0.50	2.5		102	90	110				
Sodium	2.51	0.50	2.5		100	90	110				
Zinc	0.0508	0.010	0.05		101	90	110				

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-002D; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-005D; H10120314-006C; H10120314-006D; H10120314-007C; H10120314-007D; H10120314-008C; H10120314-008D; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-011D; H10120314-012C; H10120314-012D; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-014D; H10120314-015C; H10120314-015D; H10120314-016C; H10120314-016D; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 45** SampType: **Sample Matrix Spike** Sample ID: **H10120314-001CMS** Method: **E200.8**

Analysis Date: **12/29/10 16:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0471	0.10	0.05	0.001108	92	70	130				
Arsenic	0.0472	0.0050	0.05	0.0004009	94	70	130				
Cadmium	0.0456	0.0010	0.05		91	70	130				
Calcium	65.3	1.0	50	19.67	91	70	130				
Copper	0.0451	0.010	0.05	0.0003121	90	70	130				
Iron	4.45	0.030	5	0.02553	89	70	130				
Lead	0.0474	0.010	0.05	0.0000283	95	70	130				
Magnesium	55.9	1.0	50	11.45	89	70	130				
Manganese	0.0472	0.010	0.05	0.001125	92	70	130				
Potassium	46.2	1.0	50	0.3074	92	70	130				
Sodium	45.8	1.0	50	1.155	89	70	130				
Zinc	0.0823	0.010	0.05	0.03544	94	70	130				

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68216

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101229A: 46** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120314-001CMSD** Method: **E200.8**

Analysis Date: **12/29/10 16:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0475	0.10	0.05	0.001108	93	70	130	0.04707		20	
Arsenic	0.0482	0.0050	0.05	0.0004009	96	70	130	0.04718	2.2	20	
Cadmium	0.0464	0.0010	0.05		93	70	130	0.04564	1.7	20	
Calcium	66.0	1.0	50	19.67	93	70	130	65.3	1.1	20	
Copper	0.0460	0.010	0.05	0.0003121	91	70	130	0.04511	1.8	20	
Iron	4.51	0.030	5	0.02553	90	70	130	4.453	1.3	20	
Lead	0.0470	0.010	0.05	0.0000283	94	70	130	0.04737	0.8	20	
Magnesium	57.5	1.0	50	11.45	92	70	130	55.9	2.9	20	
Manganese	0.0482	0.010	0.05	0.001125	94	70	130	0.04716	2.2	20	
Potassium	47.6	1.0	50	0.3074	95	70	130	46.23	3.0	20	
Sodium	47.0	1.0	50	1.155	92	70	130	45.85	2.6	20	
Zinc	0.0840	0.010	0.05	0.03544	97	70	130	0.08231	2.0	20	

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 49** SampType: **Sample Matrix Spike** Sample ID: **H10120314-001DMS** Method: **E200.8**

Analysis Date: **12/29/10 16:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0511	0.10	0.05	0.00573	91	70	130				
Arsenic	0.0485	0.0050	0.05	0.0004334	96	70	130				
Cadmium	0.0466	0.0010	0.05		93	70	130				
Calcium	66.1	1.0	50	21.11	90	70	130				
Copper	0.0465	0.010	0.05	0.0002383	92	70	130				
Iron	4.50	0.030	5	0.006453	90	70	130				
Lead	0.0478	0.010	0.05	0.0000603	96	70	130				
Magnesium	58.0	1.0	50	12.38	91	70	130				
Manganese	0.0469	0.010	0.05	0.0007145	92	70	130				
Potassium	47.5	1.0	50	0.3628	94	70	130				
Sodium	47.8	1.0	50	1.247	93	70	130				
Zinc	0.0561	0.010	0.05	0.007888	96	70	130				

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68216

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101229A: 50** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120314-001DMSD** Method: **E200.8**

Analysis Date: **12/29/10 16:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0521	0.10	0.05	0.00573	93	70	130	0.05107		20	
Arsenic	0.0488	0.0050	0.05	0.0004334	97	70	130	0.0485	0.7	20	
Cadmium	0.0464	0.0010	0.05		93	70	130	0.04658	0.3	20	
Calcium	67.7	1.0	50	21.11	93	70	130	66.07	2.4	20	
Copper	0.0468	0.010	0.05	0.0002383	93	70	130	0.04646	0.7	20	
Iron	4.65	0.030	5	0.006453	93	70	130	4.495	3.4	20	
Lead	0.0484	0.010	0.05	0.0000603	97	70	130	0.04783	1.2	20	
Magnesium	58.1	1.0	50	12.38	91	70	130	58	0.1	20	
Manganese	0.0476	0.010	0.05	0.0007145	94	70	130	0.04687	1.6	20	
Potassium	48.1	1.0	50	0.3628	95	70	130	47.53	1.2	20	
Sodium	47.0	1.0	50	1.247	92	70	130	47.75	1.5	20	
Zinc	0.0561	0.010	0.05	0.007888	96	70	130	0.05609	0.0	20	

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 87** SampType: **Sample Matrix Spike** Sample ID: **H10120314-013CMS** Method: **E200.8**

Analysis Date: **12/29/10 19:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0604	0.10	0.05	0.01532	90	70	130				
Arsenic	0.0491	0.0050	0.05	0.0001571	98	70	130				
Cadmium	0.0475	0.0010	0.05	0.000655	94	70	130				
Calcium	82.8	1.0	50	39.42	87	70	130				
Copper	0.0455	0.010	0.05	0.0002479	90	70	130				
Iron	4.66	0.030	5	0.04136	92	70	130				
Lead	0.0493	0.010	0.05	0.0005189	98	70	130				
Magnesium	72.2	1.0	50	27.78	89	70	130				
Manganese	0.0526	0.010	0.05	0.008171	89	70	130				
Potassium	44.7	1.0	50	1.112	87	70	130				
Sodium	47.3	1.0	50	1.725	91	70	130				
Zinc	0.287	0.010	0.05	0.2523		70	130				A

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68216

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101229A: 88** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120314-013CMSD** Method: **E200.8**

Analysis Date: **12/29/10 19:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0601	0.10	0.05	0.01532	90	70	130	0.06036		20	
Arsenic	0.0488	0.0050	0.05	0.0001571	97	70	130	0.04907	0.6	20	
Cadmium	0.0476	0.0010	0.05	0.000655	94	70	130	0.0475	0.3	20	
Calcium	83.6	1.0	50	39.42	88	70	130	82.82	0.9	20	
Copper	0.0450	0.010	0.05	0.0002479	90	70	130	0.04547	1.0	20	
Iron	4.64	0.030	5	0.04136	92	70	130	4.656	0.3	20	
Lead	0.0491	0.010	0.05	0.0005189	97	70	130	0.04927	0.3	20	
Magnesium	72.5	1.0	50	27.78	89	70	130	72.17	0.4	20	
Manganese	0.0537	0.010	0.05	0.008171	91	70	130	0.05263	1.9	20	
Potassium	45.1	1.0	50	1.112	88	70	130	44.66	0.9	20	
Sodium	47.9	1.0	50	1.725	92	70	130	47.32	1.1	20	
Zinc	0.284	0.010	0.05	0.2523		70	130	0.2873	1.1	20	A

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 101** SampType: **Sample Matrix Spike** Sample ID: **H10120314-016DMS3** Method: **E200.8**

Analysis Date: **12/29/10 20:40** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	3.83	0.10	2.5	1.087	110	70	130				
Arsenic	0.490	0.0050	0.5	0.007089	97	70	130				
Cadmium	0.251	0.0010	0.25	0.000343	100	70	130				
Calcium	57.4	1.0	25	34.55	91	70	130				
Copper	0.470	0.010	0.5	0.004447	93	70	130				
Iron	6.84	0.030	2.5	4.633	88	70	130				
Lead	0.531	0.010	0.5	0.02323	101	70	130				
Magnesium	39.4	1.0	25	15.85	94	70	130				
Manganese	2.58	0.010	2.5	0.3703	88	70	130				
Potassium	22.6	1.0	25	0.9055	87	70	130				
Sodium	26.0	1.0	25	1.897	96	70	130				
Zinc	0.519	0.010	0.5	0.04338	95	70	130				

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68216

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101229A: 102** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120314-016DMSD3** Method: **E200.8**

Analysis Date: **12/29/10 20:44** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	4.08	0.10	2.5	1.087	120	70	130	3.827	6.3	20	
Arsenic	0.496	0.0050	0.5	0.007089	98	70	130	0.4905	1.2	20	
Cadmium	0.254	0.0010	0.25	0.000343	102	70	130	0.2511	1.2	20	
Calcium	57.7	1.0	25	34.55	92	70	130	57.38	0.5	20	
Copper	0.484	0.010	0.5	0.004447	96	70	130	0.4701	3.0	20	
Iron	7.19	0.030	2.5	4.633	102	70	130	6.838	5.0	20	
Lead	0.531	0.010	0.5	0.02323	102	70	130	0.5306	0.1	20	
Magnesium	39.0	1.0	25	15.85	93	70	130	39.41	1.0	20	
Manganese	2.59	0.010	2.5	0.3703	89	70	130	2.582	0.3	20	
Potassium	22.5	1.0	25	0.9055	86	70	130	22.56	0.2	20	
Sodium	25.6	1.0	25	1.897	95	70	130	25.98	1.3	20	
Zinc	0.527	0.010	0.5	0.04338	97	70	130	0.5192	1.5	20	

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68259

Date: *12-Jan-11*

Run ID :Run Order: **IC101-H_101230A: 12** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV123010-12** Method: **E300.0**
Analysis Date: **12/30/10 19:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	100	1.0	100		103	90	110				
Sulfate	420	1.0	400		105	90	110				

Associated samples: **H10120314-001A**

Run ID :Run Order: **IC101-H_101230A: 13** SampType: **Method Blank** Sample ID: **ICB123010-13** Method: **E300.0**
Analysis Date: **12/30/10 20:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.2									
Sulfate	ND	0.5									

Associated samples: **H10120314-001A**

Run ID :Run Order: **IC101-H_101230A: 14** SampType: **Laboratory Fortified Blank** Sample ID: **LFB123010-14** Method: **E300.0**
Analysis Date: **12/30/10 20:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49	1.0	50		98	90	110				
Sulfate	200	1.1	200		99	90	110				

Associated samples: **H10120314-001A**

Run ID :Run Order: **IC101-H_101230A: 15** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-123010-15** Method: **E300.0**
Analysis Date: **12/30/10 20:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	100	1.0	100		103	90	110				
Sulfate	410	1.0	400		103	90	110				

Associated samples: **H10120314-001A**

Run ID :Run Order: **IC101-H_101230A: 26** SampType: **Sample Matrix Spike** Sample ID: **H10120314-001AMS** Method: **E300.0**
Analysis Date: **12/31/10 00:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	48	1.0	50	0.216	96	90	110				
Sulfate	200	1.1	200	5.087	97	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68259

Date: *12-Jan-11*

Run ID :Run Order: **IC101-H_101230A: 26** SampType: **Sample Matrix Spike** Sample ID: **H10120314-001AMS** Method: **E300.0**

Analysis Date: **12/31/10 00:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10120314-001A**

Run ID :Run Order: **IC101-H_101230A: 27** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120314-001AMSD** Method: **E300.0**

Analysis Date: **12/31/10 00:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	48	1.0	50	0.216	**96**	90	110	48.39	**0.5**	20	
Sulfate	200	1.1	200	5.087	**98**	90	110	200	**0.6**	20	

Associated samples: **H10120314-001A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68286

Date: *12-Jan-11*

Run ID :Run Order: **IC101-H_101229A: 11** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV122810-11** Method: **E300.0**

Analysis Date: **12/30/10 11:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		100	90	110				
Sulfate	96	1.0	100		96	90	110				

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 12** SampType: **Method Blank** Sample ID: **ICB122810-12** Method: **E300.0**

Analysis Date: **12/30/10 11:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.2									
Sulfate	ND	0.5									

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 13** SampType: **Laboratory Fortified Blank** Sample ID: **LFB122810-13** Method: **E300.0**

Analysis Date: **12/30/10 11:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	27	1.0	25		109	90	110				
Sulfate	100	1.1	100		103	90	110				

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 14** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV122210-15** Method: **E300.0**

Analysis Date: **12/30/10 11:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		100	90	110				
Sulfate	96	1.0	100		96	90	110				

Associated samples: **H10120314-001B; H10120314-002A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68286

Date: *12-Jan-11*

Run ID :Run Order: **IC101-H_101229A: 16** SampType: **Laboratory Fortified Blank** Sample ID: **LFB122810-13** Method: **E300.0**

Analysis Date: **12/30/10 12:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	26	1.0	25		105	90	110				
Sulfate	98	1.1	100		98	90	110				

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 18** SampType: **Sample Matrix Spike** Sample ID: **B10121796-002AMS** Method: **E300.0**

Analysis Date: **12/30/10 12:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	29	1.0	25	4.146	100	90	110				
Sulfate	530	1.1	100	424.2		90	110				A

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 19** SampType: **Sample Matrix Spike Duplicate** Sample ID: **B10121796-002AMSD** Method: **E300.0**

Analysis Date: **12/30/10 12:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	29	1.0	25	4.146	101	90	110				
Sulfate	530	1.1	100	424.2		90	110				A

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 22** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV122210-68** Method: **E300.0**

Analysis Date: **12/30/10 13:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		101	90	110				
Sulfate	96	1.0	100		96	90	110				

Associated samples: **H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68286

Date: *12-Jan-11*

Run ID :Run Order: **IC101-H_101229A: 30** SampType: **Sample Matrix Spike** Sample ID: **H10120314-005AMS** Method: **E300.0**

Analysis Date: **12/30/10 14:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51	1.0	50	0.44	102	90	110				
Sulfate	260	1.1	200	53.01	104	90	110				

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 31** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120314-005AMSD** Method: **E300.0**

Analysis Date: **12/30/10 14:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51	1.0	50	0.44	101	90	110	51.25	0.8	20	
Sulfate	260	1.1	200	53.01	103	90	110	260.3	0.7	20	

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 37** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV122210-68** Method: **E300.0**

Analysis Date: **12/30/10 15:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		102	90	110				
Sulfate	98	1.0	100		98	90	110				

Associated samples: **H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 44** SampType: **Sample Matrix Spike** Sample ID: **H10120314-013AMS** Method: **E300.0**

Analysis Date: **12/30/10 16:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51	1.0	50	0.419	102	90	110				
Sulfate	340	1.1	200	132.7	106	90	110				

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68286

Date: *12-Jan-11*

Run ID :Run Order: **IC101-H_101229A: 45** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120314-013AMSD** Method: **E300.0**

Analysis Date: **12/30/10 16:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51	1.0	50	0.419	102	90	110	51.46	0.2	20	
Sulfate	340	1.1	200	132.7	105	90	110	344.1	0.5	20	

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68292

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_110103A: 8** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **01/03/11 18:09** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0504	0.010	0.05		101	90	110				
Manganese	0.245	0.010	0.25		98	90	110				

Associated samples: **H10120314-006C; H10120314-007C; H10120314-012D**

Run ID :Run Order: **ICPMS204-B_110103A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**
Analysis Date: **01/03/11 18:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.000528	0.010									
Manganese	0.00198	0.010									

Associated samples: **H10120314-006C; H10120314-007C; H10120314-012D**

Run ID :Run Order: **ICPMS204-B_110103A: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**
Analysis Date: **01/03/11 18:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0208	0.010	0.02		104	70	130				
Manganese	0.0233	0.010	0.02		116	70	130				

Associated samples: **H10120314-006C; H10120314-007C; H10120314-012D**

Run ID :Run Order: **ICPMS204-B_110103A: 22** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **01/03/11 19:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0483	0.010	0.05		97	90	110				
Manganese	0.238	0.010	0.25		95	90	110				

Associated samples: **H10120314-006C; H10120314-007C; H10120314-012D**

Run ID :Run Order: **ICPMS204-B_110103A: 28** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**
Analysis Date: **01/03/11 19:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	3E-05									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68292

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_110103A: 28** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**
Analysis Date: **01/03/11 19:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10120314-006C; H10120314-007C**

Run ID :Run Order: **ICPMS204-B_110103A: 29** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**
Analysis Date: **01/03/11 19:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0464	0.010	0.05		93	85	115				

Associated samples: **H10120314-006C; H10120314-007C**

Run ID :Run Order: **ICPMS204-B_110103A: 66** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **01/03/11 22:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0506	0.010	0.05		101	90	110				
Manganese	0.245	0.010	0.25		98	90	110				

Associated samples: **H10120314-006C; H10120314-007C; H10120314-012D**

Run ID :Run Order: **ICPMS204-B_110103A: 78** SampType: **Sample Matrix Spike** Sample ID: **H10120322-001AMS** Method: **E200.8**
Analysis Date: **01/03/11 23:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0510	0.010	0.05	0.001407	99	70	130				

Associated samples: **H10120314-006C; H10120314-007C**

Run ID :Run Order: **ICPMS204-B_110103A: 79** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120322-001AMSD** Method: **E200.8**
Analysis Date: **01/03/11 23:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0500	0.010	0.05	0.001407	97	70	130	0.05097	2.0	20	

Associated samples: **H10120314-006C; H10120314-007C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68451

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_110110A: 7** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**

Analysis Date: **01/10/11 14:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0512	0.010	0.05		102	90	110				

Associated samples: **H10120314-002E; H10120314-006E; H10120314-007E; H10120314-008E; H10120314-012E; H10120314-014E; H10120314-015E; H10120314-016E**

Run ID :Run Order: **ICPMS204-B_110110A: 8** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **01/10/11 14:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.000440	0.010									

Associated samples: **H10120314-002E; H10120314-006E; H10120314-007E; H10120314-008E; H10120314-012E; H10120314-014E; H10120314-015E; H10120314-016E**

Run ID :Run Order: **ICPMS204-B_110110A: 9** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **01/10/11 14:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0212	0.010	0.02		106	70	130				

Associated samples: **H10120314-002E; H10120314-006E; H10120314-007E; H10120314-008E; H10120314-012E; H10120314-014E; H10120314-015E; H10120314-016E**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68475

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_110111A: 8** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **01/11/11 11:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	2.64	0.50	2.5		106	90	110				

Associated samples: **H10120314-012C**

Run ID :Run Order: **ICPMS204-B_110111A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**
Analysis Date: **01/11/11 11:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	117	0.50									

Associated samples: **H10120314-012C**

Run ID :Run Order: **ICPMS204-B_110111A: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**
Analysis Date: **01/11/11 11:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	116	0.50	120		97	70	130				

Associated samples: **H10120314-012C**

Run ID :Run Order: **ICPMS204-B_110111A: 16** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**
Analysis Date: **01/11/11 12:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.006									

Associated samples: **H10120314-012C**

Run ID :Run Order: **ICPMS204-B_110111A: 17** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**
Analysis Date: **01/11/11 12:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	45.8	0.50	50		92	85	115				

Associated samples: **H10120314-012C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68475

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_110111A: 36** SampType: **Sample Matrix Spike** Sample ID: **H11010080-006AMS** Method: **E200.8**
Analysis Date: **01/11/11 14:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	105	1.0	50	58.05	93	70	130				

Associated samples: **H10120314-012C**

Run ID :Run Order: **ICPMS204-B_110111A: 37** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H11010080-006AMSD** Method: **E200.8**
Analysis Date: **01/11/11 14:09** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	102	1.0	50	58.05	89	70	130	104.7	2.1	20	

Associated samples: **H10120314-012C**

Run ID :Run Order: **ICPMS204-B_110111A: 48** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **01/11/11 14:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	2.68	0.50	2.5		107	90	110				

Associated samples: **H10120314-012C**

Run ID :Run Order: **ICPMS204-B_110111A: 85** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **01/11/11 18:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	2.65	0.50	2.5		106	90	110				

Associated samples: **H10120314-012C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68488

Date: *12-Jan-11*

Run ID :Run Order: **IC101-H_110111A: 13** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV011111-12** Method: **E300.0**
Analysis Date: **01/11/11 10:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	100	1.0	100		105	90	110				
Sulfate	420	1.0	400		105	90	110				

Associated samples: **H10120314-012A**

Run ID :Run Order: **IC101-H_110111A: 14** SampType: **Method Blank** Sample ID: **ICB011111-13** Method: **E300.0**
Analysis Date: **01/11/11 10:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.2									
Sulfate	ND	0.5									

Associated samples: **H10120314-012A**

Run ID :Run Order: **IC101-H_110111A: 15** SampType: **Laboratory Fortified Blank** Sample ID: **LFB011111-14** Method: **E300.0**
Analysis Date: **01/11/11 11:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49	1.0	50		98	90	110				
Sulfate	200	1.1	200		99	90	110				

Associated samples: **H10120314-012A**

Run ID :Run Order: **IC101-H_110111A: 30** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV011111-28** Method: **E300.0**
Analysis Date: **01/11/11 15:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	98	1.0	100		98	90	110				
Sulfate	390	1.0	400		98	90	110				

Associated samples: **H10120314-012A**

Run ID :Run Order: **IC101-H_110111A: 33** SampType: **Sample Matrix Spike** Sample ID: **H11010076-001AMS** Method: **E300.0**
Analysis Date: **01/11/11 16:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	47	1.0	50	0.772	92	90	110				
Sulfate	190	1.1	200	3.117	93	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68488

Date: *12-Jan-11*

Run ID :Run Order: **IC101-H_110111A: 33** SampType: **Sample Matrix Spike** Sample ID: **H11010076-001AMS** Method: **E300.0**

Analysis Date: **01/11/11 16:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10120314-012A**

Run ID :Run Order: **IC101-H_110111A: 34** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H11010076-001AMSD** Method: **E300.0**

Analysis Date: **01/11/11 16:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	47	1.0	50	0.772	**92**	90	110	46.62	**0.3**	20	
Sulfate	190	1.1	200	3.117	**94**	90	110	189.3	**0.6**	20	

Associated samples: **H10120314-012A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Workorder Receipt Checklist

MT DEQ-Site Response

H10120314

Login completed by: Tracy L. Lorash
Date Received: 12/23/2010
Reviewed by: BL2000\sdull
Received by: abb
Reviewed Date: 12/29/2010
Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☐	No ☑	
Container/Temp Blank temperature:	9.1°C		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

Date and time on COC from client do not match when samples were relinquished. Sample ID on COC is TDMW3D-20101220 collected on 12/20/10 @ 13:00 - unfiltered raw sample bottle has TDMW4D-20101220. Samples collected on 12/15 and 12/16 received past hold for TSS and TDS. All samples received past hold for pH. Emailed client. TI 12/27/10.

Terra Graphics
ENVIRONMENTAL ENGINEERING
15 W 6th Avenue, Power Block 3rd Floor W
HELENA, MT 59601
(406) 441-5441 Fax (406) 441-5443

CHAIN OF CUSTODY RECORD

H10120314

Data to: TerraGraphics
Invoice to: MDEQ
Project Name: TO20- UBMC Monitoring
Project Location : UBMC
Quote # H499
TO: Energy Lab

Lab ID	Sample Date	Sample Time	SAMPLE DESCRIPTION Soil	GW	SW		Analysis (see Quote) Total Metals	Dissolved Metals	Dissolved Anions	Dissolved Cations	Physiochemical
UBM-BRSW01-20101215	12/15/2010	13:00			X		X	X	X	X	X
UBM-BRSW01-555-20101215	12/15/2010	13:15			X		X	X	X	X	X
UBM-BRSW23-20101216	12/16/2010	13:46			X		X	X	X	X	X
UBM-BRSW48-20101216	12/16/2010	13:00			X		X	X	X	X	X
UBM-BRSW3A-20101215	12/15/2010	14:20			X		X	X	X	X	X
UBM-BRSW3B-20101215	12/15/2010	14:00			X		X	X	X	X	X
UBM-BRSW38-20101216	12/16/2010	15:45			X		X	X	X	X	X
UBM-BRSW29-20101216	12/16/2010	15:00			X		X	X	X	X	X
UBM-BRSW29-333-20101216	12/16/2010	15:10			X		X				
UBM-BRSW29-444-20101216	12/16/2010	15:15			X		X				
UBM-TDMW4D-20101220	12/20/2010	12:00		X			X	X	X	X	X
UBM-TDMW2S-20101221	12/21/2010	12:15		X			X	X	X	X	X
UBM-TDMW01-555-20101221	12/21/2010	11:00		X			X	X	X	X	X
UBM-TDMW2D-20101221	12/21/2010	11:45		X			X	X	X	X	X
UBM-TDMW01-20101221	12/21/2010	11:00		X			X	X	X	X	X
UBM-TDMW3D-20101220	12/20/2010	13:00		X			X	X	X	X	X
UBM-TDMW01-333-20101221	12/21/2010	11:05		X			X				
UBM-TDMW01-444-20101221	12/21/2010	11:05		X			X				

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Shana Stone	12-22-2010 10:45	Amanda Pearson	12/23/10 12:46
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time

Normal T.A.T.

Temp 9.1

REMARKS: Perform Lab QA/QC on last sample per batch

UBMC Surface Water Flow Summary March 2010

BRSW-01

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.43	0.3	0.13	0.45	0.06
0.43	0.25	0.11	0.27	0.03
0.43	0.3	0.13	0.86	0.11
0.43	0.2	0.09	0.93	0.08
0.43	0.2	0.09	0.44	0.04
0.43	0.15	0.06	0.08	0.01
0.43	0.2	0.09	0.29	0.02
0.43	0.1	0.04	1.95	0.08
0.43	0.05	0.02	0.30	0.01
0.43	0.05	0.02	0.14	0.00
Totals		0.77	5.71	**0.44**

BRSW-3A

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.316	0.3	0.09	0.28	0.03
0.316	0.3	0.09	0.35	0.03
0.316	0.25	0.08	0.14	0.01
0.316	0.3	0.09	0.03	0.00
0.316	0.3	0.09	0.04	0.00
0.316	0.2	0.06	0.13	0.01
0.316	0.2	0.06	0.22	0.01
0.316	0.2	0.06	0.04	0.00
0.316	0.1	0.03	0.03	0.00
0.316	0.1	0.03	0.02	0.00
Totals		0.71	1.28	**0.10**

BRSW-38

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.383	0.25	0.10	0.47	0.05
0.383	0.4	0.15	0.93	0.14
0.383	0.6	0.23	1.25	0.29
0.383	0.65	0.25	1.02	0.25
0.383	0.45	0.17	1.10	0.19
0.383	0.45	0.17	1.42	0.24
0.383	0.4	0.15	1.41	0.22
0.383	0.2	0.08	0.64	0.05
0.383	0.2	0.08	0.39	0.03
0.383	0.3	0.11	0.04	0.00
Totals		1.49	8.67	**1.46**

BRSW-48

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.35	0.05	0.02	0.25	0.00
0.35	0.1	0.04	1.13	0.04
0.35	0.15	0.05	0.87	0.05
0.35	0.15	0.05	0.96	0.05
0.35	0.2	0.07	1.82	0.13
0.35	0.3	0.11	1.83	0.19
0.35	0.2	0.07	1.87	0.13
0.35	0.2	0.07	1.06	0.07
0.35	0.3	0.11	0.66	0.07
0.35	0.2	0.07	0.08	0.01
Totals		0.65	10.53	**0.74**

BRSW-3B

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.225	0.25	0.06	0.06	0.00
0.225	0.45	0.10	0.15	0.02
0.225	0.45	0.10	0.16	0.02
0.225	0.5	0.11	0.15	0.02
0.225	0.5	0.11	0.12	0.01
0.225	0.5	0.11	0.18	0.02
0.225	0.45	0.10	0.22	0.02
0.225	0.35	0.08	0.22	0.02
0.225	0.3	0.07	0.13	0.01
0.225	0.1	0.02	0.05	0.00
Totals		0.87	1.44	**0.13**

BRSW-23

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.416	0.1	0.04	0.01	0.00
0.416	0.3	0.12	0.01	0.00
0.416	0.5	0.21	1.45	0.30
0.416	0.6	0.25	1.70	0.42
0.416	0.4	0.17	0.85	0.14
0.416	0.3	0.12	0.38	0.05
0.416	0.3	0.12	0.77	0.10
0.416	0.35	0.15	0.80	0.12
0.416	0.35	0.15	0.14	0.02
0.416	0.25	0.10	0.01	0.00
Totals		1.44	6.12	**1.15**

BRSW-29

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.416	0.15	0.06	0.31	0.02
0.416	0.3	0.12	0.14	0.02
0.416	0.35	0.15	0.24	0.03
0.416	0.45	0.19	0.19	0.04
0.416	0.6	0.25	1.31	0.33
0.416	0.8	0.33	2.06	0.69
0.416	0.9	0.37	2.46	0.92
0.416	0.7	0.29	2.82	0.82
0.416	0.2	0.08	1.60	0.13
0.416	0.2	0.08	0.48	0.04
Totals		1.93	11.61	**3.04**

UBMC Surface Water Flow Summary June 2010

BRSW-01

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.52	0.4	0.21	0.92	0.19
0.52	0.4	0.21	1.37	0.28
0.52	0.7	0.36	1.49	0.54
0.52	0.8	0.42	1.20	0.50
0.52	0.7	0.36	2.57	0.94
0.52	0.7	0.36	3.23	1.18
0.52	0.7	0.36	2.13	0.78
0.52	0.7	0.36	2.04	0.74
0.52	0.7	0.36	3.11	1.13
0.52	0.5	0.26	0.45	0.12
Totals		3.28	18.51	**6.40**

BRSW-22

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.73	0.8	0.58	1.25	0.73
0.73	0.7	0.51	0.30	0.15
0.73	0.7	0.51	2.12	1.08
0.73	0.7	0.51	3.12	1.59
0.73	0.8	0.58	0.70	0.41
0.73	0.9	0.66	3.79	2.49
0.73	0.8	0.58	2.96	1.73
0.73	1	0.73	2.23	1.63
0.73	0.7	0.51	2.77	1.42
0.73	0.5	0.37	1.09	0.40
Totals		5.55	20.33	**11.63**

BRSW-48

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.64	0.8	0.51	1.14	0.58
0.64	0.95	0.61	1.85	1.12
0.64	1	0.64	2.09	1.34
0.64	1	0.64	0.92	0.59
0.64	0.95	0.61	1.45	0.88
0.64	1	0.64	1.49	0.95
0.64	1.1	0.70	1.54	1.08
0.64	1.05	0.67	1.17	0.79
0.64	0.75	0.48	1.22	0.59
0.64	0.45	0.29	1.27	0.37
Totals		5.79	14.14	**8.29**

BRSW-23

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.93	0.4	0.37	0.72	0.27
0.93	0.65	0.60	0.01	0.01
0.93	0.7	0.65	1.22	0.79
0.93	0.75	0.70	3.15	2.20
0.93	0.6	0.56	4.36	2.43
0.93	0.5	0.47	3.51	1.63
0.93	0.35	0.33	1.85	0.60
0.93	0.4	0.37	2.52	0.94
0.93	0.45	0.42	2.13	0.89
0.93	0.55	0.51	1.80	0.92
Totals		4.98	21.27	**10.68**

BRSW-38

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.95	0.4	0.38	0.65	0.25
0.95	0.5	0.48	1.36	0.65
0.95	0.35	0.33	2.24	0.74
0.95	0.6	0.57	2.75	1.57
0.95	0.75	0.71	3.51	2.50
0.95	0.7	0.67	2.61	1.74
0.95	0.8	0.76	2.39	1.82
0.95	0.5	0.48	1.89	0.90
0.95	0.8	0.76	1.94	1.47
0.95	0.75	0.71	2.03	1.45
Totals		5.84	21.37	**13.08**

BRSW-29

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
1.03	0.1	0.103	0.49	0.05
1.03	0.1	0.103	0.62	0.06
1.03	0.2	0.206	0.84	0.17
1.03	0.3	0.309	0.45	0.14
1.03	0.25	0.258	0.59	0.15
1.03	0.45	0.464	0.81	0.38
1.03	0.4	0.412	1.06	0.44
1.03	0.45	0.464	1.58	0.73
1.03	0.4	0.412	1.15	0.47
1.03	0.3	0.309	1.95	0.60
1.03	0.4	0.412	2.2	0.91
1.03	0.8	0.824	2.73	2.25
1.03	0.75	0.773	2.85	2.20
1.03	0.75	0.773	2.53	1.95
1.03	0.85	0.876	2.51	2.20
1.03	0.9	0.927	2.95	2.73
1.03	0.7	0.721	3.76	2.71
1.03	0.7	0.721	3.13	2.26
1.03	0.7	0.721	2.42	1.74
1.03	0.5	0.515	2.41	1.24
Totals		10.300	37.03	**23.40**

UBMC Surface Water Flow Summary September 2010

BRSW-01

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.4	0.15	0.06	0.08	0.00
0.4	0.25	0.10	0.56	0.06
0.4	0.25	0.10	0.81	0.08
0.4	0.2	0.08	1.18	0.09
0.4	0.25	0.10	0.64	0.06
0.4	0.2	0.08	0.50	0.04
0.4	0.2	0.08	0.53	0.04
0.4	0.25	0.10	0.60	0.06
0.4	0.1	0.04	0.37	0.01
0.4	0.1	0.04	0.46	0.02
Totals		0.78	5.73	**0.48**

BRSW-22

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.3	0.1	0.03	0.16	0.00
0.3	0.1	0.03	0.08	0.00
0.3	0.1	0.03	0.09	0.00
0.3	0.2	0.06	0.52	0.03
0.3	0.2	0.06	0.50	0.03
0.3	0.1	0.03	0.27	0.01
0.3	0.1	0.03	0.20	0.01
0.3	0.1	0.03	0.07	0.00
0.3	0.1	0.03	0.04	0.00
0.3	0.05	0.02	0.04	0.00
Totals		0.35	1.97	**0.09**

BRSW-23

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.4	0.3	0.12	0.20	0.02
0.4	0.3	0.12	0.26	0.03
0.4	0.3	0.12	0.58	0.07
0.4	0.4	0.16	1.01	0.16
0.4	0.3	0.12	0.98	0.12
0.4	0.1	0.04	0.97	0.04
0.4	0.1	0.04	0.90	0.04
0.4	0.2	0.08	0.64	0.05
0.4	0.1	0.04	0.13	0.01
0.4	0.1	0.04	0.14	0.01
Totals		0.88	5.81	**0.54**

BRSW-38

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.5	0.25	0.13	0.75	0.09
0.5	0.2	0.10	1.32	0.13
0.5	0.25	0.13	1.07	0.13
0.5	0.2	0.10	0.32	0.03
0.5	0.25	0.13	1.40	0.18
0.5	0.2	0.10	0.69	0.07
0.5	0.2	0.10	0.59	0.06
0.5	0.2	0.10	0.02	0.00
0.5	0.25	0.13	0.70	0.09
0.5	0.25	0.13	0.89	0.11
Totals		1.13	7.75	**0.90**

BRSW-48

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.5	0.45	0.23	0.33	0.07
0.5	0.5	0.25	0.36	0.09
0.5	0.5	0.25	0.40	0.10
0.5	0.6	0.30	0.41	0.12
0.5	0.6	0.30	0.35	0.11
0.5	0.5	0.25	0.33	0.08
0.5	0.55	0.28	0.34	0.09
0.5	0.65	0.33	0.35	0.11
0.5	0.6	0.30	0.34	0.10
0.5	0.4	0.20	0.34	0.07
Totals		2.68	3.55	**0.95**

BRSW-29

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.425	0.35	0.149	0.71	0.11
0.425	0.35	0.149	1.27	0.19
0.425	0.3	0.128	1.34	0.17
0.425	0.3	0.128	0.87	0.11
0.425	0.3	0.128	0.96	0.12
0.425	0.3	0.128	0.74	0.09
0.425	0.3	0.128	0.63	0.08
0.425	0.35	0.149	0.6	0.09
0.425	0.3	0.128	0.54	0.07
0.425	0.4	0.170	0.68	0.12
0.425	0.3	0.128	0.52	0.07
0.425	0.4	0.170	0.83	0.14
0.425	0.3	0.128	1.18	0.15
0.425	0.2	0.085	1.34	0.11
0.425	0.2	0.085	0.4	0.03
0.425	0.3	0.128	1.04	0.13
0.425	0.3	0.128	0.87	0.11
0.425	0.3	0.128	0.54	0.07
0.425	0.3	0.128	0.46	0.06
0.425	0.1	0.043	0.26	0.01
Totals		2.529	15.78	**2.03**

UBMC Surface Water Flow Summary December 2010

BRSW-23

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.4	0.1	0.04	0.03	0.00
0.4	0.1	0.04	0.06	0.00
0.4	0.2	0.08	0.13	0.01
0.4	0.2	0.08	0.44	0.04
0.4	0.3	0.12	0.53	0.06
0.4	0.2	0.08	0.33	0.03
0.4	0.1	0.04	0.51	0.02
0.4	0.1	0.04	0.26	0.01
0.4	0.1	0.04	0.23	0.01
0.4	0.1	0.04	0.31	0.01
Totals		0.60	2.83	**0.19**

BRSW-38

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.5	0.05	0.03	1.22	0.03
0.5	0.3	0.15	1.61	0.24
0.5	0.4	0.20	0.34	0.07
0.5	0.3	0.15	0.85	0.13
0.5	0.3	0.15	0.23	0.03
0.5	0.2	0.10	0.71	0.07
0.5	0.3	0.15	0.05	0.01
0.5	0.2	0.10	0.03	0.00
0.5	0.1	0.05	0.01	0.00
0.5	0.1	0.05	0.02	0.00
Totals		1.13	5.07	**0.59**

BRSW-29

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.4	0.2	0.080	0.12	0.01
0.4	0.3	0.120	0.17	0.02
0.4	0.2	0.080	0.38	0.03
0.4	0.25	0.100	0.54	0.05
0.4	0.15	0.060	0.61	0.04
0.4	0.2	0.080	0.84	0.07
0.4	0.2	0.080	0.72	0.06
0.4	0.3	0.120	0.92	0.11
0.4	0.2	0.080	0.7	0.06
0.4	0.25	0.100	0.49	0.05
0.4	0.35	0.140	0.54	0.08
0.4	0.3	0.120	0.06	0.01
0.4	0.25	0.100	0.01	0.00
0.4	0.3	0.120	0.32	0.04
0.4	0.15	0.060	0.75	0.05
0.4	0.25	0.100	0.61	0.06
0.4	0.3	0.120	0.79	0.09
0.4	0.4	0.160	0.76	0.12
0.4	0.3	0.120	0.6	0.07
0.4	0.2	0.080	0.27	0.02
Totals		2.020	10.2	**1.03**

Appendix B

Groundwater

Report of Laboratory Analysis

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

ANALYTICAL SUMMARY REPORT

April 07, 2010

Shellie Haaland
MT DEQ
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H10030226 Quote ID: H452 - UBMC

Project Name: UBMC To 20

Energy Laboratories Inc received the following 9 samples for MT DEQ on 3/17/2010 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H10030226-001	UBM-TDMW4D-20100316	03/16/10 16:01	03/17/10	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Metals Digestion by EPA 200.2
H10030226-002	UBM-TDMW05-20100316	03/16/10 19:10	03/17/10	Aqueous	Same As Above
H10030226-003	UBM-TDMW05-333-20100316	03/16/10 19:22	03/17/10	Aqueous	Same As Above
H10030226-004	UBM-TDMW05-444-20100316	03/16/10 19:22	03/17/10	Aqueous	Same As Above
H10030226-005	UBM-TDMW3D-20100317	03/17/10 10:51	03/17/10	Aqueous	Same As Above
H10030226-006	UBM-TDMW3D-555-20100317	03/17/10 10:51	03/17/10	Aqueous	Same As Above
H10030226-007	UBM-TDMW2D-20100317	03/17/10 13:03	03/17/10	Aqueous	Same As Above
H10030226-008	UBM-TDMW2S-20100317	03/17/10 13:22	03/17/10	Aqueous	Same As Above
H10030226-009	UBM-TDMW01-20100317	03/17/10 13:59	03/17/10	Aqueous	Same As Above

BRANCH LABORATORY LOCATIONS
eli-b - Energy Laboratories, Inc. - Billings, MT, EPA # MT00005
eli-c - Energy Laboratories, Inc. - Casper, WY, EPA# WY00002
eli-g - Energy Laboratories, Inc. - Gillette, WY, EPA# WY00006
eli-h - Energy Laboratories, Inc. - Helena, MT, EPA# MT00945
eli-r - Energy Laboratories, Inc. - Rapid City, SD, EPA# SD00012
eli-t - Energy Laboratories, Inc. - College Station, TX, EPA# TX01520

SUBCONTRACTING ANALYSIS
Subcontracting of sample analyses to an outside laboratory may be required. If so, ENERGY LABORATORIES, INC. will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories are indicated within the Laboratory Analytical Report.

SAMPLE TEMPERATURE COMPLIANCE: 4°C (±2°C)
Temperature of samples received may not be considered properly preserved by accepted standards. Samples that are hand delivered immediately after collection shall be considered acceptable if there is evidence that the chilling process has begun.

ELI appreciates the opportunity to provide you with this analytical service. For additional information, including certifications, and analytical services visit our web page www.energylab.com.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

ANALYTICAL SUMMARY REPORT

Report Approved By:

Inorganic Supervisor

Digitally signed by
Amanda B. Blackburn
Date: 2010.04.07 09:39:04 -06:00

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

CLIENT: MT DEQ
Project: UBMC To 20
Sample Delivery Group: H10030226

Revised Date: 04/07/10
Report Date: 04/06/10

CASE NARRATIVE

4/6/10 Per client sample UBM-TDMW40-20100316 should be named UBM-TDMW4D-20100316. Revised report to reflect correct name. Abb

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

LABORATORY ANALYTICAL REPORT

Revised Date: 04/07/10
Client: MT DEQ
Report Date: 04/06/10
Project: UBMC To 20
Collection Date: 03/16/10 16:01
Lab ID: H10030226-001
DateReceived: 03/17/10
Client Sample ID UBM-TDMW4D-20100316
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.9	s.u.		0.1		A4500-H B	03/22/10 11:31 / hm
Conductivity	213	umhos/cm		1		A2510 B	03/22/10 11:31 / hm
DISSOLVED INORGANICS							
Bicarbonate as HCO3	110	mg/L		4		A2320 B	03/22/10 13:18 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 13:18 / hm
Chloride	ND	mg/L		1		E300.0	03/24/10 15:24 / hm
Sulfate	19	mg/L		1		E300.0	03/24/10 15:24 / hm
INORGANICS							
Alkalinity, Total as CaCO3	91	mg/L		4		A2320 B	03/22/10 11:31 / hm
Bicarbonate as HCO3	110	mg/L		4		A2320 B	03/22/10 11:31 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 11:31 / hm
Hardness as CaCO3	107	mg/L		1		A2340 B	03/25/10 08:18 / sld
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.03		E200.8	03/23/10 22:03 / dck
Arsenic	ND	mg/L		0.003		E200.8	03/23/10 22:03 / dck
Cadmium	ND	mg/L		0.00008		E200.8	03/23/10 22:03 / dck
Calcium	22	mg/L		1		E200.7	03/22/10 13:40 / sld
Copper	ND	mg/L		0.001		E200.8	03/23/10 22:03 / dck
Iron	ND	mg/L		0.03		E200.7	03/22/10 13:40 / sld
Lead	ND	mg/L		0.0005		E200.8	03/23/10 22:03 / dck
Magnesium	13	mg/L		1		E200.7	03/22/10 13:40 / sld
Manganese	0.020	mg/L		0.005		E200.8	03/23/10 22:03 / dck
Potassium	ND	mg/L		1		E200.7	03/22/10 13:40 / sld
Sodium	3	mg/L		1		E200.7	03/22/10 13:40 / sld
Zinc	ND	mg/L		0.01		E200.8	03/23/10 22:03 / dck
METALS, TOTAL							
Aluminum	1.00	mg/L		0.03		E200.8	03/23/10 22:30 / dck
Arsenic	0.003	mg/L		0.003		E200.8	03/23/10 22:30 / dck
Cadmium	0.00010	mg/L		0.00008		E200.8	03/23/10 22:30 / dck
Copper	0.034	mg/L		0.001		E200.8	03/23/10 22:30 / dck
Iron	1.68	mg/L		0.03		E200.8	03/23/10 22:30 / dck
Lead	0.0078	mg/L		0.0005		E200.8	03/23/10 22:30 / dck
Manganese	0.086	mg/L		0.005		E200.8	03/23/10 22:30 / dck
Zinc	0.02	mg/L		0.01		E200.8	03/23/10 22:30 / dck

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

LABORATORY ANALYTICAL REPORT

Revised Date: 04/07/10
Client: MT DEQ
Report Date: 04/06/10
Project: UBMC To 20
Collection Date: 03/16/10 19:10
Lab ID: H10030226-002
DateReceived: 03/17/10
Client Sample ID UBM-TDMW05-20100316
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.2	s.u.		0.1		A4500-H B	03/22/10 11:38 / hm
Conductivity	258	umhos/cm		1		A2510 B	03/22/10 11:38 / hm
DISSOLVED INORGANICS							
Bicarbonate as HCO3	110	mg/L		4		A2320 B	03/22/10 13:25 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 13:25 / hm
Chloride	ND	mg/L		1		E300.0	03/24/10 15:40 / hm
Sulfate	42	mg/L		1		E300.0	03/24/10 15:40 / hm
INORGANICS							
Alkalinity, Total as CaCO3	92	mg/L		4		A2320 B	03/22/10 11:38 / hm
Bicarbonate as HCO3	110	mg/L		4		A2320 B	03/22/10 11:38 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 11:38 / hm
Hardness as CaCO3	130	mg/L		1		A2340 B	03/25/10 08:18 / sld
METALS, DISSOLVED							
Aluminum	0.03	mg/L		0.03		E200.8	03/23/10 22:56 / dck
Arsenic	ND	mg/L		0.003		E200.8	03/23/10 22:56 / dck
Cadmium	0.00010	mg/L		0.00008		E200.8	03/23/10 22:56 / dck
Calcium	28	mg/L		1		E200.7	03/22/10 13:43 / sld
Copper	0.001	mg/L		0.001		E200.8	03/23/10 22:56 / dck
Iron	0.04	mg/L		0.03		E200.7	03/22/10 13:43 / sld
Lead	0.0011	mg/L		0.0005		E200.8	03/23/10 22:56 / dck
Magnesium	15	mg/L		1		E200.7	03/22/10 13:43 / sld
Manganese	ND	mg/L		0.005		E200.8	03/23/10 22:56 / dck
Potassium	ND	mg/L		1		E200.7	03/22/10 13:43 / sld
Sodium	4	mg/L		1		E200.7	03/22/10 13:43 / sld
Zinc	0.02	mg/L		0.01		E200.8	03/23/10 22:56 / dck
METALS, TOTAL							
Aluminum	2.04	mg/L		0.03		E200.8	03/23/10 23:29 / dck
Arsenic	ND	mg/L		0.003		E200.8	03/23/10 23:29 / dck
Cadmium	0.00048	mg/L		0.00008		E200.8	03/23/10 23:29 / dck
Copper	0.030	mg/L		0.001		E200.8	03/23/10 23:29 / dck
Iron	6.50	mg/L		0.03		E200.8	03/23/10 23:29 / dck
Lead	0.0178	mg/L		0.0005		E200.8	03/23/10 23:29 / dck
Manganese	0.400	mg/L		0.005		E200.8	03/23/10 23:29 / dck
Zinc	0.08	mg/L		0.01		E200.8	03/23/10 23:29 / dck

Report Definitions:
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QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

LABORATORY ANALYTICAL REPORT

Revised Date: 04/07/10
Client: MT DEQ
Report Date: 04/06/10
Project: UBMC To 20
Collection Date: 03/16/10 19:22
Lab ID: H10030226-003
DateReceived: 03/17/10
Client Sample ID UBM-TDMW05-333-20100316
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	5.4	s.u.		0.1		A4500-H B	03/22/10 11:50 / hm
Conductivity	ND	umhos/cm		1		A2510 B	03/22/10 11:50 / hm
DISSOLVED INORGANICS							
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	03/22/10 13:30 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 13:30 / hm
Chloride	ND	mg/L		1		E300.0	03/24/10 15:56 / hm
Sulfate	ND	mg/L		1		E300.0	03/24/10 15:56 / hm
INORGANICS							
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	03/22/10 11:50 / hm
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	03/22/10 11:50 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 11:50 / hm
Hardness as CaCO3	ND	mg/L		1		A2340 B	03/25/10 08:18 / sld
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.03		E200.8	03/23/10 23:36 / dck
Arsenic	ND	mg/L		0.003		E200.8	03/23/10 23:36 / dck
Cadmium	ND	mg/L		0.00008		E200.8	03/23/10 23:36 / dck
Calcium	ND	mg/L		1		E200.7	03/22/10 13:46 / sld
Copper	ND	mg/L		0.001		E200.8	03/23/10 23:36 / dck
Iron	ND	mg/L		0.03		E200.7	03/22/10 13:46 / sld
Lead	ND	mg/L		0.0005		E200.8	03/23/10 23:36 / dck
Magnesium	ND	mg/L		1		E200.7	03/22/10 13:46 / sld
Manganese	ND	mg/L		0.005		E200.8	03/23/10 23:36 / dck
Potassium	ND	mg/L		1		E200.7	03/22/10 13:46 / sld
Sodium	ND	mg/L		1		E200.7	03/22/10 13:46 / sld
Zinc	ND	mg/L		0.01		E200.8	03/23/10 23:36 / dck
METALS, TOTAL							
Aluminum	ND	mg/L		0.03		E200.8	03/23/10 23:43 / dck
Arsenic	ND	mg/L		0.003		E200.8	03/23/10 23:43 / dck
Cadmium	ND	mg/L		0.00008		E200.8	03/23/10 23:43 / dck
Copper	ND	mg/L		0.001		E200.8	03/23/10 23:43 / dck
Iron	ND	mg/L		0.03		E200.8	03/23/10 23:43 / dck
Lead	ND	mg/L		0.0005		E200.8	03/23/10 23:43 / dck
Manganese	ND	mg/L		0.005		E200.8	03/23/10 23:43 / dck
Zinc	ND	mg/L		0.01		E200.8	03/23/10 23:43 / dck

Report Definitions:
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QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

LABORATORY ANALYTICAL REPORT

Revised Date: 04/07/10
Client: MT DEQ
Report Date: 04/06/10
Project: UBMC To 20
Collection Date: 03/16/10 19:22
Lab ID: H10030226-004
DateReceived: 03/17/10
Client Sample ID UBM-TDMW05-444-20100316
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	5.3	s.u.		0.1		A4500-H B	03/22/10 11:55 / hm
Conductivity	ND	umhos/cm		1		A2510 B	03/22/10 11:55 / hm
DISSOLVED INORGANICS							
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	03/22/10 13:40 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 13:40 / hm
Chloride	ND	mg/L		1		E300.0	03/24/10 16:13 / hm
Sulfate	ND	mg/L		1		E300.0	03/24/10 16:13 / hm
INORGANICS							
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	03/22/10 11:55 / hm
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	03/22/10 11:55 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 11:55 / hm
Hardness as CaCO3	ND	mg/L		1		A2340 B	03/25/10 08:18 / sld
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.03		E200.8	03/23/10 23:49 / dck
Arsenic	ND	mg/L		0.003		E200.8	03/23/10 23:49 / dck
Cadmium	ND	mg/L		0.00008		E200.8	03/23/10 23:49 / dck
Calcium	ND	mg/L		1		E200.7	03/22/10 13:49 / sld
Copper	ND	mg/L		0.001		E200.8	03/23/10 23:49 / dck
Iron	ND	mg/L		0.03		E200.7	03/22/10 13:49 / sld
Lead	ND	mg/L		0.0005		E200.8	03/23/10 23:49 / dck
Magnesium	ND	mg/L		1		E200.7	03/22/10 13:49 / sld
Manganese	ND	mg/L		0.005		E200.8	03/23/10 23:49 / dck
Potassium	ND	mg/L		1		E200.7	03/22/10 13:49 / sld
Sodium	ND	mg/L		1		E200.7	03/22/10 13:49 / sld
Zinc	ND	mg/L		0.01		E200.8	03/23/10 23:49 / dck
METALS, TOTAL							
Aluminum	ND	mg/L		0.03		E200.8	03/23/10 23:56 / dck
Arsenic	ND	mg/L		0.003		E200.8	03/23/10 23:56 / dck
Cadmium	ND	mg/L		0.00008		E200.8	03/23/10 23:56 / dck
Copper	ND	mg/L		0.001		E200.8	03/23/10 23:56 / dck
Iron	ND	mg/L		0.03		E200.8	03/23/10 23:56 / dck
Lead	ND	mg/L		0.0005		E200.8	03/23/10 23:56 / dck
Manganese	ND	mg/L		0.005		E200.8	03/23/10 23:56 / dck
Zinc	ND	mg/L		0.01		E200.8	03/23/10 23:56 / dck

Report Definitions:
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ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

LABORATORY ANALYTICAL REPORT

Revised Date: 04/07/10
Client: MT DEQ
Report Date: 04/06/10
Project: UBMC To 20
Collection Date: 03/17/10 10:51
Lab ID: H10030226-005
DateReceived: 03/17/10
Client Sample ID UBM-TDMW3D-20100317
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.8	s.u.		0.1		A4500-H B	03/22/10 12:02 / hm
Conductivity	452	umhos/cm		1		A2510 B	03/22/10 12:02 / hm
DISSOLVED INORGANICS							
Bicarbonate as HCO3	88	mg/L		4		A2320 B	03/22/10 13:47 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 13:47 / hm
Chloride	ND	mg/L		1		E300.0	03/24/10 16:29 / hm
Sulfate	160	mg/L		1		E300.0	03/24/10 16:29 / hm
INORGANICS							
Alkalinity, Total as CaCO3	74	mg/L		4		A2320 B	03/22/10 12:02 / hm
Bicarbonate as HCO3	90	mg/L		4		A2320 B	03/22/10 12:02 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 12:02 / hm
Hardness as CaCO3	230	mg/L		1		A2340 B	03/25/10 08:18 / sld
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.03		E200.8	03/24/10 00:03 / dck
Arsenic	ND	mg/L		0.003		E200.8	03/24/10 00:03 / dck
Cadmium	ND	mg/L		0.00008		E200.8	03/24/10 00:03 / dck
Calcium	54	mg/L		1		E200.7	03/22/10 14:05 / sld
Copper	ND	mg/L		0.001		E200.8	03/24/10 00:03 / dck
Iron	ND	mg/L		0.03		E200.7	03/22/10 14:05 / sld
Lead	ND	mg/L		0.0005		E200.8	03/24/10 00:03 / dck
Magnesium	23	mg/L		1		E200.7	03/22/10 14:05 / sld
Manganese	ND	mg/L		0.005		E200.8	03/24/10 00:03 / dck
Potassium	ND	mg/L		1		E200.7	03/22/10 14:05 / sld
Sodium	2	mg/L		1		E200.7	03/22/10 14:05 / sld
Zinc	ND	mg/L		0.01		E200.8	03/24/10 00:03 / dck
METALS, TOTAL							
Aluminum	3.60	mg/L		0.03		E200.8	03/24/10 00:09 / dck
Arsenic	0.012	mg/L		0.003		E200.8	03/24/10 00:09 / dck
Cadmium	0.00052	mg/L		0.00008		E200.8	03/24/10 00:09 / dck
Copper	0.011	mg/L		0.001		E200.8	03/24/10 00:09 / dck
Iron	9.29	mg/L		0.03		E200.8	03/24/10 00:09 / dck
Lead	0.0464	mg/L		0.0005		E200.8	03/24/10 00:09 / dck
Manganese	0.719	mg/L		0.005		E200.8	03/24/10 00:09 / dck
Zinc	0.10	mg/L		0.01		E200.8	03/24/10 00:09 / dck

Report Definitions:
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ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

LABORATORY ANALYTICAL REPORT

Revised Date: 04/07/10
Client: MT DEQ
Report Date: 04/06/10
Project: UBMC To 20
Collection Date: 03/17/10 10:51
Lab ID: H10030226-006
DateReceived: 03/17/10
Client Sample ID UBM-TDMW3D-555-20100317
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.9	s.u.		0.1		A4500-H B	03/22/10 12:25 / hm
Conductivity	451	umhos/cm		1		A2510 B	03/22/10 12:25 / hm
DISSOLVED INORGANICS							
Bicarbonate as HCO3	89	mg/L		4		A2320 B	03/22/10 13:53 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 13:53 / hm
Chloride	ND	mg/L		1		E300.0	03/24/10 16:46 / hm
Sulfate	160	mg/L		1		E300.0	03/24/10 16:46 / hm
INORGANICS							
Alkalinity, Total as CaCO3	72	mg/L		4		A2320 B	03/22/10 12:25 / hm
Bicarbonate as HCO3	88	mg/L		4		A2320 B	03/22/10 12:25 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 12:25 / hm
Hardness as CaCO3	213	mg/L		1		A2340 B	03/25/10 08:18 / sld
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.03		E200.8	03/24/10 00:16 / dck
Arsenic	ND	mg/L		0.003		E200.8	03/24/10 00:16 / dck
Cadmium	ND	mg/L		0.00008		E200.8	03/24/10 00:16 / dck
Calcium	49	mg/L		1		E200.7	03/22/10 14:08 / sld
Copper	ND	mg/L		0.001		E200.8	03/24/10 00:16 / dck
Iron	ND	mg/L		0.03		E200.7	03/22/10 14:08 / sld
Lead	ND	mg/L		0.0005		E200.8	03/24/10 00:16 / dck
Magnesium	22	mg/L		1		E200.7	03/22/10 14:08 / sld
Manganese	ND	mg/L		0.005		E200.8	03/24/10 00:16 / dck
Potassium	ND	mg/L		1		E200.7	03/22/10 14:08 / sld
Sodium	2	mg/L		1		E200.7	03/22/10 14:08 / sld
Zinc	ND	mg/L		0.01		E200.8	03/24/10 00:16 / dck
METALS, TOTAL							
Aluminum	3.62	mg/L		0.03		E200.8	03/24/10 00:23 / dck
Arsenic	0.012	mg/L		0.003		E200.8	03/24/10 00:23 / dck
Cadmium	0.00052	mg/L		0.00008		E200.8	03/24/10 00:23 / dck
Copper	0.011	mg/L		0.001		E200.8	03/24/10 00:23 / dck
Iron	9.22	mg/L		0.03		E200.8	03/24/10 00:23 / dck
Lead	0.0452	mg/L		0.0005		E200.8	03/24/10 00:23 / dck
Manganese	0.720	mg/L		0.005		E200.8	03/24/10 00:23 / dck
Zinc	0.09	mg/L		0.01		E200.8	03/24/10 00:23 / dck

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ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

LABORATORY ANALYTICAL REPORT

Revised Date: 04/07/10
Client: MT DEQ
Report Date: 04/06/10
Project: UBMC To 20
Collection Date: 03/17/10 13:03
Lab ID: H10030226-007
DateReceived: 03/17/10
Client Sample ID UBM-TDMW2D-20100317
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.9	s.u.		0.1		A4500-H B	03/22/10 12:32 / hm
Conductivity	221	umhos/cm		1		A2510 B	03/22/10 12:32 / hm
DISSOLVED INORGANICS							
Bicarbonate as HCO3	120	mg/L		4		A2320 B	03/22/10 14:01 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 14:01 / hm
Chloride	ND	mg/L		1		E300.0	03/24/10 17:02 / hm
Sulfate	19	mg/L		1		E300.0	03/24/10 17:02 / hm
INORGANICS							
Alkalinity, Total as CaCO3	96	mg/L		4		A2320 B	03/22/10 12:32 / hm
Bicarbonate as HCO3	120	mg/L		4		A2320 B	03/22/10 12:32 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 12:32 / hm
Hardness as CaCO3	113	mg/L		1		A2340 B	03/25/10 08:18 / sld
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.03		E200.8	03/24/10 00:56 / dck
Arsenic	ND	mg/L		0.003		E200.8	03/24/10 00:56 / dck
Cadmium	ND	mg/L		0.00008		E200.8	03/24/10 00:56 / dck
Calcium	24	mg/L		1		E200.7	03/22/10 14:11 / sld
Copper	ND	mg/L		0.001		E200.8	03/24/10 00:56 / dck
Iron	ND	mg/L		0.03		E200.7	03/22/10 14:11 / sld
Lead	ND	mg/L		0.0005		E200.8	03/24/10 00:56 / dck
Magnesium	13	mg/L		1		E200.7	03/22/10 14:11 / sld
Manganese	ND	mg/L		0.005		E200.8	03/24/10 00:56 / dck
Potassium	ND	mg/L		1		E200.7	03/22/10 14:11 / sld
Sodium	1	mg/L		1		E200.7	03/22/10 14:11 / sld
Zinc	ND	mg/L		0.01		E200.8	03/24/10 00:56 / dck
METALS, TOTAL							
Aluminum	0.26	mg/L		0.03		E200.8	03/24/10 01:03 / dck
Arsenic	ND	mg/L		0.003		E200.8	03/24/10 01:03 / dck
Cadmium	ND	mg/L		0.00008		E200.8	03/24/10 01:03 / dck
Copper	0.003	mg/L		0.001		E200.8	03/24/10 01:03 / dck
Iron	0.22	mg/L		0.03		E200.8	03/24/10 01:03 / dck
Lead	0.0029	mg/L		0.0005		E200.8	03/24/10 01:03 / dck
Manganese	0.028	mg/L		0.005		E200.8	03/24/10 01:03 / dck
Zinc	ND	mg/L		0.01		E200.8	03/24/10 01:03 / dck

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ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

LABORATORY ANALYTICAL REPORT

Revised Date: 04/07/10
Client: MT DEQ
Report Date: 04/06/10
Project: UBMC To 20
Collection Date: 03/17/10 13:22
Lab ID: H10030226-008
DateReceived: 03/17/10
Client Sample ID UBM-TDMW2S-20100317
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.7	s.u.		0.1		A4500-H B	03/22/10 12:39 / hm
Conductivity	400	umhos/cm		1		A2510 B	03/22/10 12:39 / hm
DISSOLVED INORGANICS							
Bicarbonate as HCO3	130	mg/L		4		A2320 B	03/22/10 14:24 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 14:24 / hm
Chloride	ND	mg/L		1		E300.0	03/24/10 17:51 / hm
Sulfate	100	mg/L		1		E300.0	03/24/10 17:51 / hm
INORGANICS							
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	03/22/10 12:39 / hm
Bicarbonate as HCO3	130	mg/L		4		A2320 B	03/22/10 12:39 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 12:39 / hm
Hardness as CaCO3	189	mg/L		1		A2340 B	03/25/10 08:18 / sld
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.03		E200.8	03/24/10 01:10 / dck
Arsenic	ND	mg/L		0.003		E200.8	03/24/10 01:10 / dck
Cadmium	0.00047	mg/L		0.00008		E200.8	03/24/10 01:10 / dck
Calcium	39	mg/L		1		E200.7	03/22/10 14:14 / sld
Copper	ND	mg/L		0.001		E200.8	03/24/10 01:10 / dck
Iron	ND	mg/L		0.03		E200.7	03/22/10 14:14 / sld
Lead	0.0006	mg/L		0.0005		E200.8	03/24/10 01:10 / dck
Magnesium	22	mg/L		1		E200.7	03/22/10 14:14 / sld
Manganese	3.31	mg/L		0.005		E200.8	03/24/10 01:10 / dck
Potassium	1	mg/L		1		E200.7	03/22/10 14:14 / sld
Sodium	1	mg/L		1		E200.7	03/22/10 14:14 / sld
Zinc	0.82	mg/L		0.01		E200.8	03/24/10 01:10 / dck
METALS, TOTAL							
Aluminum	ND	mg/L		0.03		E200.8	03/24/10 01:16 / dck
Arsenic	ND	mg/L		0.003		E200.8	03/24/10 01:16 / dck
Cadmium	0.00058	mg/L		0.00008		E200.8	03/24/10 01:16 / dck
Copper	ND	mg/L		0.001		E200.8	03/24/10 01:16 / dck
Iron	0.08	mg/L		0.03		E200.8	03/24/10 01:16 / dck
Lead	ND	mg/L		0.0005		E200.8	03/24/10 01:16 / dck
Manganese	3.56	mg/L		0.005		E200.8	03/24/10 01:16 / dck
Zinc	0.90	mg/L		0.01		E200.8	03/24/10 01:16 / dck

Report Definitions:
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ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

LABORATORY ANALYTICAL REPORT

Revised Date: 04/07/10
Client: MT DEQ
Report Date: 04/06/10
Project: UBMC To 20
Collection Date: 03/17/10 13:59
Lab ID: H10030226-009
DateReceived: 03/17/10
Client Sample ID UBM-TDMW01-20100317
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.7	s.u.		0.1		A4500-H B	03/22/10 12:45 / hm
Conductivity	422	umhos/cm		1		A2510 B	03/22/10 12:45 / hm
DISSOLVED INORGANICS							
Bicarbonate as HCO3	120	mg/L		4		A2320 B	03/22/10 14:31 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 14:31 / hm
Chloride	ND	mg/L		1		E300.0	03/24/10 18:41 / hm
Sulfate	120	mg/L		1		E300.0	03/24/10 18:41 / hm
INORGANICS							
Alkalinity, Total as CaCO3	98	mg/L		4		A2320 B	03/22/10 12:45 / hm
Bicarbonate as HCO3	120	mg/L		4		A2320 B	03/22/10 12:45 / hm
Carbonate as CO3	ND	mg/L		4		A2320 B	03/22/10 12:45 / hm
Hardness as CaCO3	224	mg/L		1		A2340 B	03/25/10 08:18 / sld
METALS, DISSOLVED							
Aluminum	ND	mg/L		0.03		E200.8	03/24/10 01:23 / dck
Arsenic	ND	mg/L		0.003		E200.8	03/24/10 01:23 / dck
Cadmium	0.00054	mg/L		0.00008		E200.8	03/24/10 01:23 / dck
Calcium	45	mg/L		1		E200.7	03/22/10 14:17 / sld
Copper	ND	mg/L		0.001		E200.8	03/24/10 01:23 / dck
Iron	ND	mg/L		0.03		E200.7	03/22/10 14:17 / sld
Lead	0.0007	mg/L		0.0005		E200.8	03/24/10 01:23 / dck
Magnesium	27	mg/L		1		E200.7	03/22/10 14:17 / sld
Manganese	ND	mg/L		0.005		E200.8	03/24/10 01:23 / dck
Potassium	1	mg/L		1		E200.7	03/22/10 14:17 / sld
Sodium	2	mg/L		1		E200.7	03/22/10 14:17 / sld
Zinc	0.22	mg/L		0.01		E200.8	03/24/10 01:23 / dck
METALS, TOTAL							
Aluminum	ND	mg/L		0.03		E200.8	03/24/10 01:29 / dck
Arsenic	ND	mg/L		0.003		E200.8	03/24/10 01:29 / dck
Cadmium	0.00059	mg/L		0.00008		E200.8	03/24/10 01:29 / dck
Copper	ND	mg/L		0.001		E200.8	03/24/10 01:29 / dck
Iron	ND	mg/L		0.03		E200.8	03/24/10 01:29 / dck
Lead	ND	mg/L		0.0005		E200.8	03/24/10 01:29 / dck
Manganese	ND	mg/L		0.005		E200.8	03/24/10 01:29 / dck
Zinc	0.24	mg/L		0.01		E200.8	03/24/10 01:29 / dck

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

QA/QC Summary Report

Revised Date: 04/07/10
Report Date: 04/06/10
Work Order: H10030226

Client: MT DEQ
Project: UBMC To 20

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Batch: R61014	
Sample ID: MBLK		Method Blank				Run: MAN-TECH_100322A			03/22/10 11:15	
Alkalinity, Total as CaCO3		ND	mg/L	0.9						
Sample ID: LCS		Laboratory Control Sample				Run: MAN-TECH_100322A			03/22/10 11:24	
Alkalinity, Total as CaCO3		580	mg/L	4.0	97	90	110			
Sample ID: H10030226-002BDUP	3	Sample Duplicate				Run: MAN-TECH_100322A			03/22/10 11:45	
Alkalinity, Total as CaCO3		92	mg/L	4.0				0	20	
Bicarbonate as HCO3		110	mg/L	4.0				0	20	
Carbonate as CO3		ND	mg/L	4.0					20	
Sample ID: H10030226-005BMS		Sample Matrix Spike				Run: MAN-TECH_100322A			03/22/10 12:10	
Alkalinity, Total as CaCO3		730	mg/L	4.0	109	90	110			
Sample ID: H10030226-005BMSD		Sample Matrix Spike Duplicate				Run: MAN-TECH_100322A			03/22/10 12:19	
Alkalinity, Total as CaCO3		710	mg/L	4.0	106	90	110	2.6	20	
Sample ID: H10030226-003ADUP	3	Sample Duplicate				Run: MAN-TECH_100322A			03/22/10 13:35	
Alkalinity, Total as CaCO3		ND	mg/L	4.0					20	
Bicarbonate as HCO3		ND	mg/L	4.0					20	
Carbonate as CO3		ND	mg/L	4.0					20	
Sample ID: H10030226-007AMS		Sample Matrix Spike				Run: MAN-TECH_100322A			03/22/10 14:09	
Alkalinity, Total as CaCO3		730	mg/L	4.0	106	90	110			
Sample ID: H10030226-007AMSD		Sample Matrix Spike Duplicate				Run: MAN-TECH_100322A			03/22/10 14:18	
Alkalinity, Total as CaCO3		730	mg/L	4.0	106	90	110	0.5	20	

Qualifiers:

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ND - Not detected at the reporting limit.

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

QA/QC Summary Report

Revised Date: 04/07/10
Report Date: 04/06/10
Work Order: H10030226

Client: MT DEQ
Project: UBMC To 20

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2510 B									Analytical Run: MAN-TECH_100322A	
Sample ID: ICV		Initial Calibration Verification Standard							03/22/10 11:06	
Conductivity		714	umhos/cm	1.0	99	90	110			
Method: A2510 B									Batch: R61014	
Sample ID: LCS		Laboratory Control Sample				Run: MAN-TECH_100322A			03/22/10 11:16	
Conductivity		1410	umhos/cm	1.0	100	90	110			
Sample ID: H10030226-002BDUP		Sample Duplicate				Run: MAN-TECH_100322A			03/22/10 11:45	
Conductivity		257	umhos/cm	1.0				0.4	10	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Revised Date: 04/07/10
Client: MT DEQ
Report Date: 04/06/10
Project: UBMC To 20
Work Order: H10030226

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-H B										Batch: R61014
Sample ID: H10030226-002BDUP		Sample Duplicate				Run: MAN-TECH_100322A			03/22/10 11:45	
pH		8.18	s.u.	0.10				**0.1**	2	

Qualifiers:

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QA/QC Summary Report

Revised Date: 04/07/10
Client: MT DEQ
Report Date: 04/06/10
Project: UBMC To 20
Work Order: H10030226

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP1-HE_100322B	
Sample ID: ICV	5	Initial Calibration Verification Standard							03/22/10 12:51	
Calcium		40.5	mg/L	1.0	101	95	105			
Iron		4.00	mg/L	0.030	100	95	105			
Magnesium		40.3	mg/L	1.0	101	95	105			
Potassium		38.0	mg/L	1.0	95	95	105			
Sodium		38.4	mg/L	1.0	96	95	105			
Sample ID: CCV-1	5	Continuing Calibration Verification Standard							03/22/10 12:57	
Calcium		24.6	mg/L	1.0	99	95	105			
Iron		2.42	mg/L	0.030	97	95	105			
Magnesium		24.5	mg/L	1.0	98	95	105			
Potassium		24.3	mg/L	1.0	97	95	105			
Sodium		24.2	mg/L	1.0	97	95	105			
Sample ID: ICSA	5	Interference Check Sample A							03/22/10 13:07	
Calcium		564	mg/L	1.0	113	80	120			
Iron		190	mg/L	0.030	95	80	120			
Magnesium		587	mg/L	1.0	117	80	120			
Potassium		0.0358	mg/L	1.0		0	0			
Sodium		0.0525	mg/L	1.0		0	0			
Sample ID: ICSAB	5	Interference Check Sample AB							03/22/10 13:10	
Calcium		561	mg/L	1.0	112	80	120			
Iron		201	mg/L	0.030	100	80	120			
Magnesium		585	mg/L	1.0	117	80	120			
Potassium		22.1	mg/L	1.0	111	80	120			
Sodium		21.1	mg/L	1.0	105	80	120			
Sample ID: CCV	5	Continuing Calibration Verification Standard							03/22/10 13:14	
Calcium		24.2	mg/L	1.0	97	90	110			
Iron		2.39	mg/L	0.030	96	90	110			
Magnesium		24.5	mg/L	1.0	98	90	110			
Potassium		24.3	mg/L	1.0	97	90	110			
Sodium		23.9	mg/L	1.0	96	90	110			
Sample ID: CCV	5	Continuing Calibration Verification Standard							03/22/10 13:59	
Calcium		24.6	mg/L	1.0	99	90	110			
Iron		2.32	mg/L	0.030	93	90	110			
Magnesium		23.3	mg/L	1.0	93	90	110			
Potassium		24.4	mg/L	1.0	97	90	110			
Sodium		24.0	mg/L	1.0	96	90	110			
Sample ID: ICSA	5	Interference Check Sample A							03/22/10 16:08	
Calcium		576	mg/L	1.0	115	80	120			
Iron		193	mg/L	0.030	97	80	120			
Magnesium		568	mg/L	1.0	114	80	120			

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

QA/QC Summary Report

Revised Date: 04/07/10
Client: MT DEQ
Report Date: 04/06/10
Project: UBMC To 20
Work Order: H10030226

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: ICP1-HE_100322B	
Sample ID: ICSA	5	Interference Check Sample A							03/22/10 16:08	
Potassium		0.0307	mg/L	1.0		0	0			
Sodium		0.0579	mg/L	1.0		0	0			
Sample ID: ICSAB	5	Interference Check Sample AB							03/22/10 16:11	
Calcium		571	mg/L	1.0	114	80	120			
Iron		200	mg/L	0.030	100	80	120			
Magnesium		591	mg/L	1.0	118	80	120			
Potassium		22.6	mg/L	1.0	113	80	120			
Sodium		22.8	mg/L	1.0	114	80	120			
Method: E200.7										Batch: R61020
Sample ID: MBLK	5	Method Blank				Run: ICP1-HE_100322B			03/22/10 13:28	
Calcium		ND	mg/L	0.1						
Iron		ND	mg/L	0.002						
Magnesium		ND	mg/L	0.02						
Potassium		ND	mg/L	0.04						
Sodium		ND	mg/L	0.1						
Sample ID: LFB	5	Laboratory Fortified Blank				Run: ICP1-HE_100322B			03/22/10 13:31	
Calcium		9.61	mg/L	1.0	96	85	115			
Iron		0.957	mg/L	0.030	96	85	115			
Magnesium		9.86	mg/L	1.0	99	85	115			
Potassium		10.1	mg/L	1.0	101	85	115			
Sodium		10.1	mg/L	1.0	101	85	115			
Sample ID: LCS	5	Laboratory Control Sample				Run: ICP1-HE_100322B			03/22/10 13:34	
Calcium		20.9	mg/L	1.0	105	90	110			
Iron		1.96	mg/L	0.030	98	90	110			
Magnesium		20.0	mg/L	1.0	100	90	110			
Potassium		19.6	mg/L	1.0	98	90	110			
Sodium		19.8	mg/L	1.0	99	90	110			
Sample ID: H10030226-004CMS2	5	Sample Matrix Spike				Run: ICP1-HE_100322B			03/22/10 13:52	
Calcium		20.9	mg/L	1.0	105	70	130			
Iron		1.93	mg/L	0.030	97	70	130			
Magnesium		19.1	mg/L	1.0	95	70	130			
Potassium		20.5	mg/L	1.0	102	70	130			
Sodium		19.5	mg/L	1.0	98	70	130			
Sample ID: H10030226-004CMSD2	5	Sample Matrix Spike Duplicate				Run: ICP1-HE_100322B			03/22/10 13:56	
Calcium		20.5	mg/L	1.0	102	70	130	2.1	20	
Iron		1.93	mg/L	0.030	96	70	130	0.3	20	
Magnesium		20.0	mg/L	1.0	100	70	130	4.6	20	
Potassium		20.1	mg/L	1.0	101	70	130	1.8	20	
Sodium		19.3	mg/L	1.0	97	70	130	0.8	20	

Qualifiers:

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Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

QA/QC Summary Report

Revised Date: 04/07/10
Report Date: 04/06/10
Work Order: H10030226

Client: MT DEQ
Project: UBMC To 20

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7										Batch: R61020
Sample ID: LFB	5	Laboratory Fortified Blank				Run: ICP1-HE_100322B				03/22/10 15:06
Calcium		10.2	mg/L	1.0	102	85	115			
Iron		0.936	mg/L	0.030	94	85	115			
Magnesium		9.54	mg/L	1.0	95	85	115			
Potassium		10.0	mg/L	1.0	100	85	115			
Sodium		9.94	mg/L	1.0	99	85	115			

Qualifiers:

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QA/QC Summary Report

Revised Date: 04/07/10
Client: MT DEQ
Report Date: 04/06/10
Project: UBMC To 20
Work Order: H10030226

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8								Analytical Run: ICPMS204-B_100323B		
Sample ID: QCS STD	8	Initial Calibration Verification Standard								03/23/10 10:58
Aluminum		0.252	mg/L	0.10	101	90	110			
Arsenic		0.0501	mg/L	0.0050	100	90	110			
Cadmium		0.0263	mg/L	0.0010	105	90	110			
Copper		0.0509	mg/L	0.010	102	90	110			
Iron		0.262	mg/L	0.030	103	90	110			
Lead		0.0503	mg/L	0.010	101	90	110			
Manganese		0.251	mg/L	0.010	101	90	110			
Zinc		0.0525	mg/L	0.010	105	90	110			
Sample ID: ICSA	8	Interference Check Sample A								03/23/10 11:05
Aluminum		41.8	mg/L	0.10	105	70	130			
Arsenic		0.000120	mg/L	0.0050						
Cadmium		0.000648	mg/L	0.0010						
Copper		0.00162	mg/L	0.010						
Iron		104	mg/L	0.030	104	70	130			
Lead		9.00E-05	mg/L	0.010						
Manganese		0.00238	mg/L	0.010						
Zinc		0.00124	mg/L	0.010						
Sample ID: ICSAB	8	Interference Check Sample AB								03/23/10 11:11
Aluminum		42.2	mg/L	0.10	105	70	130			
Arsenic		0.0110	mg/L	0.0050	109	70	130			
Cadmium		0.0110	mg/L	0.0010	110	70	130			
Copper		0.0224	mg/L	0.010	112	70	130			
Iron		104	mg/L	0.030	104	70	130			
Lead		5.80E-05	mg/L	0.010		0	0			
Manganese		0.0240	mg/L	0.010	120	70	130			
Zinc		0.0116	mg/L	0.010	116	70	130			
Sample ID: QCS STD	8	Initial Calibration Verification Standard								03/23/10 14:48
Aluminum		0.257	mg/L	0.10	103	90	110			
Arsenic		0.0500	mg/L	0.0050	100	90	110			
Cadmium		0.0263	mg/L	0.0010	105	90	110			
Copper		0.0508	mg/L	0.010	102	90	110			
Iron		0.263	mg/L	0.030	103	90	110			
Lead		0.0499	mg/L	0.010	100	90	110			
Manganese		0.252	mg/L	0.010	101	90	110			
Zinc		0.0530	mg/L	0.010	106	90	110			
Sample ID: QCS STD	8	Initial Calibration Verification Standard								03/23/10 21:23
Aluminum		0.251	mg/L	0.10	101	90	110			
Arsenic		0.0497	mg/L	0.0050	99	90	110			
Cadmium		0.0267	mg/L	0.0010	107	90	110			
Copper		0.0509	mg/L	0.010	102	90	110			
Iron		0.260	mg/L	0.030	102	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Revised Date: 04/07/10
Client: MT DEQ
Report Date: 04/06/10
Project: UBMC To 20
Work Order: H10030226

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8								Analytical Run: ICPMS204-B_100323B		
Sample ID: QCS STD	8	Initial Calibration Verification Standard								03/23/10 21:23
Lead		0.0504	mg/L	0.010	101	90	110			
Manganese		0.255	mg/L	0.010	102	90	110			
Zinc		0.0514	mg/L	0.010	103	90	110			
Sample ID: QCS STD	8	Initial Calibration Verification Standard								03/24/10 06:56
Aluminum		0.259	mg/L	0.10	103	90	110			
Arsenic		0.0511	mg/L	0.0050	102	90	110			
Cadmium		0.0262	mg/L	0.0010	105	90	110			
Copper		0.0509	mg/L	0.010	102	90	110			
Iron		0.315	mg/L	0.030	123	90	110			S
Lead		0.0510	mg/L	0.010	102	90	110			
Manganese		0.260	mg/L	0.010	104	90	110			
Zinc		0.0510	mg/L	0.010	102	90	110			
Sample ID: ICSA	8	Interference Check Sample A								03/24/10 07:03
Aluminum		41.5	mg/L	0.10	104	70	130			
Arsenic		0.00190	mg/L	0.0050						
Cadmium		0.000961	mg/L	0.0010						
Copper		0.00192	mg/L	0.010						
Iron		101	mg/L	0.030	101	70	130			
Lead		9.00E-05	mg/L	0.010						
Manganese		0.00242	mg/L	0.010						
Zinc		0.00210	mg/L	0.010						
Sample ID: ICSAB	8	Interference Check Sample AB								03/24/10 07:09
Aluminum		42.0	mg/L	0.10	105	70	130			
Arsenic		0.0120	mg/L	0.0050	120	70	130			
Cadmium		0.0115	mg/L	0.0010	115	70	130			
Copper		0.0218	mg/L	0.010	109	70	130			
Iron		103	mg/L	0.030	103	70	130			
Lead		5.10E-05	mg/L	0.010		0	0			
Manganese		0.0237	mg/L	0.010	118	70	130			
Zinc		0.0122	mg/L	0.010	122	70	130			
Method: E200.8										Batch: 8282
Sample ID: MB-8282	8	Method Blank				Run: ICPMS204-B_100323B				03/23/10 18:42
Aluminum		0.002	mg/L	0.0005						
Arsenic		9E-05	mg/L	4E-05						
Cadmium		ND	mg/L	2E-05						
Copper		0.0002	mg/L	7E-05						
Iron		ND	mg/L	0.004						
Lead		ND	mg/L	3E-05						
Manganese		0.0001	mg/L	7E-06						
Zinc		0.002	mg/L	0.0004						

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

QA/QC Summary Report

Revised Date: 04/07/10
Report Date: 04/06/10
Work Order: H10030226

Client: MT DEQ
Project: UBMC To 20

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: 8282
Sample ID: LCS-8282	8	Laboratory Control Sample				Run: ICPMS204-B_100323B				03/23/10 18:49
Aluminum		2.45	mg/L	0.10	98	85	115			
Arsenic		0.515	mg/L	0.0050	103	85	115			
Cadmium		0.264	mg/L	0.0010	106	85	115			
Copper		0.510	mg/L	0.010	102	85	115			
Iron		2.59	mg/L	0.030	104	85	115			
Lead		0.519	mg/L	0.010	104	85	115			
Manganese		2.51	mg/L	0.010	100	85	115			
Zinc		0.513	mg/L	0.010	102	85	115			
Sample ID: H10030226-001DMS5	8	Sample Matrix Spike				Run: ICPMS204-B_100323B				03/23/10 22:36
Aluminum		4.26	mg/L	0.10	131	70	130			S
Arsenic		0.511	mg/L	0.0050	101	70	130			
Cadmium		0.263	mg/L	0.0010	105	70	130			
Copper		0.529	mg/L	0.010	99	70	130			
Iron		4.35	mg/L	0.030	107	70	130			
Lead		0.529	mg/L	0.010	104	70	130			
Manganese		2.60	mg/L	0.010	100	70	130			
Zinc		0.519	mg/L	0.010	100	70	130			
Sample ID: H10030226-001DMSD5	8	Sample Matrix Spike Duplicate				Run: ICPMS204-B_100323B				03/23/10 22:43
Aluminum		4.25	mg/L	0.10	130	70	130	0.4	20	
Arsenic		0.513	mg/L	0.0050	102	70	130	0.5	20	
Cadmium		0.266	mg/L	0.0010	106	70	130	1.2	20	
Copper		0.536	mg/L	0.010	100	70	130	1.2	20	
Iron		4.38	mg/L	0.030	108	70	130	0.7	20	
Lead		0.530	mg/L	0.010	104	70	130	0.2	20	
Manganese		2.58	mg/L	0.010	100	70	130	0.7	20	
Zinc		0.523	mg/L	0.010	101	70	130	0.7	20	
Method: E200.8										Batch: R61035
Sample ID: ICB	8	Method Blank				Run: ICPMS204-B_100323B				03/23/10 12:59
Aluminum		ND	mg/L	0.0002						
Arsenic		ND	mg/L	3E-05						
Cadmium		ND	mg/L	1E-05						
Copper		ND	mg/L	3E-05						
Iron		0.0005	mg/L	0.0002						
Lead		ND	mg/L	5E-06						
Manganese		ND	mg/L	2E-05						
Zinc		0.001	mg/L	0.0001						
Sample ID: LFB	8	Laboratory Fortified Blank				Run: ICPMS204-B_100323B				03/23/10 13:06
Aluminum		0.0503	mg/L	0.10	101	85	115			
Arsenic		0.0485	mg/L	0.0050	97	85	115			
Cadmium		0.0494	mg/L	0.0010	99	85	115			
Copper		0.0474	mg/L	0.010	95	85	115			

Qualifiers:

RL - Analyte reporting limit.
ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
Toll Free 877.472.0711 * 406.442.0711 * FAX 406.442.0712 * helena@enerylab.com

QA/QC Summary Report

Revised Date: 04/07/10
Report Date: 04/06/10
Work Order: H10030226

Client: MT DEQ
Project: UBMC To 20

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: R61035
Sample ID: LFB	8	Laboratory Fortified Blank				Run: ICPMS204-B_100323B			03/23/10 13:06	
Iron		5.05	mg/L	0.030	101	85	115			
Lead		0.0499	mg/L	0.010	100	85	115			
Manganese		0.0509	mg/L	0.010	102	85	115			
Zinc		0.0505	mg/L	0.010	98	85	115			
Sample ID: H10030226-001CMS	8	Sample Matrix Spike				Run: ICPMS204-B_100323B			03/23/10 22:10	
Aluminum		0.0619	mg/L	0.10	96	70	130			
Arsenic		0.0502	mg/L	0.0050	99	70	130			
Cadmium		0.0493	mg/L	0.0010	98	70	130			
Copper		0.0479	mg/L	0.010	94	70	130			
Iron		4.87	mg/L	0.030	97	70	130			
Lead		0.0496	mg/L	0.010	98	70	130			
Manganese		0.0679	mg/L	0.010	97	70	130			
Zinc		0.0507	mg/L	0.010	96	70	130			
Sample ID: H10030226-001CMSD	8	Sample Matrix Spike Duplicate				Run: ICPMS204-B_100323B			03/23/10 22:16	
Aluminum		0.0613	mg/L	0.10	95	70	130		20	
Arsenic		0.0503	mg/L	0.0050	99	70	130	0.1	20	
Cadmium		0.0484	mg/L	0.0010	97	70	130	1.9	20	
Copper		0.0480	mg/L	0.010	94	70	130	0.3	20	
Iron		4.82	mg/L	0.030	96	70	130	1.1	20	
Lead		0.0500	mg/L	0.010	99	70	130	0.9	20	
Manganese		0.0673	mg/L	0.010	95	70	130	0.9	20	
Zinc		0.0503	mg/L	0.010	95	70	130	0.9	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Revised Date: 04/07/10
Report Date: 04/06/10
Work Order: H10030226

Client: MT DEQ
Project: UBMC To 20

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0									Analytical Run: IC101-H_100324A	
Sample ID: ICV032410-12	2	Initial Calibration Verification Standard							03/24/10 13:12	
Chloride		12	mg/L	1.0	94	90	110			
Sulfate		52	mg/L	1.0	104	90	110			
Sample ID: CCV032410-15	2	Continuing Calibration Verification Standard							03/24/10 14:01	
Chloride		24	mg/L	1.0	94	90	110			
Sulfate		50	mg/L	1.0	100	90	110			
Sample ID: CCV032410-30	2	Continuing Calibration Verification Standard							03/24/10 18:08	
Chloride		24	mg/L	1.0	94	90	110			
Sulfate		51	mg/L	1.0	102	90	110			
Method: E300.0										Batch: R61169
Sample ID: ICB032410-13	2	Method Blank				Run: IC101-H_100324A			03/24/10 13:29	
Chloride		ND	mg/L	0.05						
Sulfate		ND	mg/L	0.1						
Sample ID: LFB032410-14	2	Laboratory Fortified Blank				Run: IC101-H_100324A			03/24/10 13:45	
Chloride		24	mg/L	1.0	95	90	110			
Sulfate		51	mg/L	1.0	103	90	110			
Sample ID: H10030226-007AMS	2	Sample Matrix Spike				Run: IC101-H_100324A			03/24/10 17:18	
Chloride		23	mg/L	1.0	92	90	110			
Sulfate		71	mg/L	1.0	104	90	110			
Sample ID: H10030226-007AMSD	2	Sample Matrix Spike Duplicate				Run: IC101-H_100324A			03/24/10 17:35	
Chloride		23	mg/L	1.0	92	90	110	0.3	20	
Sulfate		70	mg/L	1.0	104	90	110	0.4	20	
Sample ID: H10030230-003AMS	2	Sample Matrix Spike				Run: IC101-H_100324A			03/24/10 19:46	
Chloride		44	mg/L	1.0	99	90	110			
Sulfate		120	mg/L	1.0	104	90	110			
Sample ID: H10030230-003AMSD	2	Sample Matrix Spike Duplicate				Run: IC101-H_100324A			03/24/10 20:03	
Chloride		44	mg/L	1.0	99	90	110	0.1	20	
Sulfate		120	mg/L	1.0	103	90	110	0.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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Workorder Receipt Checklist

MT DEQ

H10030226

Login completed by: Tracy L. Lorash

Date Received: 3/17/2010

Reviewed by: BL2000\wjohnson

Received by: abb

Reviewed Date: 3/23/2010

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature:	0.1°C Snow		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

2 bottles labeled w/ alk/hardness and 2 bottles labeled total metas for UBM-TDMW3D. No alk or total metals bottles for UBM-TDMW3D-555. Dup on lid of 2 of the samples matches the others labeled UBM-TDMW3D-555. No collection times on sample bottles for TDMW3D, 3D-555, 2D, 2S and 01 - took times from COC. L/M for client re: mis-labeled samples. TI 3/22/10 spoke w/ Jeremy and the bottles that had Dup on the lid do belong with TDMW3D-555. TI

4/6/10 Per client sample UBM-TDMW40-20100316 should be named UBM-TDMW4D-20100316. abb

ENERGY LABORATORIES

Chain of Custody and Analytical Request Record

PLEASE PRINT- Provide as much information as possible.

Company Name:	Project Name, PWS, Permit, Etc.	Sample Origin	EPA/State Compliance:
Terra Graphics	UBMC TO 20	State: MT	Yes ☐ No ☒
Report Mail Address:	**Contact Name:** / **Phone/Fax:**	**Email:**	**Sampler: (Please Print)**
302 N. Last Chance Gulch Suite, Ste 409	Jeremy Mickey 406-441-5441	jeremy.mickey@terragraphics	Jeremy Mickey
Invoice Address:	**Invoice Contact & Phone:**	**Purchase Order:**	**Quote/Bottle Order:**
MDEQ	MDEQ - Shellie Garland		H452

Special Report/Formats – ELI must be notified prior to sample submittal for the following:

- ☐ DW
- ☐ GSA
- ☐ POTW/WWTP
- ☐ State: _____
- ☐ Other: _____
- ☐ A2LA
- ☒ EDD/EDT (Electronic Data) Format: _____
- ☐ LEVEL IV
- ☐ NELAC

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX (Number of Containers; Sample Type: A W S V B O; Air Water Soils/Solids Vegetation Bioassay Other)	Total Metals	Dissolved Metals	Dissolved Anions	Dissolved Cations	Alkalinity/Hardness					SEE ATTACHED	Normal Turnaround (TAT)	RUSH
1 UBM-TDMW40-20100316	03/16/10	16:01	5 G W	↓	↓	↓	↓	↓						X	
2 UBM-TDMW05-20100316	03/16/10	19:10												X	
3 UBM-TDMW05-333-20100316	03/16/10	19:22												X	
4 UBM-TDMW05-444-20100316	03/16/10	19:22												X	
5 UBM-TDMW3D-20100317	03/17/10	10:51												X	
6 UBM-TDMW3D-555-20100317	03/17/10	10:51												X	
7 UBM-TDMW2D-20100317	03/17/10	13:03												X	
8 UBM-TDMW25-20100317	03/17/10	13:22												X	
9 UBM-TDMW01-20100317	03/17/10	13:59												X	
10															

Contact ELI prior to RUSH sample submittal for charges and scheduling – See Instruction Page

Comments:

Shipped by: hand del.

Cooler ID(s): yes

Receipt Temp 0.1 °C

On Ice: (Yes) No

Custody Seal

Bottles/Coolers B C

Intact Y N

Signature Match Y N

LABORATORY USE ONLY H10030226

Custody Record MUST be Signed

Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
Jeremy Mickey	03/17/10 16:16	[signature]			
Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
			Received by Laboratory: Amanda Blackburn	Date/Time: 3/17/10 16:16	Signature: [signature]

Sample Disposal: Return to Client: _____ Lab Disposal: _____

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report. Visit our web site at www.energylab.com for additional information, downloadable fee schedule, forms, and links.

ANALYTICAL SUMMARY REPORT

September 28, 2010

MT DEQ
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H10090242 Quote ID: H499 - Section 35 and UBMC

Project Name: TO20-UBMC Monitoring

Energy Laboratories Inc received the following 9 samples for MT DEQ on 9/15/2010 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H10090242-001	UBM-TDMW2D-555-20100913	09/13/10 17:30	09/15/10	Groundwater	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Metals Digestion by EPA 200.2
H10090242-002	UBM-TDMW2D-20100913	09/13/10 17:30	09/15/10	Groundwater	Same As Above
H10090242-003	UBM-TDMW2S-444-20100913	09/13/10 18:45	09/15/10	Groundwater	Same As Above
H10090242-004	UBM-TDMW2S-333-20100913	09/13/10 18:50	09/15/10	Groundwater	Same As Above
H10090242-005	UBM-TDMW2D-20100913	09/13/10 18:00	09/15/10	Groundwater	Same As Above
H10090242-006	UBM-TDMW4D-20100913	09/13/10 12:40	09/15/10	Groundwater	Same As Above
H10090242-007	UBM-TDMW01-20100913	09/13/10 16:30	09/15/10	Groundwater	Same As Above
H10090242-008	UBM-TDMW4D-20100913	09/13/10 10:15	09/15/10	Groundwater	Same As Above
H10090242-009	UBM-TDMW05-20100913	09/13/10 11:30	09/15/10	Groundwater	Same As Above

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW2D-555-20100913
Lab ID: H10090242-001
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 17:30 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.		0.1		A4500-H B	09/17/10 15:40 / zeg		PH2_100917A	3	100917A-PH-W
Conductivity	279	umhos/cm		1		A2510 B	09/17/10 15:42 / zeg		COND_100917A	1	300917A-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	09/20/10 17:57 / zeg		MAN-TECH_100920A	8	R65465
Carbonate as CO3	ND	mg/L		4		A2320 B	09/20/10 17:57 / zeg		MAN-TECH_100920A	8	R65465
Chloride	ND	mg/L		1		E300.0	09/23/10 09:02 / zeg		IC101-H_100922A	69	R65568
Sulfate	27	mg/L		1		E300.0	09/23/10 09:02 / zeg		IC101-H_100922A	69	R65568
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	09/20/10 19:01 / zeg		MAN-TECH_100920A	27	R65465
Hardness as CaCO3	123	mg/L		1		A2340 B	09/24/10 13:12 / wjj		WATERCALC_100924A	29	R65603
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/24/10 01:41 / dck		ICPMS204-B_100923A	120	R65597
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 01:41 / dck		ICPMS204-B_100923A	120	R65597
Cadmium	ND	mg/L		0.00008		E200.8	09/24/10 01:41 / dck		ICPMS204-B_100923A	120	R65597
Calcium	25	mg/L		1		E200.8	09/24/10 01:41 / dck		ICPMS204-B_100923A	120	R65597
Copper	ND	mg/L		0.001		E200.8	09/24/10 01:41 / dck		ICPMS204-B_100923A	120	R65597
Iron	ND	mg/L		0.05		E200.8	09/24/10 01:41 / dck		ICPMS204-B_100923A	120	R65597
Lead	ND	mg/L		0.0005		E200.8	09/24/10 01:41 / dck		ICPMS204-B_100923A	120	R65597
Magnesium	15	mg/L		1		E200.8	09/24/10 01:41 / dck		ICPMS204-B_100923A	120	R65597
Manganese	ND	mg/L		0.005		E200.8	09/24/10 01:41 / dck		ICPMS204-B_100923A	120	R65597
Potassium	ND	mg/L		1		E200.8	09/24/10 01:41 / dck		ICPMS204-B_100923A	120	R65597
Sodium	2	mg/L		1		E200.8	09/24/10 01:41 / dck		ICPMS204-B_100923A	120	R65597
Zinc	ND	mg/L		0.01		E200.8	09/24/10 01:41 / dck		ICPMS204-B_100923A	120	R65597
METALS, TOTAL											
Aluminum	0.33	mg/L		0.03		E200.8	09/24/10 03:03 / dck	09/14/10 11:01	ICPMS204-B_100923A	132	9866
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 03:03 / dck	09/14/10 11:01	ICPMS204-B_100923A	132	9866
Cadmium	ND	mg/L		0.00008		E200.8	09/24/10 03:03 / dck	09/14/10 11:01	ICPMS204-B_100923A	132	9866
Copper	0.002	mg/L		0.001		E200.8	09/24/10 03:03 / dck	09/14/10 11:01	ICPMS204-B_100923A	132	9866

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW2D-555-20100913
Lab ID: H10090242-001
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 17:30 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	0.33	mg/L		0.05		E200.8	09/24/10 03:03 / dck	09/14/10 11:01	ICPMS204-B_100923A	132	9866
Lead	0.0028	mg/L		0.0005		E200.8	09/24/10 03:03 / dck	09/14/10 11:01	ICPMS204-B_100923A	132	9866
Manganese	0.019	mg/L		0.005		E200.8	09/24/10 03:03 / dck	09/14/10 11:01	ICPMS204-B_100923A	132	9866
Zinc	ND	mg/L		0.01		E200.8	09/24/10 03:03 / dck	09/14/10 11:01	ICPMS204-B_100923A	132	9866

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW2D-20100913
Lab ID: H10090242-002
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 17:30 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.		0.1		A4500-H B	09/17/10 15:43 / zeg		PH2_100917A	4	100917A-PH-W
Conductivity	255	umhos/cm		1		A2510 B	09/17/10 15:44 / zeg		COND_100917A	1	500917A-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	09/20/10 18:13 / zeg		MAN-TECH_100920A	10	R65465
Carbonate as CO3	ND	mg/L		4		A2320 B	09/20/10 18:13 / zeg		MAN-TECH_100920A	10	R65465
Chloride	ND	mg/L		1		E300.0	09/23/10 09:51 / zeg		IC101-H_100922A	72	R65568
Sulfate	27	mg/L		1		E300.0	09/23/10 09:51 / zeg		IC101-H_100922A	72	R65568
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	09/20/10 19:08 / zeg		MAN-TECH_100920A	30	R65465
Hardness as CaCO3	122	mg/L		1		A2340 B	09/24/10 13:12 / wjj		WATERCALC_100924A	30	R65603
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/24/10 03:10 / dck		ICPMS204-B_100923A	133	R65597
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 03:10 / dck		ICPMS204-B_100923A	133	R65597
Cadmium	ND	mg/L		0.00008		E200.8	09/24/10 03:10 / dck		ICPMS204-B_100923A	133	R65597
Calcium	25	mg/L		1		E200.8	09/24/10 03:10 / dck		ICPMS204-B_100923A	133	R65597
Copper	ND	mg/L		0.001		E200.8	09/24/10 03:10 / dck		ICPMS204-B_100923A	133	R65597
Iron	ND	mg/L		0.05		E200.8	09/24/10 03:10 / dck		ICPMS204-B_100923A	133	R65597
Lead	ND	mg/L		0.0005		E200.8	09/24/10 03:10 / dck		ICPMS204-B_100923A	133	R65597
Magnesium	14	mg/L		1		E200.8	09/24/10 03:10 / dck		ICPMS204-B_100923A	133	R65597
Manganese	ND	mg/L		0.005		E200.8	09/24/10 03:10 / dck		ICPMS204-B_100923A	133	R65597
Potassium	ND	mg/L		1		E200.8	09/24/10 03:10 / dck		ICPMS204-B_100923A	133	R65597
Sodium	1	mg/L		1		E200.8	09/24/10 03:10 / dck		ICPMS204-B_100923A	133	R65597
Zinc	ND	mg/L		0.01		E200.8	09/24/10 03:10 / dck		ICPMS204-B_100923A	133	R65597
METALS, TOTAL											
Aluminum	0.32	mg/L		0.03		E200.8	09/24/10 03:17 / dck	09/14/10 11:01	ICPMS204-B_100923A	134	9866
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 03:17 / dck	09/14/10 11:01	ICPMS204-B_100923A	134	9866
Cadmium	ND	mg/L		0.00008		E200.8	09/24/10 03:17 / dck	09/14/10 11:01	ICPMS204-B_100923A	134	9866
Copper	0.002	mg/L		0.001		E200.8	09/24/10 03:17 / dck	09/14/10 11:01	ICPMS204-B_100923A	134	9866

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW2D-20100913
Lab ID: H10090242-002
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 17:30 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	0.33	mg/L		0.05		E200.8	09/24/10 03:17 / dck	09/14/10 11:01	ICPMS204-B_100923A	134	9866
Lead	0.0025	mg/L		0.0005		E200.8	09/24/10 03:17 / dck	09/14/10 11:01	ICPMS204-B_100923A	134	9866
Manganese	0.019	mg/L		0.005		E200.8	09/24/10 03:17 / dck	09/14/10 11:01	ICPMS204-B_100923A	134	9866
Zinc	ND	mg/L		0.01		E200.8	09/24/10 10:55 / dck	09/14/10 11:01	ICPMS204-B_100923A	193	9866

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW2S-444-20100913
Lab ID: H10090242-003
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 18:45 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.6	s.u.		0.1		A4500-H B	09/17/10 15:45 / zeg		PH2_100917A	5	100917A-PH-W
Conductivity	7	umhos/cm		1		A2510 B	09/17/10 15:47 / zeg		COND_100917A	1	600917A-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	09/20/10 18:17 / zeg		MAN-TECH_100920A	12	R65465
Carbonate as CO3	ND	mg/L		4		A2320 B	09/20/10 18:17 / zeg		MAN-TECH_100920A	12	R65465
Chloride	ND	mg/L		1		E300.0	09/23/10 10:08 / zeg		IC101-H_100922A	73	R65568
Sulfate	ND	mg/L		1		E300.0	09/23/10 10:08 / zeg		IC101-H_100922A	73	R65568
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	09/20/10 19:13 / zeg		MAN-TECH_100920A	33	R65465
Hardness as CaCO3	ND	mg/L		1		A2340 B	09/24/10 13:12 / wjj		WATERCALC_100924A	31	R65603
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/24/10 03:24 / dck		ICPMS204-B_100923A	135	R65597
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 03:24 / dck		ICPMS204-B_100923A	135	R65597
Cadmium	ND	mg/L		0.00008		E200.8	09/24/10 03:24 / dck		ICPMS204-B_100923A	135	R65597
Calcium	ND	mg/L		1		E200.8	09/24/10 03:24 / dck		ICPMS204-B_100923A	135	R65597
Copper	ND	mg/L		0.001		E200.8	09/24/10 03:24 / dck		ICPMS204-B_100923A	135	R65597
Iron	ND	mg/L		0.05		E200.8	09/24/10 03:24 / dck		ICPMS204-B_100923A	135	R65597
Lead	ND	mg/L		0.0005		E200.8	09/24/10 03:24 / dck		ICPMS204-B_100923A	135	R65597
Magnesium	ND	mg/L		1		E200.8	09/24/10 03:24 / dck		ICPMS204-B_100923A	135	R65597
Manganese	ND	mg/L		0.005		E200.8	09/24/10 03:24 / dck		ICPMS204-B_100923A	135	R65597
Potassium	ND	mg/L		1		E200.8	09/24/10 03:24 / dck		ICPMS204-B_100923A	135	R65597
Sodium	ND	mg/L		1		E200.8	09/24/10 03:24 / dck		ICPMS204-B_100923A	135	R65597
Zinc	ND	mg/L		0.01		E200.8	09/24/10 03:24 / dck		ICPMS204-B_100923A	135	R65597
METALS, TOTAL											
Aluminum	ND	mg/L		0.03		E200.8	09/24/10 03:31 / dck		ICPMS204-B_100923A	136	R65597
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 03:31 / dck		ICPMS204-B_100923A	136	R65597
Cadmium	ND	mg/L		0.00008		E200.8	09/24/10 03:31 / dck		ICPMS204-B_100923A	136	R65597
Copper	ND	mg/L		0.001		E200.8	09/24/10 03:31 / dck		ICPMS204-B_100923A	136	R65597

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW2S-444-20100913
Lab ID: H10090242-003
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 18:45 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	ND	mg/L		0.05		E200.8	09/24/10 03:31 / dck		ICPMS204-B_100923A	136	R65597
Lead	ND	mg/L		0.0005		E200.8	09/24/10 03:31 / dck		ICPMS204-B_100923A	136	R65597
Manganese	ND	mg/L		0.005		E200.8	09/24/10 03:31 / dck		ICPMS204-B_100923A	136	R65597
Zinc	ND	mg/L		0.01		E200.8	09/24/10 03:31 / dck		ICPMS204-B_100923A	136	R65597

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW2S-333-20100913
Lab ID: H10090242-004
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 18:50 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	5.6	s.u.		0.1		A4500-H B	09/17/10 15:47 / zeg		PH2_100917A	6	100917A-PH-W
Conductivity	6	umhos/cm		1		A2510 B	09/17/10 15:49 / zeg		COND_100917A	1	700917A-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	09/20/10 18:22 / zeg		MAN-TECH_100920A	14	R65465
Carbonate as CO3	ND	mg/L		4		A2320 B	09/20/10 18:22 / zeg		MAN-TECH_100920A	14	R65465
Chloride	ND	mg/L		1		E300.0	09/23/10 10:24 / zeg		IC101-H_100922A	74	R65568
Sulfate	ND	mg/L		1		E300.0	09/23/10 10:24 / zeg		IC101-H_100922A	74	R65568
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	09/20/10 19:17 / zeg		MAN-TECH_100920A	36	R65465
Hardness as CaCO3	ND	mg/L		1		A2340 B	09/24/10 13:12 / wjj		WATERCALC_100924A	32	R65603
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/24/10 03:38 / dck		ICPMS204-B_100923A	137	R65597
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 03:38 / dck		ICPMS204-B_100923A	137	R65597
Cadmium	ND	mg/L		0.00008		E200.8	09/24/10 03:38 / dck		ICPMS204-B_100923A	137	R65597
Calcium	ND	mg/L		1		E200.8	09/24/10 03:38 / dck		ICPMS204-B_100923A	137	R65597
Copper	ND	mg/L		0.001		E200.8	09/24/10 03:38 / dck		ICPMS204-B_100923A	137	R65597
Iron	ND	mg/L		0.05		E200.8	09/24/10 03:38 / dck		ICPMS204-B_100923A	137	R65597
Lead	ND	mg/L		0.0005		E200.8	09/24/10 03:38 / dck		ICPMS204-B_100923A	137	R65597
Magnesium	ND	mg/L		1		E200.8	09/24/10 03:38 / dck		ICPMS204-B_100923A	137	R65597
Manganese	ND	mg/L		0.005		E200.8	09/24/10 03:38 / dck		ICPMS204-B_100923A	137	R65597
Potassium	ND	mg/L		1		E200.8	09/24/10 03:38 / dck		ICPMS204-B_100923A	137	R65597
Sodium	ND	mg/L		1		E200.8	09/24/10 03:38 / dck		ICPMS204-B_100923A	137	R65597
Zinc	ND	mg/L		0.01		E200.8	09/24/10 03:38 / dck		ICPMS204-B_100923A	137	R65597
METALS, TOTAL											
Aluminum	ND	mg/L		0.03		E200.8	09/24/10 03:44 / dck		ICPMS204-B_100923A	138	R65597
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 03:44 / dck		ICPMS204-B_100923A	138	R65597
Cadmium	ND	mg/L		0.00008		E200.8	09/24/10 03:44 / dck		ICPMS204-B_100923A	138	R65597
Copper	ND	mg/L		0.001		E200.8	09/24/10 03:44 / dck		ICPMS204-B_100923A	138	R65597

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW2S-333-20100913
Lab ID: H10090242-004
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 18:50
DateReceived: 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	ND	mg/L		0.05		E200.8	09/24/10 03:44 / dck		ICPMS204-B_100923A	138	R65597
Lead	ND	mg/L		0.0005		E200.8	09/24/10 03:44 / dck		ICPMS204-B_100923A	138	R65597
Manganese	ND	mg/L		0.005		E200.8	09/24/10 03:44 / dck		ICPMS204-B_100923A	138	R65597
Zinc	ND	mg/L		0.01		E200.8	09/24/10 03:44 / dck		ICPMS204-B_100923A	138	R65597

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW2D-20100913
Lab ID: H10090242-005
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 18:00 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.3	s.u.		0.1		A4500-H B	09/17/10 15:50 / zeg		PH2_100917A	7	100917A-PH-W
Conductivity	506	umhos/cm		1		A2510 B	09/17/10 15:51 / zeg		COND_100917A	1	800917A-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	09/20/10 18:33 / zeg		MAN-TECH_100920A	19	R65465
Carbonate as CO3	ND	mg/L		4		A2320 B	09/20/10 18:33 / zeg		MAN-TECH_100920A	19	R65465
Chloride	ND	mg/L		1		E300.0	09/23/10 11:14 / zeg		IC101-H_100922A	77	R65568
Sulfate	150	mg/L		1		E300.0	09/23/10 11:14 / zeg		IC101-H_100922A	77	R65568
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	09/20/10 19:25 / zeg		MAN-TECH_100920A	39	R65465
Hardness as CaCO3	226	mg/L		1		A2340 B	09/24/10 13:12 / wjj		WATERCALC_100924A	33	R65603
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/24/10 03:51 / dck		ICPMS204-B_100923A	139	R65597
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 03:51 / dck		ICPMS204-B_100923A	139	R65597
Cadmium	0.00149	mg/L		0.00008		E200.8	09/24/10 03:51 / dck		ICPMS204-B_100923A	139	R65597
Calcium	45	mg/L		1		E200.8	09/24/10 03:51 / dck		ICPMS204-B_100923A	139	R65597
Copper	ND	mg/L		0.001		E200.8	09/24/10 03:51 / dck		ICPMS204-B_100923A	139	R65597
Iron	ND	mg/L		0.05		E200.8	09/24/10 03:51 / dck		ICPMS204-B_100923A	139	R65597
Lead	ND	mg/L		0.0005		E200.8	09/24/10 03:51 / dck		ICPMS204-B_100923A	139	R65597
Magnesium	28	mg/L		1		E200.8	09/24/10 03:51 / dck		ICPMS204-B_100923A	139	R65597
Manganese	4.32	mg/L		0.005		E200.8	09/24/10 03:51 / dck		ICPMS204-B_100923A	139	R65597
Potassium	ND	mg/L		1		E200.8	09/24/10 03:51 / dck		ICPMS204-B_100923A	139	R65597
Sodium	2	mg/L		1		E200.8	09/24/10 03:51 / dck		ICPMS204-B_100923A	139	R65597
Zinc	1.96	mg/L		0.01		E200.8	09/24/10 03:51 / dck		ICPMS204-B_100923A	139	R65597
METALS, TOTAL											
Aluminum	0.25	mg/L		0.03		E200.8	09/24/10 03:58 / dck	09/14/10 11:01	ICPMS204-B_100923A	140	9866
Arsenic	0.006	mg/L		0.003		E200.8	09/24/10 03:58 / dck	09/14/10 11:01	ICPMS204-B_100923A	140	9866
Cadmium	0.00230	mg/L		0.00008		E200.8	09/24/10 03:58 / dck	09/14/10 11:01	ICPMS204-B_100923A	140	9866
Copper	0.012	mg/L		0.001		E200.8	09/24/10 03:58 / dck	09/14/10 11:01	ICPMS204-B_100923A	140	9866

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW2D-20100913
Lab ID: H10090242-005
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 18:00 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	2.05	mg/L		0.05		E200.8	09/24/10 03:58 / dck	09/14/10 11:01	ICPMS204-B_100923A	140	9866
Lead	0.0602	mg/L		0.0005		E200.8	09/24/10 03:58 / dck	09/14/10 11:01	ICPMS204-B_100923A	140	9866
Manganese	7.84	mg/L		0.005		E200.8	09/24/10 03:58 / dck	09/14/10 11:01	ICPMS204-B_100923A	140	9866
Zinc	2.48	mg/L		0.01		E200.8	09/24/10 03:58 / dck	09/14/10 11:01	ICPMS204-B_100923A	140	9866

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW4D-20100913
Lab ID: H10090242-006
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 12:40 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.5	s.u.		0.1		A4500-H B	09/17/10 15:51 / zeg		PH2_100917A	8	100917A-PH-W
Conductivity	689	umhos/cm		1		A2510 B	09/17/10 15:53 / zeg		COND_100917A	1	900917A-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	73	mg/L		4		A2320 B	09/20/10 18:40 / zeg		MAN-TECH_100920A	21	R65465
Carbonate as CO3	ND	mg/L		4		A2320 B	09/20/10 18:40 / zeg		MAN-TECH_100920A	21	R65465
Chloride	ND	mg/L		1		E300.0	09/23/10 11:30 / zeg		IC101-H_100922A	78	R65568
Sulfate	310	mg/L		1		E300.0	09/23/10 11:30 / zeg		IC101-H_100922A	78	R65568
INORGANICS											
Alkalinity, Total as CaCO3	58	mg/L		4		A2320 B	09/20/10 19:38 / zeg		MAN-TECH_100920A	45	R65465
Hardness as CaCO3	342	mg/L		1		A2340 B	09/24/10 14:43 / dck		WATERCALC_100924C	3	R65609
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/24/10 04:32 / dck		ICPMS204-B_100923A	145	R65597
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 04:32 / dck		ICPMS204-B_100923A	145	R65597
Cadmium	0.00008	mg/L		0.00008		E200.8	09/24/10 04:32 / dck		ICPMS204-B_100923A	145	R65597
Calcium	78	mg/L		1		E200.8	09/24/10 11:43 / dck		ICPMS204-B_100923A	200	R65597
Copper	ND	mg/L		0.001		E200.8	09/24/10 04:32 / dck		ICPMS204-B_100923A	145	R65597
Iron	ND	mg/L		0.05		E200.8	09/24/10 04:32 / dck		ICPMS204-B_100923A	145	R65597
Lead	ND	mg/L		0.0005		E200.8	09/24/10 04:32 / dck		ICPMS204-B_100923A	145	R65597
Magnesium	36	mg/L		1		E200.8	09/24/10 04:32 / dck		ICPMS204-B_100923A	145	R65597
Manganese	ND	mg/L		0.005		E200.8	09/24/10 04:32 / dck		ICPMS204-B_100923A	145	R65597
Potassium	ND	mg/L		1		E200.8	09/24/10 04:32 / dck		ICPMS204-B_100923A	145	R65597
Sodium	2	mg/L		1		E200.8	09/24/10 04:32 / dck		ICPMS204-B_100923A	145	R65597
Zinc	0.02	mg/L		0.01		E200.8	09/24/10 04:32 / dck		ICPMS204-B_100923A	145	R65597
METALS, TOTAL											
Aluminum	0.27	mg/L		0.03		E200.8	09/24/10 04:39 / dck	09/14/10 11:01	ICPMS204-B_100923A	146	9866
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 04:39 / dck	09/14/10 11:01	ICPMS204-B_100923A	146	9866
Cadmium	0.00013	mg/L		0.00008		E200.8	09/24/10 04:39 / dck	09/14/10 11:01	ICPMS204-B_100923A	146	9866
Copper	0.001	mg/L		0.001		E200.8	09/24/10 04:39 / dck	09/14/10 11:01	ICPMS204-B_100923A	146	9866

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW4D-20100913
Lab ID: H10090242-006
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 12:40 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	0.64	mg/L		0.05		E200.8	09/24/10 04:39 / dck	09/14/10 11:01	ICPMS204-B_100923A	146	9866
Lead	0.0030	mg/L		0.0005		E200.8	09/24/10 04:39 / dck	09/14/10 11:01	ICPMS204-B_100923A	146	9866
Manganese	0.046	mg/L		0.005		E200.8	09/24/10 04:39 / dck	09/14/10 11:01	ICPMS204-B_100923A	146	9866
Zinc	0.03	mg/L		0.01		E200.8	09/24/10 04:39 / dck	09/14/10 11:01	ICPMS204-B_100923A	146	9866

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW01-20100913
Lab ID: H10090242-007
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 16:30 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.2	s.u.		0.1		A4500-H B	09/17/10 15:54 / zeg		PH2_100917A	9	100917A-PH-W
Conductivity	453	umhos/cm		1		A2510 B	09/17/10 15:58 / zeg		COND_100917A	2	000917A-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	120	mg/L		4		A2320 B	09/20/10 18:46 / zeg		MAN-TECH_100920A	23	R65465
Carbonate as CO3	ND	mg/L		4		A2320 B	09/20/10 18:46 / zeg		MAN-TECH_100920A	23	R65465
Chloride	ND	mg/L		1		E300.0	09/23/10 11:46 / zeg		IC101-H_100922A	79	R65568
Sulfate	140	mg/L		1		E300.0	09/23/10 11:46 / zeg		IC101-H_100922A	79	R65568
INORGANICS											
Alkalinity, Total as CaCO3	94	mg/L		4		A2320 B	09/20/10 19:45 / zeg		MAN-TECH_100920A	48	R65465
Hardness as CaCO3	214	mg/L		1		A2340 B	09/24/10 13:12 / wjj		WATERCALC_100924A	34	R65603
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/24/10 05:21 / dck		ICPMS204-B_100923A	152	R65597
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 05:21 / dck		ICPMS204-B_100923A	152	R65597
Cadmium	0.00062	mg/L		0.00008		E200.8	09/24/10 05:21 / dck		ICPMS204-B_100923A	152	R65597
Calcium	39	mg/L		1		E200.8	09/24/10 05:21 / dck		ICPMS204-B_100923A	152	R65597
Copper	ND	mg/L		0.001		E200.8	09/24/10 05:21 / dck		ICPMS204-B_100923A	152	R65597
Iron	ND	mg/L		0.05		E200.8	09/24/10 05:21 / dck		ICPMS204-B_100923A	152	R65597
Lead	ND	mg/L		0.0005		E200.8	09/24/10 05:21 / dck		ICPMS204-B_100923A	152	R65597
Magnesium	28	mg/L		1		E200.8	09/24/10 05:21 / dck		ICPMS204-B_100923A	152	R65597
Manganese	ND	mg/L		0.005		E200.8	09/24/10 05:21 / dck		ICPMS204-B_100923A	152	R65597
Potassium	ND	mg/L		1		E200.8	09/24/10 05:21 / dck		ICPMS204-B_100923A	152	R65597
Sodium	2	mg/L		1		E200.8	09/24/10 05:21 / dck		ICPMS204-B_100923A	152	R65597
Zinc	0.25	mg/L		0.01		E200.8	09/24/10 05:21 / dck		ICPMS204-B_100923A	152	R65597
METALS, TOTAL											
Aluminum	ND	mg/L		0.03		E200.8	09/24/10 06:22 / dck		ICPMS204-B_100923A	161	R65597
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 06:22 / dck		ICPMS204-B_100923A	161	R65597
Cadmium	0.00061	mg/L		0.00008		E200.8	09/24/10 06:22 / dck		ICPMS204-B_100923A	161	R65597
Copper	ND	mg/L		0.001		E200.8	09/24/10 06:22 / dck		ICPMS204-B_100923A	161	R65597

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW01-20100913
Lab ID: H10090242-007
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 16:30 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	ND	mg/L		0.05		E200.8	09/24/10 06:22 / dck		ICPMS204-B_100923A	161	R65597
Lead	0.0006	mg/L		0.0005		E200.8	09/24/10 12:03 / dck		ICPMS204-B_100923A	203	R65597
Manganese	ND	mg/L		0.005		E200.8	09/24/10 06:22 / dck		ICPMS204-B_100923A	161	R65597
Zinc	0.25	mg/L		0.01		E200.8	09/24/10 06:22 / dck		ICPMS204-B_100923A	161	R65597

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW4D-20100913
Lab ID: H10090242-008
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 10:15 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.		0.1		A4500-H B	09/17/10 15:58 / zeg		PH2_100917A	11	100917A-PH-W
Conductivity	210	umhos/cm		1		A2510 B	09/17/10 16:00 / zeg		COND_100917A	2	200917A-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	93	mg/L		4		A2320 B	09/20/10 19:59 / zeg		MAN-TECH_100920A	54	R65465
Carbonate as CO3	ND	mg/L		4		A2320 B	09/20/10 19:59 / zeg		MAN-TECH_100920A	54	R65465
Chloride	ND	mg/L		1		E300.0	09/23/10 12:03 / zeg		IC101-H_100922A	80	R65568
Sulfate	25	mg/L		1		E300.0	09/23/10 12:03 / zeg		IC101-H_100922A	80	R65568
INORGANICS											
Alkalinity, Total as CaCO3	77	mg/L		4		A2320 B	09/20/10 19:52 / zeg		MAN-TECH_100920A	51	R65465
Hardness as CaCO3	93	mg/L		1		A2340 B	09/24/10 13:12 / wjj		WATERCALC_100924A	35	R65603
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/24/10 06:29 / dck		ICPMS204-B_100923A	162	R65597
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 06:29 / dck		ICPMS204-B_100923A	162	R65597
Cadmium	ND	mg/L		0.00008		E200.8	09/24/10 06:29 / dck		ICPMS204-B_100923A	162	R65597
Calcium	19	mg/L		1		E200.8	09/24/10 06:29 / dck		ICPMS204-B_100923A	162	R65597
Copper	ND	mg/L		0.001		E200.8	09/24/10 06:29 / dck		ICPMS204-B_100923A	162	R65597
Iron	ND	mg/L		0.05		E200.8	09/24/10 06:29 / dck		ICPMS204-B_100923A	162	R65597
Lead	ND	mg/L		0.0005		E200.8	09/24/10 06:29 / dck		ICPMS204-B_100923A	162	R65597
Magnesium	11	mg/L		1		E200.8	09/24/10 06:29 / dck		ICPMS204-B_100923A	162	R65597
Manganese	ND	mg/L		0.005		E200.8	09/24/10 06:29 / dck		ICPMS204-B_100923A	162	R65597
Potassium	ND	mg/L		1		E200.8	09/24/10 06:29 / dck		ICPMS204-B_100923A	162	R65597
Sodium	2	mg/L		1		E200.8	09/24/10 06:29 / dck		ICPMS204-B_100923A	162	R65597
Zinc	ND	mg/L		0.01		E200.8	09/24/10 06:29 / dck		ICPMS204-B_100923A	162	R65597
METALS, TOTAL											
Aluminum	0.20	mg/L		0.03		E200.8	09/24/10 06:36 / dck	09/14/10 11:01	ICPMS204-B_100923A	163	9866
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 06:36 / dck	09/14/10 11:01	ICPMS204-B_100923A	163	9866
Cadmium	ND	mg/L		0.00008		E200.8	09/24/10 06:36 / dck	09/14/10 11:01	ICPMS204-B_100923A	163	9866
Copper	0.005	mg/L		0.001		E200.8	09/24/10 06:36 / dck	09/14/10 11:01	ICPMS204-B_100923A	163	9866

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW4D-20100913
Lab ID: H10090242-008
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 10:15 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	0.28	mg/L		0.05		E200.8	09/24/10 06:36 / dck	09/14/10 11:01	ICPMS204-B_100923A	163	9866
Lead	0.0019	mg/L		0.0005		E200.8	09/24/10 12:24 / dck	09/14/10 11:01	ICPMS204-B_100923A	206	9866
Manganese	0.013	mg/L		0.005		E200.8	09/24/10 06:36 / dck	09/14/10 11:01	ICPMS204-B_100923A	163	9866
Zinc	ND	mg/L		0.01		E200.8	09/24/10 06:36 / dck	09/14/10 11:01	ICPMS204-B_100923A	163	9866

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW05-20100913
Lab ID: H10090242-009
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 11:30 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.0	s.u.		0.1		A4500-H B	09/17/10 16:02 / zeg		PH2_100917A	12	100917A-PH-W
Conductivity	326	umhos/cm		1		A2510 B	09/17/10 16:03 / zeg		COND_100917A	2	300917A-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	09/20/10 20:12 / zeg		MAN-TECH_100920A	59	R65465
Carbonate as CO3	ND	mg/L		4		A2320 B	09/20/10 20:12 / zeg		MAN-TECH_100920A	59	R65465
Chloride	ND	mg/L		1		E300.0	09/23/10 12:52 / zeg		IC101-H_100922A	83	R65568
Sulfate	60	mg/L		1		E300.0	09/23/10 12:52 / zeg		IC101-H_100922A	83	R65568
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	09/20/10 20:06 / zeg		MAN-TECH_100920A	56	R65465
Hardness as CaCO3	152	mg/L		1		A2340 B	09/24/10 14:43 / dck		WATERCALC_100924C	4	R65609
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	09/24/10 06:43 / dck		ICPMS204-B_100923A	164	R65597
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 06:43 / dck		ICPMS204-B_100923A	164	R65597
Cadmium	ND	mg/L		0.00008		E200.8	09/24/10 06:43 / dck		ICPMS204-B_100923A	164	R65597
Calcium	34	mg/L		1		E200.8	09/24/10 06:43 / dck		ICPMS204-B_100923A	164	R65597
Copper	0.001	mg/L		0.001		E200.8	09/24/10 06:43 / dck		ICPMS204-B_100923A	164	R65597
Iron	ND	mg/L		0.05		E200.8	09/24/10 06:43 / dck		ICPMS204-B_100923A	164	R65597
Lead	ND	mg/L		0.0005		E200.8	09/24/10 12:59 / dck		ICPMS204-B_100923A	211	R65597
Magnesium	16	mg/L		1		E200.8	09/24/10 06:43 / dck		ICPMS204-B_100923A	164	R65597
Manganese	ND	mg/L		0.005		E200.8	09/24/10 06:43 / dck		ICPMS204-B_100923A	164	R65597
Potassium	ND	mg/L		1		E200.8	09/24/10 06:43 / dck		ICPMS204-B_100923A	164	R65597
Sodium	3	mg/L		1		E200.8	09/24/10 06:43 / dck		ICPMS204-B_100923A	164	R65597
Zinc	0.02	mg/L		0.01		E200.8	09/24/10 06:43 / dck		ICPMS204-B_100923A	164	R65597
METALS, TOTAL											
Aluminum	5.73	mg/L		0.03		E200.8	09/24/10 06:50 / dck	09/14/10 11:01	ICPMS204-B_100923A	165	9866
Arsenic	ND	mg/L		0.003		E200.8	09/24/10 06:50 / dck	09/14/10 11:01	ICPMS204-B_100923A	165	9866
Cadmium	0.00077	mg/L		0.00008		E200.8	09/24/10 06:50 / dck	09/14/10 11:01	ICPMS204-B_100923A	165	9866
Copper	0.083	mg/L		0.001		E200.8	09/24/10 06:50 / dck	09/14/10 11:01	ICPMS204-B_100923A	165	9866

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Client Sample ID UBM-TDMW05-20100913
Lab ID: H10090242-009
Matrix: Groundwater

Project: TO20-UBMC Monitoring
Collection Date: 09/13/10 11:30 **DateReceived:** 09/15/10
Report Date: 09/28/10

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	19.3	mg/L		0.05		E200.8	09/24/10 06:50 / dck	09/14/10 11:01	ICPMS204-B_100923A	165	9866
Lead	0.0212	mg/L		0.0005		E200.8	09/24/10 06:50 / dck	09/14/10 11:01	ICPMS204-B_100923A	165	9866
Manganese	0.886	mg/L		0.005		E200.8	09/24/10 06:50 / dck	09/14/10 11:01	ICPMS204-B_100923A	165	9866
Zinc	0.15	mg/L		0.01		E200.8	09/24/10 06:50 / dck	09/14/10 11:01	ICPMS204-B_100923A	165	9866

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

Client: MT DEQ
Work Order: H10090242
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: 100917A-COND-PROBE

Date: *28-Sep-10*

Run ID :Run Order: **COND_100917A: 1** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV1_100917A** Method: **A2510 B**
Analysis Date: **09/17/10 14:48** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1000	1.0	1000		100	90	110				

Associated samples: **H10090242-001A; H10090242-002A; H10090242-003A; H10090242-004A; H10090242-005A; H10090242-006A; H10090242-007A; H10090242-008A; H10090242-009A**

Run ID :Run Order: **COND_100917A: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS2_100917A** Method: **A2510 B**
Analysis Date: **09/17/10 14:49** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1430	1.0	1412		101	90	110				

Associated samples: **H10090242-001A; H10090242-002A; H10090242-003A; H10090242-004A; H10090242-005A; H10090242-006A; H10090242-007A; H10090242-008A; H10090242-009A**

Run ID :Run Order: **COND_100917A: 14** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV1_100917A** Method: **A2510 B**
Analysis Date: **09/17/10 15:42** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	724	1.0	718		101	90	110				

Associated samples: **H10090242-002A; H10090242-003A; H10090242-004A; H10090242-005A; H10090242-006A; H10090242-007A; H10090242-008A; H10090242-009A**

Run ID :Run Order: **COND_100917A: 21** SampType: **Sample Duplicate** Sample ID: **H10090242-007ADUP** Method: **A2510 B**
Analysis Date: **09/17/10 15:59** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	447	1.0						453.4	1.4	10	

Associated samples: **H10090242-001A; H10090242-002A; H10090242-003A; H10090242-004A; H10090242-005A; H10090242-006A; H10090242-007A; H10090242-008A; H10090242-009A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090242
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: 100917A-PH-W

Date: *28-Sep-10*

Run ID :Run Order: **PH2_100917A: 1** SampType: **Laboratory Control Sample** Sample ID: **LCS1_100917A** Method: **A4500-H B**
Analysis Date: **09/17/10 15:28** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.02	0.10	7		100	99	101				

Associated samples: **H10090242-001A; H10090242-002A; H10090242-003A; H10090242-004A; H10090242-005A; H10090242-006A; H10090242-007A; H10090242-008A; H10090242-009A**

Run ID :Run Order: **PH2_100917A: 2** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV1_100917A** Method: **A4500-H B**
Analysis Date: **09/17/10 15:30** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	10.1	0.10	10		101	99	101				

Associated samples: **H10090242-001A; H10090242-002A; H10090242-003A; H10090242-004A; H10090242-005A; H10090242-006A; H10090242-007A; H10090242-008A; H10090242-009A**

Run ID :Run Order: **PH2_100917A: 10** SampType: **Sample Duplicate** Sample ID: **H10090242-007ADUP** Method: **A4500-H B**
Analysis Date: **09/17/10 15:56** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.20	0.10						7.16	0.6	2	

Associated samples: **H10090242-001A; H10090242-002A; H10090242-003A; H10090242-004A; H10090242-005A; H10090242-006A; H10090242-007A; H10090242-008A; H10090242-009A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090242
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: 9866

Date: *28-Sep-10*

Run ID :Run Order: **ICPMS204-B_100923A: 123** SampType: **Method Blank** Sample ID: **MB-9866** Method: **E200.8**
Analysis Date: **09/24/10 02:02** Units: **mg/L** **Prep Info:** Prep Date: **9/14/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.004	0.0008									
Arsenic	ND	4E-05									
Cadmium	ND	2E-05									
Copper	ND	0.0002									
Iron	0.001	0.0009									
Lead	0.0002	2E-05									
Manganese	5E-05	3E-05									
Zinc	0.002	0.0007									

Associated samples: **H10090242-001D; H10090242-002D; H10090242-005D; H10090242-006D; H10090242-008D; H10090242-009D**

Run ID :Run Order: **ICPMS204-B_100923A: 124** SampType: **Laboratory Control Sample** Sample ID: **LCS-9866** Method: **E200.8**
Analysis Date: **09/24/10 02:09** Units: **mg/L** **Prep Info:** Prep Date: **9/14/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.49	0.10	2.5	0.004008	99	85	115				
Arsenic	0.513	0.0050	0.5		103	85	115				
Cadmium	0.265	0.0010	0.25		106	85	115				
Copper	0.514	0.010	0.5		103	85	115				
Iron	2.51	0.030	2.5	0.001369	100	85	115				
Lead	0.528	0.010	0.5	0.000223	105	85	115				
Manganese	2.43	0.010	2.5	0.0000487	97	85	115				
Zinc	0.526	0.010	0.5	0.002429	105	85	115				

Associated samples: **H10090242-001D; H10090242-002D; H10090242-005D; H10090242-006D; H10090242-008D; H10090242-009D**

Run ID :Run Order: **ICPMS204-B_100923A: 166** SampType: **Sample Matrix Spike** Sample ID: **H10090242-009DMS3** Method: **E200.8**
Analysis Date: **09/24/10 06:56** Units: **mg/L** **Prep Info:** Prep Date: **9/20/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	11.2	0.10	5	5.73	109	70	130				
Arsenic	1.01	0.0050	1	0.002038	101	70	130				
Cadmium	0.503	0.0010	0.5	0.000769	100	70	130				
Copper	1.14	0.010	1	0.08322	105	70	130				
Iron	24.2	0.030	5	19.29	99	70	130				
Lead	1.06	0.010	1	0.02124	104	70	130				
Manganese	5.64	0.010	5	0.886	95	70	130				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090242
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: 9866

Date: *28-Sep-10*

Run ID :Run Order: **ICPMS204-B_100923A: 166** SampType: **Sample Matrix Spike** Sample ID: **H10090242-009DMS3** Method: **E200.8**
Analysis Date: **09/24/10 06:56** Units: **mg/L** **Prep Info:** Prep Date: **9/20/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc	1.18	0.010	1	0.1512	103	70	130				

Associated samples: **H10090242-001D; H10090242-002D; H10090242-005D; H10090242-006D; H10090242-008D; H10090242-009D**

Run ID :Run Order: **ICPMS204-B_100923A: 171** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10090242-009DMSD3** Method: **E200.8**
Analysis Date: **09/24/10 07:30** Units: **mg/L** **Prep Info:** Prep Date: **9/20/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	11.4	0.10	5	5.73	113	70	130	11.17	2.1	20	
Arsenic	1.00	0.0050	1	0.002038	100	70	130	1.01	0.9	20	
Cadmium	0.501	0.0010	0.5	0.000769	100	70	130	0.503	0.4	20	
Copper	1.13	0.010	1	0.08322	105	70	130	1.138	0.4	20	
Iron	25.0	0.030	5	19.29	114	70	130	24.24	3	20	
Lead	1.05	0.010	1	0.02124	103	70	130	1.062	1.4	20	
Manganese	5.64	0.010	5	0.886	95	70	130	5.636	0	20	
Zinc	1.16	0.010	1	0.1512	101	70	130	1.181	1.6	20	

Associated samples: **H10090242-001D; H10090242-002D; H10090242-005D; H10090242-006D; H10090242-008D; H10090242-009D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090242
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65465

Date: *28-Sep-10*

Run ID :Run Order: **MAN-TECH_100920A: 3** SampType: **Method Blank** Sample ID: **MBLK** Method: **A2320 B**
Analysis Date: **09/20/10 17:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	1	0.3									

Associated samples: **H10090242-001A; H10090242-001B; H10090242-002A; H10090242-002B; H10090242-003A; H10090242-003B; H10090242-004A; H10090242-004B; H10090242-005A; H10090242-005B; H10090242-006A; H10090242-006B; H10090242-007A; H10090242-007B; H10090242-008A; H10090242-008B; H10090242-009A; H10090242-009B**

Run ID :Run Order: **MAN-TECH_100920A: 6** SampType: **Laboratory Control Sample** Sample ID: **LCS-83110** Method: **A2320 B**
Analysis Date: **09/20/10 17:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	630	4.0	600	1.08	105	90	110				

Associated samples: **H10090242-001A; H10090242-001B; H10090242-002A; H10090242-002B; H10090242-003A; H10090242-003B; H10090242-004A; H10090242-004B; H10090242-005A; H10090242-005B; H10090242-006A; H10090242-006B; H10090242-007A; H10090242-007B; H10090242-008A; H10090242-008B; H10090242-009A; H10090242-009B**

Run ID :Run Order: **MAN-TECH_100920A: 16** SampType: **Sample Duplicate** Sample ID: **H10090242-004BDUP** Method: **A2320 B**
Analysis Date: **09/20/10 18:26** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	1.2	4.0						1.12		20	
Bicarbonate as HCO3	1.4	4.0						1.36		20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10090242-001A; H10090242-001B; H10090242-002A; H10090242-002B; H10090242-003A; H10090242-003B; H10090242-004A; H10090242-004B; H10090242-005A; H10090242-005B; H10090242-006A; H10090242-006B; H10090242-007A; H10090242-007B; H10090242-008A; H10090242-008B; H10090242-009A; H10090242-009B**

Run ID :Run Order: **MAN-TECH_100920A: 25** SampType: **Sample Matrix Spike** Sample ID: **H10090242-007BMS** Method: **A2320 B**
Analysis Date: **09/20/10 18:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	680	4.0	600	95.07	98	90	110				

Associated samples: **H10090242-001A; H10090242-001B; H10090242-002A; H10090242-002B; H10090242-003A; H10090242-003B; H10090242-004A; H10090242-004B; H10090242-005A; H10090242-005B; H10090242-006A; H10090242-006B; H10090242-007A; H10090242-007B; H10090242-008A; H10090242-008B; H10090242-009A; H10090242-009B**

Run ID :Run Order: **MAN-TECH_100920A: 42** SampType: **Sample Duplicate** Sample ID: **H10090242-005ADUP** Method: **A2320 B**
Analysis Date: **09/20/10 19:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	100	4.0						104.5	1.8	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090242
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65465

Date: *28-Sep-10*

Run ID :Run Order: **MAN-TECH_100920A: 42** SampType: **Sample Duplicate** Sample ID: **H10090242-005ADUP** Method: **A2320 B**
Analysis Date: **09/20/10 19:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bicarbonate as HCO3	130	4.0						127.4	1.8	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10090242-001A; H10090242-001B; H10090242-002A; H10090242-002B; H10090242-003A; H10090242-003B; H10090242-004A; H10090242-004B; H10090242-005A; H10090242-005B; H10090242-006A; H10090242-006B; H10090242-007A; H10090242-007B; H10090242-008A; H10090242-008B; H10090242-009A; H10090242-009B**

Run ID :Run Order: **MAN-TECH_100920A: 81** SampType: **Sample Matrix Spike** Sample ID: **H10090252-015AMS** Method: **A2320 B**
Analysis Date: **09/20/10 21:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	690	4.0	600	100.8	99	90	110				

Associated samples: **H10090242-001A; H10090242-001B; H10090242-002A; H10090242-002B; H10090242-003A; H10090242-003B; H10090242-004A; H10090242-004B; H10090242-005A; H10090242-005B; H10090242-006A; H10090242-006B; H10090242-007A; H10090242-007B; H10090242-008A; H10090242-008B; H10090242-009A; H10090242-009B**

Run ID :Run Order: **MAN-TECH_100920A: 87** SampType: **Sample Duplicate** Sample ID: **H10090252-024ADUP** Method: **A2320 B**
Analysis Date: **09/20/10 21:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	100	4.0						102.7	0.9	20	
Bicarbonate as HCO3	120	4.0						120.2	1.2	20	
Carbonate as CO3	2.6	4.0						2.47		20	

Associated samples: **H10090242-001A; H10090242-001B; H10090242-002A; H10090242-002B; H10090242-003A; H10090242-003B; H10090242-004A; H10090242-004B; H10090242-005A; H10090242-005B; H10090242-006A; H10090242-006B; H10090242-007A; H10090242-007B; H10090242-008A; H10090242-008B; H10090242-009A; H10090242-009B**

Run ID :Run Order: **MAN-TECH_100920A: 100** SampType: **Sample Duplicate** Sample ID: **H10090252-062ADUP** Method: **A2320 B**
Analysis Date: **09/20/10 22:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	110	4.0						105.5	0.4	20	
Bicarbonate as HCO3	130	4.0						128.7	0.4	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10090242-001A; H10090242-001B; H10090242-002A; H10090242-002B; H10090242-003A; H10090242-003B; H10090242-004A; H10090242-004B; H10090242-005A; H10090242-005B; H10090242-006A; H10090242-006B; H10090242-007A; H10090242-007B; H10090242-008A; H10090242-008B; H10090242-009A; H10090242-009B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090242
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65568

Date: *28-Sep-10*

Run ID :Run Order: **IC101-H_100922A: 13** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV092210-12** Method: **E300.0**
Analysis Date: **09/22/10 12:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		98	90	110				
Sulfate	100	1.0	100		100	90	110				

Associated samples: **H10090242-001B; H10090242-002B; H10090242-003B; H10090242-004B; H10090242-005B; H10090242-006B; H10090242-007B; H10090242-008B; H10090242-009B**

Run ID :Run Order: **IC101-H_100922A: 14** SampType: **Method Blank** Sample ID: **ICB092210-13** Method: **E300.0**
Analysis Date: **09/22/10 12:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.2									
Sulfate	ND	0.07									

Associated samples: **H10090242-001B; H10090242-002B; H10090242-003B; H10090242-004B; H10090242-005B; H10090242-006B; H10090242-007B; H10090242-008B; H10090242-009B**

Run ID :Run Order: **IC101-H_100922A: 15** SampType: **Laboratory Fortified Blank** Sample ID: **LFB092210-14** Method: **E300.0**
Analysis Date: **09/22/10 12:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		102	90	110				
Sulfate	100	1.1	100		103	90	110				

Associated samples: **H10090242-001B; H10090242-002B; H10090242-003B; H10090242-004B; H10090242-005B; H10090242-006B; H10090242-007B; H10090242-008B; H10090242-009B**

Run ID :Run Order: **IC101-H_100922A: 16** SampType: **Laboratory Fortified Blank** Sample ID: **LFB092210-14** Method: **E300.0**
Analysis Date: **09/22/10 13:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	23	1.0	25		94	90	110				
Sulfate	93	1.1	100		93	90	110				

Associated samples: **H10090242-001B; H10090242-002B; H10090242-003B; H10090242-004B; H10090242-005B; H10090242-006B; H10090242-007B; H10090242-008B; H10090242-009B**

Run ID :Run Order: **IC101-H_100922A: 61** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV092210-72** Method: **E300.0**
Analysis Date: **09/23/10 06:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		97	90	110				
Sulfate	99	1.0	100		99	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090242
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65568

Date: *28-Sep-10*

Run ID :Run Order: **IC101-H_100922A: 61** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV092210-72** Method: **E300.0**
Analysis Date: **09/23/10 06:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10090242-001B; H10090242-002B; H10090242-003B; H10090242-004B**

Run ID :Run Order: **IC101-H_100922A: 70** SampType: **Sample Matrix Spike** Sample ID: **H10090242-001BMS** Method: **E300.0**
Analysis Date: **09/23/10 09:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25	0.203	98	90	110				
Sulfate	130	1.1	100	26.58	105	90	110				

Associated samples: **H10090242-001B; H10090242-002B; H10090242-003B; H10090242-004B; H10090242-005B; H10090242-006B; H10090242-007B; H10090242-008B; H10090242-009B**

Run ID :Run Order: **IC101-H_100922A: 71** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10090242-001BMSD** Method: **E300.0**
Analysis Date: **09/23/10 09:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25	0.203	101	90	110	24.71	2.7	20	
Sulfate	130	1.1	100	26.58	108	90	110	131.7	2	20	

Associated samples: **H10090242-001B; H10090242-002B; H10090242-003B; H10090242-004B; H10090242-005B; H10090242-006B; H10090242-007B; H10090242-008B; H10090242-009B**

Run ID :Run Order: **IC101-H_100922A: 75** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV092210-86** Method: **E300.0**
Analysis Date: **09/23/10 10:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		99	90	110				
Sulfate	99	1.0	100		99	90	110				

Associated samples: **H10090242-005B; H10090242-006B; H10090242-007B; H10090242-008B; H10090242-009B**

Run ID :Run Order: **IC101-H_100922A: 81** SampType: **Sample Matrix Spike** Sample ID: **H10090242-008BMS** Method: **E300.0**
Analysis Date: **09/23/10 12:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	27	1.0	25	0.24	108	90	110				
Sulfate	140	1.1	100	24.55	114	90	110				S

Associated samples: **H10090242-001B; H10090242-002B; H10090242-003B; H10090242-004B; H10090242-005B; H10090242-006B; H10090242-007B; H10090242-008B; H10090242-009B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090242
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65568

Date: *28-Sep-10*

Run ID :Run Order: **IC101-H_100922A: 82** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10090242-008BMSD** Method: **E300.0**

Analysis Date: **09/23/10 12:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25	0.24	101	90	110	27.14	6.7	20	
Sulfate	130	1.1	100	24.55	107	90	110	139	5.3	20	

Associated samples: **H10090242-001B; H10090242-002B; H10090242-003B; H10090242-004B; H10090242-005B; H10090242-006B; H10090242-007B; H10090242-008B; H10090242-009B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090242
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65597

Date: *28-Sep-10*

Run ID :Run Order: **ICPMS204-B_100923A: 8** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**

Analysis Date: **09/23/10 12:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.262	0.10	0.25		105	90	110				
Arsenic	0.0494	0.0050	0.05		99	90	110				
Cadmium	0.0262	0.0010	0.025		105	90	110				
Calcium	2.55	0.50	2.5		102	90	110				
Copper	0.0510	0.010	0.05		102	90	110				
Iron	0.254	0.030	0.255		99	90	110				
Lead	0.0478	0.010	0.05		96	90	110				
Magnesium	2.62	0.50	2.5		105	90	110				
Manganese	0.251	0.010	0.25		100	90	110				
Potassium	2.52	0.50	2.5		101	90	110				
Sodium	2.54	0.50	2.5		102	90	110				
Zinc	0.0512	0.010	0.05		102	90	110				

Associated samples: **H10090242-001C; H10090242-001D; H10090242-002C; H10090242-002D; H10090242-003C; H10090242-003D; H10090242-004C; H10090242-004D; H10090242-005C; H10090242-005D; H10090242-006C; H10090242-006D; H10090242-007C; H10090242-007D; H10090242-008C; H10090242-008D; H10090242-009C; H10090242-009D**

Run ID :Run Order: **ICPMS204-B_100923A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **09/23/10 12:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	40.3	0.10	40		101	70	130				
Arsenic	0.000109	0.0050									
Cadmium	0.000319	0.0010									
Calcium	117	0.50									
Copper	0.00127	0.010									
Iron	98.3	0.030	100		98	70	130				
Lead	0.000250	0.010									
Magnesium	42.1	0.50									
Manganese	0.00202	0.010									
Potassium	39.6	0.50									
Sodium	104	0.50									
Zinc	0.00103	0.010									

Associated samples: **H10090242-001C; H10090242-001D; H10090242-002C; H10090242-002D; H10090242-003C; H10090242-003D; H10090242-004C; H10090242-004D; H10090242-005C; H10090242-005D; H10090242-006C; H10090242-006D; H10090242-007C; H10090242-007D; H10090242-008C; H10090242-008D; H10090242-009C; H10090242-009D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090242
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65597

Date: *28-Sep-10*

Run ID :Run Order: **ICPMS204-B_100923A: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **09/23/10 13:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	40.9	0.10	40		102	70	130				
Arsenic	0.0100	0.0050	0.01		101	70	130				
Cadmium	0.0104	0.0010	0.01		104	70	130				
Calcium	115	0.50	120		96	70	130				
Copper	0.0211	0.010	0.02		106	70	130				
Iron	98.7	0.030	100		99	70	130				
Lead	0.000233	0.010				0	0				
Magnesium	41.8	0.50	40		105	70	130				
Manganese	0.0224	0.010	0.02		112	70	130				
Potassium	39.4	0.50	40		98	70	130				
Sodium	105	0.50	100		105	70	130				
Zinc	0.0110	0.010	0.01		110	70	130				

Associated samples: **H10090242-001C; H10090242-001D; H10090242-002C; H10090242-002D; H10090242-003C; H10090242-003D; H10090242-004C; H10090242-004D; H10090242-005C; H10090242-005D; H10090242-006C; H10090242-006D; H10090242-007C; H10090242-007D; H10090242-008C; H10090242-008D; H10090242-009C; H10090242-009D**

Run ID :Run Order: **ICPMS204-B_100923A: 16** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**

Analysis Date: **09/23/10 13:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.0002									
Arsenic	ND	3E-05									
Cadmium	ND	1E-05									
Calcium	ND	0.006									
Copper	ND	3E-05									
Iron	0.0003	0.0002									
Lead	ND	1E-05									
Magnesium	ND	0.0010									
Manganese	ND	2E-05									
Potassium	ND	0.02									
Sodium	ND	0.02									
Zinc	ND	0.0006									

Associated samples: **H10090242-001C; H10090242-002C; H10090242-003C; H10090242-003D; H10090242-004C; H10090242-004D; H10090242-005C; H10090242-006C; H10090242-007C; H10090242-007D; H10090242-008C; H10090242-009C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090242
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65597

Date: *28-Sep-10*

Run ID :Run Order: **ICPMS204-B_100923A: 17** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**

Analysis Date: **09/23/10 13:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0481	0.10	0.05		96	85	115				
Arsenic	0.0490	0.0050	0.05		98	85	115				
Cadmium	0.0478	0.0010	0.05		96	85	115				
Calcium	47.2	0.50	50		94	85	115				
Copper	0.0470	0.010	0.05		94	85	115				
Iron	4.88	0.030	5	0.0002703	98	85	115				
Lead	0.0491	0.010	0.05		98	85	115				
Magnesium	47.4	0.50	50		95	85	115				
Manganese	0.0489	0.010	0.05		98	85	115				
Potassium	47.4	0.50	50		95	85	115				
Sodium	47.4	0.50	50		95	85	115				
Zinc	0.0488	0.010	0.05		98	85	115				

Associated samples: **H10090242-001C; H10090242-002C; H10090242-003C; H10090242-003D; H10090242-004C; H10090242-004D; H10090242-005C; H10090242-006C; H10090242-007C; H10090242-007D; H10090242-008C; H10090242-009C**

Run ID :Run Order: **ICPMS204-B_100923A: 111** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**

Analysis Date: **09/24/10 00:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.256	0.10	0.25		103	90	110				
Arsenic	0.0495	0.0050	0.05		99	90	110				
Cadmium	0.0259	0.0010	0.025		104	90	110				
Calcium	2.52	0.50	2.5		101	90	110				
Copper	0.0509	0.010	0.05		102	90	110				
Iron	0.248	0.030	0.255		97	90	110				
Lead	0.0470	0.010	0.05		94	90	110				
Magnesium	2.55	0.50	2.5		102	90	110				
Manganese	0.248	0.010	0.25		99	90	110				
Potassium	2.52	0.50	2.5		101	90	110				
Sodium	2.63	0.50	2.5		105	90	110				
Zinc	0.0512	0.010	0.05		102	90	110				

Associated samples: **H10090242-001C; H10090242-001D; H10090242-002C; H10090242-002D; H10090242-003C; H10090242-003D; H10090242-004C; H10090242-004D; H10090242-005C; H10090242-005D; H10090242-006C; H10090242-006D; H10090242-007C; H10090242-007D; H10090242-008C; H10090242-008D; H10090242-009C; H10090242-009D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090242
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65597

Date: *28-Sep-10*

Run ID :Run Order: **ICPMS204-B_100923A: 112** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **09/24/10 00:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	40.0	0.10	40		100	70	130				
Arsenic	0.000119	0.0050									
Cadmium	0.000224	0.0010									
Calcium	116	0.50									
Copper	0.00131	0.010									
Iron	96.7	0.030	100		97	70	130				
Lead	0.000187	0.010									
Magnesium	40.6	0.50									
Manganese	0.00220	0.010									
Potassium	38.8	0.50									
Sodium	102	0.50									
Zinc	0.00116	0.010									

Associated samples: **H10090242-001C; H10090242-001D; H10090242-002C; H10090242-002D; H10090242-003C; H10090242-003D; H10090242-004C; H10090242-004D; H10090242-005C; H10090242-005D; H10090242-006C; H10090242-006D; H10090242-007C; H10090242-007D; H10090242-008C; H10090242-008D; H10090242-009C; H10090242-009D**

Run ID :Run Order: **ICPMS204-B_100923A: 113** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **09/24/10 00:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	40.3	0.10	40		101	70	130				
Arsenic	0.0103	0.0050	0.01		103	70	130				
Cadmium	0.0100	0.0010	0.01		100	70	130				
Calcium	116	0.50	120		97	70	130				
Copper	0.0210	0.010	0.02		105	70	130				
Iron	97.4	0.030	100		97	70	130				
Lead	0.000169	0.010				0	0				
Magnesium	40.5	0.50	40		101	70	130				
Manganese	0.0226	0.010	0.02		113	70	130				
Potassium	39.2	0.50	40		98	70	130				
Sodium	104	0.50	100		104	70	130				
Zinc	0.0108	0.010	0.01		108	70	130				

Associated samples: **H10090242-001C; H10090242-001D; H10090242-002C; H10090242-002D; H10090242-003C; H10090242-003D; H10090242-004C; H10090242-004D; H10090242-005C; H10090242-005D; H10090242-006C; H10090242-006D; H10090242-007C; H10090242-007D; H10090242-008C; H10090242-008D; H10090242-009C; H10090242-009D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10090242
Project: TO20-UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

BatchID: R65597

Date: *28-Sep-10*

Run ID :Run Order: **ICPMS204-B_100923A: 153** SampType: **Sample Matrix Spike** Sample ID: **H10090242-007CMS** Method: **E200.8**

Analysis Date: **09/24/10 05:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0464	0.10	0.05	0.0007807	91	70	130				
Arsenic	0.0497	0.0050	0.05	0.0001479	99	70	130				
Cadmium	0.0485	0.0010	0.05	0.0006156	96	70	130				
Calcium	82.4	1.0	50	39.01	87	70	130				
Copper	0.0479	0.010	0.05	0.0003897	95	70	130				
Iron	4.78	0.030	5		96	70	130				
Lead	0.0498	0.010	0.05	0.0003501	99	70	130				
Magnesium	72.9	1.0	50	28.42	89	70	130				
Manganese	0.0485	0.010	0.05	0.0002876	96	70	130				
Potassium	44.9	1.0	50	0.9988	88	70	130				
Sodium	49.8	1.0	50	1.849	96	70	130				
Zinc	0.293	0.010	0.05	0.2543		70	130				A

Associated samples: **H10090242-001C; H10090242-002C; H10090242-003C; H10090242-003D; H10090242-004C; H10090242-004D; H10090242-005C; H10090242-006C; H10090242-007C; H10090242-007D; H10090242-008C; H10090242-009C**

Run ID :Run Order: **ICPMS204-B_100923A: 158** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10090242-007CMSD** Method: **E200.8**

Analysis Date: **09/24/10 06:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0484	0.10	0.05	0.0007807	95	70	130	0.04635		20	
Arsenic	0.0496	0.0050	0.05	0.0001479	99	70	130	0.04974	0.2	20	
Cadmium	0.0475	0.0010	0.05	0.0006156	94	70	130	0.0485	2.1	20	
Calcium	82.6	1.0	50	39.01	87	70	130	82.45	0.2	20	
Copper	0.0488	0.010	0.05	0.0003897	97	70	130	0.04788	1.8	20	
Iron	4.77	0.030	5		95	70	130	4.779	0.2	20	
Lead	0.0490	0.010	0.05	0.0003501	97	70	130	0.04984	1.6	20	
Magnesium	72.4	1.0	50	28.42	88	70	130	72.92	0.8	20	
Manganese	0.0496	0.010	0.05	0.0002876	99	70	130	0.04851	2.3	20	
Potassium	45.6	1.0	50	0.9988	89	70	130	44.86	1.5	20	
Sodium	49.6	1.0	50	1.849	95	70	130	49.79	0.5	20	
Zinc	0.289	0.010	0.05	0.2543		70	130	0.2929	1.2	20	A

Associated samples: **H10090242-001C; H10090242-002C; H10090242-003C; H10090242-003D; H10090242-004C; H10090242-004D; H10090242-005C; H10090242-006C; H10090242-007C; H10090242-007D; H10090242-008C; H10090242-009C**

Qualifiers:
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Workorder Receipt Checklist

MT DEQ

H10090242

Login completed by: Tracy L. Lorash

Date Received: 9/15/2010

Reviewed by: BL2000\ablackburn

Received by: wjj

Reviewed Date: 9/20/2010

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature:	6.3°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

Custody seal intact on garbage bag containing sample bottles inside cooler. Received an unpreserved bottle labeled UBM-TDMW2S-20100913 in the same bag with the samples labeled UBM-TDMW2D-20100913. They all have a collection time of 18:00. Received an unpreserved bottle labeled UBM-TDMW4D-20100913 in the same bag with the samples labeled UBM-TDMW05-20100913. They all have a collection time of 11:30. Emailed Jeremy Mickey with Terra Graphics. Per email from Jeremy, the unpreserved bottle labeled 2S should be 2D - same as the other samples it came with in the bag and the unpreserved bottle labeled 4D should be 05 - same as the other samples it came with in the bag. TI 9/16/10.

Terra Graphics
ENVIRONMENTAL ENGINEERING
302 N. LAST CHANCE GULCH
HELENA, MT 59601
(406) 441-5441 Fax (406) 441-5443

CHAIN OF CUSTODY RECORD

H10090242

Data to: TerraGraphics
Invoice to: MDEQ

Project Name: TO20- UBMC Monitoring
Project Location : UBMC
Quote # H499

TO: Energy Lab

Lab ID	Sample Date	Sample Time	Soil	GW	SW		Total Metals	Dissolved Metals	Dissolved Anions	Dissolved Cations	Physiochemical
			SAMPLE DESCRIPTION				Analysis (see Quote)				
UBM-TDMW2D-555-20100913	9/13/2010	17:30		X			X	X	X	X	X
UBM-TDMW2D-20100913	9/13/2010	17:30		X			X	X	X	X	X
UBM-TDMW2S-444-20100913	9/13/2010	18:45		X			X	X	X	X	X
UBM-TDMW2S-333-20100913	9/13/2010	18:50		X			X	X	X	X	X
UBM-TDMW2D-20100913	9/13/2010	18:00		X			X	X	X	X	X
UBM-TDMW4D-20100913	9/13/2010	12:40		X			X	X	X	X	X
UBM-TDMW01-20100913	9/13/2010	16:30		X			X	X	X	X	X
UBM-TDMW4D-20100913	9/13/2010	10:15		X			X	X	X	X	X
UBM-TDMW05-20100913	9/13/2010	11:30		X			X	X	X	X	X

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Shari Stone	9/15/2010 1408	Wanda	9-15-10 1425
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time

Normal T.A.T.

REMARKS: Perform Lab QA/QC on last sample per batch

temp 6.3

ANALYTICAL SUMMARY REPORT

January 10, 2011

MT DEQ
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H10060238 Quote ID: H499 - Section 35 and UBMC

Project Name: UBMC To 20 10013

Energy Laboratories Inc Helena MT received the following 9 samples for MT DEQ on 6/15/2010 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H10060238-001	UBM-TDMW3D-20100610	06/10/10 16:38	06/15/10	Aqueous	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Metals Digestion by EPA 200.2
H10060238-002	UBM-TDMW2S-555-20100610	06/10/10 15:10	06/15/10	Aqueous	Same As Above
H10060238-003	UBM-TDMW4D-20100610	06/10/10 10:00	06/15/10	Aqueous	Same As Above
H10060238-004	UBM-TDMW2D-20100610	06/10/10 15:28	06/15/10	Aqueous	Same As Above
H10060238-005	UBM-TDMW3D-333-20100610	06/10/10 17:15	06/15/10	Aqueous	Same As Above
H10060238-006	UBM-TDMW5-20100610	06/10/10 11:15	06/15/10	Aqueous	Same As Above
H10060238-007	UBM-TDMW2S-20100610	06/10/10 15:10	06/15/10	Aqueous	Same As Above
H10060238-008	UBM-TDMW01-20100610	06/10/10 14:15	06/15/10	Aqueous	Same As Above
H10060238-009	UBM-TDMW3D-444-20100610	06/10/10 17:20	06/15/10	Aqueous	Same As Above

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

CLIENT: MT DEQ
Project: UBMC To 20 10013
Sample Delivery Group: H10060238

Revised Date: 01/10/11
Report Date: 06/29/10

CASE NARRATIVE

Per client request Hardness calculated for samples and reported. Abb 7/26/10

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW3D-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-001
Collection Date: 06/10/10 16:38
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.8	s.u.		0.1		A4500-H B	06/16/10 18:02 / hm			MAN-TECH_100616C	58	R63054
Conductivity	362	umhos/cm		1		A2510 B	06/16/10 18:02 / hm			MAN-TECH_100616C	57	R63054
DISSOLVED INORGANICS												
Bicarbonate as HCO3	49	mg/L		4		A2320 B	06/16/10 21:06 / hm			MAN-TECH_100616C	120	R63054
Carbonate as CO3	ND	mg/L		4		A2320 B	06/16/10 21:06 / hm			MAN-TECH_100616C	120	R63054
Chloride	ND	mg/L		1		E300.0	06/19/10 01:26 / zeg			IC101-H_100618A	39	R63153
Sulfate	140	mg/L		1		E300.0	06/19/10 01:26 / zeg			IC101-H_100618A	39	R63153
INORGANICS												
Alkalinity, Total as CaCO3	42	mg/L		4		A2320 B	06/16/10 18:02 / hm			MAN-TECH_100616C	56	R63054
Chloride	ND	mg/L		1		E300.0	06/19/10 01:09 / zeg			IC101-H_100618A	38	R63153
Sulfate	140	mg/L		1		E300.0	06/19/10 01:09 / zeg			IC101-H_100618A	38	R63153
Hardness as CaCO3	183	mg/L		1		A2340 B	07/26/10 11:12 / abb			WATERCALC_100726B	9	R63957
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/23/10 07:07 / dck			ICPMS204-B_100622B	107	R63230
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 07:07 / dck			ICPMS204-B_100622B	107	R63230
Cadmium	ND	mg/L		0.00008		E200.8	06/23/10 07:07 / dck			ICPMS204-B_100622B	107	R63230
Calcium	44	mg/L		1		E200.7	06/16/10 13:22 / sld			ICP1-HE_100616A	51	R63046
Copper	ND	mg/L		0.001		E200.8	06/23/10 07:07 / dck			ICPMS204-B_100622B	107	R63230
Iron	ND	mg/L		0.05		E200.7	06/16/10 13:22 / sld			ICP1-HE_100616A	51	R63046
Lead	ND	mg/L		0.0005		E200.8	06/23/10 07:07 / dck			ICPMS204-B_100622B	107	R63230
Magnesium	18	mg/L		1		E200.7	06/16/10 13:22 / sld			ICP1-HE_100616A	51	R63046
Manganese	ND	mg/L		0.005		E200.8	06/23/10 07:07 / dck			ICPMS204-B_100622B	107	R63230
Potassium	ND	mg/L		1		E200.7	06/16/10 13:22 / sld			ICP1-HE_100616A	51	R63046
Sodium	2	mg/L		1		E200.7	06/16/10 13:22 / sld			ICP1-HE_100616A	51	R63046
Zinc	0.02	mg/L		0.01		E200.8	06/23/10 07:07 / dck			ICPMS204-B_100622B	107	R63230
METALS, TOTAL												
Aluminum	0.09	mg/L		0.03		E200.8	06/23/10 07:13 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	108	9053
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 07:13 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	108	9053
Cadmium	0.00009	mg/L		0.00008		E200.8	06/23/10 07:13 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	108	9053
Copper	ND	mg/L		0.001		E200.8	06/25/10 13:03 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100624A	169	9053
Iron	0.26	mg/L		0.05		E200.8	06/23/10 07:13 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	108	9053
Lead	0.0017	mg/L		0.0005		E200.8	06/23/10 07:13 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	108	9053

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW3D-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-001
Collection Date: 06/10/10 16:38
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL												
Manganese	0.029	mg/L		0.005		E200.8	06/23/10 07:13 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	108	9053
Zinc	0.02	mg/L		0.01		E200.8	06/23/10 07:13 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	108	9053

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW2S-555-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-002
Collection Date: 06/10/10 15:10
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.6	s.u.		0.1		A4500-H B	06/16/10 18:08 / hm			MAN-TECH_100616C	61	R63054
Conductivity	448	umhos/cm		1		A2510 B	06/16/10 18:08 / hm			MAN-TECH_100616C	60	R63054
DISSOLVED INORGANICS												
Bicarbonate as HCO3	96	mg/L		4		A2320 B	06/24/10 02:01 / hm			MAN-TECH_100623A	228	R63240
Carbonate as CO3	ND	mg/L		4		A2320 B	06/24/10 02:01 / hm			MAN-TECH_100623A	228	R63240
Chloride	ND	mg/L		1		E300.0	06/19/10 01:58 / zeg			IC101-H_100618A	41	R63153
Sulfate	140	mg/L		1		E300.0	06/19/10 01:58 / zeg			IC101-H_100618A	41	R63153
INORGANICS												
Alkalinity, Total as CaCO3	76	mg/L		4		A2320 B	06/16/10 18:08 / hm			MAN-TECH_100616C	59	R63054
Chloride	ND	mg/L		1		E300.0	06/19/10 01:42 / zeg			IC101-H_100618A	40	R63153
Sulfate	160	mg/L		1		E300.0	06/19/10 01:42 / zeg			IC101-H_100618A	40	R63153
Hardness as CaCO3	191	mg/L		1		A2340 B	07/26/10 11:12 / abb			WATERCALC_100726B	10	R63957
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/23/10 07:20 / dck			ICPMS204-B_100622B	109	R63230
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 07:20 / dck			ICPMS204-B_100622B	109	R63230
Cadmium	0.00103	mg/L		0.00008		E200.8	06/23/10 07:20 / dck			ICPMS204-B_100622B	109	R63230
Calcium	41	mg/L		1		E200.7	06/16/10 13:25 / sld			ICP1-HE_100616A	52	R63046
Copper	ND	mg/L		0.001		E200.8	06/23/10 07:20 / dck			ICPMS204-B_100622B	109	R63230
Iron	ND	mg/L		0.05		E200.7	06/16/10 13:25 / sld			ICP1-HE_100616A	52	R63046
Lead	ND	mg/L		0.0005		E200.8	06/23/10 07:20 / dck			ICPMS204-B_100622B	109	R63230
Magnesium	22	mg/L		1		E200.7	06/16/10 13:25 / sld			ICP1-HE_100616A	52	R63046
Manganese	3.75	mg/L		0.005		E200.8	06/23/10 07:20 / dck			ICPMS204-B_100622B	109	R63230
Potassium	ND	mg/L		1		E200.7	06/16/10 13:25 / sld			ICP1-HE_100616A	52	R63046
Sodium	1	mg/L		1		E200.7	06/16/10 13:25 / sld			ICP1-HE_100616A	52	R63046
Zinc	1.82	mg/L		0.01		E200.8	06/23/10 07:20 / dck			ICPMS204-B_100622B	109	R63230
METALS, TOTAL												
Aluminum	0.06	mg/L		0.03		E200.8	06/23/10 07:27 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	110	9053
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 07:27 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	110	9053
Cadmium	0.00184	mg/L		0.00008		E200.8	06/23/10 07:27 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	110	9053
Copper	0.005	mg/L		0.001		E200.8	06/23/10 07:27 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	110	9053
Iron	0.57	mg/L		0.05		E200.8	06/23/10 07:27 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	110	9053
Lead	0.0068	mg/L		0.0005		E200.8	06/23/10 07:27 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	110	9053

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW2S-555-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-002
Collection Date: 06/10/10 15:10
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL												
Manganese	7.38	mg/L		0.005		E200.8	06/24/10 03:48 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100623A	121	9053
Zinc	2.67	mg/L		0.01		E200.8	06/23/10 07:27 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	110	9053

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW4D-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-003
Collection Date: 06/10/10 10:00
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.9	s.u.		0.1		A4500-H B	06/16/10 18:15 / hm			MAN-TECH_100616C	64	R63054
Conductivity	173	umhos/cm		1		A2510 B	06/16/10 18:15 / hm			MAN-TECH_100616C	63	R63054
DISSOLVED INORGANICS												
Bicarbonate as HCO3	68	mg/L		4		A2320 B	06/24/10 02:09 / hm			MAN-TECH_100623A	229	R63240
Carbonate as CO3	ND	mg/L		4		A2320 B	06/24/10 02:09 / hm			MAN-TECH_100623A	229	R63240
Chloride	ND	mg/L		1		E300.0	06/19/10 03:04 / zeg			IC101-H_100618A	45	R63153
Sulfate	32	mg/L		1		E300.0	06/19/10 03:04 / zeg			IC101-H_100618A	45	R63153
INORGANICS												
Alkalinity, Total as CaCO3	52	mg/L		4		A2320 B	06/16/10 18:15 / hm			MAN-TECH_100616C	62	R63054
Chloride	ND	mg/L		1		E300.0	06/19/10 02:15 / zeg			IC101-H_100618A	42	R63153
Sulfate	33	mg/L		1		E300.0	06/19/10 02:15 / zeg			IC101-H_100618A	42	R63153
Hardness as CaCO3	81	mg/L		1		A2340 B	07/26/10 11:12 / abb			WATERCALC_100726B	11	R63957
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/23/10 07:34 / dck			ICPMS204-B_100622B	111	R63230
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 07:34 / dck			ICPMS204-B_100622B	111	R63230
Cadmium	ND	mg/L		0.00008		E200.8	06/23/10 07:34 / dck			ICPMS204-B_100622B	111	R63230
Calcium	18	mg/L		1		E200.7	06/16/10 13:28 / sld			ICP1-HE_100616A	53	R63046
Copper	ND	mg/L		0.001		E200.8	06/23/10 07:34 / dck			ICPMS204-B_100622B	111	R63230
Iron	ND	mg/L		0.05		E200.7	06/16/10 13:28 / sld			ICP1-HE_100616A	53	R63046
Lead	ND	mg/L		0.0005		E200.8	06/23/10 07:34 / dck			ICPMS204-B_100622B	111	R63230
Magnesium	9	mg/L		1		E200.7	06/16/10 13:28 / sld			ICP1-HE_100616A	53	R63046
Manganese	0.016	mg/L		0.005		E200.8	06/23/10 07:34 / dck			ICPMS204-B_100622B	111	R63230
Potassium	ND	mg/L		1		E200.7	06/16/10 13:28 / sld			ICP1-HE_100616A	53	R63046
Sodium	3	mg/L		1		E200.7	06/16/10 13:28 / sld			ICP1-HE_100616A	53	R63046
Zinc	ND	mg/L		0.01		E200.8	06/23/10 07:34 / dck			ICPMS204-B_100622B	111	R63230
METALS, TOTAL												
Aluminum	1.76	mg/L		0.03		E200.8	06/23/10 07:40 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	112	9053
Arsenic	0.005	mg/L		0.003		E200.8	06/23/10 07:40 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	112	9053
Cadmium	0.00014	mg/L		0.00008		E200.8	06/23/10 07:40 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	112	9053
Copper	0.033	mg/L		0.001		E200.8	06/23/10 07:40 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	112	9053
Iron	2.86	mg/L		0.05		E200.8	06/23/10 07:40 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	112	9053
Lead	0.0105	mg/L		0.0005		E200.8	06/23/10 07:40 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	112	9053

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW4D-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-003
Collection Date: 06/10/10 10:00
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL												
Manganese	0.103	mg/L		0.005		E200.8	06/23/10 07:40 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	112	9053
Zinc	0.03	mg/L		0.01		E200.8	06/23/10 07:40 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	112	9053

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW2D-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-004
Collection Date: 06/10/10 15:28
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	8.0	s.u.		0.1		A4500-H B	06/16/10 18:21 / hm			MAN-TECH_100616C	67	R63054
Conductivity	255	umhos/cm		1		A2510 B	06/16/10 18:21 / hm			MAN-TECH_100616C	66	R63054
DISSOLVED INORGANICS												
Bicarbonate as HCO3	100	mg/L		4		A2320 B	06/24/10 02:16 / hm			MAN-TECH_100623A	230	R63240
Carbonate as CO3	ND	mg/L		4		A2320 B	06/24/10 02:16 / hm			MAN-TECH_100623A	230	R63240
Chloride	ND	mg/L		1		E300.0	06/19/10 03:37 / zeg			IC101-H_100618A	47	R63153
Sulfate	47	mg/L		1		E300.0	06/19/10 03:37 / zeg			IC101-H_100618A	47	R63153
INORGANICS												
Alkalinity, Total as CaCO3	82	mg/L		4		A2320 B	06/16/10 18:21 / hm			MAN-TECH_100616C	65	R63054
Chloride	ND	mg/L		1		E300.0	06/19/10 03:21 / zeg			IC101-H_100618A	46	R63153
Sulfate	47	mg/L		1		E300.0	06/19/10 03:21 / zeg			IC101-H_100618A	46	R63153
Hardness as CaCO3	123	mg/L		1		A2340 B	07/26/10 11:12 / abb			WATERCALC_100726B	12	R63957
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/23/10 07:47 / dck			ICPMS204-B_100622B	113	R63230
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 07:47 / dck			ICPMS204-B_100622B	113	R63230
Cadmium	ND	mg/L		0.00008		E200.8	06/23/10 07:47 / dck			ICPMS204-B_100622B	113	R63230
Calcium	26	mg/L		1		E200.7	06/16/10 13:31 / sld			ICP1-HE_100616A	54	R63046
Copper	ND	mg/L		0.001		E200.8	06/23/10 07:47 / dck			ICPMS204-B_100622B	113	R63230
Iron	ND	mg/L		0.05		E200.7	06/16/10 13:31 / sld			ICP1-HE_100616A	54	R63046
Lead	ND	mg/L		0.0005		E200.8	06/23/10 07:47 / dck			ICPMS204-B_100622B	113	R63230
Magnesium	14	mg/L		1		E200.7	06/16/10 13:31 / sld			ICP1-HE_100616A	54	R63046
Manganese	ND	mg/L		0.005		E200.8	06/23/10 07:47 / dck			ICPMS204-B_100622B	113	R63230
Potassium	ND	mg/L		1		E200.7	06/16/10 13:31 / sld			ICP1-HE_100616A	54	R63046
Sodium	1	mg/L		1		E200.7	06/16/10 13:31 / sld			ICP1-HE_100616A	54	R63046
Zinc	ND	mg/L		0.01		E200.8	06/23/10 07:47 / dck			ICPMS204-B_100622B	113	R63230
METALS, TOTAL												
Aluminum	0.49	mg/L		0.03		E200.8	06/23/10 07:54 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	114	9053
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 07:54 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	114	9053
Cadmium	0.00010	mg/L		0.00008		E200.8	06/23/10 07:54 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	114	9053
Copper	0.006	mg/L		0.001		E200.8	06/23/10 07:54 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	114	9053
Iron	0.62	mg/L		0.05		E200.8	06/23/10 07:54 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	114	9053
Lead	0.0098	mg/L		0.0005		E200.8	06/23/10 07:54 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	114	9053

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW2D-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-004
Collection Date: 06/10/10 15:28
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL												
Manganese	0.067	mg/L		0.005		E200.8	06/23/10 07:54 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	114	9053
Zinc	0.03	mg/L		0.01		E200.8	06/23/10 07:54 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	114	9053

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW3D-333-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-005
Collection Date: 06/10/10 17:15
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	5.6	s.u.		0.1		A4500-H B	06/16/10 18:26 / hm			MAN-TECH_100616C	70	R63054
Conductivity	ND	umhos/cm		1		A2510 B	06/16/10 18:26 / hm			MAN-TECH_100616C	69	R63054
DISSOLVED INORGANICS												
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	06/24/10 02:21 / hm			MAN-TECH_100623A	231	R63240
Carbonate as CO3	ND	mg/L		4		A2320 B	06/24/10 02:21 / hm			MAN-TECH_100623A	231	R63240
Chloride	ND	mg/L		1		E300.0	06/19/10 04:10 / zeg			IC101-H_100618A	49	R63153
Sulfate	ND	mg/L		1		E300.0	06/19/10 04:10 / zeg			IC101-H_100618A	49	R63153
INORGANICS												
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	06/16/10 18:26 / hm			MAN-TECH_100616C	68	R63054
Chloride	ND	mg/L		1		E300.0	06/19/10 03:53 / zeg			IC101-H_100618A	48	R63153
Sulfate	ND	mg/L		1		E300.0	06/19/10 03:53 / zeg			IC101-H_100618A	48	R63153
Hardness as CaCO3	ND	mg/L		1		A2340 B	07/26/10 11:12 / abb			WATERCALC_100726B	13	R63957
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/23/10 08:00 / dck			ICPMS204-B_100622B	115	R63230
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 08:00 / dck			ICPMS204-B_100622B	115	R63230
Cadmium	ND	mg/L		0.00008		E200.8	06/23/10 08:00 / dck			ICPMS204-B_100622B	115	R63230
Calcium	ND	mg/L		1		E200.7	06/16/10 13:34 / sld			ICP1-HE_100616A	55	R63046
Copper	ND	mg/L		0.001		E200.8	06/23/10 08:00 / dck			ICPMS204-B_100622B	115	R63230
Iron	ND	mg/L		0.05		E200.7	06/16/10 13:34 / sld			ICP1-HE_100616A	55	R63046
Lead	ND	mg/L		0.0005		E200.8	06/23/10 08:00 / dck			ICPMS204-B_100622B	115	R63230
Magnesium	ND	mg/L		1		E200.7	06/16/10 13:34 / sld			ICP1-HE_100616A	55	R63046
Manganese	ND	mg/L		0.005		E200.8	06/23/10 08:00 / dck			ICPMS204-B_100622B	115	R63230
Potassium	ND	mg/L		1		E200.7	06/16/10 13:34 / sld			ICP1-HE_100616A	55	R63046
Sodium	ND	mg/L		1		E200.7	06/16/10 13:34 / sld			ICP1-HE_100616A	55	R63046
Zinc	ND	mg/L		0.01		E200.8	06/23/10 08:00 / dck			ICPMS204-B_100622B	115	R63230
METALS, TOTAL												
Aluminum	ND	mg/L		0.03		E200.8	06/23/10 08:34 / dck			ICPMS204-B_100622B	120	R63230
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 08:34 / dck			ICPMS204-B_100622B	120	R63230
Cadmium	ND	mg/L		0.00008		E200.8	06/23/10 08:34 / dck			ICPMS204-B_100622B	120	R63230
Copper	ND	mg/L		0.001		E200.8	06/23/10 08:34 / dck			ICPMS204-B_100622B	120	R63230
Iron	ND	mg/L		0.05		E200.8	06/23/10 08:34 / dck			ICPMS204-B_100622B	120	R63230
Lead	ND	mg/L		0.0005		E200.8	06/23/10 08:34 / dck			ICPMS204-B_100622B	120	R63230

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW3D-333-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-005
Collection Date: 06/10/10 17:15
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL												
Manganese	ND	mg/L		0.005		E200.8	06/23/10 08:34 / dck			ICPMS204-B_100622B	120	R63230
Zinc	ND	mg/L		0.01		E200.8	06/23/10 08:34 / dck			ICPMS204-B_100622B	120	R63230

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW5-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-006
Collection Date: 06/10/10 11:15
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	8.0	s.u.		0.1		A4500-H B	06/16/10 18:56 / hm			MAN-TECH_100616C	81	R63054
Conductivity	276	umhos/cm		1		A2510 B	06/16/10 18:56 / hm			MAN-TECH_100616C	80	R63054
DISSOLVED INORGANICS												
Bicarbonate as HCO3	67	mg/L		4		A2320 B	06/24/10 02:28 / hm			MAN-TECH_100623A	232	R63240
Carbonate as CO3	ND	mg/L		4		A2320 B	06/24/10 02:28 / hm			MAN-TECH_100623A	232	R63240
Chloride	ND	mg/L		1		E300.0	06/19/10 05:16 / zeg			IC101-H_100618A	53	R63153
Sulfate	83	mg/L		1		E300.0	06/19/10 05:16 / zeg			IC101-H_100618A	53	R63153
INORGANICS												
Alkalinity, Total as CaCO3	52	mg/L		4		A2320 B	06/16/10 18:56 / hm			MAN-TECH_100616C	79	R63054
Chloride	ND	mg/L		1		E300.0	06/19/10 04:26 / zeg			IC101-H_100618A	50	R63153
Sulfate	83	mg/L		1		E300.0	06/19/10 04:26 / zeg			IC101-H_100618A	50	R63153
Hardness as CaCO3	128	mg/L		1		A2340 B	07/26/10 11:12 / abb			WATERCALC_100726B	14	R63957
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/23/10 08:41 / dck			ICPMS204-B_100622B	121	R63230
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 08:41 / dck			ICPMS204-B_100622B	121	R63230
Cadmium	ND	mg/L		0.00008		E200.8	06/23/10 08:41 / dck			ICPMS204-B_100622B	121	R63230
Calcium	33	mg/L		1		E200.7	06/16/10 13:37 / sld			ICP1-HE_100616A	56	R63046
Copper	0.001	mg/L		0.001		E200.8	06/23/10 08:41 / dck			ICPMS204-B_100622B	121	R63230
Iron	0.09	mg/L		0.05		E200.7	06/16/10 13:37 / sld			ICP1-HE_100616A	56	R63046
Lead	ND	mg/L		0.0005		E200.8	06/23/10 08:41 / dck			ICPMS204-B_100622B	121	R63230
Magnesium	11	mg/L		1		E200.7	06/16/10 13:37 / sld			ICP1-HE_100616A	56	R63046
Manganese	ND	mg/L		0.005		E200.8	06/23/10 08:41 / dck			ICPMS204-B_100622B	121	R63230
Potassium	ND	mg/L		1		E200.7	06/16/10 13:37 / sld			ICP1-HE_100616A	56	R63046
Sodium	2	mg/L		1		E200.7	06/16/10 13:37 / sld			ICP1-HE_100616A	56	R63046
Zinc	ND	mg/L		0.01		E200.8	06/23/10 08:41 / dck			ICPMS204-B_100622B	121	R63230
METALS, TOTAL												
Aluminum	6.07	mg/L		0.03		E200.8	06/24/10 03:55 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100623A	122	9053
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 08:48 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	122	9053
Cadmium	0.00078	mg/L		0.00008		E200.8	06/23/10 08:48 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	122	9053
Copper	0.099	mg/L		0.001		E200.8	06/23/10 08:48 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	122	9053
Iron	17.8	mg/L		0.05		E200.8	06/23/10 08:48 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	122	9053
Lead	0.0242	mg/L		0.0005		E200.8	06/23/10 08:48 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	122	9053

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW5-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-006
Collection Date: 06/10/10 11:15
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL												
Manganese	0.539	mg/L		0.005		E200.8	06/23/10 08:48 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	122	9053
Zinc	0.12	mg/L		0.01		E200.8	06/23/10 08:48 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	122	9053

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW2S-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-007
Collection Date: 06/10/10 15:10
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.5	s.u.		0.1		A4500-H B	06/16/10 19:09 / hm			MAN-TECH_100616C	87	R63054
Conductivity	452	umhos/cm		1		A2510 B	06/16/10 19:09 / hm			MAN-TECH_100616C	86	R63054
DISSOLVED INORGANICS												
Bicarbonate as HCO3	95	mg/L		4		A2320 B	06/24/10 02:35 / hm			MAN-TECH_100623A	233	R63240
Carbonate as CO3	ND	mg/L		4		A2320 B	06/24/10 02:35 / hm			MAN-TECH_100623A	233	R63240
Chloride	ND	mg/L		1		E300.0	06/19/10 05:48 / zeg			IC101-H_100618A	55	R63153
Sulfate	130	mg/L		1		E300.0	06/19/10 05:48 / zeg			IC101-H_100618A	55	R63153
INORGANICS												
Alkalinity, Total as CaCO3	76	mg/L		4		A2320 B	06/16/10 19:09 / hm			MAN-TECH_100616C	85	R63054
Chloride	ND	mg/L		1		E300.0	06/19/10 05:32 / zeg			IC101-H_100618A	54	R63153
Sulfate	160	mg/L		1		E300.0	06/19/10 05:32 / zeg			IC101-H_100618A	54	R63153
Hardness as CaCO3	185	mg/L		1		A2340 B	07/26/10 11:12 / abb			WATERCALC_100726B	15	R63957
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/23/10 08:55 / dck			ICPMS204-B_100622B	123	R63230
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 08:55 / dck			ICPMS204-B_100622B	123	R63230
Cadmium	0.00086	mg/L		0.00008		E200.8	06/23/10 08:55 / dck			ICPMS204-B_100622B	123	R63230
Calcium	39	mg/L		1		E200.7	06/16/10 13:40 / sld			ICP1-HE_100616A	57	R63046
Copper	ND	mg/L		0.001		E200.8	06/23/10 08:55 / dck			ICPMS204-B_100622B	123	R63230
Iron	ND	mg/L		0.05		E200.7	06/16/10 13:40 / sld			ICP1-HE_100616A	57	R63046
Lead	ND	mg/L		0.0005		E200.8	06/23/10 08:55 / dck			ICPMS204-B_100622B	123	R63230
Magnesium	21	mg/L		1		E200.7	06/16/10 13:40 / sld			ICP1-HE_100616A	57	R63046
Manganese	3.18	mg/L		0.005		E200.8	06/23/10 08:55 / dck			ICPMS204-B_100622B	123	R63230
Potassium	ND	mg/L		1		E200.7	06/16/10 13:40 / sld			ICP1-HE_100616A	57	R63046
Sodium	1	mg/L		1		E200.7	06/16/10 13:40 / sld			ICP1-HE_100616A	57	R63046
Zinc	1.51	mg/L		0.01		E200.8	06/23/10 08:55 / dck			ICPMS204-B_100622B	123	R63230
METALS, TOTAL												
Aluminum	0.04	mg/L		0.03		E200.8	06/23/10 09:01 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	124	9053
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 09:01 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	124	9053
Cadmium	0.00124	mg/L		0.00008		E200.8	06/23/10 09:01 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	124	9053
Copper	0.003	mg/L		0.001		E200.8	06/23/10 09:01 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	124	9053
Iron	0.41	mg/L		0.05		E200.8	06/23/10 09:01 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	124	9053
Lead	0.0044	mg/L		0.0005		E200.8	06/23/10 09:01 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	124	9053

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW2S-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-007
Collection Date: 06/10/10 15:10
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL												
Manganese	4.97	mg/L		0.005		E200.8	06/24/10 04:01 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100623A	123	9053
Zinc	1.91	mg/L		0.01		E200.8	06/23/10 09:01 / dck	06/21/10 10:36	E200.2	ICPMS204-B_100622B	124	9053

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW01-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-008
Collection Date: 06/10/10 14:15
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	7.5	s.u.		0.1		A4500-H B	06/16/10 19:24 / hm			MAN-TECH_100616C	92	R63054
Conductivity	426	umhos/cm		1		A2510 B	06/16/10 19:24 / hm			MAN-TECH_100616C	91	R63054
DISSOLVED INORGANICS												
Bicarbonate as HCO3	75	mg/L		4		A2320 B	06/24/10 02:42 / hm			MAN-TECH_100623A	234	R63240
Carbonate as CO3	ND	mg/L		4		A2320 B	06/24/10 02:42 / hm			MAN-TECH_100623A	234	R63240
Chloride	ND	mg/L		1		E300.0	06/19/10 06:54 / zeg			IC101-H_100618A	59	R63153
Sulfate	160	mg/L		1		E300.0	06/19/10 06:54 / zeg			IC101-H_100618A	59	R63153
INORGANICS												
Alkalinity, Total as CaCO3	59	mg/L		4		A2320 B	06/16/10 19:24 / hm			MAN-TECH_100616C	90	R63054
Chloride	ND	mg/L		1		E300.0	06/19/10 06:05 / zeg			IC101-H_100618A	56	R63153
Sulfate	160	mg/L		1		E300.0	06/19/10 06:05 / zeg			IC101-H_100618A	56	R63153
Hardness as CaCO3	210	mg/L		1		A2340 B	07/26/10 11:12 / abb			WATERCALC_100726B	16	R63957
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/23/10 09:27 / dck			ICPMS204-B_100622B	128	R63230
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 09:27 / dck			ICPMS204-B_100622B	128	R63230
Cadmium	0.00030	mg/L		0.00008		E200.8	06/23/10 09:27 / dck			ICPMS204-B_100622B	128	R63230
Calcium	41	mg/L		1		E200.7	06/16/10 13:43 / sld			ICP1-HE_100616A	58	R63046
Copper	ND	mg/L		0.001		E200.8	06/23/10 09:27 / dck			ICPMS204-B_100622B	128	R63230
Iron	ND	mg/L		0.05		E200.7	06/16/10 13:43 / sld			ICP1-HE_100616A	58	R63046
Lead	ND	mg/L		0.0005		E200.8	06/23/10 09:27 / dck			ICPMS204-B_100622B	128	R63230
Magnesium	26	mg/L		1		E200.7	06/16/10 13:43 / sld			ICP1-HE_100616A	58	R63046
Manganese	ND	mg/L		0.005		E200.8	06/26/10 11:54 / dck			ICPMS204-B_100626A	19	R63307
Potassium	ND	mg/L		1		E200.7	06/16/10 13:43 / sld			ICP1-HE_100616A	58	R63046
Sodium	1	mg/L		1		E200.7	06/16/10 13:43 / sld			ICP1-HE_100616A	58	R63046
Zinc	0.26	mg/L		0.01		E200.8	06/23/10 09:27 / dck			ICPMS204-B_100622B	128	R63230
METALS, TOTAL												
Aluminum	ND	mg/L		0.03		E200.8	06/23/10 10:01 / dck			ICPMS204-B_100622B	133	R63230
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 10:01 / dck			ICPMS204-B_100622B	133	R63230
Cadmium	0.00030	mg/L		0.00008		E200.8	06/23/10 10:01 / dck			ICPMS204-B_100622B	133	R63230
Copper	ND	mg/L		0.001		E200.8	06/23/10 10:01 / dck			ICPMS204-B_100622B	133	R63230
Iron	ND	mg/L		0.05		E200.8	06/23/10 10:01 / dck			ICPMS204-B_100622B	133	R63230
Lead	ND	mg/L		0.0005		E200.8	06/23/10 10:01 / dck			ICPMS204-B_100622B	133	R63230

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW01-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-008
Collection Date: 06/10/10 14:15
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL												
Manganese	ND	mg/L		0.005		E200.8	06/23/10 10:01 / dck			ICPMS204-B_100622B	133	R63230
Zinc	0.26	mg/L		0.01		E200.8	06/23/10 10:01 / dck			ICPMS204-B_100622B	133	R63230

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW3D-444-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-009
Collection Date: 06/10/10 17:20
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
PHYSICAL PROPERTIES												
pH	5.4	s.u.		0.1		A4500-H B	06/16/10 19:29 / hm			MAN-TECH_100616C	95	R63054
Conductivity	ND	umhos/cm		1		A2510 B	06/16/10 19:29 / hm			MAN-TECH_100616C	94	R63054
DISSOLVED INORGANICS												
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	06/23/10 23:15 / hm			MAN-TECH_100623A	178	R63240
Carbonate as CO3	ND	mg/L		4		A2320 B	06/23/10 23:15 / hm			MAN-TECH_100623A	178	R63240
Chloride	ND	mg/L		1		E300.0	06/19/10 07:27 / zeg			IC101-H_100618A	61	R63153
Sulfate	ND	mg/L		1		E300.0	06/19/10 07:27 / zeg			IC101-H_100618A	61	R63153
INORGANICS												
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	06/16/10 19:29 / hm			MAN-TECH_100616C	93	R63054
Chloride	ND	mg/L		1		E300.0	06/19/10 07:11 / zeg			IC101-H_100618A	60	R63153
Sulfate	ND	mg/L		1		E300.0	06/19/10 07:11 / zeg			IC101-H_100618A	60	R63153
Hardness as CaCO3	ND	mg/L		1		A2340 B	07/26/10 11:12 / abb			WATERCALC_100726B	17	R63957
METALS, DISSOLVED												
Aluminum	ND	mg/L		0.03		E200.8	06/23/10 10:08 / dck			ICPMS204-B_100622B	134	R63230
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 10:08 / dck			ICPMS204-B_100622B	134	R63230
Cadmium	ND	mg/L		0.00008		E200.8	06/23/10 10:08 / dck			ICPMS204-B_100622B	134	R63230
Calcium	ND	mg/L		1		E200.7	06/16/10 13:53 / sld			ICP1-HE_100616A	61	R63046
Copper	ND	mg/L		0.001		E200.8	06/23/10 10:08 / dck			ICPMS204-B_100622B	134	R63230
Iron	ND	mg/L		0.05		E200.7	06/16/10 13:53 / sld			ICP1-HE_100616A	61	R63046
Lead	ND	mg/L		0.0005		E200.8	06/23/10 10:08 / dck			ICPMS204-B_100622B	134	R63230
Magnesium	ND	mg/L		1		E200.7	06/16/10 13:53 / sld			ICP1-HE_100616A	61	R63046
Manganese	ND	mg/L		0.005		E200.8	06/23/10 10:08 / dck			ICPMS204-B_100622B	134	R63230
Potassium	ND	mg/L		1		E200.7	06/16/10 13:53 / sld			ICP1-HE_100616A	61	R63046
Sodium	ND	mg/L		1		E200.7	06/16/10 13:53 / sld			ICP1-HE_100616A	61	R63046
Zinc	ND	mg/L		0.01		E200.8	06/23/10 10:08 / dck			ICPMS204-B_100622B	134	R63230
METALS, TOTAL												
Aluminum	ND	mg/L		0.03		E200.8	06/23/10 10:35 / dck			ICPMS204-B_100622B	138	R63230
Arsenic	ND	mg/L		0.003		E200.8	06/23/10 10:35 / dck			ICPMS204-B_100622B	138	R63230
Cadmium	ND	mg/L		0.00008		E200.8	06/23/10 10:35 / dck			ICPMS204-B_100622B	138	R63230
Copper	ND	mg/L		0.001		E200.8	06/23/10 10:35 / dck			ICPMS204-B_100622B	138	R63230
Iron	ND	mg/L		0.05		E200.8	06/23/10 10:35 / dck			ICPMS204-B_100622B	138	R63230
Lead	ND	mg/L		0.0005		E200.8	06/23/10 10:35 / dck			ICPMS204-B_100622B	138	R63230

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ
Client Sample ID UBM-TDMW3D-444-20100610
Project: UBMC To 20 10013
Matrix: Aqueous

Lab ID: H10060238-009
Collection Date: 06/10/10 17:20
DateReceived: 06/15/10
Report Date: 06/29/10 **Revised Date:** 01/10/11

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, TOTAL												
Manganese	ND	mg/L		0.005		E200.8	06/23/10 10:35 / dck			ICPMS204-B_100622B	138	R63230
Zinc	ND	mg/L		0.01		E200.8	06/23/10 10:35 / dck			ICPMS204-B_100622B	138	R63230

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 9053

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100622B: 68** SampType: **Method Blank** Sample ID: **MB-9053** Method: **E200.8**
Analysis Date: **06/23/10 02:45** Units: **mg/L** **Prep Info:** Prep Date: **6/21/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0010	0.0008									
Arsenic	0.0001	4E-05									
Cadmium	ND	2E-05									
Copper	0.0003	0.0002									
Iron	0.003	0.0009									
Lead	ND	2E-05									
Manganese	8E-05	3E-05									
Zinc	0.002	0.0007									

Associated samples: **H10060238-001D; H10060238-002D; H10060238-003D; H10060238-004D; H10060238-006D; H10060238-007D**

Run ID :Run Order: **ICPMS204-B_100622B: 69** SampType: **Laboratory Control Sample** Sample ID: **LCS-9053** Method: **E200.8**
Analysis Date: **06/23/10 02:52** Units: **mg/L** **Prep Info:** Prep Date: **6/21/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.43	0.10	2.5		97	85	115				
Arsenic	0.504	0.0050	0.5		101	85	115				
Cadmium	0.268	0.0010	0.25		107	85	115				
Copper	0.520	0.010	0.5		104	85	115				
Iron	2.55	0.030	2.5		102	85	115				
Lead	0.502	0.010	0.5		100	85	115				
Manganese	2.41	0.010	2.5		96	85	115				
Zinc	0.513	0.010	0.5		103	85	115				

Associated samples: **H10060238-001D; H10060238-002D; H10060238-003D; H10060238-004D; H10060238-006D; H10060238-007D**

Run ID :Run Order: **ICPMS204-B_100622B: 100** SampType: **Sample Matrix Spike** Sample ID: **H10060236-008DMS5** Method: **E200.8**
Analysis Date: **06/23/10 06:20** Units: **mg/L** **Prep Info:** Prep Date: **6/21/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.51	0.10	2.5	0.06078	98	70	130				
Arsenic	0.501	0.0050	0.5	0.0004365	100	70	130				
Cadmium	0.262	0.0010	0.25		105	70	130				
Copper	0.507	0.010	0.5	0.001687	101	70	130				
Iron	2.58	0.030	2.5	0.1048	99	70	130				
Lead	0.497	0.010	0.5	0.0000758	99	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 9053

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100622B: 100** SampType: **Sample Matrix Spike** Sample ID: **H10060236-008DMS5** Method: **E200.8**
Analysis Date: **06/23/10 06:20** Units: **mg/L** **Prep Info:** Prep Date: **6/21/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	2.39	0.010	2.5	0.01174	95	70	130				
Zinc	0.508	0.010	0.5	0.002492	101	70	130				

Associated samples: **H10060238-001D; H10060238-002D; H10060238-003D; H10060238-004D; H10060238-006D; H10060238-007D**

Run ID :Run Order: **ICPMS204-B_100622B: 101** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060236-008DMSD5** Method: **E200.8**
Analysis Date: **06/23/10 06:26** Units: **mg/L** **Prep Info:** Prep Date: **6/21/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.46	0.10	2.5	0.06078	96	70	130	2.507	1.7	20	
Arsenic	0.502	0.0050	0.5	0.0004365	100	70	130	0.5007	0.3	20	
Cadmium	0.263	0.0010	0.25		105	70	130	0.262	0.3	20	
Copper	0.509	0.010	0.5	0.001687	102	70	130	0.5069	0.5	20	
Iron	2.63	0.030	2.5	0.1048	101	70	130	2.584	1.8	20	
Lead	0.493	0.010	0.5	0.0000758	99	70	130	0.4971	0.9	20	
Manganese	2.37	0.010	2.5	0.01174	94	70	130	2.393	0.9	20	
Zinc	0.505	0.010	0.5	0.002492	101	70	130	0.5082	0.6	20	

Associated samples: **H10060238-001D; H10060238-002D; H10060238-003D; H10060238-004D; H10060238-006D; H10060238-007D**

Run ID :Run Order: **ICPMS204-B_100622B: 125** SampType: **Sample Matrix Spike** Sample ID: **H10060238-007DMS5** Method: **E200.8**
Analysis Date: **06/23/10 09:08** Units: **mg/L** **Prep Info:** Prep Date: **6/21/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.44	0.10	2.5	0.03723	96	70	130				
Arsenic	0.509	0.0050	0.5	0.001097	102	70	130				
Cadmium	0.266	0.0010	0.25	0.001242	106	70	130				
Copper	0.502	0.010	0.5	0.003122	100	70	130				
Iron	2.87	0.030	2.5	0.4079	98	70	130				
Lead	0.497	0.010	0.5	0.004392	98	70	130				
Manganese	7.20	0.010	2.5	4.748	98	70	130				
Zinc	2.24	0.010	0.5	1.913	65	70	130				S

Associated samples: **H10060238-001D; H10060238-002D; H10060238-003D; H10060238-004D; H10060238-006D; H10060238-007D**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 9053

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100622B: 126** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060238-007DMSD5** Method: **E200.8**

Analysis Date: **06/23/10 09:14** Units: **mg/L** **Prep Info:** Prep Date: **6/21/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.45	0.10	2.5	0.03723	97	70	130	2.443	0.4	20	
Arsenic	0.505	0.0050	0.5	0.001097	101	70	130	0.5093	0.9	20	
Cadmium	0.267	0.0010	0.25	0.001242	106	70	130	0.266	0.5	20	
Copper	0.508	0.010	0.5	0.003122	101	70	130	0.5024	1.2	20	
Iron	2.90	0.030	2.5	0.4079	100	70	130	2.867	1.0	20	
Lead	0.498	0.010	0.5	0.004392	99	70	130	0.4967	0.2	20	
Manganese	7.20	0.010	2.5	4.748	98	70	130	7.2	0.1	20	
Zinc	2.25	0.010	0.5	1.913	67	70	130	2.24	0.3	20	S

Associated samples: **H10060238-001D; H10060238-002D; H10060238-003D; H10060238-004D; H10060238-006D; H10060238-007D**

Run ID :Run Order: **ICPMS204-B_100623A: 62** SampType: **Sample Matrix Spike** Sample ID: **H10060206-001CMS5** Method: **E200.8**

Analysis Date: **06/23/10 21:10** Units: **mg/L** **Prep Info:** Prep Date: **6/21/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.74	0.10	2.5	0.1533	103	70	130				
Arsenic	0.511	0.0050	0.5	0.0004596	102	70	130				
Cadmium	0.268	0.0010	0.25		107	70	130				
Copper	0.510	0.010	0.5	0.0004819	102	70	130				
Iron	2.75	0.030	2.5	0.1566	104	70	130				
Lead	0.529	0.010	0.5	0.0000936	106	70	130				
Manganese	2.51	0.010	2.5	0.006211	100	70	130				
Zinc	0.510	0.010	0.5	0.003558	101	70	130				

Associated samples: **H10060238-001D; H10060238-002D; H10060238-003D; H10060238-004D; H10060238-006D; H10060238-007D**

Run ID :Run Order: **ICPMS204-B_100623A: 63** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060206-001CMSD5** Method: **E200.8**

Analysis Date: **06/23/10 21:17** Units: **mg/L** **Prep Info:** Prep Date: **6/21/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.68	0.10	2.5	0.1533	101	70	130	2.739	2.3	20	
Arsenic	0.510	0.0050	0.5	0.0004596	102	70	130	0.5109	0.1	20	
Cadmium	0.270	0.0010	0.25		108	70	130	0.2683	0.6	20	
Copper	0.508	0.010	0.5	0.0004819	102	70	130	0.5101	0.3	20	
Iron	2.70	0.030	2.5	0.1566	102	70	130	2.753	1.8	20	
Lead	0.529	0.010	0.5	0.0000936	106	70	130	0.529	0.0	20	

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 9053

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100623A: 63** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060206-001CMSD5** Method: **E200.8**

Analysis Date: **06/23/10 21:17** Units: **mg/L** **Prep Info:** Prep Date: **6/21/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	2.50	0.010	2.5	0.006211	**100**	70	130	2.512	**0.5**	20	
Zinc	0.505	0.010	0.5	0.003558	**100**	70	130	0.5098	**1.0**	20	

Associated samples: **H10060238-001D; H10060238-002D; H10060238-003D; H10060238-004D; H10060238-006D; H10060238-007D**

Run ID :Run Order: **ICPMS204-B_100623A: 115** SampType: **Method Blank** Sample ID: **MB-9053** Method: **E200.8**

Analysis Date: **06/24/10 03:07** Units: **mg/L** **Prep Info:** Prep Date: **6/21/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0009	0.0008									
Arsenic	ND	4E-05									
Cadmium	ND	2E-05									
Copper	ND	0.0002									
Iron	0.004	0.0009									
Lead	2E-05	2E-05									
Manganese	0.0001	3E-05									
Zinc	0.004	0.0007									

Associated samples: **H10060238-001D; H10060238-002D; H10060238-003D; H10060238-004D; H10060238-006D; H10060238-007D**

Run ID :Run Order: **ICPMS204-B_100624A: 66** SampType: **Method Blank** Sample ID: **MB-9053** Method: **E200.8**

Analysis Date: **06/25/10 01:27** Units: **mg/L** **Prep Info:** Prep Date: **6/21/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.001	0.0008									
Arsenic	0.0001	4E-05									
Cadmium	ND	2E-05									
Copper	0.0002	0.0002									
Iron	0.004	0.0009									
Lead	3E-05	2E-05									
Manganese	ND	3E-05									
Zinc	0.002	0.0007									

Associated samples: **H10060238-001D; H10060238-002D; H10060238-003D; H10060238-004D; H10060238-006D; H10060238-007D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63046

Date: *10-Jan-11*

Run ID :Run Order: **ICP1-HE_100616A: 4** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV** Method: **E200.7**

Analysis Date: **06/16/10 10:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	39.7	1.0	40		99	95	105				
Iron	3.98	0.030	4		100	95	105				
Magnesium	38.5	1.0	40		96	95	105				
Potassium	38.9	1.0	40		97	95	105				
Sodium	42.0	1.0	40		105	95	105				

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-009C**

Run ID :Run Order: **ICP1-HE_100616A: 6** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-1** Method: **E200.7**

Analysis Date: **06/16/10 11:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.5	1.0	25		102	95	105				
Iron	2.44	0.030	2.5		98	95	105				
Magnesium	24.0	1.0	25		96	95	105				
Potassium	24.6	1.0	25		98	95	105				
Sodium	26.2	1.0	25		105	95	105				

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-009C**

Run ID :Run Order: **ICP1-HE_100616A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.7**

Analysis Date: **06/16/10 11:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	497	1.0	500		99	80	120				
Iron	175	0.030	200		88	80	120				
Magnesium	509	1.0	500		102	80	120				
Potassium	0.0149	1.0				0	0				
Sodium	0.0318	1.0				0	0				

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-009C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63046

Date: *10-Jan-11*

Run ID :Run Order: **ICP1-HE_100616A: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.7**

Analysis Date: **06/16/10 11:14** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	517	1.0	500		103	80	120				
Iron	182	0.030	200		91	80	120				
Magnesium	526	1.0	500		105	80	120				
Potassium	20.6	1.0	20		103	80	120				
Sodium	20.1	1.0	20		101	80	120				

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-009C**

Run ID :Run Order: **ICP1-HE_100616A: 13** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.7**

Analysis Date: **06/16/10 11:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.1									
Iron	0.004	0.002									
Magnesium	0.03	0.02									
Potassium	ND	0.04									
Sodium	ND	0.1									

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-009C**

Run ID :Run Order: **ICP1-HE_100616A: 14** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.7**

Analysis Date: **06/16/10 11:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10.2	1.0	10		102	85	115				
Iron	0.958	0.030	1	0.0043	95	85	115				
Magnesium	9.25	1.0	10	0.0264	92	85	115				
Potassium	10.2	1.0	10		102	85	115				
Sodium	9.91	1.0	10		99	85	115				

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-009C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63046

Date: *10-Jan-11*

Run ID :Run Order: **ICP1-HE_100616A: 44** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.7**

Analysis Date: **06/16/10 13:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10.3	1.0	10		103	85	115				
Iron	0.994	0.030	1		99	85	115				
Magnesium	9.77	1.0	10		98	85	115				
Potassium	9.93	1.0	10		99	85	115				
Sodium	9.97	1.0	10		100	85	115				

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-009C**

Run ID :Run Order: **ICP1-HE_100616A: 47** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **E200.7**

Analysis Date: **06/16/10 13:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	24.1	1.0	25		96	90	110				
Iron	2.41	0.030	2.5		96	90	110				
Magnesium	23.7	1.0	25		95	90	110				
Potassium	24.4	1.0	25		98	90	110				
Sodium	24.0	1.0	25		96	90	110				

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-006C; H10060238-007C; H10060238-008C**

Run ID :Run Order: **ICP1-HE_100616A: 49** SampType: **Sample Matrix Spike** Sample ID: **H10060236-008CMS2** Method: **E200.7**

Analysis Date: **06/16/10 13:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	37.4	1.0	20	16.02	107	70	130				
Iron	2.03	0.040	2	0.0328	100	70	130				
Magnesium	24.7	1.0	20	5.91	94	70	130				
Potassium	21.2	1.0	20	0.531	103	70	130				
Sodium	23.5	1.0	20	1.636	109	70	130				

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-009C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63046

Date: *10-Jan-11*

Run ID :Run Order: **ICP1-HE_100616A: 50** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060236-008CMSD2** Method: **E200.7**

Analysis Date: **06/16/10 13:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	40.6	1.0	20	16.02	123	70	130	37.4	8.2	20	
Iron	2.08	0.040	2	0.0328	102	70	130	2.03	2.2	20	
Magnesium	26.8	1.0	20	5.91	104	70	130	24.74	8.0	20	
Potassium	20.7	1.0	20	0.531	101	70	130	21.22	2.7	20	
Sodium	21.8	1.0	20	1.636	101	70	130	23.46	7.2	20	

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-009C**

Run ID :Run Order: **ICP1-HE_100616A: 59** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV** Method: **E200.7**

Analysis Date: **06/16/10 13:47** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	23.8	1.0	25		95	90	110				
Iron	2.42	0.030	2.5		97	90	110				
Magnesium	24.2	1.0	25		97	90	110				
Potassium	24.4	1.0	25		98	90	110				
Sodium	25.3	1.0	25		101	90	110				

Associated samples: **H10060238-009C**

Run ID :Run Order: **ICP1-HE_100616A: 62** SampType: **Sample Matrix Spike** Sample ID: **H10060238-009CMS2** Method: **E200.7**

Analysis Date: **06/16/10 13:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	20.6	1.0	20		103	70	130				
Iron	1.93	0.040	2		96	70	130				
Magnesium	18.7	1.0	20		94	70	130				
Potassium	20.0	1.0	20		100	70	130				
Sodium	19.2	1.0	20		96	70	130				

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-009C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63046

Date: *10-Jan-11*

Run ID :Run Order: **ICP1-HE_100616A: 63** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060238-009CMSD2** Method: **E200.7**

Analysis Date: **06/16/10 13:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	19.2	1.0	20		96	70	130	20.56	6.8	20	
Iron	1.93	0.040	2		97	70	130	1.926	0.4	20	
Magnesium	19.0	1.0	20		95	70	130	18.74	1.4	20	
Potassium	20.2	1.0	20		101	70	130	19.98	1.3	20	
Sodium	19.5	1.0	20		98	70	130	19.2	1.7	20	

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-009C**

Run ID :Run Order: **ICP1-HE_100616A: 79** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.7**

Analysis Date: **06/16/10 14:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10.3	1.0	10		103	85	115				
Iron	0.958	0.030	1		96	85	115				
Magnesium	9.49	1.0	10		95	85	115				
Potassium	9.83	1.0	10		98	85	115				
Sodium	9.88	1.0	10		99	85	115				

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-009C**

Run ID :Run Order: **ICP1-HE_100616A: 86** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.7**

Analysis Date: **06/16/10 15:09** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	528	1.0	500		106	80	120				
Iron	178	0.030	200		89	80	120				
Magnesium	488	1.0	500		98	80	120				
Potassium	0.0130	1.0				0	0				
Sodium	0.0336	1.0				0	0				

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-009C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63046

Date: *10-Jan-11*

Run ID :Run Order: **ICP1-HE_100616A: 87** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.7**

Analysis Date: **06/16/10 15:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	508	1.0	500		102	80	120				
Iron	174	0.030	200		87	80	120				
Magnesium	502	1.0	500		100	80	120				
Potassium	20.1	1.0	20		101	80	120				
Sodium	20.3	1.0	20		102	80	120				

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-009C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63054

Date: *10-Jan-11*

Run ID :Run Order: **MAN-TECH_100616C: 3** SampType: **Method Blank** Sample ID: **MBLK** Method: **A2320 B**
Analysis Date: **06/16/10 15:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	0.3	0.3									

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-003A; H10060238-004A; H10060238-005A; H10060238-006A; H10060238-007A; H10060238-008A; H10060238-009A**

Run ID :Run Order: **MAN-TECH_100616C: 6** SampType: **Laboratory Control Sample** Sample ID: **LCS-61010** Method: **A2320 B**
Analysis Date: **06/16/10 15:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	590	4.0	600		98	90	110				

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-003A; H10060238-004A; H10060238-005A; H10060238-006A; H10060238-007A; H10060238-008A; H10060238-009A**

Run ID :Run Order: **MAN-TECH_100616C: 48** SampType: **Sample Matrix Spike** Sample ID: **H10060236-006AMS** Method: **A2320 B**
Analysis Date: **06/16/10 17:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	640	4.0	600	66.95	96	90	110				

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-003A; H10060238-004A; H10060238-005A; H10060238-006A; H10060238-007A; H10060238-008A; H10060238-009A**

Run ID :Run Order: **MAN-TECH_100616C: 82** SampType: **Sample Duplicate** Sample ID: **H10060238-006ADUP** Method: **A2320 B**
Analysis Date: **06/16/10 19:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	52	4.0						52.21	0.2	20	

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-003A; H10060238-004A; H10060238-005A; H10060238-006A; H10060238-007A; H10060238-008A; H10060238-009A**

Run ID :Run Order: **MAN-TECH_100616C: 88** SampType: **Sample Matrix Spike** Sample ID: **H10060238-007AMS** Method: **A2320 B**
Analysis Date: **06/16/10 19:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	650	4.0	600	76.2	95	90	110				

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-003A; H10060238-004A; H10060238-005A; H10060238-006A; H10060238-007A; H10060238-008A; H10060238-009A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63054

Date: *10-Jan-11*

Run ID :Run Order: **MAN-TECH_100616C: 114** SampType: **Sample Matrix Spike** Sample ID: **H10060236-004BMS** Method: **A2320 B**

Analysis Date: **06/16/10 20:33** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	640	4.0	600	61.99	97	90	110				

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-003A; H10060238-004A; H10060238-005A; H10060238-006A; H10060238-007A; H10060238-008A; H10060238-009A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63054

Date: *10-Jan-11*

Run ID :Run Order: **MAN-TECH_100616C: 1** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV-52010** Method: **A2510 B**
Analysis Date: **06/16/10 15:27** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	719	1.0	717.5		100	90	110				

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-003A; H10060238-004A; H10060238-005A; H10060238-006A; H10060238-007A; H10060238-008A; H10060238-009A**

Run ID :Run Order: **MAN-TECH_100616C: 5** SampType: **Laboratory Control Sample** Sample ID: **LCS-60110** Method: **A2510 B**
Analysis Date: **06/16/10 15:37** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1440	1.0	1412		102	90	110				

Associated samples: **H10060238-001A; H10060238-002A; H10060238-003A; H10060238-004A; H10060238-005A; H10060238-006A; H10060238-007A; H10060238-008A; H10060238-009A**

Run ID :Run Order: **MAN-TECH_100616C: 35** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-60810** Method: **A2510 B**
Analysis Date: **06/16/10 17:08** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	716	1.0	718		100	90	110				

Associated samples: **H10060238-001A; H10060238-002A; H10060238-003A; H10060238-004A; H10060238-005A**

Run ID :Run Order: **MAN-TECH_100616C: 71** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-60810** Method: **A2510 B**
Analysis Date: **06/16/10 18:28** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	721	1.0	718		100	90	110				

Associated samples:

Run ID :Run Order: **MAN-TECH_100616C: 75** SampType: **Laboratory Control Sample** Sample ID: **LCS-60110** Method: **A2510 B**
Analysis Date: **06/16/10 18:38** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1440	1.0	1412		102	90	110				

Associated samples: **H10060238-001A; H10060238-002A; H10060238-003A; H10060238-004A; H10060238-005A; H10060238-006A; H10060238-007A; H10060238-008A; H10060238-009A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63054

Date: *10-Jan-11*

Run ID :Run Order: **MAN-TECH_100616C: 83** SampType: **Sample Duplicate** Sample ID: **H10060238-006ADUP** Method: **A2510 B**

Analysis Date: **06/16/10 19:03** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	276	1.0						276	**0.0**	10	

Associated samples: **H10060238-001A; H10060238-002A; H10060238-003A; H10060238-004A; H10060238-005A; H10060238-006A; H10060238-007A; H10060238-008A; H10060238-009A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63054

Date: *10-Jan-11*

Run ID :Run Order: **MAN-TECH_100616C: 2** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV-1483** Method: **A4500-H B**

Analysis Date: **06/16/10 15:30** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.99	0.10	7		100	99	101				

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-003A; H10060238-004A; H10060238-005A; H10060238-006A; H10060238-007A; H10060238-008A; H10060238-009A**

Run ID :Run Order: **MAN-TECH_100616C: 72** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-1552** Method: **A4500-H B**

Analysis Date: **06/16/10 18:31** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.01	0.10	7		100	99	101				

Associated samples: **H10060238-006A; H10060238-007A; H10060238-008A; H10060238-009A**

Run ID :Run Order: **MAN-TECH_100616C: 76** SampType: **Laboratory Control Sample** Sample ID: **LCS-1483** Method: **A4500-H B**

Analysis Date: **06/16/10 18:41** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.00	0.10	7		100	99	101				

Associated samples: **H10060238-001A; H10060238-002A; H10060238-003A; H10060238-004A; H10060238-005A; H10060238-006A; H10060238-007A; H10060238-008A; H10060238-009A**

Run ID :Run Order: **MAN-TECH_100616C: 84** SampType: **Sample Duplicate** Sample ID: **H10060238-006ADUP** Method: **A4500-H B**

Analysis Date: **06/16/10 19:03** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.06	0.10						8.03	0.4	2	

Associated samples: **H10060238-001A; H10060238-002A; H10060238-003A; H10060238-004A; H10060238-005A; H10060238-006A; H10060238-007A; H10060238-008A; H10060238-009A**

Run ID :Run Order: **MAN-TECH_100616C: 124** SampType: **Laboratory Control Sample** Sample ID: **LCS-1483** Method: **A4500-H B**

Analysis Date: **06/16/10 21:18** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.01	0.10	7		100	99	101				

Associated samples: **H10060238-001A; H10060238-002A; H10060238-003A; H10060238-004A; H10060238-005A; H10060238-006A; H10060238-007A; H10060238-008A; H10060238-009A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63153

Date: *10-Jan-11*

Run ID :Run Order: **IC101-H_100618A: 11** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV061810-12** Method: **E300.0**

Analysis Date: **06/18/10 17:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	12	1.0	12.5		99	90	110				
Sulfate	50	1.0	50		101	90	110				

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-002B; H10060238-003A; H10060238-003B; H10060238-004A; H10060238-004B; H10060238-005A; H10060238-005B; H10060238-006A; H10060238-006B; H10060238-007A; H10060238-007B; H10060238-008A; H10060238-008B; H10060238-009A; H10060238-009B**

Run ID :Run Order: **IC101-H_100618A: 12** SampType: **Method Blank** Sample ID: **ICB061810-13** Method: **E300.0**

Analysis Date: **06/18/10 18:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.2									
Sulfate	ND	0.07									

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-002B; H10060238-003A; H10060238-003B; H10060238-004A; H10060238-004B; H10060238-005A; H10060238-005B; H10060238-006A; H10060238-006B; H10060238-007A; H10060238-007B; H10060238-008A; H10060238-008B; H10060238-009A; H10060238-009B**

Run ID :Run Order: **IC101-H_100618A: 13** SampType: **Laboratory Fortified Blank** Sample ID: **LFB061810-14** Method: **E300.0**

Analysis Date: **06/18/10 18:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		102	90	110				
Sulfate	51	1.0	50		103	90	110				

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-002B; H10060238-003A; H10060238-003B; H10060238-004A; H10060238-004B; H10060238-005A; H10060238-005B; H10060238-006A; H10060238-006B; H10060238-007A; H10060238-007B; H10060238-008A; H10060238-008B; H10060238-009A; H10060238-009B**

Run ID :Run Order: **IC101-H_100618A: 29** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV061810-28** Method: **E300.0**

Analysis Date: **06/18/10 22:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		95	90	110				
Sulfate	48	1.0	50		96	90	110				

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-002B; H10060238-003A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63153

Date: *10-Jan-11*

Run ID :Run Order: **IC101-H_100618A: 36** SampType: **Sample Matrix Spike** Sample ID: **H10060236-008BMS** Method: **E300.0**

Analysis Date: **06/19/10 00:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	26	1.0	25	0.402	101	90	110				
Sulfate	54	1.0	50	3.319	102	90	110				

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-002B; H10060238-003A; H10060238-003B; H10060238-004A; H10060238-004B; H10060238-005A; H10060238-005B; H10060238-006A; H10060238-006B; H10060238-007A; H10060238-007B; H10060238-008A; H10060238-008B; H10060238-009A; H10060238-009B**

Run ID :Run Order: **IC101-H_100618A: 37** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060236-008BMSD** Method: **E300.0**

Analysis Date: **06/19/10 00:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	26	1.0	25	0.402	102	90	110	25.78	0.4	20	
Sulfate	55	1.0	50	3.319	103	90	110	54.27	1.1	20	

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-002B; H10060238-003A; H10060238-003B; H10060238-004A; H10060238-004B; H10060238-005A; H10060238-005B; H10060238-006A; H10060238-006B; H10060238-007A; H10060238-007B; H10060238-008A; H10060238-008B; H10060238-009A; H10060238-009B**

Run ID :Run Order: **IC101-H_100618A: 43** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV061810-40** Method: **E300.0**

Analysis Date: **06/19/10 02:31** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		95	90	110				
Sulfate	48	1.0	50		96	90	110				

Associated samples: **H10060238-003B; H10060238-004A; H10060238-004B; H10060238-005A; H10060238-005B; H10060238-006A; H10060238-006B; H10060238-007A; H10060238-007B; H10060238-008A**

Run ID :Run Order: **IC101-H_100618A: 51** SampType: **Sample Matrix Spike** Sample ID: **H10060238-006AMS** Method: **E300.0**

Analysis Date: **06/19/10 04:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	26	1.0	25	0.869	99	90	110				
Sulfate	120	1.0	50	82.76	82	90	110				S

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-002B; H10060238-003A; H10060238-003B; H10060238-004A; H10060238-004B; H10060238-005A; H10060238-005B; H10060238-006A; H10060238-006B; H10060238-007A; H10060238-007B; H10060238-008A; H10060238-008B; H10060238-009A; H10060238-009B**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63153

Date: *10-Jan-11*

Run ID :Run Order: **IC101-H_100618A: 52** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060238-006AMSD** Method: **E300.0**

Analysis Date: **06/19/10 04:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	26	1.0	25	0.869	99	90	110	25.68	0.2	20	
Sulfate	120	1.0	50	82.76	82	90	110	124	0.1	20	S

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-002B; H10060238-003A; H10060238-003B; H10060238-004A; H10060238-004B; H10060238-005A; H10060238-005B; H10060238-006A; H10060238-006B; H10060238-007A; H10060238-007B; H10060238-008A; H10060238-008B; H10060238-009A; H10060238-009B**

Run ID :Run Order: **IC101-H_100618A: 57** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV061810-52** Method: **E300.0**

Analysis Date: **06/19/10 06:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	24	1.0	25		96	90	110				
Sulfate	48	1.0	50		97	90	110				

Associated samples: **H10060238-008B; H10060238-009A; H10060238-009B**

Run ID :Run Order: **IC101-H_100618A: 62** SampType: **Sample Matrix Spike** Sample ID: **H10060238-009BMS** Method: **E300.0**

Analysis Date: **06/19/10 07:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		101	90	110				
Sulfate	51	1.0	50	0.404	102	90	110				

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-002B; H10060238-003A; H10060238-003B; H10060238-004A; H10060238-004B; H10060238-005A; H10060238-005B; H10060238-006A; H10060238-006B; H10060238-007A; H10060238-007B; H10060238-008A; H10060238-008B; H10060238-009A; H10060238-009B**

Run ID :Run Order: **IC101-H_100618A: 63** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060238-009BMSD** Method: **E300.0**

Analysis Date: **06/19/10 08:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		101	90	110	25.2	0.1	20	
Sulfate	51	1.0	50	0.404	101	90	110	51.39	0.8	20	

Associated samples: **H10060238-001A; H10060238-001B; H10060238-002A; H10060238-002B; H10060238-003A; H10060238-003B; H10060238-004A; H10060238-004B; H10060238-005A; H10060238-005B; H10060238-006A; H10060238-006B; H10060238-007A; H10060238-007B; H10060238-008A; H10060238-008B; H10060238-009A; H10060238-009B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63230

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100622B: 8** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**

Analysis Date: **06/22/10 20:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.252	0.10	0.25		101	90	110				
Arsenic	0.0494	0.0050	0.05		99	90	110				
Cadmium	0.0261	0.0010	0.025		104	90	110				
Copper	0.0511	0.010	0.05		102	90	110				
Iron	0.263	0.030	0.255		103	90	110				
Lead	0.0505	0.010	0.05		101	90	110				
Manganese	0.252	0.010	0.25		101	90	110				
Zinc	0.0502	0.010	0.05		100	90	110				

Associated samples: **H10060238-001C; H10060238-001D; H10060238-002C; H10060238-002D; H10060238-003C; H10060238-003D; H10060238-004C; H10060238-004D; H10060238-005C; H10060238-005D; H10060238-006C; H10060238-006D; H10060238-007C; H10060238-007D; H10060238-008C; H10060238-008D; H10060238-009C; H10060238-009D**

Run ID :Run Order: **ICPMS204-B_100622B: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **06/22/10 20:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	37.0	0.10	40		93	70	130				
Arsenic	0.000101	0.0050									
Cadmium	0.000295	0.0010									
Copper	0.00132	0.010									
Iron	94.3	0.030	100		94	70	130				
Lead	6.20E-05	0.010									
Manganese	0.00216	0.010									
Zinc	0.000985	0.010									

Associated samples: **H10060238-001C; H10060238-001D; H10060238-002C; H10060238-002D; H10060238-003C; H10060238-003D; H10060238-004C; H10060238-004D; H10060238-005C; H10060238-005D; H10060238-006C; H10060238-006D; H10060238-007C; H10060238-007D; H10060238-008C; H10060238-008D; H10060238-009C; H10060238-009D**

Run ID :Run Order: **ICPMS204-B_100622B: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **06/22/10 20:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	36.9	0.10	40		92	70	130				
Arsenic	0.00984	0.0050	0.01		98	70	130				
Cadmium	0.00982	0.0010	0.01		98	70	130				
Copper	0.0206	0.010	0.02		103	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63230

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100622B: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **06/22/10 20:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	94.3	0.030	100		94	70	130				
Lead	6.20E-05	0.010				0	0				
Manganese	0.0216	0.010	0.02		108	70	130				
Zinc	0.0105	0.010	0.01		105	70	130				

Associated samples: **H10060238-001C; H10060238-001D; H10060238-002C; H10060238-002D; H10060238-003C; H10060238-003D; H10060238-004C; H10060238-004D; H10060238-005C; H10060238-005D; H10060238-006C; H10060238-006D; H10060238-007C; H10060238-007D; H10060238-008C; H10060238-008D; H10060238-009C; H10060238-009D**

Run ID :Run Order: **ICPMS204-B_100622B: 16** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**

Analysis Date: **06/22/10 20:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.0002									
Arsenic	ND	3E-05									
Cadmium	ND	1E-05									
Copper	ND	3E-05									
Iron	0.0004	0.0002									
Lead	ND	1E-05									
Manganese	5E-05	2E-05									
Zinc	0.001	0.0006									

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-005D; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-008D; H10060238-009C; H10060238-009D**

Run ID :Run Order: **ICPMS204-B_100622B: 17** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**

Analysis Date: **06/22/10 21:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0487	0.10	0.05		97	85	115				
Arsenic	0.0488	0.0050	0.05		98	85	115				
Cadmium	0.0497	0.0010	0.05		99	85	115				
Copper	0.0482	0.010	0.05		96	85	115				
Iron	4.93	0.030	5	0.0004207	99	85	115				
Lead	0.0498	0.010	0.05		100	85	115				
Manganese	0.0498	0.010	0.05	0.0000474	99	85	115				
Zinc	0.0504	0.010	0.05	0.001053	99	85	115				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63230

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100622B: 17** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**

Analysis Date: **06/22/10 21:01** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-005D; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-008D; H10060238-009C; H10060238-009D**

Run ID :Run Order: **ICPMS204-B_100622B: 96** SampType: **Sample Matrix Spike** Sample ID: **H10060236-008CMS** Method: **E200.8**

Analysis Date: **06/23/10 05:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0704	0.10	0.05	0.02111	99	70	130				
Arsenic	0.0496	0.0050	0.05	0.0002904	99	70	130				
Cadmium	0.0501	0.0010	0.05		100	70	130				
Copper	0.0504	0.010	0.05	0.001349	98	70	130				
Iron	4.94	0.030	5	0.04556	98	70	130				
Lead	0.0514	0.010	0.05	0.0003699	102	70	130				
Manganese	0.0541	0.010	0.05	0.005204	98	70	130				
Zinc	0.0669	0.010	0.05	0.0183	97	70	130				

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-005D; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-008D; H10060238-009C; H10060238-009D**

Run ID :Run Order: **ICPMS204-B_100622B: 97** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060236-008CMSD** Method: **E200.8**

Analysis Date: **06/23/10 06:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0692	0.10	0.05	0.02111	96	70	130	0.07041		20	
Arsenic	0.0494	0.0050	0.05	0.0002904	98	70	130	0.04957	0.2	20	
Cadmium	0.0493	0.0010	0.05		99	70	130	0.05013	1.8	20	
Copper	0.0502	0.010	0.05	0.001349	98	70	130	0.05035	0.3	20	
Iron	4.97	0.030	5	0.04556	99	70	130	4.941	0.6	20	
Lead	0.0503	0.010	0.05	0.0003699	100	70	130	0.0514	2.1	20	
Manganese	0.0550	0.010	0.05	0.005204	100	70	130	0.05414	1.5	20	
Zinc	0.0654	0.010	0.05	0.0183	94	70	130	0.06692	2.3	20	

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-005D; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-008D; H10060238-009C; H10060238-009D**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63230

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100622B: 135** SampType: **Sample Matrix Spike** Sample ID: **H10060238-009CMS** Method: **E200.8**

Analysis Date: **06/23/10 10:15** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0507	0.10	0.05		101	70	130				
Arsenic	0.0495	0.0050	0.05		99	70	130				
Cadmium	0.0492	0.0010	0.05		98	70	130				
Copper	0.0492	0.010	0.05		98	70	130				
Iron	4.77	0.030	5		95	70	130				
Lead	0.0503	0.010	0.05		101	70	130				
Manganese	0.0489	0.010	0.05	0.000096	98	70	130				
Zinc	0.0509	0.010	0.05	0.002199	97	70	130				

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-005D; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-008D; H10060238-009C; H10060238-009D**

Run ID :Run Order: **ICPMS204-B_100622B: 136** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060238-009CMSD** Method: **E200.8**

Analysis Date: **06/23/10 10:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0500	0.10	0.05		100	70	130	0.05072		20	
Arsenic	0.0483	0.0050	0.05		97	70	130	0.04948	2.4	20	
Cadmium	0.0494	0.0010	0.05		99	70	130	0.04922	0.4	20	
Copper	0.0478	0.010	0.05		96	70	130	0.04919	2.9	20	
Iron	4.88	0.030	5		98	70	130	4.767	2.4	20	
Lead	0.0501	0.010	0.05		100	70	130	0.05033	0.4	20	
Manganese	0.0497	0.010	0.05	0.000096	99	70	130	0.04893	1.6	20	
Zinc	0.0497	0.010	0.05	0.002199	95	70	130	0.05094	2.5	20	

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-005D; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-008D; H10060238-009C; H10060238-009D**

Run ID :Run Order: **ICPMS204-B_100622B: 139** SampType: **Sample Matrix Spike** Sample ID: **H10060238-009DMS** Method: **E200.8**

Analysis Date: **06/23/10 10:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0510	0.10	0.05	0.001789	99	70	130				
Arsenic	0.0494	0.0050	0.05		99	70	130				
Cadmium	0.0505	0.0010	0.05		101	70	130				
Copper	0.0484	0.010	0.05		97	70	130				
Iron	4.90	0.030	5	0.001664	98	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63230

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100622B: 139** SampType: **Sample Matrix Spike** Sample ID: **H10060238-009DMS** Method: **E200.8**

Analysis Date: **06/23/10 10:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.0508	0.010	0.05		102	70	130				
Manganese	0.0494	0.010	0.05	0.0001077	99	70	130				
Zinc	0.0515	0.010	0.05	0.001914	99	70	130				

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-005D; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-008D; H10060238-009C; H10060238-009D**

Run ID :Run Order: **ICPMS204-B_100622B: 140** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060238-009DMSD** Method: **E200.8**

Analysis Date: **06/23/10 10:48** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0506	0.10	0.05	0.001789	98	70	130	0.05105		20	
Arsenic	0.0491	0.0050	0.05		98	70	130	0.04936	0.5	20	
Cadmium	0.0499	0.0010	0.05		100	70	130	0.05046	1.0	20	
Copper	0.0486	0.010	0.05		97	70	130	0.04835	0.6	20	
Iron	4.78	0.030	5	0.001664	96	70	130	4.902	2.4	20	
Lead	0.0512	0.010	0.05		102	70	130	0.05082	0.7	20	
Manganese	0.0503	0.010	0.05	0.0001077	100	70	130	0.04945	1.6	20	
Zinc	0.0512	0.010	0.05	0.001914	99	70	130	0.05149	0.6	20	

Associated samples: **H10060238-001C; H10060238-002C; H10060238-003C; H10060238-004C; H10060238-005C; H10060238-005D; H10060238-006C; H10060238-007C; H10060238-008C; H10060238-008D; H10060238-009C; H10060238-009D**

Run ID :Run Order: **ICPMS204-B_100622B: 147** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **06/23/10 11:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	36.9	0.10	40		92	70	130				
Arsenic	3.00E-06	0.0050									
Cadmium	0.000321	0.0010									
Copper	0.00114	0.010									
Iron	94.8	0.030	100		95	70	130				
Lead	6.50E-05	0.010									
Manganese	0.00214	0.010									
Zinc	0.000982	0.010									

Associated samples: **H10060238-001C; H10060238-001D; H10060238-002C; H10060238-002D; H10060238-003C; H10060238-003D; H10060238-004C; H10060238-004D; H10060238-005C; H10060238-005D; H10060238-006C; H10060238-006D; H10060238-007C; H10060238-007D; H10060238-008C; H10060238-008D; H10060238-009C; H10060238-009D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63230

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100622B: 148** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **06/23/10 11:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	36.8	0.10	40		92	70	130				
Arsenic	0.00991	0.0050	0.01		99	70	130				
Cadmium	0.00987	0.0010	0.01		99	70	130				
Copper	0.0205	0.010	0.02		103	70	130				
Iron	95.8	0.030	100		96	70	130				
Lead	6.60E-05	0.010				0	0				
Manganese	0.0216	0.010	0.02		108	70	130				
Zinc	0.0104	0.010	0.01		104	70	130				

Associated samples: **H10060238-001C; H10060238-001D; H10060238-002C; H10060238-002D; H10060238-003C; H10060238-003D; H10060238-004C; H10060238-004D; H10060238-005C; H10060238-005D; H10060238-006C; H10060238-006D; H10060238-007C; H10060238-007D; H10060238-008C; H10060238-008D; H10060238-009C; H10060238-009D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63240

Date: *10-Jan-11*

Run ID :Run Order: **MAN-TECH_100623A: 3** SampType: **Method Blank** Sample ID: **MBLK** Method: **A2320 B**
Analysis Date: **06/23/10 15:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	0.3									

Associated samples: **H10060238-002B; H10060238-003B; H10060238-004B; H10060238-005B; H10060238-006B; H10060238-007B; H10060238-008B; H10060238-009B**

Run ID :Run Order: **MAN-TECH_100623A: 6** SampType: **Laboratory Control Sample** Sample ID: **LCS-62210** Method: **A2320 B**
Analysis Date: **06/23/10 15:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	620	4.0	600		104	90	110				

Associated samples: **H10060238-002B; H10060238-003B; H10060238-004B; H10060238-005B; H10060238-006B; H10060238-007B; H10060238-008B; H10060238-009B**

Run ID :Run Order: **MAN-TECH_100623A: 65** SampType: **Laboratory Control Sample** Sample ID: **LCS-62210** Method: **A2320 B**
Analysis Date: **06/23/10 18:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	620	4.0	600		103	90	110				

Associated samples: **H10060238-002B; H10060238-003B; H10060238-004B; H10060238-005B; H10060238-006B; H10060238-007B; H10060238-008B; H10060238-009B**

Run ID :Run Order: **MAN-TECH_100623A: 144** SampType: **Laboratory Control Sample** Sample ID: **LCS-62210** Method: **A2320 B**
Analysis Date: **06/23/10 21:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	620	4.0	600		103	90	110				

Associated samples: **H10060238-002B; H10060238-003B; H10060238-004B; H10060238-005B; H10060238-006B; H10060238-007B; H10060238-008B; H10060238-009B**

Run ID :Run Order: **MAN-TECH_100623A: 149** SampType: **Sample Duplicate** Sample ID: **H10060339-009ADUP** Method: **A2320 B**
Analysis Date: **06/23/10 22:06** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	ND	4.0								20	
Bicarbonate as HCO3	ND	4.0								20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10060238-002B; H10060238-003B; H10060238-004B; H10060238-005B; H10060238-006B; H10060238-007B; H10060238-008B; H10060238-009B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63240

Date: *10-Jan-11*

Run ID :Run Order: **MAN-TECH_100623A: 184** SampType: **Sample Duplicate** Sample ID: **H10060319-001ADUP** Method: **A2320 B**
Analysis Date: **06/23/10 23:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	77	4.0						79.05	3.2	20	
Bicarbonate as HCO3	93	4.0						96.44	3.2	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10060238-002B; H10060238-003B; H10060238-004B; H10060238-005B; H10060238-006B; H10060238-007B; H10060238-008B; H10060238-009B**

Run ID :Run Order: **MAN-TECH_100623A: 210** SampType: **Laboratory Control Sample** Sample ID: **LCS-62210** Method: **A2320 B**
Analysis Date: **06/24/10 01:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	620	4.0	600		104	90	110				

Associated samples: **H10060238-002B; H10060238-003B; H10060238-004B; H10060238-005B; H10060238-006B; H10060238-007B; H10060238-008B; H10060238-009B**

Run ID :Run Order: **MAN-TECH_100623A: 218** SampType: **Sample Matrix Spike** Sample ID: **H10060303-010AMS** Method: **A2320 B**
Analysis Date: **06/24/10 01:29** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	630	4.0	600	76.5	91	90	110				

Associated samples: **H10060238-002B; H10060238-003B; H10060238-004B; H10060238-005B; H10060238-006B; H10060238-007B; H10060238-008B; H10060238-009B**

Run ID :Run Order: **MAN-TECH_100623A: 222** SampType: **Sample Duplicate** Sample ID: **H10060303-011ADUP** Method: **A2320 B**
Analysis Date: **06/24/10 01:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	29	4.0						28.81	0.2	20	
Bicarbonate as HCO3	35	4.0						35.15	0.2	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10060238-002B; H10060238-003B; H10060238-004B; H10060238-005B; H10060238-006B; H10060238-007B; H10060238-008B; H10060238-009B**

Run ID :Run Order: **MAN-TECH_100623A: 251** SampType: **Laboratory Control Sample** Sample ID: **LCS** Method: **A2320 B**
Analysis Date: **06/24/10 03:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	630	4.0	600		104	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63240

Date: *10-Jan-11*

Run ID :Run Order: **MAN-TECH_100623A: 251** SampType: **Laboratory Control Sample** Sample ID: **LCS** Method: **A2320 B**

Analysis Date: **06/24/10 03:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10060238-002B; H10060238-003B; H10060238-004B; H10060238-005B; H10060238-006B; H10060238-007B; H10060238-008B; H10060238-009B**

Run ID :Run Order: **MAN-TECH_100623A: 255** SampType: **Sample Duplicate** Sample ID: **H10060294-001ADUP** Method: **A2320 B**

Analysis Date: **06/24/10 03:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	110	4.0						114.1	1.2	20	
Bicarbonate as HCO3	140	4.0						139.2	1.2	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10060238-002B; H10060238-003B; H10060238-004B; H10060238-005B; H10060238-006B; H10060238-007B; H10060238-008B; H10060238-009B**

Run ID :Run Order: **MAN-TECH_100623A: 267** SampType: **Sample Matrix Spike** Sample ID: **H10060303-002AMS** Method: **A2320 B**

Analysis Date: **06/24/10 04:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	610	4.0	600	153.4	77	90	110				S

Associated samples: **H10060238-002B; H10060238-003B; H10060238-004B; H10060238-005B; H10060238-006B; H10060238-007B; H10060238-008B; H10060238-009B**

Run ID :Run Order: **MAN-TECH_100623A: 337** SampType: **Laboratory Control Sample** Sample ID: **LCS-62210** Method: **A2320 B**

Analysis Date: **06/24/10 08:59** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	620	4.0	600		104	90	110				

Associated samples: **H10060238-002B; H10060238-003B; H10060238-004B; H10060238-005B; H10060238-006B; H10060238-007B; H10060238-008B; H10060238-009B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63240

Date: *10-Jan-11*

Run ID :Run Order: **MAN-TECH_100623A: 1** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV-1557** Method: **A2510 B**

Analysis Date: **06/23/10 15:37** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1010	1.0	1000		101	90	110				

Associated samples: **H10060238-002B; H10060238-003B; H10060238-004B; H10060238-005B; H10060238-006B; H10060238-007B; H10060238-008B; H10060238-009B**

Run ID :Run Order: **MAN-TECH_100623A: 59** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-61710** Method: **A2510 B**

Analysis Date: **06/23/10 18:32** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	719	1.0	718		100	90	110				

Associated samples:

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63240

Date: *10-Jan-11*

Run ID :Run Order: **MAN-TECH_100623A: 2** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV-1483** Method: **A4500-H B**

Analysis Date: **06/23/10 15:40** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.99	0.10	7		100	99	101				

Associated samples: **H10060238-002B; H10060238-003B; H10060238-004B; H10060238-005B; H10060238-006B; H10060238-007B; H10060238-008B; H10060238-009B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63258

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100623A: 8** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **06/23/10 15:03** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.256	0.10	0.25		102	90	110				
Manganese	0.251	0.010	0.25		100	90	110				

Associated samples: **H10060238-002D; H10060238-006D; H10060238-007D**

Run ID :Run Order: **ICPMS204-B_100623A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**
Analysis Date: **06/23/10 15:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.4	0.10	40		98	70	130				
Manganese	0.00211	0.010									

Associated samples: **H10060238-002D; H10060238-006D; H10060238-007D**

Run ID :Run Order: **ICPMS204-B_100623A: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**
Analysis Date: **06/23/10 15:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	39.0	0.10	40		98	70	130				
Manganese	0.0220	0.010	0.02		110	70	130				

Associated samples: **H10060238-002D; H10060238-006D; H10060238-007D**

Run ID :Run Order: **ICPMS204-B_100623A: 151** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**
Analysis Date: **06/24/10 07:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	38.2	0.10	40		96	70	130				
Manganese	0.00228	0.010									

Associated samples: **H10060238-002D; H10060238-006D; H10060238-007D**

Run ID :Run Order: **ICPMS204-B_100623A: 152** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**
Analysis Date: **06/24/10 07:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	38.6	0.10	40		96	70	130				
Manganese	0.0221	0.010	0.02		110	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63258

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100623A: 152** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **06/24/10 07:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10060238-002D; H10060238-006D; H10060238-007D**

Run ID :Run Order: **ICPMS204-B_100623A: 200** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**

Analysis Date: **06/24/10 12:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.261	0.10	0.25		104	90	110				
Manganese	0.257	0.010	0.25		103	90	110				

Associated samples: **H10060238-002D; H10060238-006D; H10060238-007D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63268

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100624A: 7** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **06/24/10 18:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0517	0.010	0.05		103	90	110				

Associated samples: **H10060238-001D**

Run ID :Run Order: **ICPMS204-B_100624A: 8** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**
Analysis Date: **06/24/10 18:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.00140	0.010									

Associated samples: **H10060238-001D**

Run ID :Run Order: **ICPMS204-B_100624A: 9** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**
Analysis Date: **06/24/10 18:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0211	0.010	0.02		106	70	130				

Associated samples: **H10060238-001D**

Run ID :Run Order: **ICPMS204-B_100624A: 92** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **06/25/10 04:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0513	0.010	0.05		103	90	110				

Associated samples: **H10060238-001D**

Run ID :Run Order: **ICPMS204-B_100624A: 93** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**
Analysis Date: **06/25/10 04:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.00134	0.010									

Associated samples: **H10060238-001D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63268

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100624A: 94** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **06/25/10 04:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0208	0.010	0.02		104	70	130				

Associated samples: **H10060238-001D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63307

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100626A: 8** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **06/26/10 10:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.249	0.010	0.25		100	90	110				

Associated samples: **H10060238-008C**

Run ID :Run Order: **ICPMS204-B_100626A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**
Analysis Date: **06/26/10 11:02** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.00221	0.010									

Associated samples: **H10060238-008C**

Run ID :Run Order: **ICPMS204-B_100626A: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**
Analysis Date: **06/26/10 11:07** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.0221	0.010	0.02		110	70	130				

Associated samples: **H10060238-008C**

Run ID :Run Order: **ICPMS204-B_100626A: 16** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**
Analysis Date: **06/26/10 11:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	2E-05									

Associated samples: **H10060238-008C**

Run ID :Run Order: **ICPMS204-B_100626A: 17** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**
Analysis Date: **06/26/10 11:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.0497	0.010	0.05		99	85	115				

Associated samples: **H10060238-008C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63307

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100626A: 35** SampType: **Sample Matrix Spike** Sample ID: **H10060301-002AMS** Method: **E200.8**
Analysis Date: **06/26/10 13:16** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.0552	0.010	0.05	0.006796	97	70	130				

Associated samples: **H10060238-008C**

Run ID :Run Order: **ICPMS204-B_100626A: 36** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10060301-002AMSD** Method: **E200.8**
Analysis Date: **06/26/10 13:21** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.0547	0.010	0.05	0.006796	96	70	130	0.05515	0.8	20	

Associated samples: **H10060238-008C**

Run ID :Run Order: **ICPMS204-B_100626A: 107** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **06/26/10 19:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.245	0.010	0.25		98	90	110				

Associated samples: **H10060238-008C**

Run ID :Run Order: **ICPMS204-B_100626A: 108** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**
Analysis Date: **06/26/10 19:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.00219	0.010									

Associated samples: **H10060238-008C**

Run ID :Run Order: **ICPMS204-B_100626A: 109** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**
Analysis Date: **06/26/10 19:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.0222	0.010	0.02		111	70	130				

Associated samples: **H10060238-008C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ
Work Order: H10060238
Project: UBMC To 20 10013

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R63307

Date: *10-Jan-11*

Run ID :Run Order: **ICPMS204-B_100626A: 217** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**

Analysis Date: **06/27/10 04:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.250	0.010	0.25		100	90	110				

Associated samples: **H10060238-008C**

Run ID :Run Order: **ICPMS204-B_100626A: 218** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **06/27/10 05:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.00214	0.010									

Associated samples: **H10060238-008C**

Run ID :Run Order: **ICPMS204-B_100626A: 219** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **06/27/10 05:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.0223	0.010	0.02		112	70	130				

Associated samples: **H10060238-008C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Workorder Receipt Checklist

MT DEQ

H10060238

Login completed by: Wanda Johnson

Date Received: 6/15/2010

Reviewed by: Elizabeth Ulrich

Received by: rlt

Reviewed Date: 6/25/2010

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature:	1.6°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☑	Not Applicable ☐

Contact and Corrective Action Comments:

No date on sample containers. Sample 009 filtered & TR added 2mls of Nitric Acid to samples. Wj

Terra Graphics
ENVIRONMENTAL ENGINEERING
302 N. Last Chance Gulch, Suite 409
Helena, MT 59601
(406) 441-5441 Fax (406) 541-5443

CHAIN OF CUSTODY RECORD

Data to: TerraGraphics
Invoice to: MDEQ

Project Name: UBMC TO 20
Project Code : 10013

TO: Energy Labs

Normal T.A.T.

REMARKS
Perform Matrix Spike and Lab Duplicate on last sample per batch

Lab ID	Sample Date	SAMPLE DESCRIPTION: Well Water	Soil	Dust	Other	Analysis- see SAP: Total Metals	Dissolved Metals	Dissolved Anions	Dissolved Cations	Physiochemical	Remarks
UBM-TDMW3D-20100610	6/10/2010	X				X	X	X	X	X	H10060238
UBM-TDMW2S-555-20100610	6/10/2010	X				X	X	X	X	X	
UBM-TDMW4D-20100610	6/10/2010	X				X	X	X	X	X	
UBM-TDMW2D-20100610	6/10/2010	X				X	X	X	X	X	
UBM-TDMW3D-333-20100610	6/10/2010	X				X	X	X	X	X	
UBM-TDMW5-20100610	6/10/2010	X				X	X	X	X	X	
UBM-TDMW2S-20100610	6/10/2010	X				X	X	X	X	X	
UBM-TDMW01-20100610	6/10/2010	X				X	X	X	X	X	
UBM-TDMW3D-444-20100610	6/10/2010	X				X	X	X	X	X	

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Relinquished By: (Signature)	Date/Time	Received By: (Signature)
[signature]	6/11/10 8:45			6-15-10 9:40	[signature]
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time	Remarks: 1.6 on ice, cooler, [illegible]	
[signature]					

ANALYTICAL SUMMARY REPORT

January 12, 2011

MT DEQ-Site Response
PO Box 200901
Helena, MT 59620-0901

Workorder No.: H10120314 Quote ID: H499 - Section 35 and UBMC

Project Name: TO20 - UBMC Monitoring

Energy Laboratories Inc Helena MT received the following 18 samples for MT DEQ-Site Response on 12/23/2010 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H10120314-001	UBM-BRSW01-20101215	12/15/10 13:00	12/23/10	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Metals Digestion by EPA 200.2 Preparation for TDS Preparation for TSS Solids, Total Dissolved Solids, Total Suspended
H10120314-002	UBM-BRSW01-555-20101215	12/15/10 13:15	12/23/10	Surface Water	Same As Above
H10120314-003	UBM-BRSW23-20101216	12/16/10 13:46	12/23/10	Surface Water	Same As Above
H10120314-004	UBM-BRSW48-20101216	12/16/10 13:00	12/23/10	Surface Water	Same As Above
H10120314-005	UBM-BRSW3A-20101215	12/15/10 14:20	12/23/10	Surface Water	Same As Above
H10120314-006	UBM-BRSW3B-20101215	12/15/10 14:00	12/23/10	Surface Water	Same As Above
H10120314-007	UBM-BRSW38-20101216	12/16/10 15:45	12/23/10	Surface Water	Same As Above
H10120314-008	UBM-BRSW29-20101216	12/16/10 15:00	12/23/10	Surface Water	Same As Above
H10120314-009	UBM-BRSW29-333-20101216	12/16/10 15:10	12/23/10	Surface Water	Metals by ICP/ICPMS, Tot. Rec. Metals Digestion by EPA 200.2
H10120314-010	UBM-BRSW29-444-20101216	12/16/10 15:15	12/23/10	Surface Water	Same As Above
H10120314-011	UBM-TDMW4D-20101220	12/20/10 12:00	12/23/10	Groundwater	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Total Alkalinity Conductivity Hardness as CaCO3 Anions by Ion Chromatography pH Metals Digestion by EPA 200.2
H10120314-012	UBM-TDMW2S-20101221	12/21/10 12:15	12/23/10	Groundwater	Same As Above
H10120314-013	UBM-TDMW01-555-20101221	12/21/10 11:00	12/23/10	Groundwater	Same As Above
H10120314-014	UBM-TDMW2D-20101221	12/21/10 11:45	12/23/10	Groundwater	Same As Above
H10120314-015	UBM-TDMW01-20101221	12/21/10 11:00	12/23/10	Groundwater	Same As Above
H10120314-016	UBM-TDMW3D-20101220	12/21/10 13:00	12/23/10	Groundwater	Same As Above

ANALYTICAL SUMMARY REPORT

H10120314-017	UBM-TDMW01-333-20101221	12/21/10 11:05 12/23/10	Groundwater	Metals by ICP/ICPMS, Total Metals Digestion by EPA 200.2
H10120314-018	UBM-TDMW01-444-20101221	12/21/10 11:05 12/23/10	Groundwater	Same As Above

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

CLIENT: MT DEQ-Site Response
Project: TO20 - UBMC Monitoring
Sample Delivery Group: H10120314

Report Date: 01/12/11

CASE NARRATIVE

Prep Comments for Sample H10120314-001B, Test PRP-TDS-W: The prep hold time was exceeded by 5.01 days.
Prep Comments for Sample H10120314-002B, Test PRP-TDS-W: The prep hold time was exceeded by 5.00 days.
Prep Comments for Sample H10120314-003B, Test PRP-TDS-W: The prep hold time was exceeded by 3.98 days.
Prep Comments for Sample H10120314-004B, Test PRP-TDS-W: The prep hold time was exceeded by 4.01 days.
Prep Comments for Sample H10120314-005B, Test PRP-TDS-W: The prep hold time was exceeded by 4.96 days.
Prep Comments for Sample H10120314-006B, Test PRP-TDS-W: The prep hold time was exceeded by 4.97 days.
Prep Comments for Sample H10120314-007B, Test PRP-TDS-W: The prep hold time was exceeded by 3.90 days.
Prep Comments for Sample H10120314-008B, Test PRP-TDS-W: The prep hold time was exceeded by 3.93 days.
Prep Comments for Sample H10120314-001B, Test PRP-TSS-W: The prep hold time was exceeded by 5.01 days.
Prep Comments for Sample H10120314-002B, Test PRP-TSS-W: The prep hold time was exceeded by 5.00 days.
Prep Comments for Sample H10120314-003B, Test PRP-TSS-W: The prep hold time was exceeded by 3.98 days.
Prep Comments for Sample H10120314-004B, Test PRP-TSS-W: The prep hold time was exceeded by 4.01 days.
Prep Comments for Sample H10120314-005B, Test PRP-TSS-W: The prep hold time was exceeded by 4.96 days.
Prep Comments for Sample H10120314-006B, Test PRP-TSS-W: The prep hold time was exceeded by 4.97 days.
Prep Comments for Sample H10120314-007B, Test PRP-TSS-W: The prep hold time was exceeded by 3.90 days.
Prep Comments for Sample H10120314-008B, Test PRP-TSS-W: The prep hold time was exceeded by 3.93 days.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW01-20101215
Lab ID: H10120314-001
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/15/10 13:00 **DateReceived:** 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.2	s.u.		0.1		A4500-H B	12/27/10 14:05 / zeg		MAN-TECH_101227B	12	R68140
Conductivity	207	umhos/cm		1		A2510 B	12/28/10 09:51 / zeg		COND_101228A	801228A	COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	12/27/10 13:51 / glj	12/27/10 13:19	J-124 (14410200)_101227A	4	11043
Solids, Total Dissolved TDS @ 180 C	104	mg/L	H	10		A2540 C	12/27/10 13:58 / glj	12/27/10 13:18	J-124 (14410200)_101227B	6	11042
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/27/10 15:58 / zeg		MAN-TECH_101227B	43	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 15:58 / zeg		MAN-TECH_101227B	43	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 23:46 / zeg		IC101-H_101230A	25	R68259
Sulfate	5	mg/L		1		E300.0	12/30/10 23:46 / zeg		IC101-H_101230A	25	R68259
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	12/27/10 14:05 / zeg		MAN-TECH_101227B	11	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 12:51 / zeg		IC101-H_101229A	20	R68286
Sulfate	5	mg/L		1		E300.0	12/30/10 12:51 / zeg		IC101-H_101229A	20	R68286
Hardness as CaCO3	96	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	1	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Calcium	20	mg/L		1		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Magnesium	11	mg/L		1		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Sodium	1	mg/L		1		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216
Zinc	0.04	mg/L		0.01		E200.8	12/29/10 16:31 / dck		ICPMS204-B_101229A	44	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW01-20101215
Lab ID: H10120314-001
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/15/10 13:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 16:48 / dck		ICPMS204-B_101229A	48	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 16:48 / dck		ICPMS204-B_101229A	48	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 16:48 / dck		ICPMS204-B_101229A	48	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 16:48 / dck		ICPMS204-B_101229A	48	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 16:48 / dck		ICPMS204-B_101229A	48	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 16:48 / dck		ICPMS204-B_101229A	48	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 16:48 / dck		ICPMS204-B_101229A	48	R68216
Zinc	ND	mg/L		0.01		E200.8	12/29/10 16:48 / dck		ICPMS204-B_101229A	48	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW01-555-20101215
Lab ID: H10120314-002
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/15/10 13:15
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.2	s.u.		0.1		A4500-H B	12/27/10 14:13 / zeg		MAN-TECH_101227B	14	R68140
Conductivity	207	umhos/cm		1		A2510 B	12/28/10 09:52 / zeg		COND_101228A	901228A	COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	12/27/10 13:51 / glj	12/27/10 13:19	J-124 (14410200)_101227A	5	11043
Solids, Total Dissolved TDS @ 180 C	104	mg/L	H	10		A2540 C	12/27/10 13:58 / glj	12/27/10 13:18	J-124 (14410200)_101227B	7	11042
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/27/10 16:12 / zeg		MAN-TECH_101227B	46	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 16:12 / zeg		MAN-TECH_101227B	46	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 13:01 / zeg		IC101-H_101229A	21	R68286
Sulfate	4	mg/L		1		E300.0	12/30/10 13:01 / zeg		IC101-H_101229A	21	R68286
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	12/27/10 14:13 / zeg		MAN-TECH_101227B	13	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 13:30 / zeg		IC101-H_101229A	24	R68286
Sulfate	5	mg/L		1		E300.0	12/30/10 13:30 / zeg		IC101-H_101229A	24	R68286
Hardness as CaCO3	105	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	2	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Calcium	21	mg/L		1		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Magnesium	13	mg/L		1		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Sodium	1	mg/L		1		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216
Zinc	0.03	mg/L		0.01		E200.8	12/29/10 17:23 / dck		ICPMS204-B_101229A	56	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW01-555-20101215
Lab ID: H10120314-002
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/15/10 13:15 **DateReceived:** 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.06	mg/L		0.03		E200.8	12/29/10 17:37 / dck	12/27/10 09:48	ICPMS204-B_101229A	59	11038
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 17:37 / dck	12/27/10 09:48	ICPMS204-B_101229A	59	11038
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 17:37 / dck	12/27/10 09:48	ICPMS204-B_101229A	59	11038
Copper	0.001	mg/L		0.001		E200.8	01/10/11 14:59 / dck	01/04/11 10:53	ICPMS204-B_110110A	16	11108
Iron	0.09	mg/L		0.05		E200.8	12/29/10 17:37 / dck	12/27/10 09:48	ICPMS204-B_101229A	59	11038
Lead	0.0006	mg/L		0.0005		E200.8	12/29/10 17:37 / dck	12/27/10 09:48	ICPMS204-B_101229A	59	11038
Manganese	0.008	mg/L		0.005		E200.8	12/29/10 17:37 / dck	12/27/10 09:48	ICPMS204-B_101229A	59	11038
Zinc	0.01	mg/L		0.01		E200.8	12/29/10 17:37 / dck	12/27/10 09:48	ICPMS204-B_101229A	59	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW23-20101216
Lab ID: H10120314-003
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 13:46
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.1	s.u.		0.1		A4500-H B	12/27/10 14:20 / zeg		MAN-TECH_101227B	16	R68140
Conductivity	304	umhos/cm		1		A2510 B	12/28/10 09:55 / zeg		COND_101228A	1	1101228A-COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	12/27/10 13:51 / glj	12/27/10 13:19	J-124 (14410200)_101227A	6	11043
Solids, Total Dissolved TDS @ 180 C	176	mg/L	H	10		A2540 C	12/27/10 13:58 / glj	12/27/10 13:18	J-124 (14410200)_101227B	8	11042
DISSOLVED INORGANICS											
Bicarbonate as HCO3	120	mg/L		4		A2320 B	12/27/10 16:20 / zeg		MAN-TECH_101227B	47	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 16:20 / zeg		MAN-TECH_101227B	47	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 13:39 / zeg		IC101-H_101229A	25	R68286
Sulfate	56	mg/L		1		E300.0	12/30/10 13:39 / zeg		IC101-H_101229A	25	R68286
INORGANICS											
Alkalinity, Total as CaCO3	99	mg/L		4		A2320 B	12/27/10 14:20 / zeg		MAN-TECH_101227B	15	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 13:49 / zeg		IC101-H_101229A	26	R68286
Sulfate	56	mg/L		1		E300.0	12/30/10 13:49 / zeg		IC101-H_101229A	26	R68286
Hardness as CaCO3	146	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	3	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Cadmium	0.00233	mg/L		0.00008		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Calcium	29	mg/L		1		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Copper	0.005	mg/L		0.001		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Lead	0.0013	mg/L		0.0005		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Magnesium	18	mg/L		1		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Manganese	0.424	mg/L		0.005		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Sodium	1	mg/L		1		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216
Zinc	0.72	mg/L		0.01		E200.8	12/29/10 17:41 / dck		ICPMS204-B_101229A	60	R68216

Report Definitions:
RL - Analyte reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW23-20101216
Lab ID: H10120314-003
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 13:46
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.03	mg/L		0.03		E200.8	12/29/10 17:45 / dck		ICPMS204-B_101229A	61	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 17:45 / dck		ICPMS204-B_101229A	61	R68216
Cadmium	0.00240	mg/L		0.00008		E200.8	12/29/10 17:45 / dck		ICPMS204-B_101229A	61	R68216
Copper	0.006	mg/L		0.001		E200.8	12/29/10 17:45 / dck		ICPMS204-B_101229A	61	R68216
Iron	0.10	mg/L		0.05		E200.8	12/29/10 17:45 / dck		ICPMS204-B_101229A	61	R68216
Lead	0.0036	mg/L		0.0005		E200.8	12/29/10 17:45 / dck		ICPMS204-B_101229A	61	R68216
Manganese	0.408	mg/L		0.005		E200.8	12/29/10 17:45 / dck		ICPMS204-B_101229A	61	R68216
Zinc	0.71	mg/L		0.01		E200.8	12/29/10 17:45 / dck		ICPMS204-B_101229A	61	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW48-20101216
Lab ID: H10120314-004
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 13:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.0	s.u.		0.1		A4500-H B	12/27/10 14:34 / zeg		MAN-TECH_101227B	20	R68140
Conductivity	323	umhos/cm		1		A2510 B	12/28/10 09:56 / zeg		COND_101228A	1	1201228A-COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	12/27/10 13:52 / glj	12/27/10 13:19	J-124 (14410200)_101227A	7	11043
Solids, Total Dissolved TDS @ 180 C	194	mg/L	H	10		A2540 C	12/27/10 13:59 / glj	12/27/10 13:18	J-124 (14410200)_101227B	9	11042
DISSOLVED INORGANICS											
Bicarbonate as HCO3	110	mg/L		4		A2320 B	12/27/10 16:27 / zeg		MAN-TECH_101227B	48	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 16:27 / zeg		MAN-TECH_101227B	48	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 13:59 / zeg		IC101-H_101229A	27	R68286
Sulfate	68	mg/L		1		E300.0	12/30/10 13:59 / zeg		IC101-H_101229A	27	R68286
INORGANICS											
Alkalinity, Total as CaCO3	96	mg/L		4		A2320 B	12/27/10 14:34 / zeg		MAN-TECH_101227B	19	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 14:08 / zeg		IC101-H_101229A	28	R68286
Sulfate	68	mg/L		1		E300.0	12/30/10 14:08 / zeg		IC101-H_101229A	28	R68286
Hardness as CaCO3	151	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	4	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Cadmium	0.00342	mg/L		0.00008		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Calcium	30	mg/L		1		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Copper	0.006	mg/L		0.001		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Iron	0.40	mg/L		0.05		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Lead	0.0056	mg/L		0.0005		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Magnesium	18	mg/L		1		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Manganese	1.26	mg/L		0.005		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Sodium	1	mg/L		1		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216
Zinc	0.91	mg/L		0.01		E200.8	12/29/10 17:50 / dck		ICPMS204-B_101229A	62	R68216

Report Definitions:
RL - Analyte reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW48-20101216
Lab ID: H10120314-004
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 13:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.07	mg/L		0.03		E200.8	12/29/10 17:54 / dck		ICPMS204-B_101229A	63	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 17:54 / dck		ICPMS204-B_101229A	63	R68216
Cadmium	0.00383	mg/L		0.00008		E200.8	12/29/10 17:54 / dck		ICPMS204-B_101229A	63	R68216
Copper	0.017	mg/L		0.001		E200.8	12/29/10 17:54 / dck		ICPMS204-B_101229A	63	R68216
Iron	0.98	mg/L		0.05		E200.8	12/29/10 17:54 / dck		ICPMS204-B_101229A	63	R68216
Lead	0.0298	mg/L		0.0005		E200.8	12/29/10 17:54 / dck		ICPMS204-B_101229A	63	R68216
Manganese	1.28	mg/L		0.005		E200.8	12/29/10 17:54 / dck		ICPMS204-B_101229A	63	R68216
Zinc	0.98	mg/L		0.01		E200.8	12/29/10 17:54 / dck		ICPMS204-B_101229A	63	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW3A-20101215
Lab ID: H10120314-005
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/15/10 14:20
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.0	s.u.		0.1		A4500-H B	12/27/10 14:41 / zeg		MAN-TECH_101227B	22	R68140
Conductivity	312	umhos/cm		1		A2510 B	12/28/10 09:57 / zeg		COND_101228A	1	1301228A-COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	12/27/10 13:53 / glj	12/27/10 13:19	J-124 (14410200)_101227A	9	11043
Solids, Total Dissolved TDS @ 180 C	192	mg/L	H	10		A2540 C	12/27/10 14:00 / glj	12/27/10 13:18	-124 (14410200)_101227B	11	11042
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/27/10 16:34 / zeg		MAN-TECH_101227B	49	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 16:34 / zeg		MAN-TECH_101227B	49	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 14:18 / zeg		IC101-H_101229A	29	R68286
Sulfate	53	mg/L		1		E300.0	12/30/10 14:18 / zeg		IC101-H_101229A	29	R68286
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	12/27/10 14:41 / zeg		MAN-TECH_101227B	21	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 14:47 / zeg		IC101-H_101229A	32	R68286
Sulfate	53	mg/L		1		E300.0	12/30/10 14:47 / zeg		IC101-H_101229A	32	R68286
Hardness as CaCO3	152	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	5	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Cadmium	0.00064	mg/L		0.00008		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Calcium	29	mg/L		1		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Copper	0.002	mg/L		0.001		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Iron	0.09	mg/L		0.05		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Magnesium	19	mg/L		1		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Manganese	0.564	mg/L		0.005		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Sodium	1	mg/L		1		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216
Zinc	0.48	mg/L		0.01		E200.8	12/29/10 18:16 / dck		ICPMS204-B_101229A	68	R68216

Report Definitions:
RL - Analyte reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW3A-20101215
Lab ID: H10120314-005
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/15/10 14:20
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.21	mg/L		0.03		E200.8	12/29/10 18:20 / dck	12/27/10 09:48	ICPMS204-B_101229A	69	11038
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:20 / dck	12/27/10 09:48	ICPMS204-B_101229A	69	11038
Cadmium	0.00339	mg/L		0.00008		E200.8	12/29/10 18:20 / dck	12/27/10 09:48	ICPMS204-B_101229A	69	11038
Copper	0.040	mg/L		0.001		E200.8	12/29/10 18:20 / dck	12/27/10 09:48	ICPMS204-B_101229A	69	11038
Iron	1.31	mg/L		0.05		E200.8	12/29/10 18:20 / dck	12/27/10 09:48	ICPMS204-B_101229A	69	11038
Lead	0.0097	mg/L		0.0005		E200.8	12/29/10 18:20 / dck	12/27/10 09:48	ICPMS204-B_101229A	69	11038
Manganese	0.755	mg/L		0.005		E200.8	12/29/10 18:20 / dck	12/27/10 09:48	ICPMS204-B_101229A	69	11038
Zinc	0.62	mg/L		0.01		E200.8	12/29/10 18:20 / dck	12/27/10 09:48	ICPMS204-B_101229A	69	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW3B-20101215
Lab ID: H10120314-006
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/15/10 14:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.9	s.u.		0.1		A4500-H B	12/27/10 14:56 / zeg		MAN-TECH_101227B	26	R68140
Conductivity	304	umhos/cm		1		A2510 B	12/28/10 09:58 / zeg		COND_101228A	1401228A	COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	12/27/10 13:53 / glj	12/27/10 13:19	-124 (14410200)_101227A	10	11043
Solids, Total Dissolved TDS @ 180 C	176	mg/L	H	10		A2540 C	12/27/10 14:00 / glj	12/27/10 13:18	-124 (14410200)_101227B	12	11042
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/27/10 16:41 / zeg		MAN-TECH_101227B	50	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 16:41 / zeg		MAN-TECH_101227B	50	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 14:56 / zeg		IC101-H_101229A	33	R68286
Sulfate	48	mg/L		1		E300.0	12/30/10 14:56 / zeg		IC101-H_101229A	33	R68286
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	12/27/10 14:56 / zeg		MAN-TECH_101227B	25	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 15:06 / zeg		IC101-H_101229A	34	R68286
Sulfate	48	mg/L		1		E300.0	12/30/10 15:06 / zeg		IC101-H_101229A	34	R68286
Hardness as CaCO3	138	mg/L		1		A2340 B	12/29/10 18:25 / abb		CALC_110104A	410	R68293
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Cadmium	0.00091	mg/L		0.00008		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Calcium	28	mg/L		1		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Copper	0.003	mg/L		0.001		E200.8	01/03/11 22:51 / dck		ICPMS204-B_110103A	72	R68292
Iron	ND	mg/L		0.05		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Magnesium	17	mg/L		1		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Manganese	0.192	mg/L		0.005		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Sodium	1	mg/L		1		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216
Zinc	0.35	mg/L		0.01		E200.8	12/29/10 18:25 / dck		ICPMS204-B_101229A	70	R68216

Report Definitions:
RL - Analyte reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW3B-20101215
Lab ID: H10120314-006
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/15/10 14:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.09	mg/L		0.03		E200.8	12/29/10 18:29 / dck	12/27/10 09:48	ICPMS204-B_101229A	71	11038
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:29 / dck	12/27/10 09:48	ICPMS204-B_101229A	71	11038
Cadmium	0.00120	mg/L		0.00008		E200.8	12/29/10 18:29 / dck	12/27/10 09:48	ICPMS204-B_101229A	71	11038
Copper	0.008	mg/L		0.001		E200.8	01/10/11 15:03 / dck	01/04/11 10:53	ICPMS204-B_110110A	17	11108
Iron	0.07	mg/L		0.05		E200.8	12/29/10 18:29 / dck	12/27/10 09:48	ICPMS204-B_101229A	71	11038
Lead	0.0007	mg/L		0.0005		E200.8	12/29/10 18:29 / dck	12/27/10 09:48	ICPMS204-B_101229A	71	11038
Manganese	0.311	mg/L		0.005		E200.8	12/29/10 18:29 / dck	12/27/10 09:48	ICPMS204-B_101229A	71	11038
Zinc	0.40	mg/L		0.01		E200.8	12/29/10 18:29 / dck	12/27/10 09:48	ICPMS204-B_101229A	71	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW38-20101216
Lab ID: H10120314-007
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 15:45
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.9	s.u.		0.1		A4500-H B	12/27/10 15:03 / zeg		MAN-TECH_101227B	28	R68140
Conductivity	329	umhos/cm		1		A2510 B	12/28/10 09:59 / zeg		COND_101228A	1501228A	COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	12/27/10 13:53 / glj	12/27/10 13:19	-124 (14410200)_101227A	11	11043
Solids, Total Dissolved TDS @ 180 C	200	mg/L	H	10		A2540 C	12/27/10 14:01 / glj	12/27/10 13:18	-124 (14410200)_101227B	13	11042
DISSOLVED INORGANICS											
Bicarbonate as HCO3	99	mg/L		4		A2320 B	12/27/10 17:03 / zeg		MAN-TECH_101227B	56	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 17:03 / zeg		MAN-TECH_101227B	56	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 15:16 / zeg		IC101-H_101229A	35	R68286
Sulfate	81	mg/L		1		E300.0	12/30/10 15:16 / zeg		IC101-H_101229A	35	R68286
INORGANICS											
Alkalinity, Total as CaCO3	81	mg/L		4		A2320 B	12/27/10 15:03 / zeg		MAN-TECH_101227B	27	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 15:25 / zeg		IC101-H_101229A	36	R68286
Sulfate	81	mg/L		1		E300.0	12/30/10 15:25 / zeg		IC101-H_101229A	36	R68286
Hardness as CaCO3	147	mg/L		1		A2340 B	12/29/10 18:33 / abb		CALC_110104A	432	R68293
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Cadmium	0.00533	mg/L		0.00008		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Calcium	30	mg/L		1		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Copper	0.004	mg/L		0.001		E200.8	01/03/11 22:55 / dck		ICPMS204-B_110103A	73	R68292
Iron	ND	mg/L		0.05		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Lead	0.0008	mg/L		0.0005		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Magnesium	18	mg/L		1		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Manganese	0.929	mg/L		0.005		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Sodium	1	mg/L		1		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216
Zinc	1.30	mg/L		0.01		E200.8	12/29/10 18:33 / dck		ICPMS204-B_101229A	72	R68216

Report Definitions:
RL - Analyte reporting limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW38-20101216
Lab ID: H10120314-007
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 15:45
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.06	mg/L		0.03		E200.8	12/29/10 18:38 / dck	12/27/10 09:48	ICPMS204-B_101229A	73	11038
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:38 / dck	12/27/10 09:48	ICPMS204-B_101229A	73	11038
Cadmium	0.00588	mg/L		0.00008		E200.8	12/29/10 18:38 / dck	12/27/10 09:48	ICPMS204-B_101229A	73	11038
Copper	0.016	mg/L		0.001		E200.8	01/10/11 15:08 / dck	01/04/11 10:53	ICPMS204-B_110110A	18	11108
Iron	0.67	mg/L		0.05		E200.8	12/29/10 18:38 / dck	12/27/10 09:48	ICPMS204-B_101229A	73	11038
Lead	0.0214	mg/L		0.0005		E200.8	12/29/10 18:38 / dck	12/27/10 09:48	ICPMS204-B_101229A	73	11038
Manganese	0.981	mg/L		0.005		E200.8	12/29/10 18:38 / dck	12/27/10 09:48	ICPMS204-B_101229A	73	11038
Zinc	1.41	mg/L		0.01		E200.8	12/29/10 18:38 / dck	12/27/10 09:48	ICPMS204-B_101229A	73	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW29-20101216
Lab ID: H10120314-008
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 15:00 **DateReceived:** 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.9	s.u.		0.1		A4500-H B	12/27/10 15:10 / zeg		MAN-TECH_101227B	30	R68140
Conductivity	264	umhos/cm		1		A2510 B	12/28/10 10:01 / zeg		COND_101228A	1	1701228A-COND-PROBI
Solids, Total Suspended TSS @ 105 C	ND	mg/L	H	10		A2540 D	12/27/10 13:54 / glj	12/27/10 13:19	-124 (14410200)_101227A	12	11043
Solids, Total Dissolved TDS @ 180 C	160	mg/L	H	10		A2540 C	12/27/10 14:01 / glj	12/27/10 13:18	-124 (14410200)_101227B	14	11042
DISSOLVED INORGANICS											
Bicarbonate as HCO3	98	mg/L		4		A2320 B	12/27/10 17:10 / zeg		MAN-TECH_101227B	57	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 17:10 / zeg		MAN-TECH_101227B	57	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 15:54 / zeg		IC101-H_101229A	39	R68286
Sulfate	48	mg/L		1		E300.0	12/30/10 15:54 / zeg		IC101-H_101229A	39	R68286
INORGANICS											
Alkalinity, Total as CaCO3	84	mg/L		4		A2320 B	12/27/10 15:10 / zeg		MAN-TECH_101227B	29	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 16:04 / zeg		IC101-H_101229A	40	R68286
Sulfate	48	mg/L		1		E300.0	12/30/10 16:04 / zeg		IC101-H_101229A	40	R68286
Hardness as CaCO3	116	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	6	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Cadmium	0.00338	mg/L		0.00008		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Calcium	24	mg/L		1		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Copper	0.004	mg/L		0.001		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Iron	0.06	mg/L		0.05		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Lead	0.0006	mg/L		0.0005		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Magnesium	14	mg/L		1		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Manganese	0.450	mg/L		0.005		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Sodium	2	mg/L		1		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216
Zinc	0.92	mg/L		0.01		E200.8	12/29/10 18:42 / dck		ICPMS204-B_101229A	74	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.
H - Analysis performed past recommended holding time.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW29-20101216
Lab ID: H10120314-008
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 15:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	0.06	mg/L		0.03		E200.8	12/29/10 18:46 / dck	12/27/10 09:48	ICPMS204-B_101229A	75	11038
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:46 / dck	12/27/10 09:48	ICPMS204-B_101229A	75	11038
Cadmium	0.00374	mg/L		0.00008		E200.8	12/29/10 18:46 / dck	12/27/10 09:48	ICPMS204-B_101229A	75	11038
Copper	0.012	mg/L		0.001		E200.8	01/10/11 15:12 / dck	01/04/11 10:53	ICPMS204-B_110110A	19	11108
Iron	0.44	mg/L		0.05		E200.8	12/29/10 18:46 / dck	12/27/10 09:48	ICPMS204-B_101229A	75	11038
Lead	0.0112	mg/L		0.0005		E200.8	12/29/10 18:46 / dck	12/27/10 09:48	ICPMS204-B_101229A	75	11038
Manganese	0.473	mg/L		0.005		E200.8	12/29/10 18:46 / dck	12/27/10 09:48	ICPMS204-B_101229A	75	11038
Zinc	0.94	mg/L		0.01		E200.8	12/29/10 18:46 / dck	12/27/10 09:48	ICPMS204-B_101229A	75	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW29-333-20101216
Lab ID: H10120314-009
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 15:10
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 18:51 / dck		ICPMS204-B_101229A	76	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 18:51 / dck		ICPMS204-B_101229A	76	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 18:51 / dck		ICPMS204-B_101229A	76	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 18:51 / dck		ICPMS204-B_101229A	76	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 18:51 / dck		ICPMS204-B_101229A	76	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 18:51 / dck		ICPMS204-B_101229A	76	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 18:51 / dck		ICPMS204-B_101229A	76	R68216
Zinc	ND	mg/L		0.01		E200.8	12/29/10 18:51 / dck		ICPMS204-B_101229A	76	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-BRSW29-444-20101216
Lab ID: H10120314-010
Matrix: Surface Water

Project: TO20 - UBMC Monitoring
Collection Date: 12/16/10 15:15
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 19:13 / dck		ICPMS204-B_101229A	81	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 19:13 / dck		ICPMS204-B_101229A	81	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 19:13 / dck		ICPMS204-B_101229A	81	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 19:13 / dck		ICPMS204-B_101229A	81	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 19:13 / dck		ICPMS204-B_101229A	81	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 19:13 / dck		ICPMS204-B_101229A	81	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 19:13 / dck		ICPMS204-B_101229A	81	R68216
Zinc	ND	mg/L		0.01		E200.8	12/29/10 19:13 / dck		ICPMS204-B_101229A	81	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW4D-20101220
Lab ID: H10120314-011
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/20/10 12:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	8.0	s.u.		0.1		A4500-H B	12/27/10 15:16 / zeg		MAN-TECH_101227B	32	R68140
Conductivity	210	umhos/cm		1		A2510 B	12/28/10 10:02 / zeg		COND_101228A	1801228A	-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	120	mg/L		4		A2320 B	12/27/10 17:17 / zeg		MAN-TECH_101227B	58	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 17:17 / zeg		MAN-TECH_101227B	58	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 16:14 / zeg		IC101-H_101229A	41	R68286
Sulfate	13	mg/L		1		E300.0	12/30/10 16:14 / zeg		IC101-H_101229A	41	R68286
INORGANICS											
Alkalinity, Total as CaCO3	94	mg/L		4		A2320 B	12/27/10 15:16 / zeg		MAN-TECH_101227B	31	R68140
Hardness as CaCO3	100	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	7	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Calcium	21	mg/L		1		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Magnesium	11	mg/L		1		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Manganese	0.013	mg/L		0.005		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Sodium	2	mg/L		1		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
Zinc	ND	mg/L		0.01		E200.8	12/29/10 19:17 / dck		ICPMS204-B_101229A	82	R68216
METALS, TOTAL											
Aluminum	1.17	mg/L		0.03		E200.8	12/29/10 19:22 / dck	12/27/10 09:48	ICPMS204-B_101229A	83	11038
Arsenic	0.004	mg/L		0.003		E200.8	12/29/10 19:22 / dck	12/27/10 09:48	ICPMS204-B_101229A	83	11038
Cadmium	0.00012	mg/L		0.00008		E200.8	12/29/10 19:22 / dck	12/27/10 09:48	ICPMS204-B_101229A	83	11038
Copper	0.043	mg/L		0.001		E200.8	12/29/10 19:22 / dck	12/27/10 09:48	ICPMS204-B_101229A	83	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW4D-20101220
Lab ID: H10120314-011
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/20/10 12:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	2.36	mg/L		0.05		E200.8	12/29/10 19:22 / dck	12/27/10 09:48	ICPMS204-B_101229A	83	11038
Lead	0.0102	mg/L		0.0005		E200.8	12/29/10 19:22 / dck	12/27/10 09:48	ICPMS204-B_101229A	83	11038
Manganese	0.121	mg/L		0.005		E200.8	12/29/10 19:22 / dck	12/27/10 09:48	ICPMS204-B_101229A	83	11038
Zinc	0.02	mg/L		0.01		E200.8	12/29/10 19:22 / dck	12/27/10 09:48	ICPMS204-B_101229A	83	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW2S-20101221
Lab ID: H10120314-012
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 12:15
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.		0.1		A4500-H B	12/27/10 15:23 / zeg		MAN-TECH_101227B	34	R68140
Conductivity	499	umhos/cm		1		A2510 B	12/28/10 10:03 / zeg		COND_101228A	1	901228A-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/27/10 17:32 / zeg		MAN-TECH_101227B	61	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 17:32 / zeg		MAN-TECH_101227B	61	R68140
Chloride	ND	mg/L		1		E300.0	01/11/11 17:31 / zeg		IC101-H_110111A	36	R68488
Sulfate	150	mg/L		1		E300.0	01/11/11 17:31 / zeg		IC101-H_110111A	36	R68488
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	12/27/10 15:23 / zeg		MAN-TECH_101227B	33	R68140
Hardness as CaCO3	192	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	8	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Cadmium	0.00210	mg/L		0.00008		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Calcium	42	mg/L		1		E200.8	01/11/11 13:42 / dck		ICPMS204-B_110111A	31	R68475
Copper	ND	mg/L		0.001		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Magnesium	25	mg/L		1		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Manganese	4.19	mg/L		0.005		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Sodium	2	mg/L		1		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
Zinc	1.72	mg/L		0.01		E200.8	12/29/10 19:26 / dck		ICPMS204-B_101229A	84	R68216
METALS, TOTAL											
Aluminum	0.09	mg/L		0.03		E200.8	12/29/10 19:31 / dck	12/27/10 09:48	ICPMS204-B_101229A	85	11038
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 19:31 / dck	12/27/10 09:48	ICPMS204-B_101229A	85	11038
Cadmium	0.00376	mg/L		0.00008		E200.8	12/29/10 19:31 / dck	12/27/10 09:48	ICPMS204-B_101229A	85	11038
Copper	0.008	mg/L		0.001		E200.8	01/10/11 15:16 / dck	01/04/11 10:53	ICPMS204-B_110110A	20	11108

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW2S-20101221
Lab ID: H10120314-012
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 12:15
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	0.82	mg/L		0.05		E200.8	12/29/10 19:31 / dck	12/27/10 09:48	ICPMS204-B_101229A	85	11038
Lead	0.0331	mg/L		0.0005		E200.8	12/29/10 19:31 / dck	12/27/10 09:48	ICPMS204-B_101229A	85	11038
Manganese	8.96	mg/L		0.005		E200.8	01/03/11 23:09 / dck	12/27/10 09:48	ICPMS204-B_110103A	76	11038
Zinc	2.86	mg/L		0.01		E200.8	12/29/10 19:31 / dck	12/27/10 09:48	ICPMS204-B_101229A	85	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW01-555-20101221
Lab ID: H10120314-013
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 11:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.6	s.u.		0.1		A4500-H B	12/27/10 15:30 / zeg		MAN-TECH_101227B	36	R68140
Conductivity	457	umhos/cm		1		A2510 B	12/28/10 10:04 / zeg		COND_101228A	2001228A	-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/27/10 17:39 / zeg		MAN-TECH_101227B	62	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 17:39 / zeg		MAN-TECH_101227B	62	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 16:33 / zeg		IC101-H_101229A	43	R68286
Sulfate	130	mg/L		1		E300.0	12/30/10 16:33 / zeg		IC101-H_101229A	43	R68286
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	12/27/10 15:30 / zeg		MAN-TECH_101227B	35	R68140
Hardness as CaCO3	213	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	9	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Cadmium	0.00066	mg/L		0.00008		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Calcium	39	mg/L		1		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Lead	0.0005	mg/L		0.0005		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Magnesium	28	mg/L		1		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Manganese	0.008	mg/L		0.005		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Potassium	1	mg/L		1		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Sodium	2	mg/L		1		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
Zinc	0.25	mg/L		0.01		E200.8	12/29/10 19:35 / dck		ICPMS204-B_101229A	86	R68216
METALS, TOTAL											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 20:10 / dck		ICPMS204-B_101229A	94	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 20:10 / dck		ICPMS204-B_101229A	94	R68216
Cadmium	0.00067	mg/L		0.00008		E200.8	12/29/10 20:10 / dck		ICPMS204-B_101229A	94	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 20:10 / dck		ICPMS204-B_101229A	94	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW01-555-20101221
Lab ID: H10120314-013
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 11:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	ND	mg/L		0.05		E200.8	12/29/10 20:10 / dck		ICPMS204-B_101229A	94	R68216
Lead	0.0008	mg/L		0.0005		E200.8	12/29/10 20:10 / dck		ICPMS204-B_101229A	94	R68216
Manganese	0.005	mg/L		0.005		E200.8	12/29/10 20:10 / dck		ICPMS204-B_101229A	94	R68216
Zinc	0.25	mg/L		0.01		E200.8	12/29/10 20:10 / dck		ICPMS204-B_101229A	94	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW2D-20101221
Lab ID: H10120314-014
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 11:45 **DateReceived:** 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.9	s.u.		0.1		A4500-H B	12/27/10 15:37 / zeg		MAN-TECH_101227B	38	R68140
Conductivity	240	umhos/cm		1		A2510 B	12/28/10 10:05 / zeg		COND_101228A	2	101228A-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/27/10 17:46 / zeg		MAN-TECH_101227B	63	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 17:46 / zeg		MAN-TECH_101227B	63	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 17:02 / zeg		IC101-H_101229A	46	R68286
Sulfate	17	mg/L		1		E300.0	12/30/10 17:02 / zeg		IC101-H_101229A	46	R68286
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	12/27/10 15:37 / zeg		MAN-TECH_101227B	37	R68140
Hardness as CaCO3	114	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	10	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Calcium	24	mg/L		1		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Magnesium	13	mg/L		1		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Sodium	1	mg/L		1		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
Zinc	ND	mg/L		0.01		E200.8	12/29/10 20:14 / dck		ICPMS204-B_101229A	95	R68216
METALS, TOTAL											
Aluminum	0.19	mg/L		0.03		E200.8	12/29/10 20:19 / dck	12/27/10 09:48	ICPMS204-B_101229A	96	11038
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 20:19 / dck	12/27/10 09:48	ICPMS204-B_101229A	96	11038
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 20:19 / dck	12/27/10 09:48	ICPMS204-B_101229A	96	11038
Copper	0.003	mg/L		0.001		E200.8	01/10/11 15:21 / dck	01/04/11 10:53	ICPMS204-B_110110A	21	11108

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW2D-20101221
Lab ID: H10120314-014
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 11:45
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	0.30	mg/L		0.05		E200.8	12/29/10 20:19 / dck	12/27/10 09:48	ICPMS204-B_101229A	96	11038
Lead	0.0014	mg/L		0.0005		E200.8	12/29/10 20:19 / dck	12/27/10 09:48	ICPMS204-B_101229A	96	11038
Manganese	0.026	mg/L		0.005		E200.8	12/29/10 20:19 / dck	12/27/10 09:48	ICPMS204-B_101229A	96	11038
Zinc	ND	mg/L		0.01		E200.8	12/29/10 20:19 / dck	12/27/10 09:48	ICPMS204-B_101229A	96	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW01-20101221
Lab ID: H10120314-015
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 11:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.7	s.u.		0.1		A4500-H B	12/27/10 15:44 / zeg		MAN-TECH_101227B	40	R68140
Conductivity	458	umhos/cm		1		A2510 B	12/28/10 10:06 / zeg		COND_101228A	2201228A-COND-PROBI	
DISSOLVED INORGANICS											
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/27/10 17:53 / zeg		MAN-TECH_101227B	64	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 17:53 / zeg		MAN-TECH_101227B	64	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 17:12 / zeg		IC101-H_101229A	47	R68286
Sulfate	130	mg/L		1		E300.0	12/30/10 17:12 / zeg		IC101-H_101229A	47	R68286
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	12/27/10 15:44 / zeg		MAN-TECH_101227B	39	R68140
Hardness as CaCO3	211	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	11	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Cadmium	0.00052	mg/L		0.00008		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Calcium	39	mg/L		1		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Iron	0.14	mg/L		0.05		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Magnesium	28	mg/L		1		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Manganese	0.328	mg/L		0.005		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Potassium	1	mg/L		1		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Sodium	2	mg/L		1		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
Zinc	0.21	mg/L		0.01		E200.8	12/29/10 20:23 / dck		ICPMS204-B_101229A	97	R68216
METALS, TOTAL											
Aluminum	0.08	mg/L		0.03		E200.8	12/29/10 20:28 / dck	12/27/10 09:48	ICPMS204-B_101229A	98	11038
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 20:28 / dck	12/27/10 09:48	ICPMS204-B_101229A	98	11038
Cadmium	0.00066	mg/L		0.00008		E200.8	12/29/10 20:28 / dck	12/27/10 09:48	ICPMS204-B_101229A	98	11038
Copper	0.001	mg/L		0.001		E200.8	01/10/11 15:25 / dck	01/04/11 10:53	ICPMS204-B_110110A	22	11108

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW01-20101221
Lab ID: H10120314-015
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 11:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	0.15	mg/L		0.05		E200.8	12/29/10 20:28 / dck	12/27/10 09:48	ICPMS204-B_101229A	98	11038
Lead	0.0016	mg/L		0.0005		E200.8	12/29/10 20:28 / dck	12/27/10 09:48	ICPMS204-B_101229A	98	11038
Manganese	0.006	mg/L		0.005		E200.8	12/29/10 20:28 / dck	12/27/10 09:48	ICPMS204-B_101229A	98	11038
Zinc	0.25	mg/L		0.01		E200.8	12/29/10 20:28 / dck	12/27/10 09:48	ICPMS204-B_101229A	98	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW3D-20101220
Lab ID: H10120314-016
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 13:00 **DateReceived:** 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
pH	7.9	s.u.		0.1		A4500-H B	12/27/10 15:51 / zeg		MAN-TECH_101227B	42	R68140
Conductivity	299	umhos/cm		1		A2510 B	12/28/10 10:07 / zeg		COND_101228A	2401228A	-COND-PROBI
DISSOLVED INORGANICS											
Bicarbonate as HCO3	79	mg/L		4		A2320 B	12/27/10 18:07 / zeg		MAN-TECH_101227B	67	R68140
Carbonate as CO3	ND	mg/L		4		A2320 B	12/27/10 18:07 / zeg		MAN-TECH_101227B	67	R68140
Chloride	ND	mg/L		1		E300.0	12/30/10 17:21 / zeg		IC101-H_101229A	48	R68286
Sulfate	78	mg/L		1		E300.0	12/30/10 17:21 / zeg		IC101-H_101229A	48	R68286
INORGANICS											
Alkalinity, Total as CaCO3	65	mg/L		4		A2320 B	12/27/10 15:51 / zeg		MAN-TECH_101227B	41	R68140
Hardness as CaCO3	126	mg/L		1		A2340 B	01/03/11 11:57 / sld		WATERCALC_110103A	12	R68279
METALS, DISSOLVED											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Calcium	29	mg/L		1		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Magnesium	13	mg/L		1		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Potassium	ND	mg/L		1		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Sodium	2	mg/L		1		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
Zinc	ND	mg/L		0.01		E200.8	12/29/10 20:32 / dck		ICPMS204-B_101229A	99	R68216
METALS, TOTAL											
Aluminum	1.09	mg/L		0.03		E200.8	12/29/10 20:36 / dck	12/27/10 09:48	ICPMS204-B_101229A	100	11038
Arsenic	0.007	mg/L		0.003		E200.8	12/29/10 20:36 / dck	12/27/10 09:48	ICPMS204-B_101229A	100	11038
Cadmium	0.00034	mg/L		0.00008		E200.8	12/29/10 20:36 / dck	12/27/10 09:48	ICPMS204-B_101229A	100	11038
Copper	0.004	mg/L		0.001		E200.8	01/10/11 15:29 / dck	01/04/11 10:53	ICPMS204-B_110110A	23	11108

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW3D-20101220
Lab ID: H10120314-016
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 13:00
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Iron	4.63	mg/L		0.05		E200.8	12/29/10 20:36 / dck	12/27/10 09:48	ICPMS204-B_101229A	100	11038
Lead	0.0232	mg/L		0.0005		E200.8	12/29/10 20:36 / dck	12/27/10 09:48	ICPMS204-B_101229A	100	11038
Manganese	0.370	mg/L		0.005		E200.8	12/29/10 20:36 / dck	12/27/10 09:48	ICPMS204-B_101229A	100	11038
Zinc	0.04	mg/L		0.01		E200.8	12/29/10 20:36 / dck	12/27/10 09:48	ICPMS204-B_101229A	100	11038

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW01-333-20101221
Lab ID: H10120314-017
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 11:05
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 21:10 / dck		ICPMS204-B_101229A	108	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 21:10 / dck		ICPMS204-B_101229A	108	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 21:10 / dck		ICPMS204-B_101229A	108	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 21:10 / dck		ICPMS204-B_101229A	108	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 21:10 / dck		ICPMS204-B_101229A	108	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 21:10 / dck		ICPMS204-B_101229A	108	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 21:10 / dck		ICPMS204-B_101229A	108	R68216
Zinc	ND	mg/L		0.01		E200.8	12/29/10 21:10 / dck		ICPMS204-B_101229A	108	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client: MT DEQ-Site Response
Client Sample ID UBM-TDMW01-444-20101221
Lab ID: H10120314-018
Matrix: Groundwater

Project: TO20 - UBMC Monitoring
Collection Date: 12/21/10 11:05
DateReceived: 12/23/10
Report Date: 01/12/11

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL											
Aluminum	ND	mg/L		0.03		E200.8	12/29/10 21:14 / dck		ICPMS204-B_101229A	109	R68216
Arsenic	ND	mg/L		0.003		E200.8	12/29/10 21:14 / dck		ICPMS204-B_101229A	109	R68216
Cadmium	ND	mg/L		0.00008		E200.8	12/29/10 21:14 / dck		ICPMS204-B_101229A	109	R68216
Copper	ND	mg/L		0.001		E200.8	12/29/10 21:14 / dck		ICPMS204-B_101229A	109	R68216
Iron	ND	mg/L		0.05		E200.8	12/29/10 21:14 / dck		ICPMS204-B_101229A	109	R68216
Lead	ND	mg/L		0.0005		E200.8	12/29/10 21:14 / dck		ICPMS204-B_101229A	109	R68216
Manganese	ND	mg/L		0.005		E200.8	12/29/10 21:14 / dck		ICPMS204-B_101229A	109	R68216
Zinc	ND	mg/L		0.01		E200.8	12/29/10 21:14 / dck		ICPMS204-B_101229A	109	R68216

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 101228A-COND-PROBE

Date: *12-Jan-11*

Run ID :Run Order: **COND_101228A: 6** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV1_101228A** Method: **A2510 B**
Analysis Date: **12/28/10 09:48** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	986	1.0	1000		99	90	110				

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Run ID :Run Order: **COND_101228A: 7** SampType: **Laboratory Control Sample** Sample ID: **LCS2_101228A** Method: **A2510 B**
Analysis Date: **12/28/10 09:49** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1410	1.0	1412		100	90	110				

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Run ID :Run Order: **COND_101228A: 10** SampType: **Sample Duplicate** Sample ID: **H10120314-002BDUP** Method: **A2510 B**
Analysis Date: **12/28/10 09:53** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	207	1.0						206.7	0.0	10	

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Run ID :Run Order: **COND_101228A: 16** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV6_101228A** Method: **A2510 B**
Analysis Date: **12/28/10 09:59** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	1410	1.0	1412		100	90	110				

Associated samples: **H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Run ID :Run Order: **COND_101228A: 23** SampType: **Sample Duplicate** Sample ID: **H10120314-015BDUP** Method: **A2510 B**
Analysis Date: **12/28/10 10:06** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	456	1.0						458.4	0.6	10	

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 101228A-COND-PROBE

Date: *12-Jan-11*

Run ID :Run Order: **COND_101228A: 32** SampType: **Sample Duplicate** Sample ID: **H10120315-006ADUP** Method: **A2510 B**

Analysis Date: **12/28/10 10:17** Units: **umhos/cm** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Conductivity	614	1.0						616	0.3	10	

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 11038

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101228A: 46** SampType: **Laboratory Control Sample** Sample ID: **LCS-11038** Method: **E200.8**
Analysis Date: **12/28/10 18:13** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	2.52	0.10	2.5	0.003863	101	85	115				
Arsenic	0.495	0.0050	0.5		99	85	115				
Cadmium	0.266	0.0010	0.25		106	85	115				
Copper	0.505	0.010	0.5	0.003206	100	85	115				
Iron	2.59	0.030	2.5	0.0008818	104	85	115				
Lead	0.509	0.010	0.5	0.000049	102	85	115				
Manganese	2.55	0.010	2.5		102	85	115				
Zinc	0.511	0.010	0.5		102	85	115				

Associated samples: **H10120314-002D; H10120314-005D; H10120314-006D; H10120314-007D; H10120314-008D; H10120314-011D; H10120314-012D; H10120314-014D; H10120314-015D; H10120314-016D**

Run ID :Run Order: **ICPMS204-B_101228A: 50** SampType: **Sample Matrix Spike** Sample ID: **H10120215-012FMS3** Method: **E200.8**
Analysis Date: **12/28/10 18:30** Units: **mg/L** **Prep Info:** Prep Date: **12/29/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	3.93	0.10	2.5	1.033	116	70	130				
Arsenic	0.517	0.0050	0.5	0.01398	101	70	130				
Cadmium	0.257	0.0010	0.25	0.00154	102	70	130				
Copper	0.652	0.010	0.5	0.158	99	70	130				
Iron	4.27	0.030	2.5	1.53	110	70	130				
Lead	0.568	0.010	0.5	0.04814	104	70	130				
Manganese	2.75	0.010	2.5	0.2535	100	70	130				
Zinc	0.857	0.010	0.5	0.3597	99	70	130				

Associated samples: **H10120314-002D; H10120314-005D; H10120314-006D; H10120314-007D; H10120314-008D; H10120314-011D; H10120314-012D; H10120314-014D; H10120314-015D; H10120314-016D**

Run ID :Run Order: **ICPMS204-B_101228A: 51** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120215-012FMSD3** Method: **E200.8**
Analysis Date: **12/28/10 18:34** Units: **mg/L** **Prep Info:** Prep Date: **12/29/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	3.88	0.10	2.5	1.033	114	70	130	3.929	1.3	20	
Arsenic	0.513	0.0050	0.5	0.01398	100	70	130	0.5175	0.8	20	
Cadmium	0.261	0.0010	0.25	0.00154	104	70	130	0.2571	1.4	20	
Copper	0.648	0.010	0.5	0.158	98	70	130	0.6522	0.6	20	
Iron	4.22	0.030	2.5	1.53	108	70	130	4.273	1.2	20	

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD
J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 11038

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101228A: 51** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120215-012FMSD3** Method: **E200.8**

Analysis Date: **12/28/10 18:34** Units: **mg/L** **Prep Info:** Prep Date: **12/29/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.556	0.010	0.5	0.04814	102	70	130	0.5682	2.2	20	
Manganese	2.77	0.010	2.5	0.2535	101	70	130	2.754	0.5	20	
Zinc	0.841	0.010	0.5	0.3597	96	70	130	0.857	1.9	20	

Associated samples: **H10120314-002D; H10120314-005D; H10120314-006D; H10120314-007D; H10120314-008D; H10120314-011D; H10120314-012D; H10120314-014D; H10120314-015D; H10120314-016D**

Run ID :Run Order: **ICPMS204-B_101229A: 58** SampType: **Method Blank** Sample ID: **MB-11038** Method: **E200.8**

Analysis Date: **12/29/10 17:32** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.004	0.0008									
Arsenic	ND	4E-05									
Cadmium	ND	2E-05									
Copper	0.003	0.0002									
Iron	ND	0.0009									
Lead	4E-05	2E-05									
Manganese	ND	3E-05									
Zinc	0.0009	0.0007									

Associated samples: **H10120314-002D; H10120314-005D; H10120314-006D; H10120314-007D; H10120314-008D; H10120314-011D; H10120314-012D; H10120314-014D; H10120314-015D; H10120314-016D**

Run ID :Run Order: **ICPMS204-B_110103A: 75** SampType: **Method Blank** Sample ID: **MB-11038** Method: **E200.8**

Analysis Date: **01/03/11 23:04** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.004	0.0008									
Arsenic	ND	4E-05									
Cadmium	ND	2E-05									
Copper	0.002	0.0002									
Iron	ND	0.0009									
Lead	4E-05	2E-05									
Manganese	0.0001	3E-05									
Zinc	0.0010	0.0007									

Associated samples: **H10120314-002D; H10120314-005D; H10120314-006D; H10120314-007D; H10120314-008D; H10120314-011D; H10120314-012D; H10120314-014D; H10120314-015D; H10120314-016D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 11038

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_110111A: 149** SampType: **Method Blank** Sample ID: **MB-11038** Method: **E200.8**

Analysis Date: **01/11/11 22:45** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **E200.2**

Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.005	0.0008									
Arsenic	6E-05	4E-05									
Cadmium	ND	2E-05									
Copper	0.0009	0.0002									
Iron	ND	0.0009									
Lead	6E-05	2E-05									
Manganese	0.0006	3E-05									
Zinc	0.001	0.0007									

Associated samples: **H10120314-002D; H10120314-005D; H10120314-006D; H10120314-007D; H10120314-008D; H10120314-011D; H10120314-012D; H10120314-014D; H10120314-015D; H10120314-016D**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 11042

Date: *12-Jan-11*

Run ID :Run Order: **ACCU-124 (14410200)_101227B: 1** SampType: **Method Blank** Sample ID: **MB-11042** Method: **A2540 C**
Analysis Date: **12/27/10 13:55** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2	1.0									

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B**

Run ID :Run Order: **ACCU-124 (14410200)_101227B: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS-11042** Method: **A2540 C**
Analysis Date: **12/27/10 13:56** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	1930	10	2000	2	96	90	110				

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B**

Run ID :Run Order: **ACCU-124 (14410200)_101227B: 10** SampType: **Sample Duplicate** Sample ID: **H10120314-004BDUP** Method: **A2540 C**
Analysis Date: **12/27/10 13:59** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	196	10						194	1.0	5	

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B**

Run ID :Run Order: **ACCU-124 (14410200)_101227B: 15** SampType: **Sample Matrix Spike** Sample ID: **H10120314-008BMS** Method: **A2540 C**
Analysis Date: **12/27/10 14:01** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **A2540 C**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Dissolved TDS @ 180 C	2140	10	2000	160	99	80	120				

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 11043

Date: *12-Jan-11*

Run ID :Run Order: **ACCU-124 (14410200)_101227A: 1** SampType: **Method Blank** Sample ID: **MB-11043** Method: **A2540 D**
Analysis Date: **12/27/10 13:50** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	ND	1									

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B**

Run ID :Run Order: **ACCU-124 (14410200)_101227A: 2** SampType: **Laboratory Control Sample** Sample ID: **LCS-11043** Method: **A2540 D**
Analysis Date: **12/27/10 13:50** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	1850	10	2000		92	70	130				

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B**

Run ID :Run Order: **ACCU-124 (14410200)_101227A: 8** SampType: **Sample Duplicate** Sample ID: **H10120314-004BDUP** Method: **A2540 D**
Analysis Date: **12/27/10 13:52** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method: **A2540 D**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspended TSS @ 105 C	6.00	10						6		5	

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: 11108

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_110106A: 26** SampType: **Laboratory Control Sample** Sample ID: **LCS-11108** Method: **E200.8**
Analysis Date: **01/06/11 14:00** Units: **mg/L** **Prep Info:** Prep Date: **1/4/2011** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.489	0.010	0.5	0.003926	97	85	115				

Associated samples: **H10120314-002E; H10120314-006E; H10120314-007E; H10120314-008E; H10120314-012E; H10120314-014E; H10120314-015E; H10120314-016E**

Run ID :Run Order: **ICPMS204-B_110106A: 30** SampType: **Sample Matrix Spike** Sample ID: **H10120314-002EMS3** Method: **E200.8**
Analysis Date: **01/06/11 14:17** Units: **mg/L** **Prep Info:** Prep Date: **1/4/2011** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.483	0.010	0.5	0.003492	96	70	130				

Associated samples: **H10120314-002E; H10120314-006E; H10120314-007E; H10120314-008E; H10120314-012E; H10120314-014E; H10120314-015E; H10120314-016E**

Run ID :Run Order: **ICPMS204-B_110106A: 35** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120314-002EMSD3** Method: **E200.8**
Analysis Date: **01/06/11 14:39** Units: **mg/L** **Prep Info:** Prep Date: **1/4/2011** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.488	0.010	0.5	0.003492	97	70	130	0.483	1.1	20	

Associated samples: **H10120314-002E; H10120314-006E; H10120314-007E; H10120314-008E; H10120314-012E; H10120314-014E; H10120314-015E; H10120314-016E**

Run ID :Run Order: **ICPMS204-B_110110A: 15** SampType: **Method Blank** Sample ID: **MB-11108** Method: **E200.8**
Analysis Date: **01/10/11 14:55** Units: **mg/L** **Prep Info:** Prep Date: **1/4/2011** Prep Method: **E200.2**

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0003	0.0002									

Associated samples: **H10120314-002E; H10120314-006E; H10120314-007E; H10120314-008E; H10120314-012E; H10120314-014E; H10120314-015E; H10120314-016E**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68140

Date: *12-Jan-11*

Run ID :Run Order: **MAN-TECH_101227B: 7** SampType: **Method Blank** Sample ID: **MBLK** Method: **A2320 B**

Analysis Date: **12/27/10 13:51** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	1	0.6									

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 9** SampType: **Laboratory Control Sample** Sample ID: **LCS-12202010** Method: **A2320 B**

Analysis Date: **12/27/10 13:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	620	4.0	600	1.33	103	90	110				

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 17** SampType: **Sample Duplicate** Sample ID: **H10120314-003BDUP** Method: **A2320 B**

Analysis Date: **12/27/10 14:27** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	99	4.0						99.31	0.1	20	
Bicarbonate as HCO3	120	4.0						121.2	0.1	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 23** SampType: **Sample Matrix Spike** Sample ID: **H10120314-005BMS** Method: **A2320 B**

Analysis Date: **12/27/10 14:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	630	4.0	600	104.1	88	90	110				S

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68140

Date: *12-Jan-11*

Run ID :Run Order: **MAN-TECH_101227B: 44** SampType: **Sample Duplicate** Sample ID: **H10120314-001ADUP** Method: **A2320 B**

Analysis Date: **12/27/10 16:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	110	4.0						106.6	0.2	20	
Bicarbonate as HCO3	130	4.0						130	0.2	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 59** SampType: **Sample Matrix Spike** Sample ID: **H10120314-011AMS** Method: **A2320 B**

Analysis Date: **12/27/10 17:25** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	680	4.0	600	95.13	98	90	110				

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 65** SampType: **Sample Duplicate** Sample ID: **H10120314-015ADUP** Method: **A2320 B**

Analysis Date: **12/27/10 18:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total as CaCO3	100	4.0						103.4	0.1	20	
Bicarbonate as HCO3	130	4.0						126.2	0.1	20	
Carbonate as CO3	ND	4.0								20	

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68140

Date: *12-Jan-11*

Run ID :Run Order: **MAN-TECH_101227B: 1** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV1-1631** Method: **A4500-H B**

Analysis Date: **12/27/10 13:33** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	3.92	0.10	4		98	98	102				

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 2** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-1777** Method: **A4500-H B**

Analysis Date: **12/27/10 13:36** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.95	0.10	7		99	98	102				

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 3** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV2-1664** Method: **A4500-H B**

Analysis Date: **12/27/10 13:38** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	9.95	0.10	10		99	98	102				

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 4** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV-1846** Method: **A4500-H B**

Analysis Date: **12/27/10 13:41** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.96	0.10	7		99	99	101				

Associated samples: **H10120314-001A; H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-011B; H10120314-012A; H10120314-012B; H10120314-013A; H10120314-013B; H10120314-014A; H10120314-014B; H10120314-015A; H10120314-015B; H10120314-016A; H10120314-016B**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68140

Date: *12-Jan-11*

Run ID :Run Order: **MAN-TECH_101227B: 18** SampType: **Sample Duplicate** Sample ID: **H10120314-003BDUP** Method: **A4500-H B**

Analysis Date: **12/27/10 14:27** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.09	0.10						8.09	0.0	3	

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 45** SampType: **Sample Duplicate** Sample ID: **H10120314-001ADUP** Method: **A4500-H B**

Analysis Date: **12/27/10 16:05** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.23	0.10									

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Run ID :Run Order: **MAN-TECH_101227B: 66** SampType: **Sample Duplicate** Sample ID: **H10120314-015ADUP** Method: **A4500-H B**

Analysis Date: **12/27/10 18:00** Units: **s.u.** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.68	0.10									

Associated samples: **H10120314-001B; H10120314-002B; H10120314-003B; H10120314-004B; H10120314-005B; H10120314-006B; H10120314-007B; H10120314-008B; H10120314-011B; H10120314-012B; H10120314-013B; H10120314-014B; H10120314-015B; H10120314-016B**

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; N - Analyte concentration was not sufficiently high to calculate RPD; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits; A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68216

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101229A: 8** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**

Analysis Date: **12/29/10 13:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.248	0.10	0.25		99	90	110				
Arsenic	0.0495	0.0050	0.05		99	90	110				
Cadmium	0.0261	0.0010	0.025		105	90	110				
Calcium	2.65	0.50	2.5		106	90	110				
Copper	0.0507	0.010	0.05		101	90	110				
Iron	0.261	0.030	0.255		102	90	110				
Lead	0.0506	0.010	0.05		101	90	110				
Magnesium	2.58	0.50	2.5		103	90	110				
Manganese	0.245	0.010	0.25		98	90	110				
Potassium	2.59	0.50	2.5		104	90	110				
Sodium	2.49	0.50	2.5		100	90	110				
Zinc	0.0506	0.010	0.05		101	90	110				

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-002D; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-005D; H10120314-006C; H10120314-006D; H10120314-007C; H10120314-007D; H10120314-008C; H10120314-008D; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-011D; H10120314-012C; H10120314-012D; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-014D; H10120314-015C; H10120314-015D; H10120314-016C; H10120314-016D; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **12/29/10 13:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	37.9	0.10	40		95	70	130				
Arsenic	0.000128	0.0050									
Cadmium	0.000446	0.0010									
Calcium	115	0.50									
Copper	0.00157	0.010									
Iron	96.9	0.030	100		97	70	130				
Lead	0.000108	0.010									
Magnesium	39.9	0.50									
Manganese	0.00173	0.010									
Potassium	39.5	0.50									
Sodium	99.0	0.50									
Zinc	0.00108	0.010									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68216

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101229A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **12/29/10 13:45** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-002D; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-005D; H10120314-006C; H10120314-006D; H10120314-007C; H10120314-007D; H10120314-008C; H10120314-008D; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-011D; H10120314-012C; H10120314-012D; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-014D; H10120314-015C; H10120314-015D; H10120314-016C; H10120314-016D; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **12/29/10 13:50** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	37.8	0.10	40		94	70	130				
Arsenic	0.0102	0.0050	0.01		102	70	130				
Cadmium	0.00984	0.0010	0.01		98	70	130				
Calcium	117	0.50	120		98	70	130				
Copper	0.0209	0.010	0.02		105	70	130				
Iron	99.3	0.030	100		99	70	130				
Lead	9.40E-05	0.010				0	0				
Magnesium	40.4	0.50	40		101	70	130				
Manganese	0.0211	0.010	0.02		106	70	130				
Potassium	39.9	0.50	40		100	70	130				
Sodium	99.8	0.50	100		100	70	130				
Zinc	0.0106	0.010	0.01		106	70	130				

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-002D; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-005D; H10120314-006C; H10120314-006D; H10120314-007C; H10120314-007D; H10120314-008C; H10120314-008D; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-011D; H10120314-012C; H10120314-012D; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-014D; H10120314-015C; H10120314-015D; H10120314-016C; H10120314-016D; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 21** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**

Analysis Date: **12/29/10 14:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.0002									
Arsenic	ND	3E-05									
Cadmium	ND	1E-05									
Calcium	ND	0.006									
Copper	ND	3E-05									
Iron	0.0005	0.0002									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68216

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101229A: 21** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**

Analysis Date: **12/29/10 14:49** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1E-05									
Magnesium	ND	0.0010									
Manganese	ND	2E-05									
Potassium	ND	0.02									
Sodium	ND	0.02									
Zinc	ND	0.0006									

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 22** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**

Analysis Date: **12/29/10 14:54** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0483	0.10	0.05		97	85	115				
Arsenic	0.0480	0.0050	0.05		96	85	115				
Cadmium	0.0487	0.0010	0.05		97	85	115				
Calcium	47.3	0.50	50		95	85	115				
Copper	0.0459	0.010	0.05		92	85	115				
Iron	4.88	0.030	5	0.0005152	97	85	115				
Lead	0.0492	0.010	0.05		98	85	115				
Magnesium	47.9	0.50	50		96	85	115				
Manganese	0.0461	0.010	0.05		92	85	115				
Potassium	48.2	0.50	50		97	85	115				
Sodium	47.4	0.50	50		95	85	115				
Zinc	0.0491	0.010	0.05		98	85	115				

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 36** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**

Analysis Date: **12/29/10 15:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.245	0.10	0.25		98	90	110				
Arsenic	0.0497	0.0050	0.05		99	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68216

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101229A: 36** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**

Analysis Date: **12/29/10 15:56** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.0252	0.0010	0.025		101	90	110				
Calcium	2.69	0.50	2.5		107	90	110				
Copper	0.0508	0.010	0.05		102	90	110				
Iron	0.262	0.030	0.255		103	90	110				
Lead	0.0504	0.010	0.05		101	90	110				
Magnesium	2.58	0.50	2.5		103	90	110				
Manganese	0.243	0.010	0.25		97	90	110				
Potassium	2.56	0.50	2.5		102	90	110				
Sodium	2.51	0.50	2.5		100	90	110				
Zinc	0.0508	0.010	0.05		101	90	110				

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-002D; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-005D; H10120314-006C; H10120314-006D; H10120314-007C; H10120314-007D; H10120314-008C; H10120314-008D; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-011D; H10120314-012C; H10120314-012D; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-014D; H10120314-015C; H10120314-015D; H10120314-016C; H10120314-016D; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 45** SampType: **Sample Matrix Spike** Sample ID: **H10120314-001CMS** Method: **E200.8**

Analysis Date: **12/29/10 16:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0471	0.10	0.05	0.001108	92	70	130				
Arsenic	0.0472	0.0050	0.05	0.0004009	94	70	130				
Cadmium	0.0456	0.0010	0.05		91	70	130				
Calcium	65.3	1.0	50	19.67	91	70	130				
Copper	0.0451	0.010	0.05	0.0003121	90	70	130				
Iron	4.45	0.030	5	0.02553	89	70	130				
Lead	0.0474	0.010	0.05	0.0000283	95	70	130				
Magnesium	55.9	1.0	50	11.45	89	70	130				
Manganese	0.0472	0.010	0.05	0.001125	92	70	130				
Potassium	46.2	1.0	50	0.3074	92	70	130				
Sodium	45.8	1.0	50	1.155	89	70	130				
Zinc	0.0823	0.010	0.05	0.03544	94	70	130				

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68216

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101229A: 46** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120314-001CMSD** Method: **E200.8**

Analysis Date: **12/29/10 16:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0475	0.10	0.05	0.001108	93	70	130	0.04707		20	
Arsenic	0.0482	0.0050	0.05	0.0004009	96	70	130	0.04718	2.2	20	
Cadmium	0.0464	0.0010	0.05		93	70	130	0.04564	1.7	20	
Calcium	66.0	1.0	50	19.67	93	70	130	65.3	1.1	20	
Copper	0.0460	0.010	0.05	0.0003121	91	70	130	0.04511	1.8	20	
Iron	4.51	0.030	5	0.02553	90	70	130	4.453	1.3	20	
Lead	0.0470	0.010	0.05	0.0000283	94	70	130	0.04737	0.8	20	
Magnesium	57.5	1.0	50	11.45	92	70	130	55.9	2.9	20	
Manganese	0.0482	0.010	0.05	0.001125	94	70	130	0.04716	2.2	20	
Potassium	47.6	1.0	50	0.3074	95	70	130	46.23	3.0	20	
Sodium	47.0	1.0	50	1.155	92	70	130	45.85	2.6	20	
Zinc	0.0840	0.010	0.05	0.03544	97	70	130	0.08231	2.0	20	

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 49** SampType: **Sample Matrix Spike** Sample ID: **H10120314-001DMS** Method: **E200.8**

Analysis Date: **12/29/10 16:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0511	0.10	0.05	0.00573	91	70	130				
Arsenic	0.0485	0.0050	0.05	0.0004334	96	70	130				
Cadmium	0.0466	0.0010	0.05		93	70	130				
Calcium	66.1	1.0	50	21.11	90	70	130				
Copper	0.0465	0.010	0.05	0.0002383	92	70	130				
Iron	4.50	0.030	5	0.006453	90	70	130				
Lead	0.0478	0.010	0.05	0.0000603	96	70	130				
Magnesium	58.0	1.0	50	12.38	91	70	130				
Manganese	0.0469	0.010	0.05	0.0007145	92	70	130				
Potassium	47.5	1.0	50	0.3628	94	70	130				
Sodium	47.8	1.0	50	1.247	93	70	130				
Zinc	0.0561	0.010	0.05	0.007888	96	70	130				

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68216

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101229A: 50** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120314-001DMSD** Method: **E200.8**

Analysis Date: **12/29/10 16:57** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0521	0.10	0.05	0.00573	93	70	130	0.05107		20	
Arsenic	0.0488	0.0050	0.05	0.0004334	97	70	130	0.0485	0.7	20	
Cadmium	0.0464	0.0010	0.05		93	70	130	0.04658	0.3	20	
Calcium	67.7	1.0	50	21.11	93	70	130	66.07	2.4	20	
Copper	0.0468	0.010	0.05	0.0002383	93	70	130	0.04646	0.7	20	
Iron	4.65	0.030	5	0.006453	93	70	130	4.495	3.4	20	
Lead	0.0484	0.010	0.05	0.0000603	97	70	130	0.04783	1.2	20	
Magnesium	58.1	1.0	50	12.38	91	70	130	58	0.1	20	
Manganese	0.0476	0.010	0.05	0.0007145	94	70	130	0.04687	1.6	20	
Potassium	48.1	1.0	50	0.3628	95	70	130	47.53	1.2	20	
Sodium	47.0	1.0	50	1.247	92	70	130	47.75	1.5	20	
Zinc	0.0561	0.010	0.05	0.007888	96	70	130	0.05609	0.0	20	

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 87** SampType: **Sample Matrix Spike** Sample ID: **H10120314-013CMS** Method: **E200.8**

Analysis Date: **12/29/10 19:39** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0604	0.10	0.05	0.01532	90	70	130				
Arsenic	0.0491	0.0050	0.05	0.0001571	98	70	130				
Cadmium	0.0475	0.0010	0.05	0.000655	94	70	130				
Calcium	82.8	1.0	50	39.42	87	70	130				
Copper	0.0455	0.010	0.05	0.0002479	90	70	130				
Iron	4.66	0.030	5	0.04136	92	70	130				
Lead	0.0493	0.010	0.05	0.0005189	98	70	130				
Magnesium	72.2	1.0	50	27.78	89	70	130				
Manganese	0.0526	0.010	0.05	0.008171	89	70	130				
Potassium	44.7	1.0	50	1.112	87	70	130				
Sodium	47.3	1.0	50	1.725	91	70	130				
Zinc	0.287	0.010	0.05	0.2523		70	130				A

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68216

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101229A: 88** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120314-013CMSD** Method: **E200.8**

Analysis Date: **12/29/10 19:44** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	0.0601	0.10	0.05	0.01532	90	70	130	0.06036		20	
Arsenic	0.0488	0.0050	0.05	0.0001571	97	70	130	0.04907	0.6	20	
Cadmium	0.0476	0.0010	0.05	0.000655	94	70	130	0.0475	0.3	20	
Calcium	83.6	1.0	50	39.42	88	70	130	82.82	0.9	20	
Copper	0.0450	0.010	0.05	0.0002479	90	70	130	0.04547	1.0	20	
Iron	4.64	0.030	5	0.04136	92	70	130	4.656	0.3	20	
Lead	0.0491	0.010	0.05	0.0005189	97	70	130	0.04927	0.3	20	
Magnesium	72.5	1.0	50	27.78	89	70	130	72.17	0.4	20	
Manganese	0.0537	0.010	0.05	0.008171	91	70	130	0.05263	1.9	20	
Potassium	45.1	1.0	50	1.112	88	70	130	44.66	0.9	20	
Sodium	47.9	1.0	50	1.725	92	70	130	47.32	1.1	20	
Zinc	0.284	0.010	0.05	0.2523		70	130	0.2873	1.1	20	A

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Run ID :Run Order: **ICPMS204-B_101229A: 101** SampType: **Sample Matrix Spike** Sample ID: **H10120314-016DMS3** Method: **E200.8**

Analysis Date: **12/29/10 20:40** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	3.83	0.10	2.5	1.087	110	70	130				
Arsenic	0.490	0.0050	0.5	0.007089	97	70	130				
Cadmium	0.251	0.0010	0.25	0.000343	100	70	130				
Calcium	57.4	1.0	25	34.55	91	70	130				
Copper	0.470	0.010	0.5	0.004447	93	70	130				
Iron	6.84	0.030	2.5	4.633	88	70	130				
Lead	0.531	0.010	0.5	0.02323	101	70	130				
Magnesium	39.4	1.0	25	15.85	94	70	130				
Manganese	2.58	0.010	2.5	0.3703	88	70	130				
Potassium	22.6	1.0	25	0.9055	87	70	130				
Sodium	26.0	1.0	25	1.897	96	70	130				
Zinc	0.519	0.010	0.5	0.04338	95	70	130				

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68216

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_101229A: 102** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120314-016DMSD3** Method: **E200.8**

Analysis Date: **12/29/10 20:44** Units: **mg/L** **Prep Info:** Prep Date: **12/27/2010** Prep Method:

Analytes 12	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	4.08	0.10	2.5	1.087	120	70	130	3.827	6.3	20	
Arsenic	0.496	0.0050	0.5	0.007089	98	70	130	0.4905	1.2	20	
Cadmium	0.254	0.0010	0.25	0.000343	102	70	130	0.2511	1.2	20	
Calcium	57.7	1.0	25	34.55	92	70	130	57.38	0.5	20	
Copper	0.484	0.010	0.5	0.004447	96	70	130	0.4701	3.0	20	
Iron	7.19	0.030	2.5	4.633	102	70	130	6.838	5.0	20	
Lead	0.531	0.010	0.5	0.02323	102	70	130	0.5306	0.1	20	
Magnesium	39.0	1.0	25	15.85	93	70	130	39.41	1.0	20	
Manganese	2.59	0.010	2.5	0.3703	89	70	130	2.582	0.3	20	
Potassium	22.5	1.0	25	0.9055	86	70	130	22.56	0.2	20	
Sodium	25.6	1.0	25	1.897	95	70	130	25.98	1.3	20	
Zinc	0.527	0.010	0.5	0.04338	97	70	130	0.5192	1.5	20	

Associated samples: **H10120314-001C; H10120314-001D; H10120314-002C; H10120314-003C; H10120314-003D; H10120314-004C; H10120314-004D; H10120314-005C; H10120314-006C; H10120314-007C; H10120314-008C; H10120314-009A; H10120314-010A; H10120314-011C; H10120314-012C; H10120314-013C; H10120314-013D; H10120314-014C; H10120314-015C; H10120314-016C; H10120314-017A; H10120314-018A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68259

Date: *12-Jan-11*

Run ID :Run Order: **IC101-H_101230A: 12** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV123010-12** Method: **E300.0**
Analysis Date: **12/30/10 19:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	100	1.0	100		103	90	110				
Sulfate	420	1.0	400		105	90	110				

Associated samples: **H10120314-001A**

Run ID :Run Order: **IC101-H_101230A: 13** SampType: **Method Blank** Sample ID: **ICB123010-13** Method: **E300.0**
Analysis Date: **12/30/10 20:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.2									
Sulfate	ND	0.5									

Associated samples: **H10120314-001A**

Run ID :Run Order: **IC101-H_101230A: 14** SampType: **Laboratory Fortified Blank** Sample ID: **LFB123010-14** Method: **E300.0**
Analysis Date: **12/30/10 20:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49	1.0	50		98	90	110				
Sulfate	200	1.1	200		99	90	110				

Associated samples: **H10120314-001A**

Run ID :Run Order: **IC101-H_101230A: 15** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV-123010-15** Method: **E300.0**
Analysis Date: **12/30/10 20:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	100	1.0	100		103	90	110				
Sulfate	410	1.0	400		103	90	110				

Associated samples: **H10120314-001A**

Run ID :Run Order: **IC101-H_101230A: 26** SampType: **Sample Matrix Spike** Sample ID: **H10120314-001AMS** Method: **E300.0**
Analysis Date: **12/31/10 00:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	48	1.0	50	0.216	96	90	110				
Sulfate	200	1.1	200	5.087	97	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68259

Date: *12-Jan-11*

Run ID :Run Order: **IC101-H_101230A: 26** SampType: **Sample Matrix Spike** Sample ID: **H10120314-001AMS** Method: **E300.0**

Analysis Date: **12/31/10 00:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10120314-001A**

Run ID :Run Order: **IC101-H_101230A: 27** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120314-001AMSD** Method: **E300.0**

Analysis Date: **12/31/10 00:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	48	1.0	50	0.216	**96**	90	110	48.39	**0.5**	20	
Sulfate	200	1.1	200	5.087	**98**	90	110	200	**0.6**	20	

Associated samples: **H10120314-001A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68286

Date: *12-Jan-11*

Run ID :Run Order: **IC101-H_101229A: 11** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV122810-11** Method: **E300.0**

Analysis Date: **12/30/10 11:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		100	90	110				
Sulfate	96	1.0	100		96	90	110				

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 12** SampType: **Method Blank** Sample ID: **ICB122810-12** Method: **E300.0**

Analysis Date: **12/30/10 11:34** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.2									
Sulfate	ND	0.5									

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 13** SampType: **Laboratory Fortified Blank** Sample ID: **LFB122810-13** Method: **E300.0**

Analysis Date: **12/30/10 11:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	27	1.0	25		109	90	110				
Sulfate	100	1.1	100		103	90	110				

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 14** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV122210-15** Method: **E300.0**

Analysis Date: **12/30/10 11:53** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		100	90	110				
Sulfate	96	1.0	100		96	90	110				

Associated samples: **H10120314-001B; H10120314-002A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68286

Date: *12-Jan-11*

Run ID :Run Order: **IC101-H_101229A: 16** SampType: **Laboratory Fortified Blank** Sample ID: **LFB122810-13** Method: **E300.0**

Analysis Date: **12/30/10 12:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	26	1.0	25		105	90	110				
Sulfate	98	1.1	100		98	90	110				

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 18** SampType: **Sample Matrix Spike** Sample ID: **B10121796-002AMS** Method: **E300.0**

Analysis Date: **12/30/10 12:32** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	29	1.0	25	4.146	100	90	110				
Sulfate	530	1.1	100	424.2		90	110				A

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 19** SampType: **Sample Matrix Spike Duplicate** Sample ID: **B10121796-002AMSD** Method: **E300.0**

Analysis Date: **12/30/10 12:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	29	1.0	25	4.146	101	90	110				
Sulfate	530	1.1	100	424.2		90	110				A

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 22** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV122210-68** Method: **E300.0**

Analysis Date: **12/30/10 13:11** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		101	90	110				
Sulfate	96	1.0	100		96	90	110				

Associated samples: **H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B**

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68286

Date: *12-Jan-11*

Run ID :Run Order: **IC101-H_101229A: 30** SampType: **Sample Matrix Spike** Sample ID: **H10120314-005AMS** Method: **E300.0**

Analysis Date: **12/30/10 14:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51	1.0	50	0.44	102	90	110				
Sulfate	260	1.1	200	53.01	104	90	110				

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 31** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120314-005AMSD** Method: **E300.0**

Analysis Date: **12/30/10 14:37** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51	1.0	50	0.44	101	90	110	51.25	0.8	20	
Sulfate	260	1.1	200	53.01	103	90	110	260.3	0.7	20	

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 37** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV122210-68** Method: **E300.0**

Analysis Date: **12/30/10 15:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	25	1.0	25		102	90	110				
Sulfate	98	1.0	100		98	90	110				

Associated samples: **H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Run ID :Run Order: **IC101-H_101229A: 44** SampType: **Sample Matrix Spike** Sample ID: **H10120314-013AMS** Method: **E300.0**

Analysis Date: **12/30/10 16:43** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51	1.0	50	0.419	102	90	110				
Sulfate	340	1.1	200	132.7	106	90	110				

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68286

Date: *12-Jan-11*

Run ID :Run Order: **IC101-H_101229A: 45** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120314-013AMSD** Method: **E300.0**

Analysis Date: **12/30/10 16:52** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	51	1.0	50	0.419	102	90	110	51.46	0.2	20	
Sulfate	340	1.1	200	132.7	105	90	110	344.1	0.5	20	

Associated samples: **H10120314-001B; H10120314-002A; H10120314-002B; H10120314-003A; H10120314-003B; H10120314-004A; H10120314-004B; H10120314-005A; H10120314-005B; H10120314-006A; H10120314-006B; H10120314-007A; H10120314-007B; H10120314-008A; H10120314-008B; H10120314-011A; H10120314-013A; H10120314-014A; H10120314-015A; H10120314-016A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68292

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_110103A: 8** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **01/03/11 18:09** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0504	0.010	0.05		101	90	110				
Manganese	0.245	0.010	0.25		98	90	110				

Associated samples: **H10120314-006C; H10120314-007C; H10120314-012D**

Run ID :Run Order: **ICPMS204-B_110103A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**
Analysis Date: **01/03/11 18:13** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.000528	0.010									
Manganese	0.00198	0.010									

Associated samples: **H10120314-006C; H10120314-007C; H10120314-012D**

Run ID :Run Order: **ICPMS204-B_110103A: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**
Analysis Date: **01/03/11 18:18** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0208	0.010	0.02		104	70	130				
Manganese	0.0233	0.010	0.02		116	70	130				

Associated samples: **H10120314-006C; H10120314-007C; H10120314-012D**

Run ID :Run Order: **ICPMS204-B_110103A: 22** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **01/03/11 19:10** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0483	0.010	0.05		97	90	110				
Manganese	0.238	0.010	0.25		95	90	110				

Associated samples: **H10120314-006C; H10120314-007C; H10120314-012D**

Run ID :Run Order: **ICPMS204-B_110103A: 28** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**
Analysis Date: **01/03/11 19:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	3E-05									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68292

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_110103A: 28** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**
Analysis Date: **01/03/11 19:38** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10120314-006C; H10120314-007C**

Run ID :Run Order: **ICPMS204-B_110103A: 29** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**
Analysis Date: **01/03/11 19:42** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0464	0.010	0.05		93	85	115				

Associated samples: **H10120314-006C; H10120314-007C**

Run ID :Run Order: **ICPMS204-B_110103A: 66** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **01/03/11 22:24** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0506	0.010	0.05		101	90	110				
Manganese	0.245	0.010	0.25		98	90	110				

Associated samples: **H10120314-006C; H10120314-007C; H10120314-012D**

Run ID :Run Order: **ICPMS204-B_110103A: 78** SampType: **Sample Matrix Spike** Sample ID: **H10120322-001AMS** Method: **E200.8**
Analysis Date: **01/03/11 23:17** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0510	0.010	0.05	0.001407	99	70	130				

Associated samples: **H10120314-006C; H10120314-007C**

Run ID :Run Order: **ICPMS204-B_110103A: 79** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H10120322-001AMSD** Method: **E200.8**
Analysis Date: **01/03/11 23:22** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0500	0.010	0.05	0.001407	97	70	130	0.05097	2.0	20	

Associated samples: **H10120314-006C; H10120314-007C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68451

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_110110A: 7** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**

Analysis Date: **01/10/11 14:19** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0512	0.010	0.05		102	90	110				

Associated samples: **H10120314-002E; H10120314-006E; H10120314-007E; H10120314-008E; H10120314-012E; H10120314-014E; H10120314-015E; H10120314-016E**

Run ID :Run Order: **ICPMS204-B_110110A: 8** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**

Analysis Date: **01/10/11 14:23** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.000440	0.010									

Associated samples: **H10120314-002E; H10120314-006E; H10120314-007E; H10120314-008E; H10120314-012E; H10120314-014E; H10120314-015E; H10120314-016E**

Run ID :Run Order: **ICPMS204-B_110110A: 9** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**

Analysis Date: **01/10/11 14:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	0.0212	0.010	0.02		106	70	130				

Associated samples: **H10120314-002E; H10120314-006E; H10120314-007E; H10120314-008E; H10120314-012E; H10120314-014E; H10120314-015E; H10120314-016E**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68475

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_110111A: 8** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **01/11/11 11:30** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	2.64	0.50	2.5		106	90	110				

Associated samples: **H10120314-012C**

Run ID :Run Order: **ICPMS204-B_110111A: 9** SampType: **Interference Check Sample A** Sample ID: **ICSA** Method: **E200.8**
Analysis Date: **01/11/11 11:35** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	117	0.50									

Associated samples: **H10120314-012C**

Run ID :Run Order: **ICPMS204-B_110111A: 10** SampType: **Interference Check Sample AB** Sample ID: **ICSAB** Method: **E200.8**
Analysis Date: **01/11/11 11:40** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	116	0.50	120		97	70	130				

Associated samples: **H10120314-012C**

Run ID :Run Order: **ICPMS204-B_110111A: 16** SampType: **Method Blank** Sample ID: **ICB** Method: **E200.8**
Analysis Date: **01/11/11 12:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.006									

Associated samples: **H10120314-012C**

Run ID :Run Order: **ICPMS204-B_110111A: 17** SampType: **Laboratory Fortified Blank** Sample ID: **LFB** Method: **E200.8**
Analysis Date: **01/11/11 12:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	45.8	0.50	50		92	85	115				

Associated samples: **H10120314-012C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68475

Date: *12-Jan-11*

Run ID :Run Order: **ICPMS204-B_110111A: 36** SampType: **Sample Matrix Spike** Sample ID: **H11010080-006AMS** Method: **E200.8**
Analysis Date: **01/11/11 14:05** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	105	1.0	50	58.05	93	70	130				

Associated samples: **H10120314-012C**

Run ID :Run Order: **ICPMS204-B_110111A: 37** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H11010080-006AMSD** Method: **E200.8**
Analysis Date: **01/11/11 14:09** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	102	1.0	50	58.05	89	70	130	104.7	2.1	20	

Associated samples: **H10120314-012C**

Run ID :Run Order: **ICPMS204-B_110111A: 48** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **01/11/11 14:58** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	2.68	0.50	2.5		107	90	110				

Associated samples: **H10120314-012C**

Run ID :Run Order: **ICPMS204-B_110111A: 85** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV STD** Method: **E200.8**
Analysis Date: **01/11/11 18:00** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	2.65	0.50	2.5		106	90	110				

Associated samples: **H10120314-012C**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68488

Date: *12-Jan-11*

Run ID :Run Order: **IC101-H_110111A: 13** SampType: **Initial Calibration Verification Standard** Sample ID: **ICV011111-12** Method: **E300.0**
Analysis Date: **01/11/11 10:28** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	100	1.0	100		105	90	110				
Sulfate	420	1.0	400		105	90	110				

Associated samples: **H10120314-012A**

Run ID :Run Order: **IC101-H_110111A: 14** SampType: **Method Blank** Sample ID: **ICB011111-13** Method: **E300.0**
Analysis Date: **01/11/11 10:46** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.2									
Sulfate	ND	0.5									

Associated samples: **H10120314-012A**

Run ID :Run Order: **IC101-H_110111A: 15** SampType: **Laboratory Fortified Blank** Sample ID: **LFB011111-14** Method: **E300.0**
Analysis Date: **01/11/11 11:04** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49	1.0	50		98	90	110				
Sulfate	200	1.1	200		99	90	110				

Associated samples: **H10120314-012A**

Run ID :Run Order: **IC101-H_110111A: 30** SampType: **Continuing Calibration Verification Standard** Sample ID: **CCV011111-28** Method: **E300.0**
Analysis Date: **01/11/11 15:41** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	98	1.0	100		98	90	110				
Sulfate	390	1.0	400		98	90	110				

Associated samples: **H10120314-012A**

Run ID :Run Order: **IC101-H_110111A: 33** SampType: **Sample Matrix Spike** Sample ID: **H11010076-001AMS** Method: **E300.0**
Analysis Date: **01/11/11 16:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	47	1.0	50	0.772	92	90	110				
Sulfate	190	1.1	200	3.117	93	90	110				

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Client: MT DEQ-Site Response
Work Order: H10120314
Project: TO20 - UBMC Monitoring

ANALYTICAL QC SUMMARY REPORT

Prepared by Helena, MT Branch

BatchID: R68488

Date: *12-Jan-11*

Run ID :Run Order: **IC101-H_110111A: 33** SampType: **Sample Matrix Spike** Sample ID: **H11010076-001AMS** Method: **E300.0**

Analysis Date: **01/11/11 16:36** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: **H10120314-012A**

Run ID :Run Order: **IC101-H_110111A: 34** SampType: **Sample Matrix Spike Duplicate** Sample ID: **H11010076-001AMSD** Method: **E300.0**

Analysis Date: **01/11/11 16:55** Units: **mg/L** **Prep Info:** Prep Date: Prep Method:

Analytes 2	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	47	1.0	50	0.772	**92**	90	110	46.62	**0.3**	20	
Sulfate	190	1.1	200	3.117	**94**	90	110	189.3	**0.6**	20	

Associated samples: **H10120314-012A**

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than three times the spike amount

Workorder Receipt Checklist

MT DEQ-Site Response

H10120314

Login completed by: Tracy L. Lorash
Date Received: 12/23/2010
Reviewed by: BL2000\sdull
Received by: abb
Reviewed Date: 12/29/2010
Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☐	No ☑	
Container/Temp Blank temperature:	9.1°C		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Contact and Corrective Action Comments:

Date and time on COC from client do not match when samples were relinquished. Sample ID on COC is TDMW3D-20101220 collected on 12/20/10 @ 13:00 - unfiltered raw sample bottle has TDMW4D-20101220. Samples collected on 12/15 and 12/16 received past hold for TSS and TDS. All samples received past hold for pH. Emailed client. TI 12/27/10.

Terra Graphics
ENVIRONMENTAL ENGINEERING
15 W 6th Avenue, Power Block 3rd Floor W
HELENA, MT 59601
(406) 441-5441 Fax (406) 441-5443

CHAIN OF CUSTODY RECORD

H10120314

Data to: TerraGraphics
Invoice to: MDEQ
Project Name: TO20- UBMC Monitoring
Project Location : UBMC
Quote # H499
TO: Energy Lab

Lab ID	Sample Date	Sample Time	SAMPLE DESCRIPTION Soil	GW	SW		Analysis (see Quote) Total Metals	Dissolved Metals	Dissolved Anions	Dissolved Cations	Physiochemical
UBM-BRSW01-20101215	12/15/2010	13:00			X		X	X	X	X	X
UBM-BRSW01-555-20101215	12/15/2010	13:15			X		X	X	X	X	X
UBM-BRSW23-20101216	12/16/2010	13:46			X		X	X	X	X	X
UBM-BRSW48-20101216	12/16/2010	13:00			X		X	X	X	X	X
UBM-BRSW3A-20101215	12/15/2010	14:20			X		X	X	X	X	X
UBM-BRSW3B-20101215	12/15/2010	14:00			X		X	X	X	X	X
UBM-BRSW38-20101216	12/16/2010	15:45			X		X	X	X	X	X
UBM-BRSW29-20101216	12/16/2010	15:00			X		X	X	X	X	X
UBM-BRSW29-333-20101216	12/16/2010	15:10			X		X				
UBM-BRSW29-444-20101216	12/16/2010	15:15			X		X				
UBM-TDMW4D-20101220	12/20/2010	12:00		X			X	X	X	X	X
UBM-TDMW2S-20101221	12/21/2010	12:15		X			X	X	X	X	X
UBM-TDMW01-555-20101221	12/21/2010	11:00		X			X	X	X	X	X
UBM-TDMW2D-20101221	12/21/2010	11:45		X			X	X	X	X	X
UBM-TDMW01-20101221	12/21/2010	11:00		X			X	X	X	X	X
UBM-TDMW3D-20101220	12/20/2010	13:00		X			X	X	X	X	X
UBM-TDMW01-333-20101221	12/21/2010	11:05		X			X				
UBM-TDMW01-444-20101221	12/21/2010	11:05		X			X				

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time
Shana Stone	12-22-2010 10:45	Amanda Pearson	12/23/10 12:46
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Date/Time

Normal T.A.T.

Temp 9.1

REMARKS: Perform Lab QA/QC on last sample per batch

UBMC Surface Water Flow Summary March 2010

BRSW-01

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.43	0.3	0.13	0.45	0.06
0.43	0.25	0.11	0.27	0.03
0.43	0.3	0.13	0.86	0.11
0.43	0.2	0.09	0.93	0.08
0.43	0.2	0.09	0.44	0.04
0.43	0.15	0.06	0.08	0.01
0.43	0.2	0.09	0.29	0.02
0.43	0.1	0.04	1.95	0.08
0.43	0.05	0.02	0.30	0.01
0.43	0.05	0.02	0.14	0.00
Totals		0.77	5.71	**0.44**

BRSW-3A

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.316	0.3	0.09	0.28	0.03
0.316	0.3	0.09	0.35	0.03
0.316	0.25	0.08	0.14	0.01
0.316	0.3	0.09	0.03	0.00
0.316	0.3	0.09	0.04	0.00
0.316	0.2	0.06	0.13	0.01
0.316	0.2	0.06	0.22	0.01
0.316	0.2	0.06	0.04	0.00
0.316	0.1	0.03	0.03	0.00
0.316	0.1	0.03	0.02	0.00
Totals		0.71	1.28	**0.10**

BRSW-38

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.383	0.25	0.10	0.47	0.05
0.383	0.4	0.15	0.93	0.14
0.383	0.6	0.23	1.25	0.29
0.383	0.65	0.25	1.02	0.25
0.383	0.45	0.17	1.10	0.19
0.383	0.45	0.17	1.42	0.24
0.383	0.4	0.15	1.41	0.22
0.383	0.2	0.08	0.64	0.05
0.383	0.2	0.08	0.39	0.03
0.383	0.3	0.11	0.04	0.00
Totals		1.49	8.67	**1.46**

BRSW-48

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.35	0.05	0.02	0.25	0.00
0.35	0.1	0.04	1.13	0.04
0.35	0.15	0.05	0.87	0.05
0.35	0.15	0.05	0.96	0.05
0.35	0.2	0.07	1.82	0.13
0.35	0.3	0.11	1.83	0.19
0.35	0.2	0.07	1.87	0.13
0.35	0.2	0.07	1.06	0.07
0.35	0.3	0.11	0.66	0.07
0.35	0.2	0.07	0.08	0.01
Totals		0.65	10.53	**0.74**

BRSW-3B

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.225	0.25	0.06	0.06	0.00
0.225	0.45	0.10	0.15	0.02
0.225	0.45	0.10	0.16	0.02
0.225	0.5	0.11	0.15	0.02
0.225	0.5	0.11	0.12	0.01
0.225	0.5	0.11	0.18	0.02
0.225	0.45	0.10	0.22	0.02
0.225	0.35	0.08	0.22	0.02
0.225	0.3	0.07	0.13	0.01
0.225	0.1	0.02	0.05	0.00
Totals		0.87	1.44	**0.13**

BRSW-23

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.416	0.1	0.04	0.01	0.00
0.416	0.3	0.12	0.01	0.00
0.416	0.5	0.21	1.45	0.30
0.416	0.6	0.25	1.70	0.42
0.416	0.4	0.17	0.85	0.14
0.416	0.3	0.12	0.38	0.05
0.416	0.3	0.12	0.77	0.10
0.416	0.35	0.15	0.80	0.12
0.416	0.35	0.15	0.14	0.02
0.416	0.25	0.10	0.01	0.00
Totals		1.44	6.12	**1.15**

BRSW-29

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.416	0.15	0.06	0.31	0.02
0.416	0.3	0.12	0.14	0.02
0.416	0.35	0.15	0.24	0.03
0.416	0.45	0.19	0.19	0.04
0.416	0.6	0.25	1.31	0.33
0.416	0.8	0.33	2.06	0.69
0.416	0.9	0.37	2.46	0.92
0.416	0.7	0.29	2.82	0.82
0.416	0.2	0.08	1.60	0.13
0.416	0.2	0.08	0.48	0.04
Totals		1.93	11.61	**3.04**

UBMC Surface Water Flow Summary June 2010

BRSW-01

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.52	0.4	0.21	0.92	0.19
0.52	0.4	0.21	1.37	0.28
0.52	0.7	0.36	1.49	0.54
0.52	0.8	0.42	1.20	0.50
0.52	0.7	0.36	2.57	0.94
0.52	0.7	0.36	3.23	1.18
0.52	0.7	0.36	2.13	0.78
0.52	0.7	0.36	2.04	0.74
0.52	0.7	0.36	3.11	1.13
0.52	0.5	0.26	0.45	0.12
Totals		3.28	18.51	**6.40**

BRSW-22

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.73	0.8	0.58	1.25	0.73
0.73	0.7	0.51	0.30	0.15
0.73	0.7	0.51	2.12	1.08
0.73	0.7	0.51	3.12	1.59
0.73	0.8	0.58	0.70	0.41
0.73	0.9	0.66	3.79	2.49
0.73	0.8	0.58	2.96	1.73
0.73	1	0.73	2.23	1.63
0.73	0.7	0.51	2.77	1.42
0.73	0.5	0.37	1.09	0.40
Totals		5.55	20.33	**11.63**

BRSW-48

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.64	0.8	0.51	1.14	0.58
0.64	0.95	0.61	1.85	1.12
0.64	1	0.64	2.09	1.34
0.64	1	0.64	0.92	0.59
0.64	0.95	0.61	1.45	0.88
0.64	1	0.64	1.49	0.95
0.64	1.1	0.70	1.54	1.08
0.64	1.05	0.67	1.17	0.79
0.64	0.75	0.48	1.22	0.59
0.64	0.45	0.29	1.27	0.37
Totals		5.79	14.14	**8.29**

BRSW-23

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.93	0.4	0.37	0.72	0.27
0.93	0.65	0.60	0.01	0.01
0.93	0.7	0.65	1.22	0.79
0.93	0.75	0.70	3.15	2.20
0.93	0.6	0.56	4.36	2.43
0.93	0.5	0.47	3.51	1.63
0.93	0.35	0.33	1.85	0.60
0.93	0.4	0.37	2.52	0.94
0.93	0.45	0.42	2.13	0.89
0.93	0.55	0.51	1.80	0.92
Totals		4.98	21.27	**10.68**

BRSW-38

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.95	0.4	0.38	0.65	0.25
0.95	0.5	0.48	1.36	0.65
0.95	0.35	0.33	2.24	0.74
0.95	0.6	0.57	2.75	1.57
0.95	0.75	0.71	3.51	2.50
0.95	0.7	0.67	2.61	1.74
0.95	0.8	0.76	2.39	1.82
0.95	0.5	0.48	1.89	0.90
0.95	0.8	0.76	1.94	1.47
0.95	0.75	0.71	2.03	1.45
Totals		5.84	21.37	**13.08**

BRSW-29

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
1.03	0.1	0.103	0.49	0.05
1.03	0.1	0.103	0.62	0.06
1.03	0.2	0.206	0.84	0.17
1.03	0.3	0.309	0.45	0.14
1.03	0.25	0.258	0.59	0.15
1.03	0.45	0.464	0.81	0.38
1.03	0.4	0.412	1.06	0.44
1.03	0.45	0.464	1.58	0.73
1.03	0.4	0.412	1.15	0.47
1.03	0.3	0.309	1.95	0.60
1.03	0.4	0.412	2.2	0.91
1.03	0.8	0.824	2.73	2.25
1.03	0.75	0.773	2.85	2.20
1.03	0.75	0.773	2.53	1.95
1.03	0.85	0.876	2.51	2.20
1.03	0.9	0.927	2.95	2.73
1.03	0.7	0.721	3.76	2.71
1.03	0.7	0.721	3.13	2.26
1.03	0.7	0.721	2.42	1.74
1.03	0.5	0.515	2.41	1.24
Totals		10.300	37.03	**23.40**

UBMC Surface Water Flow Summary September 2010

BRSW-01

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.4	0.15	0.06	0.08	0.00
0.4	0.25	0.10	0.56	0.06
0.4	0.25	0.10	0.81	0.08
0.4	0.2	0.08	1.18	0.09
0.4	0.25	0.10	0.64	0.06
0.4	0.2	0.08	0.50	0.04
0.4	0.2	0.08	0.53	0.04
0.4	0.25	0.10	0.60	0.06
0.4	0.1	0.04	0.37	0.01
0.4	0.1	0.04	0.46	0.02
Totals		0.78	5.73	**0.48**

BRSW-22

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.3	0.1	0.03	0.16	0.00
0.3	0.1	0.03	0.08	0.00
0.3	0.1	0.03	0.09	0.00
0.3	0.2	0.06	0.52	0.03
0.3	0.2	0.06	0.50	0.03
0.3	0.1	0.03	0.27	0.01
0.3	0.1	0.03	0.20	0.01
0.3	0.1	0.03	0.07	0.00
0.3	0.1	0.03	0.04	0.00
0.3	0.05	0.02	0.04	0.00
Totals		0.35	1.97	**0.09**

BRSW-23

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.4	0.3	0.12	0.20	0.02
0.4	0.3	0.12	0.26	0.03
0.4	0.3	0.12	0.58	0.07
0.4	0.4	0.16	1.01	0.16
0.4	0.3	0.12	0.98	0.12
0.4	0.1	0.04	0.97	0.04
0.4	0.1	0.04	0.90	0.04
0.4	0.2	0.08	0.64	0.05
0.4	0.1	0.04	0.13	0.01
0.4	0.1	0.04	0.14	0.01
Totals		0.88	5.81	**0.54**

BRSW-38

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.5	0.25	0.13	0.75	0.09
0.5	0.2	0.10	1.32	0.13
0.5	0.25	0.13	1.07	0.13
0.5	0.2	0.10	0.32	0.03
0.5	0.25	0.13	1.40	0.18
0.5	0.2	0.10	0.69	0.07
0.5	0.2	0.10	0.59	0.06
0.5	0.2	0.10	0.02	0.00
0.5	0.25	0.13	0.70	0.09
0.5	0.25	0.13	0.89	0.11
Totals		1.13	7.75	**0.90**

BRSW-48

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.5	0.45	0.23	0.33	0.07
0.5	0.5	0.25	0.36	0.09
0.5	0.5	0.25	0.40	0.10
0.5	0.6	0.30	0.41	0.12
0.5	0.6	0.30	0.35	0.11
0.5	0.5	0.25	0.33	0.08
0.5	0.55	0.28	0.34	0.09
0.5	0.65	0.33	0.35	0.11
0.5	0.6	0.30	0.34	0.10
0.5	0.4	0.20	0.34	0.07
Totals		2.68	3.55	**0.95**

BRSW-29

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.425	0.35	0.149	0.71	0.11
0.425	0.35	0.149	1.27	0.19
0.425	0.3	0.128	1.34	0.17
0.425	0.3	0.128	0.87	0.11
0.425	0.3	0.128	0.96	0.12
0.425	0.3	0.128	0.74	0.09
0.425	0.3	0.128	0.63	0.08
0.425	0.35	0.149	0.6	0.09
0.425	0.3	0.128	0.54	0.07
0.425	0.4	0.170	0.68	0.12
0.425	0.3	0.128	0.52	0.07
0.425	0.4	0.170	0.83	0.14
0.425	0.3	0.128	1.18	0.15
0.425	0.2	0.085	1.34	0.11
0.425	0.2	0.085	0.4	0.03
0.425	0.3	0.128	1.04	0.13
0.425	0.3	0.128	0.87	0.11
0.425	0.3	0.128	0.54	0.07
0.425	0.3	0.128	0.46	0.06
0.425	0.1	0.043	0.26	0.01
Totals		2.529	15.78	**2.03**

UBMC Surface Water Flow Summary December 2010

BRSW-23

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.4	0.1	0.04	0.03	0.00
0.4	0.1	0.04	0.06	0.00
0.4	0.2	0.08	0.13	0.01
0.4	0.2	0.08	0.44	0.04
0.4	0.3	0.12	0.53	0.06
0.4	0.2	0.08	0.33	0.03
0.4	0.1	0.04	0.51	0.02
0.4	0.1	0.04	0.26	0.01
0.4	0.1	0.04	0.23	0.01
0.4	0.1	0.04	0.31	0.01
Totals		0.60	2.83	**0.19**

BRSW-38

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.5	0.05	0.03	1.22	0.03
0.5	0.3	0.15	1.61	0.24
0.5	0.4	0.20	0.34	0.07
0.5	0.3	0.15	0.85	0.13
0.5	0.3	0.15	0.23	0.03
0.5	0.2	0.10	0.71	0.07
0.5	0.3	0.15	0.05	0.01
0.5	0.2	0.10	0.03	0.00
0.5	0.1	0.05	0.01	0.00
0.5	0.1	0.05	0.02	0.00
Totals		1.13	5.07	**0.59**

BRSW-29

Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)
0.4	0.2	0.080	0.12	0.01
0.4	0.3	0.120	0.17	0.02
0.4	0.2	0.080	0.38	0.03
0.4	0.25	0.100	0.54	0.05
0.4	0.15	0.060	0.61	0.04
0.4	0.2	0.080	0.84	0.07
0.4	0.2	0.080	0.72	0.06
0.4	0.3	0.120	0.92	0.11
0.4	0.2	0.080	0.7	0.06
0.4	0.25	0.100	0.49	0.05
0.4	0.35	0.140	0.54	0.08
0.4	0.3	0.120	0.06	0.01
0.4	0.25	0.100	0.01	0.00
0.4	0.3	0.120	0.32	0.04
0.4	0.15	0.060	0.75	0.05
0.4	0.25	0.100	0.61	0.06
0.4	0.3	0.120	0.79	0.09
0.4	0.4	0.160	0.76	0.12
0.4	0.3	0.120	0.6	0.07
0.4	0.2	0.080	0.27	0.02
Totals		2.020	10.2	**1.03**

Appendix C

Data Validation Reports

DATA VALIDATION REPORT
UBMC March 2010 Groundwater

Prepared by: Mara Moscato, TerraGraphics, on 10/2/2012

Reviewed by: Susan Spalinger, TerraGraphics, on 10/4/12

1. Introduction

This memo addresses the quality assurance and quality control (QA/QC) review of nine samples analyzed by Energy Laboratories in report H10030226, as part of the UBMC quarterly monitoring on March 16 and 17, 2010. Validation procedures used are consistent with the *Final Sampling and Analysis Plan(SAP) / Quality Assurance Project Plan (QAPP) for Groundwater and Surface Water Monitoring and Soil and Tailings Sampling at the Upper Blackfoot Mining Complex, Lewis and Clark County, Montana* (TerraGraphics 2009), hereinafter referred to as the SAP/QAPP, and the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA 2010).

The samples evaluated in this data validation report are listed in Table 1 and include six groundwater samples, one field duplicate, one rinsate blank, and one field blank. The analytes and analytical methods are presented in Table 2.

Table 1 Evaluated Samples

Laboratory ID	Sample ID
H10030226-001	UBM-TDMW4D-20100316
H10030226-002	UBM-TDMW05-20100316
H10030226-003	UBM-TDMW05-333-20100316
H10030226-004	UBM-TDMW05-444-20100316
H10030226-005	UBM-TDMW3D-20100317
H10030226-006	UBM-TDMW3D-555-20100317
H10030226-007	UBM-TDMW2D-20100317
H10030226-008	UBM-TDMW2S-20100317
H10030226-009	UBM-TDMW01-20100317

Table 2 Water Sample Analytes and Analytical Methods

Analyte	Analytical Method
Aluminum	EPA 200.8
Aluminum, Dissolved	EPA 200.8
Arsenic	EPA 200.8
Arsenic, Dissolved	EPA 200.8
Cadmium	EPA 200.8
Cadmium, Dissolved	EPA 200.8
Calcium, Dissolved	EPA 200.7/200.8
Copper	EPA 200.8
Copper, Dissolved	EPA 200.8
Iron	EPA 200.8
Iron, Dissolved	EPA 200.7/200.8

Lead	EPA 200.8
Lead, Dissolved	EPA 200.8
Magnesium, Dissolved	EPA 200.7/200.8
Manganese	EPA 200.8
Manganese, Dissolved	EPA 200.8
Potassium, Dissolved	EPA 200.7/200.8
Sodium, Dissolved	EPA 200.7/200.8
Hardness (total as CaCO3)	SM 2320B
Zinc	EPA 200.8
Zinc, Dissolved	EPA 200.8
Chloride, total and dissolved	EPA 300.0
Sulfate, total and dissolved	EPA 300.0
Alkalinity, Carbonate (CaCO3)	SM 2320B
Alkalinity, Total as CaCO3	SM 2320B
Alkalinity, Bicarbonate (CaCO3)	SM 2320B
Specific Conductance	SM 2510B
pH at 25 Degrees C	SM 4500-HB

- Data qualifiers that were assigned in this validation include:
  - J+ = estimated high concentration

- Overall level of validation:
  ___ Contract Laboratory Program (CLP)
  _X_ Standard
  ___ Visual

2. Deliverables

- All laboratory document deliverables were present as specified in the *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis: Multi-Media, Multi-Concentration (ILM05.4)* (USEPA 2007a), USEPA publication *SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (USEPA 2007b), and/or the project contract.
  _X_ Yes
  ___ No

- All field documentation, including completed chain-of-custody (COC) forms and field logbook notes, were provided as required.
  _X_ Yes
  ___ No

3. Condition of Samples Upon Receipt

Samples were received in good condition within method specified requirements, with the following exceptions:

- The lab noted that there were no custody seals intact on the shipping container or sample bottles. However, all bottles were received intact, and the chain-of-

custody (COC) form was maintained, as evidenced by field and laboratory personnel signatures, dates, and times of receipt. No data were qualified.

- The lab clarified with TerraGraphics personnel that the two sample bottles labeled "dup" were for sample TDMW3D-555. No further corrective action was necessary.
- There were no collection times listed on the sample bottles for TDMW3D, 3D-555, 2D, 2S, and -01. The lab used the sample times listed on the COC.

4. Field Quality Control Samples

- **Blanks:** Please note that the highest blank value associated with any particular analyte is the blank value used for the flagging process.

  DI, trip, rinsate, or any other field blanks have been carried out at the proper frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No
  ___ NA

  Reported results on the field and rinsate blanks are less than the contract required detection limits (CRDLs) or the project required detection limits (PRDL) if project detection limits have been specified.
  _X_ Yes
  ___ No

- **Field duplicates**
  Field duplicates have been collected at the proper frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No
  ___ NA

  Field duplicate relative percent differences (RPDs) were within the required control limits (i.e., RPD of 20% or less).
  _X_ Yes
  ___ No
  ___ NA

5. Laboratory Procedures

- **Laboratory procedures followed**
  ___ CLP-SOW
  _X_ SW-846
  ___ Methods for Chemical Analysis of Water and Wastes
  ___ XRF Standard Operating Procedures
  _X_ Other

  Table 2 details the analytical methods used.

- **Holding times met**
  _X_ Yes
  ___ No

- **Consistency with project requirements**
  Analyses were carried out as requested.
  _X_ Yes
  ___ No

  Appropriate units were reported for each sample matrix type and method.
  _X_ Yes
  ___ No

  Project specified methods were used.
  _X_ Yes
  ___ No
  ___ NA
  The following analytical requirements differed from the SAP/QAPP, as the methods listed in the SAP/QAPP are no longer EPA approved methods:
    - Method for pH was changed from USEPA 150.0 to SM 4500-HB
    - Method for sulfate was changed from USEPA 375.2 to 300.0.

6. Detection Limits

- Reporting detection limits met PRDLs.
  _X_ Yes
  ___ No

7. Initial and/or Continuing Calibration Results

- Initial or continuing calibration verification results were within acceptable limits, as reported by the lab.
  ___ Yes
  _X_ No
  ___ NA
  In report number H10030226, an initial calibration verification standard had a percent recovery for iron of 123%, which is above the EPA acceptable range. This standard was analyzed more than 12 hours after the last samples from this project were analyzed. No data were qualified due to this result.

8. Laboratory Blanks

- **Preparation blanks**
  Preparation blanks were prepared and analyzed at the required frequency of at least 5% of the total number of samples.
  _X_ Yes
  ___ No

  All the analytes in the preparation blank were less than the CRDL (or the PRDL if a project detection limit has been specified).

_X_ Yes
___ No

9. Laboratory Matrix Spikes

- A matrix spike sample (pre-digestion) was prepared and analyzed at the required frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No

- Samples were spiked at levels appropriate to the sample concentrations.
  _X_ Yes
  ___ No

- Matrix spike recoveries were within the required control limits (75-125%).
  ___ Yes
  _X_ No

  - Matrix spike recoveries were calculated when the spiked amount was within 4 times the parent sample concentration. MS recoveries were within the required control limits for all analyses, except the following:

    - An MS and MSD had percent recoveries >125% for total aluminum. Associated detected aluminum results were qualified with a J+.

10. Laboratory Duplicates

- Laboratory duplicate samples were analyzed at the proper frequency.
  _X_ Yes
  ___ No

- The laboratory duplicate RPDs were within the required control limits (i.e., RPD of 20% or less).
  _X_ Yes
  ___ No

11. Laboratory Control Standards

- The reference material used was of the correct matrix and concentration, according to Energy Laboratories.
  _X_ Yes
  ___ No

- Laboratory control samples (LCSs) were prepared and analyzed at the proper frequency of at least 5% of the total number of samples.
  _X_ Yes
  ___ No

- LCSs were prepared in the same way as the associated samples, according to Energy Laboratories.
  _X_ Yes

___ No

- LCS recoveries were within the required control limits.
  _X_ Yes
  ___ No

12. Additional Data Evaluation

- None for this batch.

13. Data Quality Objectives

- Project data quality objectives (DQOs) met.
  _X_ Yes
  ___ No
  ___ NA

  QC criteria for precision, accuracy, and representativeness were used to assess and qualify data. Based on this assessment, the data are acceptable and usable. No results were rejected, meeting the target goal of 95% completeness for the project, as defined in the SAP/QAPP. Table 3 provides a summary of the rationale for all assigned data qualifiers.

Table 3 Assigned Qualifiers

Reason for Qualification	Parameter	Laboratory ID	Sample ID	Assigned Qualifier
MS or MS dup percent recovery out of range	Aluminum	H10030226-001	UBM-TDMW4D-20100316	J+
		H10030226-002	UBM-TDMW05-20100316	J+
		H10030226-005	UBM-TDMW3D-20100317	J+
		H10030226-006	UBM-TDMW3D-555-20100317	J+
		H10030226-007	UBM-TDMW2D-20100317	J+

References

TerraGraphics Environmental Engineering, Inc. (TerraGraphics). 2009. *Final Sampling and Analysis Plan (SAP)/Quality Assurance Project Plan (QAPP) for Groundwater and Surface Water Monitoring and Soil and Tailings Sampling at the Upper Blackfoot Mining Complex, Lewis and Clark County, Montana.* Prepared for Montana Department of Environmental Quality (DEQ). August.

USEPA 1996. *Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses.* December.

USEPA. 2007a. *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis: Multi-Media, Multi-Concentration (ILM05.4).* USEPA 540-FS-07-004. January.

USEPA. 2007b. *Third Edition of SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, as amended by Final Updates I, II, IIA, IIB, III, IIIA, IIIB, and IV; February.

USEPA. 2010. *Final USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*. USEPA 540-R-10-011. January.

DATA VALIDATION REPORT
UBMC June 2010 Surface Water

Prepared by: Mara Moscato, TerraGraphics, on 10/2/2012

Reviewed by: Susan Spalinger, TerraGraphics, on 10/4/12

1. Introduction

This memo addresses the quality assurance and quality control (QA/QC) review of 12 samples analyzed by Energy Laboratories in report H10060160, as part of the UBMC quarterly monitoring on June 8, 2010. Validation procedures used are consistent with the *Final Sampling and Analysis Plan(SAP) / Quality Assurance Project Plan (QAPP) for Groundwater and Surface Water Monitoring and Soil and Tailings Sampling at the Upper Blackfoot Mining Complex, Lewis and Clark County, Montana* (TerraGraphics 2009), hereinafter referred to as the SAP/QAPP, and the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA 2010).

The samples evaluated in this data validation report are listed in Table 1 and include nine surface water samples, one field duplicate, one rinsate blank, and one field blank. The analytes and analytical methods are presented in Table 2.

Table 1 Evaluated Samples

Laboratory ID	Sample ID
H10060160-001	UBM-BRSW01-20100608
H10060160-002	UBM-BRSW22-20100608
H10060160-003	UBM-BRSW48-20100608
H10060160-004	UBM-BRSW23-20100608
H10060160-005	UBM-BRSW3A-20100608
H10060160-006	UBM-BRSW3B-20100608
H10060160-007	UBM-BRSW02-20100608
H10060160-008	UBM-BRSW29-20100608
H10060160-009	UBM-BRSW29-555-20100608
H10060160-010	UBM-BRSW38-333-20100608
H10060160-011	UBM-BRSW38-444-20100608
H10060160-012	UBM-BRSW38-20100608

Table 2 Water Sample Analytes and Analytical Methods

Analyte	Analytical Method
Aluminum	EPA 200.8
Aluminum, Dissolved	EPA 200.8
Arsenic	EPA 200.8
Arsenic, Dissolved	EPA 200.8
Cadmium	EPA 200.8
Cadmium, Dissolved	EPA 200.8
Calcium, Dissolved	EPA 200.7/200.8

Copper	EPA 200.8
Copper, Dissolved	EPA 200.8
Iron	EPA 200.8
Iron, Dissolved	EPA 200.7/200.8
Lead	EPA 200.8
Lead, Dissolved	EPA 200.8
Magnesium, Dissolved	EPA 200.7/200.8
Manganese	EPA 200.8
Manganese, Dissolved	EPA 200.8
Potassium, Dissolved	EPA 200.7/200.8
Sodium, Dissolved	EPA 200.7/200.8
Hardness (total as CaCO3)	SM 2320B
Zinc	EPA 200.8
Zinc, Dissolved	EPA 200.8
Chloride, total and dissolved	EPA 300.0
Sulfate, total and dissolved	EPA 300.0
Alkalinity, Carbonate (CaCO3)	SM 2320B
Alkalinity, Total as CaCO3	SM 2320B
Alkalinity, Bicarbonate (CaCO3)	SM 2320B
Specific Conductance	SM 2510B
Total Dissolved Solids – Surface water	SM 2540C
Total Suspended Solids – Surface water	SM 2540D
pH at 25 Degrees C	SM 4500-HB

- Data qualifiers that were assigned in this validation include:
  - J = estimated concentration
  - J+ = estimated high concentration
  - J- = estimated low concentration

- Overall level of validation:
  ___ Contract Laboratory Program (CLP)
  _X_ Standard
  ___ Visual

2. Deliverables

- All laboratory document deliverables were present as specified in the *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis: Multi-Media, Multi-Concentration (ILM05.4)* (USEPA 2007a), USEPA publication *SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (USEPA 2007b), and/or the project contract.
  _X_ Yes
  ___ No

- All field documentation, including completed chain-of-custody (COC) forms and field logbook notes, were provided as required.
  _X_ Yes
  ___ No

3. Condition of Samples Upon Receipt

All samples were received in good condition within method specified requirements.

4. Field Quality Control Samples

- **Blanks:** Please note that the highest blank value associated with any particular analyte is the blank value used for the flagging process.

  DI, trip, rinsate, or any other field blanks have been carried out at the proper frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No
  ___ NA

  Reported results on the field and rinsate blanks are less than the contract required detection limits (CRDLs) or the project required detection limits (PRDL) if project detection limits have been specified.
  ___ Yes
  _ X_ No
  The rinsate blank collected in June had a detected concentration of 0.04 milligrams per liter (mg/L) total zinc and 0.02 mg/L dissolved zinc. One associated sample was qualified with a J+. Other associated results were qualified with a J; they would have been qualified with a J+ in accordance with EPA guidance; however, a low matrix spike percent recovery was also associated with these samples (described below).

- **Field duplicates**
  Field duplicates have been collected at the proper frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No
  ___ NA

  Field duplicate relative percent differences (RPDs) were within the required control limits (i.e., RPD of 20% or less).
  _X_ Yes
  ___ No
  ___ NA

5. Laboratory Procedures

- **Laboratory procedures followed**
  ___ CLP-SOW
  _X_ SW-846
  ___ Methods for Chemical Analysis of Water and Wastes
  ___ XRF Standard Operating Procedures
  _X_ Other

Table 2 details the analytical methods used.

- **Holding times met**
  _X_ Yes
  ___ No

- **Consistency with project requirements**
  Analyses were carried out as requested.
  _X_ Yes
  ___ No

  Appropriate units were reported for each sample matrix type and method.
  _X_ Yes
  ___ No

  Project specified methods were used.
  _X_ Yes
  ___ No
  ___ NA
  The following analytical requirements differed from the SAP/QAPP, as the methods listed in the SAP/QAPP are no longer EPA approved methods:
    - Method for pH was changed from USEPA 150.0 to SM 4500-HB
    - Method for total suspended solids was changed from USEPA 160.2 to SM 2540D.
    - Method for sulfate was changed from USEPA 375.2 to 300.0.

6. Detection Limits

- Reporting detection limits met PRDLs.
  _X_ Yes
  ___ No

7. Initial and/or Continuing Calibration Results

- Initial or continuing calibration verification results were within acceptable limits, as reported by the lab.
  _X_ Yes
  ___ No
  ___ NA

8. Laboratory Blanks

- **Preparation blanks**
  Preparation blanks were prepared and analyzed at the required frequency of at least 5% of the total number of samples.
  _X_ Yes
  ___ No

  All the analytes in the preparation blank were less than the CRDL (or the PRDL if a project detection limit has been specified).
  ___ Yes

_X_ No

- Any detected analytes in preparation blanks were less than the project required detection limits except for total copper, which was detected at 0.001 mg/L in QA/QC batch 8975 in report H10060160. Associated samples were more than ten times the amount detected in the blanks; therefore, they were not qualified.

9. Laboratory Matrix Spikes

- A matrix spike sample (pre-digestion) was prepared and analyzed at the required frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No

- Samples were spiked at levels appropriate to the sample concentrations.
  _X_ Yes
  ___ No

- Matrix spike recoveries were within the required control limits (75-125%).
  ___ Yes
  _X_ No

  - Matrix spike recoveries were calculated when the spiked amount was within 4 times the parent sample concentration. MS recoveries were within the required control limits for all analyses, except the following:
    - Report number H10060160, QA/QC batch number R63037: An MS had a percent recovery >125% and an MSD had a percent recovery < 75% for aluminum. Detected aluminum results were qualified with a J.
    - Report number H10060160, QA/QC batch number R63037: an MS and an MSD had a percent recovery <75% for zinc. Some associated results had already been qualified with a J+ due to rinsate blank analysis. These were changed to "J." The other associated total and dissolved zinc results were qualified as "J-" if they were above detection and "J" if they were below detection.
    - The spiked samples were from the project samples.

10. Laboratory Duplicates

- Laboratory duplicate samples were analyzed at the proper frequency.
  _X_ Yes
  ___ No

- The laboratory duplicate RPDs were within the required control limits (i.e., RPD of 20% or less).
  _X_ Yes
  ___ No

11. Laboratory Control Standards

- The reference material used was of the correct matrix and concentration, according to Energy Laboratories.

_X_ Yes
___ No

- Laboratory control samples (LCSs) were prepared and analyzed at the proper frequency of at least 5% of the total number of samples.
  _X_ Yes
  ___ No

- LCSs were prepared in the same way as the associated samples, according to Energy Laboratories.
  _X_ Yes
  ___ No

- LCS recoveries were within the required control limits.
  _X_ Yes
  ___ No

12. Additional Data Evaluation

None for this batch.

13. Data Quality Objectives

- Project data quality objectives (DQOs) met.
  _X_ Yes
  ___ No
  ___ NA

QC criteria for precision, accuracy, and representativeness were used to assess and qualify data. Based on this assessment, the data are acceptable and usable. No results were rejected, meeting the target goal of 95% completeness for the project, as defined in the SAP/QAPP. Table 3 provides a summary of the rationale for all assigned data qualifiers.

Table 3 Assigned Qualifiers

Reason for Qualification	Parameter	LabID	FieldID	Assigned Qualifier
Field or rinsate blank detect	Zinc	H10060160-007	UBM-BRSW02-20100608	J+
MS or MS dup percent recovery out of range	Aluminum	H10060160-002	UBM-BRSW22-20100608	J
	Aluminum	H10060160-003	UBM-BRSW48-20100608	J
	Aluminum	H10060160-004	UBM-BRSW23-20100608	J
	Aluminum	H10060160-005	UBM-BRSW3A-20100608	J
	Aluminum	H10060160-006	UBM-BRSW3B-20100608	J
	Aluminum	H10060160-008	UBM-BRSW29-20100608	J
	Aluminum	H10060160-009	UBM-BRSW29-555-20100608	J

	Aluminum	H10060160-012	UBM-BRSW38-20100608	J
	Aluminum, Dissolved	H10060160-007	UBM-BRSW02-20100608	J
	Zinc	H10060160-001	UBM-BRSW01-20100608	J
	Zinc	H10060160-002	UBM-BRSW22-20100608	J
	Zinc	H10060160-003	UBM-BRSW48-20100608	J-
	Zinc	H10060160-004	UBM-BRSW23-20100608	J
	Zinc	H10060160-005	UBM-BRSW3A-20100608	J-
	Zinc	H10060160-006	UBM-BRSW3B-20100608	J-
	Zinc	H10060160-008	UBM-BRSW29-20100608	J
	Zinc	H10060160-009	UBM-BRSW29-555-20100608	J
	Zinc	H10060160-010	UBM-BRSW38-333-20100608	J
	Zinc	H10060160-011	UBM-BRSW38-444-20100608	J-
	Zinc	H10060160-012	UBM-BRSW38-20100608	J-
	Zinc, Dissolved	H10060160-001	UBM-BRSW01-20100608	J
	Zinc, Dissolved	H10060160-002	UBM-BRSW22-20100608	J
	Zinc, Dissolved	H10060160-003	UBM-BRSW48-20100608	J-
	Zinc, Dissolved	H10060160-004	UBM-BRSW23-20100608	J-
	Zinc, Dissolved	H10060160-005	UBM-BRSW3A-20100608	J-
	Zinc, Dissolved	H10060160-006	UBM-BRSW3B-20100608	J-
	Zinc, Dissolved	H10060160-007	UBM-BRSW02-20100608	J-
	Zinc, Dissolved	H10060160-008	UBM-BRSW29-20100608	J-
	Zinc, Dissolved	H10060160-009	UBM-BRSW29-555-20100608	J-
	Zinc, Dissolved	H10060160-010	UBM-BRSW38-333-20100608	J
	Zinc, Dissolved	H10060160-011	UBM-BRSW38-444-20100608	J-
	Zinc, Dissolved	H10060160-012	UBM-BRSW38-20100608	J-

References

TerraGraphics Environmental Engineering, Inc. (TerraGraphics). 2009. *Final Sampling and Analysis Plan (SAP)/Quality Assurance Project Plan (QAPP) for Groundwater and Surface Water Monitoring and Soil and Tailings Sampling at the Upper Blackfoot Mining Complex, Lewis and Clark County, Montana.* Prepared for Montana Department of Environmental Quality (DEQ). August.

USEPA 1996. *Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses.* December.

USEPA. 2007a. *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis: Multi-Media, Multi-Concentration (ILM05.4).* USEPA 540-FS-07-004. January.

USEPA. 2007b. *Third Edition of SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, as amended by Final Updates I, II, IIA, IIB, III, IIIA, IIIB, and IV; February.

USEPA. 2010. *Final USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*. USEPA 540-R-10-011. January.

DATA VALIDATION REPORT
UBMC September 2010 Surface Water

Prepared by: Mara Moscato, TerraGraphics, on 10/2/2012

Reviewed by: Susan Spalinger, TerraGraphics, on 10/4/12

1. Introduction

This memo addresses the quality assurance and quality control (QA/QC) review of 12 samples analyzed by Energy Laboratories in report H10090233, as part of the UBMC quarterly monitoring September 8 and 10, 2010. Validation procedures used are consistent with the *Final Sampling and Analysis Plan(SAP) / Quality Assurance Project Plan (QAPP) for Groundwater and Surface Water Monitoring and Soil and Tailings Sampling at the Upper Blackfoot Mining Complex, Lewis and Clark County, Montana* (TerraGraphics 2009), hereinafter referred to as the SAP/QAPP, and the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA 2010).

The samples evaluated in this data validation report are listed in Table 1 and include nine surface water samples, one field duplicate, one rinsate blank, and one field blank. The analytes and analytical methods are presented in Table 2.

Table 1 Evaluated Samples

Laboratory ID	Sample ID
H10090233-001	UBM-BRSW01-20100908
H10090233-002	UBM-BRSW01-555-20100908
H10090233-003	UBM-BRSW02-20100908
H10090233-004	UBM-BRSW02-444-20100908
H10090233-005	UBM-BRSW3A-20100908
H10090233-006	UBM-BRSW22-20100908
H10090233-007	UBM-BRSW23-20100908
H10090233-008	UBM-BRSW48-20100908
H10090233-009	UBM-BRSW38-20100910
H10090233-010	UBM-BRSW3B-20100910
H10090233-011	UBM-BRSW29-333-20100910
H10090233-012	UBM-BRSW29-20100910

Table 2 Water Sample Analytes and Analytical Methods

Analyte	Analytical Method
Aluminum	EPA 200.8
Aluminum, Dissolved	EPA 200.8
Arsenic	EPA 200.8
Arsenic, Dissolved	EPA 200.8
Cadmium	EPA 200.8
Cadmium, Dissolved	EPA 200.8
Calcium, Dissolved	EPA 200.7/200.8

Copper	EPA 200.8
Copper, Dissolved	EPA 200.8
Iron	EPA 200.8
Iron, Dissolved	EPA 200.7/200.8
Lead	EPA 200.8
Lead, Dissolved	EPA 200.8
Magnesium, Dissolved	EPA 200.7/200.8
Manganese	EPA 200.8
Manganese, Dissolved	EPA 200.8
Potassium, Dissolved	EPA 200.7/200.8
Sodium, Dissolved	EPA 200.7/200.8
Hardness (total as CaCO3)	SM 2320B
Zinc	EPA 200.8
Zinc, Dissolved	EPA 200.8
Chloride, total and dissolved	EPA 300.0
Sulfate, total and dissolved	EPA 300.0
Alkalinity, Carbonate (CaCO3)	SM 2320B
Alkalinity, Total as CaCO3	SM 2320B
Alkalinity, Bicarbonate (CaCO3)	SM 2320B
Specific Conductance	SM 2510B
Total Dissolved Solids – Surface water	SM 2540C
Total Suspended Solids – Surface water	SM 2540D
pH at 25 Degrees C	SM 4500-HB

- Data qualifiers that were assigned in this validation include:
  - J = estimated concentration
  - J+ = estimated high concentration
  - J- = estimated low concentration
  - R = rejected, data not usable

- Overall level of validation:
  ___ Contract Laboratory Program (CLP)
  _X_ Standard
  ___ Visual

2. Deliverables

- All laboratory document deliverables were present as specified in the *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis: Multi-Media, Multi-Concentration (ILM05.4)* (USEPA 2007a), USEPA publication *SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (USEPA 2007b), and/or the project contract.
  _X_ Yes
  ___ No

- All field documentation, including completed chain-of-custody (COC) forms and field logbook notes, were provided as required.
  _X_ Yes
  ___ No

3. Condition of Samples Upon Receipt

All samples were received in good condition within method specified requirements.

4. Field Quality Control Samples

- **Blanks:** Please note that the highest blank value associated with any particular analyte is the blank value used for the flagging process.

  DI, trip, rinsate, or any other field blanks have been carried out at the proper frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No
  ___ NA

  Reported results on the field and rinsate blanks are less than the contract required detection limits (CRDLs) or the project required detection limits (PRDL) if project detection limits have been specified.
  ___ Yes
  _X_ No
  - The rinsate blank had a concentration of 0.01 mg/L dissolved and 0.02 mg/L total zinc, and a concentration of 22 mg/L TDS. Two associated detected results for dissolved zinc were within ten times the blank detect and qualified with a J+.

- **Field duplicates**
  Field duplicates have been collected at the proper frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No
  ___ NA

  Field duplicate relative percent differences (RPDs) were within the required control limits (i.e., RPD of 20% or less).
  ___ Yes
  _X_ No
  ___ NA
  - Sample results were qualified with a J if the duplicate RPD was greater than 20% and both the original and duplicate results were greater than five times the project required quantitation limits. In report H10090233, 12 sulfate surface water sulfate results were qualified due to duplicate RPD.

5. Laboratory Procedures

- **Laboratory procedures followed**
  ___ CLP-SOW
  _X_ SW-846
  ___ Methods for Chemical Analysis of Water and Wastes

___ XRF Standard Operating Procedures
_X_ Other

Table 2 details the analytical methods used.

- **Holding times met**
  ___ Yes
  _X_ No
  Samples exceeded the holding time for total dissolved solids and total suspended solids. After further review, associated TDS and TSS results were rejected.

- **Consistency with project requirements**
  Analyses were carried out as requested.
  _X_ Yes
  ___ No

  Appropriate units were reported for each sample matrix type and method.
  _X_ Yes
  ___ No

  Project specified methods were used.
  _X_ Yes
  ___ No
  ___ NA
  The following analytical requirements differed from the SAP/QAPP, as the methods listed in the SAP/QAPP are no longer EPA approved methods:
    - Method for pH was changed from USEPA 150.0 to SM 4500-HB.
    - Method for total suspended solids was changed from USEPA 160.2 to SM 2540D.
    - Method for sulfate was changed from USEPA 375.2 to 300.0.

6. Detection Limits

- Reporting detection limits met PRDLs.
  _X_ Yes
  ___ No

7. Initial and/or Continuing Calibration Results

- Initial or continuing calibration verification results were within acceptable limits, as reported by the lab.
  _X_ Yes
  ___ No
  ___ NA

8. Laboratory Blanks

- **Preparation blanks**
  Preparation blanks were prepared and analyzed at the required frequency of at least 5% of the total number of samples.
  _X_ Yes

___ No

All the analytes in the preparation blank were less than the CRDL (or the PRDL if a project detection limit has been specified).
_X_ Yes
___ No

9. Laboratory Matrix Spikes

- A matrix spike sample (pre-digestion) was prepared and analyzed at the required frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No

- Samples were spiked at levels appropriate to the sample concentrations.
  _X_ Yes
  ___ No

- Matrix spike recoveries were within the required control limits (75-125%).
  ___ Yes
  _X_ No

  - Matrix spike recoveries were calculated when the spiked amount was within 4 times the parent sample concentration. MS recoveries were within the required control limits for all analyses, except the following:

    - Report number H10090233: An MS had a percent recovery <75% for calcium. Associated detected calcium results were qualified with a J-, while nondetected results were qualified with a J.
    - The spiked samples were from the project samples.

10. Laboratory Duplicates

- Laboratory duplicate samples were analyzed at the proper frequency.
  _X_ Yes
  ___ No

- The laboratory duplicate RPDs were within the required control limits (i.e., RPD of 20% or less).
  _X_ Yes
  ___ No

11. Laboratory Control Standards

- The reference material used was of the correct matrix and concentration, according to Energy Laboratories.
  _X_ Yes
  ___ No

- Laboratory control samples (LCSs) were prepared and analyzed at the proper frequency of at least 5% of the total number of samples.

_X_ Yes
___ No

- LCSs were prepared in the same way as the associated samples, according to Energy Laboratories.
  _X_ Yes
  ___ No

- LCS recoveries were within the required control limits.
  _X_ Yes
  ___ No

12. Additional Data Evaluation

- In report number H10090233, an interference check sample had a high percent recovery for manganese. Associated detected total and dissolved manganese results were qualified with a J+, while undetected results were not qualified.

13. Data Quality Objectives

- Project data quality objectives (DQOs) met.
  ___ Yes
  _X_ No
  ___ NA

  QC criteria for precision, accuracy, and representativeness were used to assess and qualify data. Based on this assessment, the data are acceptable and usable, except for 24 results which have been rejected. Completeness for the sampling event is assessed at 94% (360 usable results out of 384), which does not meet the target goal of 95% completeness for the project, as defined in the SAP/QAPP. Table 3 provides a summary of the rationale for all assigned data qualifiers.

Table 3 Assigned Qualifiers

Reason for Qualification	Parameter	Laboratory ID	Sample ID	Assigned Qualifier
MS or MS dup percent recovery out of range	Calcium, Dissolved	H10090233-001	UBM-BRSW01-20100908	J-
		H10090233-002	UBM-BRSW01-555-20100908	J-
		H10090233-003	UBM-BRSW02-20100908	J-
		H10090233-004	UBM-BRSW02-444-20100908	J
		H10090233-005	UBM-BRSW3A-20100908	J-
		H10090233-006	UBM-BRSW22-20100908	J-
		H10090233-007	UBM-BRSW23-20100908	J-
		H10090233-008	UBM-BRSW48-20100908	J-
		H10090233-009	UBM-BRSW38-20100910	J-
		H10090233-010	UBM-BRSW3B-20100910	J-

		H10090233-011	UBM-BRSW29-333-20100910	J
		H10090233-012	UBM-BRSW29-20100910	J-
Relative percent difference out of range (field duplicate)	Sulfate	H10090233-001	UBM-BRSW01-20100908	J
		H10090233-002	UBM-BRSW01-555-20100908	J
		H10090233-003	UBM-BRSW02-20100908	J
		H10090233-004	UBM-BRSW02-444-20100908	J
		H10090233-005	UBM-BRSW3A-20100908	J
		H10090233-006	UBM-BRSW22-20100908	J
		H10090233-007	UBM-BRSW23-20100908	J
		H10090233-008	UBM-BRSW48-20100908	J
		H10090233-009	UBM-BRSW38-20100910	J
		H10090233-010	UBM-BRSW3B-20100910	J
		H10090233-011	UBM-BRSW29-333-20100910	J
		H10090233-012	UBM-BRSW29-20100910	J
Field or rinsate blank detect	Zinc, Dissolved	H10090233-001	UBM-BRSW01-20100908	J+
		H10090233-002	UBM-BRSW01-555-20100908	J+
Interference check out of range	Manganese	H10090233-003	UBM-BRSW02-20100908	J+
		H10090233-005	UBM-BRSW3A-20100908	J+
		H10090233-006	UBM-BRSW22-20100908	J+
		H10090233-007	UBM-BRSW23-20100908	J+
		H10090233-008	UBM-BRSW48-20100908	J+
		H10090233-009	UBM-BRSW38-20100910	J+
		H10090233-010	UBM-BRSW3B-20100910	J+
		H10090233-012	UBM-BRSW29-20100910	J+
	Manganese, Dissolved	H10090233-003	UBM-BRSW02-20100908	J+
		H10090233-005	UBM-BRSW3A-20100908	J+
		H10090233-006	UBM-BRSW22-20100908	J+
		H10090233-007	UBM-BRSW23-20100908	J+
		H10090233-008	UBM-BRSW48-20100908	J+
		H10090233-009	UBM-BRSW38-20100910	J+
		H10090233-010	UBM-BRSW3B-20100910	J+
		H10090233-012	UBM-BRSW29-20100910	J+
Holding Time not Met	Solids, Total Dissolved TDS and Total Suspended TSS	H10090233-001	UBM-BRSW01-20100908	R
		H10090233-002	UBM-BRSW01-555-20100908	R
		H10090233-003	UBM-BRSW02-20100908	R
		H10090233-004	UBM-BRSW02-444-20100908	R
		H10090233-005	UBM-BRSW3A-20100908	R
		H10090233-006	UBM-BRSW22-20100908	R
		H10090233-007	UBM-BRSW23-20100908	R

		H10090233-008	UBM-BRSW48-20100908	R
		H10090233-009	UBM-BRSW38-20100910	R
		H10090233-010	UBM-BRSW3B-20100910	R
		H10090233-011	UBM-BRSW29-333-20100910	R
		H10090233-012	UBM-BRSW29-20100910	R

References

TerraGraphics Environmental Engineering, Inc. (TerraGraphics). 2009. *Final Sampling and Analysis Plan (SAP)/Quality Assurance Project Plan (QAPP) for Groundwater and Surface Water Monitoring and Soil and Tailings Sampling at the Upper Blackfoot Mining Complex, Lewis and Clark County, Montana.* Prepared for Montana Department of Environmental Quality (DEQ). August.

USEPA 1996. *Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses.* December.

USEPA. 2007a. *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis: Multi-Media, Multi-Concentration (ILM05.4).* USEPA 540-FS-07-004. January.

USEPA. 2007b. *Third Edition of SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, as amended by Final Updates I, II, IIA, IIB, III, IIIA, IIIB, and IV; February.

USEPA. 2010. *Final USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*. USEPA 540-R-10-011. January.

DATA VALIDATION REPORT
UBMC September 2010 Groundwater

Prepared by: Mara Moscato, TerraGraphics, on 10/2/2012

Reviewed by: Susan Spalinger, TerraGraphics, on 10/4/12

1. Introduction

This memo addresses the quality assurance and quality control (QA/QC) review of nine samples analyzed by Energy Laboratories in report H10090242, as part of the UBMC quarterly monitoring on September 13, 2010. Validation procedures used are consistent with the *Final Sampling and Analysis Plan(SAP) / Quality Assurance Project Plan (QAPP) for Groundwater and Surface Water Monitoring and Soil and Tailings Sampling at the Upper Blackfoot Mining Complex, Lewis and Clark County, Montana* (TerraGraphics 2009), hereinafter referred to as the SAP/QAPP, and the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA 2010).

The samples evaluated in this data validation report are listed in Table 1 and include six groundwater samples, one field duplicate, one rinsate blank, and one field blank. The analytes and analytical methods are presented in Table 2.

Table 1 Evaluated Samples

Laboratory ID	Sample ID
H10090242-001	UBM-TDMW2D-555-20100913
H10090242-002	UBM-TDMW2D-20100913
H10090242-003	UBM-TDMW2S-444-20100913
H10090242-004	UBM-TDMW2S-333-20100913
H10090242-005	UBM-TDMW2S-20100913
H10090242-006	UBM-TDMW3D-20100913
H10090242-007	UBM-TDMW01-20100913
H10090242-008	UBM-TDMW4D-20100913
H10090242-009	UBM-TDMW05-20100913

Table 2 Water Sample Analytes and Analytical Methods

Analyte	Analytical Method
Aluminum	EPA 200.8
Aluminum, Dissolved	EPA 200.8
Arsenic	EPA 200.8
Arsenic, Dissolved	EPA 200.8
Cadmium	EPA 200.8
Cadmium, Dissolved	EPA 200.8
Calcium, Dissolved	EPA 200.7/200.8
Copper	EPA 200.8
Copper, Dissolved	EPA 200.8
Iron	EPA 200.8

Iron, Dissolved	EPA 200.7/200.8
Lead	EPA 200.8
Lead, Dissolved	EPA 200.8
Magnesium, Dissolved	EPA 200.7/200.8
Manganese	EPA 200.8
Manganese, Dissolved	EPA 200.8
Potassium, Dissolved	EPA 200.7/200.8
Sodium, Dissolved	EPA 200.7/200.8
Hardness (total as CaCO3)	SM 2320B
Zinc	EPA 200.8
Zinc, Dissolved	EPA 200.8
Chloride, total and dissolved	EPA 300.0
Sulfate, total and dissolved	EPA 300.0
Alkalinity, Carbonate (CaCO3)	SM 2320B
Alkalinity, Total as CaCO3	SM 2320B
Alkalinity, Bicarbonate (CaCO3)	SM 2320B
Specific Conductance	SM 2510B
pH at 25 Degrees C	SM 4500-HB

- There were no data qualifiers assigned in this validation.

- Overall level of validation:
  ___ Contract Laboratory Program (CLP)
  _X_ Standard
  ___ Visual

2. Deliverables

- All laboratory document deliverables were present as specified in the *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis: Multi-Media, Multi-Concentration (ILM05.4)* (USEPA 2007a), USEPA publication *SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (USEPA 2007b), and/or the project contract.
  _X_ Yes
  ___ No

- All field documentation, including completed chain-of-custody (COC) forms and field logbook notes, were provided as required.
  _X_ Yes
  ___ No

3. Condition of Samples Upon Receipt

Samples were received in good condition within method specified requirements, with the following exceptions:

- In report H10090242, the lab noted that they "received an unpreserved bottle labeled UBM-TDMW2S-20100913 in the same bag with the samples labeled UBM-TDMW2D-20100913. They all have a collection time of 18:00. Received an unpreserved bottle labeled UBM-TDMW4D-20100913 in the same bag with

the samples labeled UBM-TDMW05-20100913. They all have a collection time of 11:30. Emailed Jeremy Mickey with Terra Graphics. Per email from Jeremy, the unpreserved bottle labeled 2S should be 2D -same as the other samples it came with in the bag and the unpreserved bottle labeled 4D should be 05 same as the other samples it came with in the bag."

- All of the samples with a collection time of 18:00 were further researched and should have been labeled 2S instead of 2D. The electronic laboratory results were updated. No further corrective action was necessary.
- Sample temperature was 6.3 degrees C upon receipt at the laboratory. Conductivity, alkalinity, bicarbonate, carbonate, chloride, TSS, TDS, and sulfate analyses require that sample preservation at 6 degrees C or less. Because the samples were near the preservation temperature and the method-required temperatures for alkalinity, bicarbonate, carbonate upon receipt, there was likely no effect on the results. No qualifiers were assigned based on sample receipt temperature.

4. Field Quality Control Samples

- **Blanks:** Please note that the highest blank value associated with any particular analyte is the blank value used for the flagging process.

  DI, trip, rinsate, or any other field blanks have been carried out at the proper frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No
  ___ NA

  Reported results on the field and rinsate blanks are less than the contract required detection limits (CRDLs) or the project required detection limits (PRDL) if project detection limits have been specified.
  _X_ Yes
  ___ No

- **Field duplicates**
  Field duplicates have been collected at the proper frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No
  ___ NA

  Field duplicate relative percent differences (RPDs) were within the required control limits (i.e., RPD of 20% or less).
  _X_ Yes
  ___ No
  ___ NA

5. Laboratory Procedures

- **Laboratory procedures followed**
  ___ CLP-SOW
  _X_ SW-846
  ___ Methods for Chemical Analysis of Water and Wastes
  ___ XRF Standard Operating Procedures
  _X_ Other

  Table 2 details the analytical methods used.

- **Holding times met**
  _X_ Yes
  ___ No

- **Consistency with project requirements**
  Analyses were carried out as requested.
  _X_ Yes
  ___ No

  Appropriate units were reported for each sample matrix type and method.
  _X_ Yes
  ___ No

  Project specified methods were used.
  _X_ Yes
  ___ No
  ___ NA
  The following analytical requirements differed from the SAP/QAPP, as the methods listed in the SAP/QAPP are no longer EPA approved methods:
  - Method for pH was changed from USEPA 150.0 to SM 4500-HB
  - Method for sulfate was changed from USEPA 375.2 to 300.0.

6. Detection Limits

- Reporting detection limits met PRDLs.
  _X_ Yes
  ___ No

7. Initial and/or Continuing Calibration Results

- Initial or continuing calibration verification results were within acceptable limits, as reported by the lab.
  _X_ Yes
  ___ No
  ___ NA

8. Laboratory Blanks

- **Preparation blanks**
  Preparation blanks were prepared and analyzed at the required frequency of at least 5% of the total number of samples.
  _X_ Yes

___ No

All the analytes in the preparation blank were less than the CRDL (or the PRDL if a project detection limit has been specified).
_X_ Yes
___ No

9. Laboratory Matrix Spikes

- A matrix spike sample (pre-digestion) was prepared and analyzed at the required frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No

- Samples were spiked at levels appropriate to the sample concentrations.
  _X_ Yes
  ___ No

- Matrix spike recoveries were within the required control limits (75-125%).
  _X_ Yes
  ___ No
    - Matrix spike recoveries were calculated when the spiked amount was within 4 times the parent sample concentration. MS recoveries were within the required control limits for all analyses.

10. Laboratory Duplicates

- Laboratory duplicate samples were analyzed at the proper frequency.
  _X_ Yes
  ___ No

- The laboratory duplicate RPDs were within the required control limits (i.e., RPD of 20% or less).
  _X_ Yes
  ___ No

11. Laboratory Control Standards

- The reference material used was of the correct matrix and concentration, according to Energy Laboratories.
  _X_ Yes
  ___ No

- Laboratory control samples (LCSs) were prepared and analyzed at the proper frequency of at least 5% of the total number of samples.
  _X_ Yes
  ___ No

- LCSs were prepared in the same way as the associated samples, according to Energy Laboratories.
  _X_ Yes

___ No

- LCS recoveries were within the required control limits.
  _X_ Yes
  ___ No

12. Additional Data Evaluation

None for this batch.

13. Data Quality Objectives

- Project data quality objectives (DQOs) met.
  _X_ Yes
  ___ No
  ___ NA

  QC criteria for precision, accuracy, and representativeness were used to assess and qualify data. Based on this assessment, the data are acceptable and usable. No results were rejected, meeting the target goal of 95% completeness for the project, as defined in the SAP/QAPP.

References

TerraGraphics Environmental Engineering, Inc. (TerraGraphics). 2009. *Final Sampling and Analysis Plan (SAP)/Quality Assurance Project Plan (QAPP) for Groundwater and Surface Water Monitoring and Soil and Tailings Sampling at the Upper Blackfoot Mining Complex, Lewis and Clark County, Montana.* Prepared for Montana Department of Environmental Quality (DEQ). August.

USEPA 1996. *Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses.* December.

USEPA. 2007a. *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis: Multi-Media, Multi-Concentration (ILM05.4).* USEPA 540-FS-07-004. January.

USEPA. 2007b. *Third Edition of SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, as amended by Final Updates I, II, IIA, IIB, III, IIIA, IIIB, and IV; February.

USEPA. 2010. *Final USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*. USEPA 540-R-10-011. January.

DATA VALIDATION REPORT
UBMC June 2010 Groundwater

Prepared by: Mara Moscato, TerraGraphics, on 10/2/2012

Reviewed by: Susan Spalinger, TerraGraphics, on 10/4/12

1. Introduction

This memo addresses the quality assurance and quality control (QA/QC) review of nine samples analyzed by Energy Laboratories in report H10060238, as part of the UBMC quarterly monitoring on June 10, 2010. Validation procedures used are consistent with the *Final Sampling and Analysis Plan(SAP) / Quality Assurance Project Plan (QAPP) for Groundwater and Surface Water Monitoring and Soil and Tailings Sampling at the Upper Blackfoot Mining Complex, Lewis and Clark County, Montana* (TerraGraphics 2009), hereinafter referred to as the SAP/QAPP, and the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA 2010).

The samples evaluated in this data validation report are listed in Table 1 and include six groundwater samples, one field duplicate, one rinsate blank, and one field blank. The analytes and analytical methods are presented in Table 2.

Table 1 Evaluated Samples

Laboratory ID	Sample ID
H10060238-001	UBM-TDMW3D-20100610
H10060238-002	UBM-TDMW2S-555-20100610
H10060238-003	UBM-TDMW4D-20100610
H10060238-004	UBM-TDMW2D-20100610
H10060238-005	UBM-TDMW3D-333-20100610
H10060238-006	UBM-TDMW05-20100610
H10060238-007	UBM-TDMW2S-20100610
H10060238-008	UBM-TDMW01-20100610
H10060238-009	UBM-TDMW3D-444-20100610

Table 2 Water Sample Analytes and Analytical Methods

Analyte	Analytical Method
Aluminum	EPA 200.8
Aluminum, Dissolved	EPA 200.8
Arsenic	EPA 200.8
Arsenic, Dissolved	EPA 200.8
Cadmium	EPA 200.8
Cadmium, Dissolved	EPA 200.8
Calcium, Dissolved	EPA 200.7/200.8
Copper	EPA 200.8
Copper, Dissolved	EPA 200.8
Iron	EPA 200.8

Iron, Dissolved	EPA 200.7/200.8
Lead	EPA 200.8
Lead, Dissolved	EPA 200.8
Magnesium, Dissolved	EPA 200.7/200.8
Manganese	EPA 200.8
Manganese, Dissolved	EPA 200.8
Potassium, Dissolved	EPA 200.7/200.8
Sodium, Dissolved	EPA 200.7/200.8
Hardness (total as CaCO3)	SM 2320B
Zinc	EPA 200.8
Zinc, Dissolved	EPA 200.8
Chloride, total and dissolved	EPA 300.0
Sulfate, total and dissolved	EPA 300.0
Alkalinity, Carbonate (CaCO3)	SM 2320B
Alkalinity, Total as CaCO3	SM 2320B
Alkalinity, Bicarbonate (CaCO3)	SM 2320B
Specific Conductance	SM 2510B
pH at 25 Degrees C	SM 4500-HB

- Data qualifiers that were assigned in this validation include:
  - J = estimated concentration

- Overall level of validation:
  ___ Contract Laboratory Program (CLP)
  _X_ Standard
  ___ Visual

2. Deliverables

- All laboratory document deliverables were present as specified in the *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis: Multi-Media, Multi-Concentration (ILM05.4)* (USEPA 2007a), USEPA publication *SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (USEPA 2007b), and/or the project contract.
  _X_ Yes
  ___ No

- All field documentation, including completed chain-of-custody (COC) forms and field logbook notes, were provided as required.
  _X_ Yes
  ___ No

3. Condition of Samples Upon Receipt

Samples were received in good condition within method specified requirements, with the following exceptions:

- There were no collection times listed on the sample bottles. The lab used the sample times listed on the COC.

- Sample H10060238-009 was filtered at the laboratory, and 2 mLs of Nitric Acid were added to the sample upon receipt at the laboratory. This was the rinsate blank sample.

4. Field Quality Control Samples

- **Blanks:** Please note that the highest blank value associated with any particular analyte is the blank value used for the flagging process.

  DI, trip, rinsate, or any other field blanks have been carried out at the proper frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No
  ___ NA

  Reported results on the field and rinsate blanks are less than the contract required detection limits (CRDLs) or the project required detection limits (PRDL) if project detection limits have been specified.
  _X_ Yes
  ___ No

- **Field duplicates**
  Field duplicates have been collected at the proper frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No
  ___ NA

  Field duplicate relative percent differences (RPDs) were within the required control limits (i.e., RPD of 20% or less).
  ___ Yes
  _X_ No
  ___ NA

  Sample results were qualified with a J if the duplicate RPD was greater than 20% and both the original and duplicate results were greater than five times the project required quantitation limits. In report H10060238, 54 groundwater results for total cadmium, copper, iron, lead, manganese, and zinc were qualified due to duplicate RPD.

5. Laboratory Procedures

- **Laboratory procedures followed**
  ___ CLP-SOW
  _X_ SW-846
  ___ Methods for Chemical Analysis of Water and Wastes
  ___ XRF Standard Operating Procedures
  _X_ Other

Table 2 details the analytical methods used.

- **Holding times met**
  _X_ Yes
  ___ No

- **Consistency with project requirements**
  Analyses were carried out as requested.
  _X_ Yes
  ___ No

  Appropriate units were reported for each sample matrix type and method.
  _X_ Yes
  ___ No

  Project specified methods were used.
  _X_ Yes
  ___ No
  ___ NA
  The following analytical requirements differed from the SAP/QAPP, as the methods listed in the SAP/QAPP are no longer EPA approved methods:
    - Method for pH was changed from USEPA 150.0 to SM 4500-HB
    - Method for sulfate was changed from USEPA 375.2 to 300.0.

6. Detection Limits

- Reporting detection limits met PRDLs.
  _X_ Yes
  ___ No

7. Initial and/or Continuing Calibration Results

- Initial or continuing calibration verification results were within acceptable limits, as reported by the lab.
  _X_ Yes
  ___ No
  ___ NA

8. Laboratory Blanks

- **Preparation blanks**
  Preparation blanks were prepared and analyzed at the required frequency of at least 5% of the total number of samples.
  _X_ Yes
  ___ No

  All the analytes in the preparation blank were less than the CRDL (or the PRDL if a project detection limit has been specified).
  _X_ Yes
  ___ No

9. Laboratory Matrix Spikes

- A matrix spike sample (pre-digestion) was prepared and analyzed at the required frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No

- Samples were spiked at levels appropriate to the sample concentrations.
  _X_ Yes
  ___ No

- Matrix spike recoveries were within the required control limits (75-125%).
  _X_ Yes
  ___ No

  - Matrix spike recoveries were calculated when the spiked amount was within 4 times the parent sample concentration. MS recoveries were within the required control limits for all analyses.

10. Laboratory Duplicates

- Laboratory duplicate samples were analyzed at the proper frequency.
  _X_ Yes
  ___ No

- The laboratory duplicate RPDs were within the required control limits (i.e., RPD of 20% or less).
  _X_ Yes
  ___ No

11. Laboratory Control Standards

- The reference material used was of the correct matrix and concentration, according to Energy Laboratories.
  _X_ Yes
  ___ No

- Laboratory control samples (LCSs) were prepared and analyzed at the proper frequency of at least 5% of the total number of samples.
  _X_ Yes
  ___ No

- LCSs were prepared in the same way as the associated samples, according to Energy Laboratories.
  _X_ Yes
  ___ No

- LCS recoveries were within the required control limits.
  _X_ Yes
  ___ No

12. Additional Data Evaluation

- The sample filtered and acidified by the lab (H10060328-009) is a rinsate blank sample. All filtered and unfiltered results for this sample were below detection limits. No data were qualified based on the rinsate blank results.

13. Data Quality Objectives

- Project data quality objectives (DQOs) met.
  _X_ Yes
  ___ No
  ___ NA

  QC criteria for precision, accuracy, and representativeness were used to assess and qualify data. Based on this assessment, the data are acceptable and usable. No results were rejected, meeting the target goal of 95% completeness for the project, as defined in the SAP/QAPP. Table 3 provides a summary of the rationale for all assigned data qualifiers.

Table 3 Assigned Qualifiers

Reason for Qualification	Parameter	Laboratory ID	Sample ID	Assigned Qualifier
Relative percent difference out of range (field duplicate)	Cadmium	H10060238-001	UBM-TDMW3D-20100610	J
		H10060238-002	UBM-TDMW2S-555-20100610	J
		H10060238-003	UBM-TDMW4D-20100610	J
		H10060238-004	UBM-TDMW2D-20100610	J
		H10060238-005	UBM-TDMW3D-333-20100610	J
		H10060238-006	UBM-TDMW5-20100610	J
		H10060238-007	UBM-TDMW2S-20100610	J
		H10060238-008	UBM-TDMW01-20100610	J
		H10060238-009	UBM-TDMW3D-444-20100610	J
	Copper	H10060238-001	UBM-TDMW3D-20100610	J
		H10060238-002	UBM-TDMW2S-555-20100610	J
		H10060238-003	UBM-TDMW4D-20100610	J
		H10060238-004	UBM-TDMW2D-20100610	J
		H10060238-005	UBM-TDMW3D-333-20100610	J
		H10060238-006	UBM-TDMW5-20100610	J
		H10060238-007	UBM-TDMW2S-20100610	J
		H10060238-008	UBM-TDMW01-20100610	J
		H10060238-009	UBM-TDMW3D-444-20100610	J
	Iron	H10060238-001	UBM-TDMW3D-20100610	J
		H10060238-002	UBM-TDMW2S-555-20100610	J
		H10060238-003	UBM-TDMW4D-20100610	J
		H10060238-004	UBM-TDMW2D-20100610	J

		H10060238-005	UBM-TDMW3D-333-20100610	J
		H10060238-006	UBM-TDMW5-20100610	J
		H10060238-007	UBM-TDMW2S-20100610	J
		H10060238-008	UBM-TDMW01-20100610	J
		H10060238-009	UBM-TDMW3D-444-20100610	J
	Lead	H10060238-001	UBM-TDMW3D-20100610	J
		H10060238-002	UBM-TDMW2S-555-20100610	J
		H10060238-003	UBM-TDMW4D-20100610	J
		H10060238-004	UBM-TDMW2D-20100610	J
		H10060238-005	UBM-TDMW3D-333-20100610	J
		H10060238-006	UBM-TDMW5-20100610	J
		H10060238-007	UBM-TDMW2S-20100610	J
		H10060238-008	UBM-TDMW01-20100610	J
		H10060238-009	UBM-TDMW3D-444-20100610	J
	Manganese	H10060238-001	UBM-TDMW3D-20100610	J
		H10060238-002	UBM-TDMW2S-555-20100610	J
		H10060238-003	UBM-TDMW4D-20100610	J
		H10060238-004	UBM-TDMW2D-20100610	J
		H10060238-005	UBM-TDMW3D-333-20100610	J
		H10060238-006	UBM-TDMW5-20100610	J
		H10060238-007	UBM-TDMW2S-20100610	J
		H10060238-008	UBM-TDMW01-20100610	J
		H10060238-009	UBM-TDMW3D-444-20100610	J
	Zinc	H10060238-001	UBM-TDMW3D-20100610	J
		H10060238-002	UBM-TDMW2S-555-20100610	J
		H10060238-003	UBM-TDMW4D-20100610	J
		H10060238-004	UBM-TDMW2D-20100610	J
		H10060238-005	UBM-TDMW3D-333-20100610	J
		H10060238-006	UBM-TDMW5-20100610	J
		H10060238-007	UBM-TDMW2S-20100610	J
		H10060238-008	UBM-TDMW01-20100610	J
		H10060238-009	UBM-TDMW3D-444-20100610	J

References

TerraGraphics Environmental Engineering, Inc. (TerraGraphics). 2009. *Final Sampling and Analysis Plan (SAP)/Quality Assurance Project Plan (QAPP) for Groundwater and Surface Water Monitoring and Soil and Tailings Sampling at the Upper Blackfoot Mining Complex, Lewis and Clark County, Montana.* Prepared for Montana Department of Environmental Quality (DEQ). August.

USEPA 1996. *Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses.* December.

USEPA. 2007a. *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis: Multi-Media, Multi-Concentration (ILM05.4)*. USEPA 540-FS-07-004. January.

USEPA. 2007b. *Third Edition of SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, as amended by Final Updates I, II, IIA, IIB, III, IIIA, IIIB, and IV; February.

USEPA. 2010. *Final USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*. USEPA 540-R-10-011. January.

DATA VALIDATION REPORT
UBMC March 2010 Surface Water

Prepared by: Mara Moscato, TerraGraphics, on 10/2/2012

Reviewed by: Susan Spalinger, TerraGraphics, on 10/4/12

1. Introduction

This memo addresses the quality assurance and quality control (QA/QC) review of ten samples analyzed by Energy Laboratories in report H10030257, as part of the UBMC quarterly monitoring on March 18, 2010. Validation procedures used are consistent with the *Final Sampling and Analysis Plan(SAP) / Quality Assurance Project Plan (QAPP) for Groundwater and Surface Water Monitoring and Soil and Tailings Sampling at the Upper Blackfoot Mining Complex, Lewis and Clark County, Montana* (TerraGraphics 2009), hereinafter referred to as the SAP/QAPP, and the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA 2010).

The samples evaluated in this data validation report are listed in Table 1 and include eight surface water samples, one rinsate blank, and one field blank. The analytes and analytical methods are presented in Table 2.

Table 1 Evaluated Samples

Laboratory ID	Sample ID
H10030257-001	UBM-BRSW01-20100318
H10030257-002	UBM-Trench-20100318
H10030257-003	UBM-BRSW48-20100318
H10030257-004	UBM-BRSW23-20100318
H10030257-005	UBM-BRSW3A-20100318
H10030257-006	UBM-BRSW3B-20100318
H10030257-007	UBM-BRSW29-20100318
H10030257-008	UBM-BRSW29-333-20100318
H10030257-009	UBM-BRSW29-444-20100318
H10030257-010	UBM-BRSW38-20100318

Table 2 Water Sample Analytes and Analytical Methods

Analyte	Analytical Method
Aluminum	EPA 200.8
Aluminum, Dissolved	EPA 200.8
Arsenic	EPA 200.8
Arsenic, Dissolved	EPA 200.8
Cadmium	EPA 200.8
Cadmium, Dissolved	EPA 200.8
Calcium, Dissolved	EPA 200.7/200.8
Copper	EPA 200.8
Copper, Dissolved	EPA 200.8
Iron	EPA 200.8

Iron, Dissolved	EPA 200.7/200.8
Lead	EPA 200.8
Lead, Dissolved	EPA 200.8
Magnesium, Dissolved	EPA 200.7/200.8
Manganese	EPA 200.8
Manganese, Dissolved	EPA 200.8
Potassium, Dissolved	EPA 200.7/200.8
Sodium, Dissolved	EPA 200.7/200.8
Hardness (total as CaCO3)	SM 2320B
Zinc	EPA 200.8
Zinc, Dissolved	EPA 200.8
Chloride, total and dissolved	EPA 300.0
Sulfate, total and dissolved	EPA 300.0
Alkalinity, Carbonate (CaCO3)	SM 2320B
Alkalinity, Total as CaCO3	SM 2320B
Alkalinity, Bicarbonate (CaCO3)	SM 2320B
Specific Conductance	SM 2510B
Total Dissolved Solids – Surface water	SM 2540C
Total Suspended Solids – Surface water	SM 2540D
pH at 25 Degrees C	SM 4500-HB

- Data qualifiers assigned during this validation review include:
  - R = rejected, data not usable.

- Overall level of validation:

___ Contract Laboratory Program (CLP)
_X_ Standard
___ Visual

2. Deliverables

- All laboratory document deliverables were present as specified in the *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis: Multi-Media, Multi-Concentration (ILM05.4)* (USEPA 2007a), USEPA publication *SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (USEPA 2007b), and/or the project contract.

_X_ Yes
___ No

- All field documentation, including completed chain-of-custody (COC) forms and field logbook notes, were provided as required.

_X_ Yes
___ No

3. Condition of Samples Upon Receipt

Samples were received in good condition within method specified requirements, with the following exceptions:

- The lab noted that there were no custody seals intact on the shipping container or sample bottles. However, the COC form indicates that a custody seal had

been used, and it may have fallen off during transport. Chain-of-custody was maintained, as evidenced by field and laboratory personnel signatures, dates, and times of receipt. No additional corrective action was necessary.

- There were no collection times listed on the sample bottles. The lab used the sample times listed on the COC.
- BRSW3B-20100318 was received with a hole in the container. This sample was included in the original data summary report. However, upon further review, since the integrity of the sample was compromised, the results for this sample were rejected and should not be used for decision making purposes.

4. Field Quality Control Samples

- **Blanks:** Please note that the highest blank value associated with any particular analyte is the blank value used for the flagging process.

  DI, trip, rinsate, or any other field blanks have been carried out at the proper frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No
  ___ NA

  Reported results on the field and rinsate blanks are less than the contract required detection limits (CRDLs) or the project required detection limits (PRDL) if project detection limits have been specified.
  _X_ Yes
  ___ No

- **Field duplicates**
  Field duplicates have been collected at the proper frequency as described in the SAP/QAPP.
  ___ Yes
  _X_ No
  ___ NA
  No duplicate sample was collected with this event. Field duplicates help evaluate field variability and reproducibility of laboratory and field procedures. No other information collected or documented from this sampling event and associated results indicates an issue with laboratory or field procedures. Field variability cannot be assessed with this batch of samples. Consequently, no data were qualified.

  Field duplicate relative percent differences (RPDs) were within the required control limits (i.e., RPD of 20% or less).
  ___ Yes
  ___ No
  _X_ NA
  RPD was unable to be calculated for these samples, as there was no field duplicate collected.

5. Laboratory Procedures

- **Laboratory procedures followed**

___ CLP-SOW
_X_ SW-846
___ Methods for Chemical Analysis of Water and Wastes
___ XRF Standard Operating Procedures
_X_ Other

Table 2 details the analytical methods used.

- **Holding times met**

_X_ Yes
___ No

- **Consistency with project requirements**

Analyses were carried out as requested.
_X_ Yes
___ No

Appropriate units were reported for each sample matrix type and method.
_X_ Yes
___ No

Project specified methods were used.
_X_ Yes
___ No
___ NA
The following analytical requirements differed from the SAP/QAPP, as the methods listed in the SAP/QAPP are no longer EPA approved methods:

- Method for pH was changed from USEPA 150.0 to SM 4500-HB
- Method for total suspended solids was changed from USEPA 160.2 to SM 2540D.
- Method for sulfate was changed from USEPA 375.2 to 300.0.

6. Detection Limits

- Reporting detection limits met PRDLs.

_X_ Yes
___ No

7. Initial and/or Continuing Calibration Results

- Initial or continuing calibration verification results were within acceptable limits, as reported by the lab.

_X_ Yes
___ No
___ NA

8. Laboratory Blanks

- **Preparation blanks**

Preparation blanks were prepared and analyzed at the required frequency of at least 5% of the total number of samples.
_X_ Yes
___ No

All the analytes in the preparation blank were less than the CRDL (or the PRDL if a project detection limit has been specified).
_X_ Yes
___ No

9. Laboratory Matrix Spikes

- A matrix spike sample (pre-digestion) was prepared and analyzed at the required frequency as described in the SAP/QAPP.

_X_ Yes
___ No

- Samples were spiked at levels appropriate to the sample concentrations.

_X_ Yes
___ No

- Matrix spike recoveries were within the required control limits (75-125%).

_X_ Yes
___ No

  - Matrix spike recoveries were calculated when the spiked amount was within 4 times the parent sample concentration. MS recoveries were within the required control limits for all analyses, except the following:
  - Report number H10030257: the MS and MSD had percent recoveries < 75% for total zinc. The spiked samples were not from this project. Only the MS and MSD results from a sample from this project were evaluated as specified in the SAP/QAPP, and no data were qualified.

10. Laboratory Duplicates

- Laboratory duplicate samples were analyzed at the proper frequency.

_X_ Yes
___ No

- The laboratory duplicate RPDs were within the required control limits (i.e., RPD of 20% or less).

_X_ Yes
___ No

11. Laboratory Control Standards

- The reference material used was of the correct matrix and concentration, according to Energy Laboratories.

_X_ Yes
___ No

- Laboratory control samples (LCSs) were prepared and analyzed at the proper frequency of at least 5% of the total number of samples.
  _X_ Yes
  ___ No

- LCSs were prepared in the same way as the associated samples, according to Energy Laboratories.
  _X_ Yes
  ___ No

- LCS recoveries were within the required control limits.
  _X_ Yes
  ___ No

12. Additional Data Evaluation

- In report number H10030257, there were no QA/QC analyses performed on a sample from this project for conductivity, TDS, TSS, or pH. However, the QA/QC results for these parameters based on samples not from this project were still used to evaluate the data.

13. Data Quality Objectives

- Project data quality objectives (DQOs) met.
  ___ Yes
  _X_ No
  ___ NA

  QC criteria for precision, accuracy, and representativeness were used to assess data, and one sample was qualified as not useable. Other than this sample, the data are acceptable and usable. Thirty-two (32) of the 320 results were rejected. Following the SAP/QAPP, completeness for this sample event is 90%, which does not meet the target goal of 95% completeness for the project. Table 3 provides a summary of the rationale for all assigned data qualifiers.

Table 3 Assigned Qualifiers

Laboratory ID	Sample ID	Parameter	Laboratory Result	Assigned Qualifier	Reason for Qualification
H10030257-006	UBM-BRSW3B-20100318	All Analytes	Detected and Non-Detected	R	Sample Integrity Compromised

References

TerraGraphics Environmental Engineering, Inc. (TerraGraphics). 2009. *Final Sampling and Analysis Plan (SAP)/Quality Assurance Project Plan (QAPP) for Groundwater and Surface Water Monitoring and Soil and Tailings Sampling at the Upper Blackfoot Mining*

Complex, Lewis and Clark County, Montana. Prepared for Montana Department of Environmental Quality (DEQ). August.

USEPA 1996. *Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses.* December.

USEPA. 2007a. *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis: Multi-Media, Multi-Concentration (ILM05.4).* USEPA 540-FS-07-004. January.

USEPA. 2007b. *Third Edition of SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, as amended by Final Updates I, II, IIA, IIB, III, IIIA, IIIB, and IV; February.

USEPA. 2010. *Final USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*. USEPA 540-R-10-011. January.

DATA VALIDATION REPORT
UBMC December 2010 Surface Water and Groundwater

Prepared by: Mara Moscato, TerraGraphics, on 10/2/2012

Reviewed by: Susan Spalinger, TerraGraphics, on 10/4/12

1. Introduction

This memo addresses the quality assurance and quality control (QA/QC) review of eighteen samples analyzed by Energy Laboratories in report H10120314, as part of the UBMC quarterly monitoring from December 15 to December 21, 2010. Validation procedures used are consistent with the *Final Sampling and Analysis Plan(SAP) / Quality Assurance Project Plan (QAPP) for Groundwater and Surface Water Monitoring and Soil and Tailings Sampling at the Upper Blackfoot Mining Complex, Lewis and Clark County, Montana* (TerraGraphics 2009), hereinafter referred to as the SAP/QAPP, and the *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA 2010).

The samples evaluated in this data validation report are listed in Table 1 and include five groundwater samples, seven surface water samples, two field duplicates, two rinsate blanks, and two field blanks. The analytes and analytical methods are presented in Table 2.

Table 1 Evaluated Samples

Laboratory ID	Sample ID
H10120314-001	UBM-BRSW01-20101215
H10120314-002	UBM-BRSW01-555-20101215
H10120314-003	UBM-BRSW23-20101216
H10120314-004	UBM-BRSW48-20101216
H10120314-005	UBM-BRSW3A-20101215
H10120314-006	UBM-BRSW3B-20101215
H10120314-007	UBM-BRSW38-20101216
H10120314-008	UBM-BRSW29-20101216
H10120314-009	UBM-BRSW29-333-20101216
H10120314-010	UBM-BRSW29-444-20101216
H10120314-011	UBM-TDMW4D-20101220
H10120314-012	UBM-TDMW2S-20101221
H10120314-013	UBM-TDMW01-555-20101221
H10120314-014	UBM-TDMW2D-20101221
H10120314-015	UBM-TDMW01-20101221
H10120314-016	UBM-TDMW3D-20101220
H10120314-017	UBM-TDMW01-333-20101221
H10120314-018	UBM-TDMW01-444-20101221

Table 2 Water Sample Analytes and Analytical Methods

Analyte	Analytical Method
Aluminum	EPA 200.8
Aluminum, Dissolved	EPA 200.8
Arsenic	EPA 200.8
Arsenic, Dissolved	EPA 200.8
Cadmium	EPA 200.8
Cadmium, Dissolved	EPA 200.8
Calcium, Dissolved	EPA 200.7/200.8
Copper	EPA 200.8
Copper, Dissolved	EPA 200.8
Iron	EPA 200.8
Iron, Dissolved	EPA 200.7/200.8
Lead	EPA 200.8
Lead, Dissolved	EPA 200.8
Magnesium, Dissolved	EPA 200.7/200.8
Manganese	EPA 200.8
Manganese, Dissolved	EPA 200.8
Potassium, Dissolved	EPA 200.7/200.8
Sodium, Dissolved	EPA 200.7/200.8
Hardness (total as CaCO3)	SM 2320B
Zinc	EPA 200.8
Zinc, Dissolved	EPA 200.8
Chloride, total and dissolved	EPA 300.0
Sulfate, total and dissolved	EPA 300.0
Alkalinity, Carbonate (CaCO3)	SM 2320B
Alkalinity, Total as CaCO3	SM 2320B
Alkalinity, Bicarbonate (CaCO3)	SM 2320B
Specific Conductance	SM 2510B
Total Dissolved Solids – Surface water	SM 2540C
Total Suspended Solids – Surface water	SM 2540D
pH at 25 Degrees C	SM 4500-HB

- Data qualifiers that were assigned in this validation include:
  - J = estimated concentration
  - R = Rejected, data not usable

- Overall level of validation:
  ___ Contract Laboratory Program (CLP)
  _X_ Standard
  ___ Visual

2. Deliverables

- All laboratory document deliverables were present as specified in the *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis: Multi-Media, Multi-Concentration (ILM05.4)* (USEPA 2007a), USEPA publication *SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (USEPA 2007b), and/or the project contract.
  _X_ Yes

___ No

- All field documentation, including completed chain-of-custody (COC) forms and field logbook notes, were provided as required.
  _X_ Yes
  ___ No

3. Condition of Samples Upon Receipt

Samples were received in good condition within method specified requirements, with the following exceptions:

- In report H10120314, the lab noted that sample TDMW3D-20101220 was collected on 12/20/10 at 13:00, but the unfiltered raw sample bottle had the label of TDMW4D-20101220. The lab confirmed that this sample was actually TDMW3D-20101220. No further corrective action was necessary. The lab noted that the date and time on the chain of custody did not match when samples were relinquished.
- Sample temperature upon receipt at the laboratory was 9.1 degrees C. Conductivity, alkalinity, bicarbonate, carbonate, chloride, TSS, TDS, and sulfate analyses require that sample preservation at 6 degrees C or less. Because the samples were near the method-required temperatures for alkalinity, biocarbonate, and carbonate upon receipt, there was likely little to no effect on the results. Methods for alkalinity, biocarbonate, and carbonate analyses indicate that samples are warmed to room temperature (~25C) to perform titrations. For TSS and TDS, preservation and holding requirements are primarily intended to minimize microbial decomposition of solids. TSS and TDS are discussed below under Holding Times. No qualifiers were assigned based on sample receipt temperature.

4. Field Quality Control Samples

- **Blanks:** Please note that the highest blank value associated with any particular analyte is the blank value used for the flagging process.

  DI, trip, rinsate, or any other field blanks have been carried out at the proper frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No
  ___ NA

  Reported results on the field and rinsate blanks are less than the contract required detection limits (CRDLs) or the project required detection limits (PRDL) if project detection limits have been specified.
  _X_ Yes
  ___ No

  - The rinsate and field blanks for the December sampling event were only analyzed for total metals. No other sampling events contained blank

results where dissolved metals were detected without the corresponding total metals detected. Consequently, no results were qualified.

- **Field duplicates**
  Field duplicates have been collected at the proper frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No
  ___ NA

  Field duplicate relative percent differences (RPDs) were within the required control limits (i.e., RPD of 20% or less).
  ___ Yes
  _X_ No
  ___ NA
  - In report H10120314, groundwater results for dissolved cadmium were qualified with a J due to duplicate RPD.

5. Laboratory Procedures

- **Laboratory procedures followed**
  ___ CLP-SOW
  _X_ SW-846
  ___ Methods for Chemical Analysis of Water and Wastes
  ___ XRF Standard Operating Procedures
  _X_ Other

  Table 2 details the analytical methods used.

- **Holding times met**
  ___ Yes
  _X_ No
  Samples exceeded the holding time for TDS and TSS. These results have been rejected.

- **Consistency with project requirements**
  Analyses were carried out as requested.
  _X_ Yes
  ___ No

  Appropriate units were reported for each sample matrix type and method.
  _X_ Yes
  ___ No

  Project specified methods were used.
  _X_ Yes
  ___ No
  ___ NA

The following analytical requirements differed from the SAP/QAPP, as the methods listed in the SAP/QAPP are no longer EPA approved methods:

- Method for pH was changed from USEPA 150.0 to SM 4500-HB
- Method for total suspended solids was changed from USEPA 160.2 to SM 2540D.
- Method for sulfate was changed from USEPA 375.2 to 300.0.

6. Detection Limits

- Reporting detection limits met PRDLs.
  _X_ Yes
  ___ No

7. Initial and/or Continuing Calibration Results

- Initial or continuing calibration verification results were within acceptable limits, as reported by the lab.
  _X_ Yes
  ___ No
  ___ NA

8. Laboratory Blanks

- **Preparation blanks**
  Preparation blanks were prepared and analyzed at the required frequency of at least 5% of the total number of samples.
  _X_ Yes
  ___ No

  All the analytes in the preparation blank were less than the CRDL (or the PRDL if a project detection limit has been specified).
  ___ Yes
  _X_ No
  - Any detected analytes in preparation blanks were less than the project required detection limits except for total copper, which was detected at 0.003 mg/L in QA/QC batch11038 in report H10120314. Associated samples were more than ten times the amount detected in the blanks; therefore, they were not qualified.

9. Laboratory Matrix Spikes

- A matrix spike sample (pre-digestion) was prepared and analyzed at the required frequency as described in the SAP/QAPP.
  _X_ Yes
  ___ No

- Samples were spiked at levels appropriate to the sample concentrations.
  _X_ Yes
  ___ No

- Matrix spike recoveries were within the required control limits (75-125%).
  _X_ Yes

___ No

- Matrix spike recoveries were calculated when the spiked amount was within 4 times the parent sample concentration. MS recoveries were within the required control limits for all analyses.

10. Laboratory Duplicates

- Laboratory duplicate samples were analyzed at the proper frequency.
  _X_ Yes
  ___ No

- The laboratory duplicate RPDs were within the required control limits (i.e., RPD of 20% or less).
  _X_ Yes
  ___ No

11. Laboratory Control Standards

- The reference material used was of the correct matrix and concentration, according to Energy Laboratories.
  _X_ Yes
  ___ No

- Laboratory control samples (LCSs) were prepared and analyzed at the proper frequency of at least 5% of the total number of samples.
  _X_ Yes
  ___ No

- LCSs were prepared in the same way as the associated samples, according to Energy Laboratories.
  _X_ Yes
  ___ No

- LCS recoveries were within the required control limits.
  _X_ Yes
  ___ No

12. Additional Data Evaluation

None for this batch.

13. Data Quality Objectives

- Project data quality objectives (DQOs) met.
  _X_ Yes
  ___ No
  ___ NA

QC criteria for precision and accuracy were used to assess and qualify data. Based on this assessment, the data are acceptable and usable, except for sixteen of the 456 results, which were rejected, meeting the target goal of 95% completeness for the project, as defined in the SAP/QAPP. Table 3 provides a summary of the rationale for all assigned data qualifiers.

Table 3 Assigned Qualifiers

Reason for Qualification	Parameter	LabID	FieldID	Assigned Qualifier
Relative percent difference out of range (field duplicate)	Cadmium, Dissolved	H10120314-011	UBM-TDMW4D-20101220	J
		H10120314-012	UBM-TDMW2S-20101221	J
		H10120314-013	UBM-TDMW01-555-20101221	J
		H10120314-014	UBM-TDMW2D-20101221	J
		H10120314-015	UBM-TDMW01-20101221	J
		H10120314-016	UBM-TDMW3D-20101220	J
Holding Times not Met	TDS, TSS	H10120314-001	UBM-BRSW01-20101215	R
		H10120314-002	UBM-BRSW01-555-20101215	R
		H10120314-003	UBM-BRSW23-20101216	R
		H10120314-004	UBM-BRSW48-20101216	R
		H10120314-005	UBM-BRSW3A-20101215	R
		H10120314-006	UBM-BRSW3B-20101215	R
		H10120314-007	UBM-BRSW38-20101216	R
		H10120314-008	UBM-BRSW29-20101216	R

References

TerraGraphics Environmental Engineering, Inc. (TerraGraphics). 2009. *Final Sampling and Analysis Plan (SAP)/Quality Assurance Project Plan (QAPP) for Groundwater and Surface Water Monitoring and Soil and Tailings Sampling at the Upper Blackfoot Mining Complex, Lewis and Clark County, Montana.* Prepared for Montana Department of Environmental Quality (DEQ). August.

USEPA 1996. *Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses.* December.

USEPA. 2007a. *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis: Multi-Media, Multi-Concentration (ILM05.4).* USEPA 540-FS-07-004. January.

USEPA. 2007b. *Third Edition of SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, as amended by Final Updates I, II, IIA, IIB, III, IIIA, IIIB, and IV; February.

USEPA. 2010. *Final USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review*. USEPA 540-R-10-011. January.

Appendix D

Correlation Graphs

Appendix D1 (Surface Water)

Appendix D2 (Groundwater)

Sample ID	Aluminum Concentration (mg/L)	pH
UBM-BRSW01-20100318	0.07	8.22
UBM-BRSW23-20100318	0.08	7.85
UBM-BRSW29-20100318	0.04	7.83
UBM-BRSW38-20100318	0.06	7.72
UBM-BRSW3A-20100318	0.04	7.86
UBM-BRSW3B-20100318	0.03	7.89
UBM-BRSW48-20100318	0.11	7.87
UBM-TRENCH-20100318	0.5	7.84
UBM-BRSW01-20100608	0.03	8.29
UBM-BRSW02-20100608	0.1	8
UBM-BRSW22-20100608	0.03	8
UBM-BRSW23-20100608	0.05	8
UBM-BRSW29-20100608	0.04	8
UBM-BRSW38-20100608	0.06	8
UBM-BRSW3A-20100608	0.15	7.23
UBM-BRSW3B-20100608	0.21	7.2
UBM-BRSW48-20100608	0.08	8.2
UBM-BRSW01-20100908	0.03	8.57
UBM-BRSW02-20100908	0.03	7.9
UBM-BRSW22-20100908	0.03	8.45
UBM-BRSW23-20100908	0.03	8.5
UBM-BRSW29-20100910	0.03	8
UBM-BRSW38-20100910	0.06	7.92
UBM-BRSW3A-20100908	0.05	7.77
UBM-BRSW3B-20100910	0.03	7.67
UBM-BRSW48-20100908	0.03	8
UBM-BRSW01-20101215	0.06	9
UBM-BRSW23-20101216	0.03	8
UBM-BRSW29-20101216	0.06	8
UBM-BRSW38-20101216	0.06	8
UBM-BRSW3A-20101215	0.21	8
UBM-BRSW3B-20101215	0.09	8
UBM-BRSW48-20101216	0.07	8

Sample ID	Aluminum Concentration (mg/L)	Conductivity (µS/cm)
UBM-BRSW01-20100318	0.07	320
UBM-BRSW23-20100318	0.08	415
UBM-BRSW29-20100318	0.04	368
UBM-BRSW38-20100318	0.06	388
UBM-BRSW3A-20100318	0.04	520
UBM-BRSW3B-20100318	0.03	500
UBM-BRSW48-20100318	0.11	418
UBM-TRENCH-20100318	0.5	309
UBM-BRSW01-20100608	0.03	280
UBM-BRSW02-20100608	0.1	1520
UBM-BRSW22-20100608	0.03	305
UBM-BRSW23-20100608	0.05	352
UBM-BRSW29-20100608	0.04	301
UBM-BRSW38-20100608	0.06	327
UBM-BRSW3A-20100608	0.15	772
UBM-BRSW3B-20100608	0.21	672
UBM-BRSW48-20100608	0.08	347
UBM-BRSW01-20100908	0.03	369
UBM-BRSW02-20100908	0.03	6269
UBM-BRSW22-20100908	0.03	558
UBM-BRSW23-20100908	0.03	447
UBM-BRSW29-20100910	0.03	422
UBM-BRSW38-20100910	0.06	517
UBM-BRSW3A-20100908	0.05	559
UBM-BRSW3B-20100910	0.03	578
UBM-BRSW48-20100908	0.03	475
UBM-BRSW01-20101215	0.06	362
UBM-BRSW23-20101216	0.03	550
UBM-BRSW29-20101216	0.06	471
UBM-BRSW38-20101216	0.06	594
UBM-BRSW3A-20101215	0.21	522
UBM-BRSW3B-20101215	0.09	511
UBM-BRSW48-20101216	0.07	587

Sample ID	Arsenic Concentration (mg/L)	pH
UBM-BRSW01-20100318	0.003	8.22
UBM-BRSW23-20100318	0.003	7.85
UBM-BRSW29-20100318	0.003	7.83
UBM-BRSW38-20100318	0.003	7.72
UBM-BRSW3A-20100318	0.003	7.86
UBM-BRSW3B-20100318	0.003	7.89
UBM-BRSW48-20100318	0.003	7.87
UBM-TRENCH-20100318	0.003	7.84
UBM-BRSW01-20100608	0.003	8.29
UBM-BRSW02-20100608	0.003	8
UBM-BRSW22-20100608	0.003	8
UBM-BRSW23-20100608	0.003	8
UBM-BRSW29-20100608	0.003	8
UBM-BRSW38-20100608	0.003	8
UBM-BRSW3A-20100608	0.003	7.23
UBM-BRSW3B-20100608	0.003	7.2
UBM-BRSW48-20100608	0.003	8.2
UBM-BRSW01-20100908	0.003	8.57
UBM-BRSW02-20100908	0.003	7.9
UBM-BRSW22-20100908	0.003	8.45
UBM-BRSW23-20100908	0.003	8.5
UBM-BRSW29-20100910	0.003	8
UBM-BRSW38-20100910	0.003	7.92
UBM-BRSW3A-20100908	0.003	7.77
UBM-BRSW3B-20100910	0.003	7.67
UBM-BRSW48-20100908	0.003	8
UBM-BRSW01-20101215	0.003	9
UBM-BRSW23-20101216	0.003	8
UBM-BRSW29-20101216	0.003	8
UBM-BRSW38-20101216	0.003	8
UBM-BRSW3A-20101215	0.003	8
UBM-BRSW3B-20101215	0.003	8
UBM-BRSW48-20101216	0.003	8

Sample ID	Arsenic Concentration (mg/L)	Conductivity (µS/cm)
UBM-BRSW01-20100318	0.003	320
UBM-BRSW23-20100318	0.003	415
UBM-BRSW29-20100318	0.003	368
UBM-BRSW38-20100318	0.003	388
UBM-BRSW3A-20100318	0.003	520
UBM-BRSW3B-20100318	0.003	500
UBM-BRSW48-20100318	0.003	418
UBM-TRENCH-20100318	0.003	309
UBM-BRSW01-20100608	0.003	280
UBM-BRSW02-20100608	0.003	1520
UBM-BRSW22-20100608	0.003	305
UBM-BRSW23-20100608	0.003	352
UBM-BRSW29-20100608	0.003	301
UBM-BRSW38-20100608	0.003	327
UBM-BRSW3A-20100608	0.003	772
UBM-BRSW3B-20100608	0.003	672
UBM-BRSW48-20100608	0.003	347
UBM-BRSW01-20100908	0.003	369
UBM-BRSW02-20100908	0.003	6269
UBM-BRSW22-20100908	0.003	558
UBM-BRSW23-20100908	0.003	447
UBM-BRSW29-20100910	0.003	422
UBM-BRSW38-20100910	0.003	517
UBM-BRSW3A-20100908	0.003	559
UBM-BRSW3B-20100910	0.003	578
UBM-BRSW48-20100908	0.003	475
UBM-BRSW01-20101215	0.003	362
UBM-BRSW23-20101216	0.003	550
UBM-BRSW29-20101216	0.003	471
UBM-BRSW38-20101216	0.003	594
UBM-BRSW3A-20101215	0.003	522
UBM-BRSW3B-20101215	0.003	511
UBM-BRSW48-20101216	0.003	587

Sample ID	Cadmium Concentration (mg/L)	pH
UBM-BRSW01-20100318	0.00008	8.22
UBM-BRSW23-20100318	0.0023	7.85
UBM-BRSW29-20100318	0.00185	7.83
UBM-BRSW38-20100318	0.00359	7.72
UBM-BRSW3A-20100318	0.00032	7.86
UBM-BRSW3B-20100318	0.0003	7.89
UBM-BRSW48-20100318	0.00344	7.87
UBM-TRENCH-20100318	0.00008	7.84
UBM-BRSW01-20100608	0.00008	8.29
UBM-BRSW02-20100608	0.00222	8
UBM-BRSW22-20100608	0.00097	8
UBM-BRSW23-20100608	0.00195	8
UBM-BRSW29-20100608	0.00152	8
UBM-BRSW38-20100608	0.00274	8
UBM-BRSW3A-20100608	0.0118	7.23
UBM-BRSW3B-20100608	0.0135	7.2
UBM-BRSW48-20100608	0.00281	8.2
UBM-BRSW01-20100908	0.00008	8.57
UBM-BRSW02-20100908	0.0117	7.9
UBM-BRSW22-20100908	0.00864	8.45
UBM-BRSW23-20100908	0.00147	8.5
UBM-BRSW29-20100910	0.00292	8
UBM-BRSW38-20100910	0.00521	7.92
UBM-BRSW3A-20100908	0.00071	7.77
UBM-BRSW3B-20100910	0.00087	7.67
UBM-BRSW48-20100908	0.00239	8
UBM-BRSW01-20101215	0.00008	9
UBM-BRSW23-20101216	0.0024	8
UBM-BRSW29-20101216	0.00374	8
UBM-BRSW38-20101216	0.00588	8
UBM-BRSW3A-20101215	0.00339	8
UBM-BRSW3B-20101215	0.0012	8
UBM-BRSW48-20101216	0.00383	8

Sample ID	Cadmium Concentration (mg/L)	Conductivity (µS/cm)
UBM-BRSW01-20100318	0.00008	320
UBM-BRSW23-20100318	0.0023	415
UBM-BRSW29-20100318	0.00185	368
UBM-BRSW38-20100318	0.00359	388
UBM-BRSW3A-20100318	0.00032	520
UBM-BRSW3B-20100318	0.0003	500
UBM-BRSW48-20100318	0.00344	418
UBM-TRENCH-20100318	0.00008	309
UBM-BRSW01-20100608	0.00008	280
UBM-BRSW02-20100608	0.00222	1520
UBM-BRSW22-20100608	0.00097	305
UBM-BRSW23-20100608	0.00195	352
UBM-BRSW29-20100608	0.00152	301
UBM-BRSW38-20100608	0.00274	327
UBM-BRSW3A-20100608	0.0118	772
UBM-BRSW3B-20100608	0.0135	672
UBM-BRSW48-20100608	0.00281	347
UBM-BRSW01-20100908	0.00008	369
UBM-BRSW02-20100908	0.0117	6269
UBM-BRSW22-20100908	0.00864	558
UBM-BRSW23-20100908	0.00147	447
UBM-BRSW29-20100910	0.00292	422
UBM-BRSW38-20100910	0.00521	517
UBM-BRSW3A-20100908	0.00071	559
UBM-BRSW3B-20100910	0.00087	578
UBM-BRSW48-20100908	0.00239	475
UBM-BRSW01-20101215	0.00008	362
UBM-BRSW23-20101216	0.0024	550
UBM-BRSW29-20101216	0.00374	471
UBM-BRSW38-20101216	0.00588	594
UBM-BRSW3A-20101215	0.00339	522
UBM-BRSW3B-20101215	0.0012	511
UBM-BRSW48-20101216	0.00383	587

Sample ID	Copper Concentration (mg/L)	pH
UBM-BRSW01-20100318	0.001	8.22
UBM-BRSW23-20100318	0.006	7.85
UBM-BRSW29-20100318	0.007	7.83
UBM-BRSW38-20100318	0.011	7.72
UBM-BRSW3A-20100318	0.004	7.86
UBM-BRSW3B-20100318	0.001	7.89
UBM-BRSW48-20100318	0.015	7.87
UBM-TRENCH-20100318	0.004	7.84
UBM-BRSW01-20100608	0.001	8.29
UBM-BRSW02-20100608	0.012	8
UBM-BRSW22-20100608	0.007	8
UBM-BRSW23-20100608	0.011	8
UBM-BRSW29-20100608	0.007	8
UBM-BRSW38-20100608	0.012	8
UBM-BRSW3A-20100608	0.032	7.23
UBM-BRSW3B-20100608	0.037	7.2
UBM-BRSW48-20100608	0.05	8.2
UBM-BRSW01-20100908	0.001	8.57
UBM-BRSW02-20100908	0.009	7.9
UBM-BRSW22-20100908	0.042	8.45
UBM-BRSW23-20100908	0.005	8.5
UBM-BRSW29-20100910	0.006	8
UBM-BRSW38-20100910	0.011	7.92
UBM-BRSW3A-20100908	0.007	7.77
UBM-BRSW3B-20100910	0.003	7.67
UBM-BRSW48-20100908	0.008	8
UBM-BRSW01-20101215	0.001	9
UBM-BRSW23-20101216	0.006	8
UBM-BRSW29-20101216	0.012	8
UBM-BRSW38-20101216	0.016	8
UBM-BRSW3A-20101215	0.04	8
UBM-BRSW3B-20101215	0.008	8
UBM-BRSW48-20101216	0.017	8

Sample ID	Copper Concentration (mg/L)	Conductivity (µS/cm)
UBM-BRSW01-20100318	0.001	320
UBM-BRSW23-20100318	0.006	415
UBM-BRSW29-20100318	0.007	368
UBM-BRSW38-20100318	0.011	388
UBM-BRSW3A-20100318	0.004	520
UBM-BRSW3B-20100318	0.001	500
UBM-BRSW48-20100318	0.015	418
UBM-TRENCH-20100318	0.004	309
UBM-BRSW01-20100608	0.001	280
UBM-BRSW02-20100608	0.012	1520
UBM-BRSW22-20100608	0.007	305
UBM-BRSW23-20100608	0.011	352
UBM-BRSW29-20100608	0.007	301
UBM-BRSW38-20100608	0.012	327
UBM-BRSW3A-20100608	0.032	772
UBM-BRSW3B-20100608	0.037	672
UBM-BRSW48-20100608	0.05	347
UBM-BRSW01-20100908	0.001	369
UBM-BRSW02-20100908	0.009	6269
UBM-BRSW22-20100908	0.042	558
UBM-BRSW23-20100908	0.005	447
UBM-BRSW29-20100910	0.006	422
UBM-BRSW38-20100910	0.011	517
UBM-BRSW3A-20100908	0.007	559
UBM-BRSW3B-20100910	0.003	578
UBM-BRSW48-20100908	0.008	475
UBM-BRSW01-20101215	0.001	362
UBM-BRSW23-20101216	0.006	550
UBM-BRSW29-20101216	0.012	471
UBM-BRSW38-20101216	0.016	594
UBM-BRSW3A-20101215	0.04	522
UBM-BRSW3B-20101215	0.008	511
UBM-BRSW48-20101216	0.017	587

Sample ID	Iron Concentration (mg/L)	pH
UBM-BRSW01-20100318	0.05	8.22
UBM-BRSW23-20100318	0.11	7.85
UBM-BRSW29-20100318	0.28	7.83
UBM-BRSW38-20100318	0.48	7.72
UBM-BRSW3A-20100318	0.05	7.86
UBM-BRSW3B-20100318	0.05	7.89
UBM-BRSW48-20100318	0.81	7.87
UBM-TRENCH-20100318	0.51	7.84
UBM-BRSW01-20100608	0.05	8.29
UBM-BRSW02-20100608	0.27	8
UBM-BRSW22-20100608	0.05	8
UBM-BRSW23-20100608	0.43	8
UBM-BRSW29-20100608	0.15	8
UBM-BRSW38-20100608	0.26	8
UBM-BRSW3A-20100608	0.18	7.23
UBM-BRSW3B-20100608	0.11	7.2
UBM-BRSW48-20100608	0.5	8.2
UBM-BRSW01-20100908	0.05	8.57
UBM-BRSW02-20100908	0.43	7.9
UBM-BRSW22-20100908	0.05	8.45
UBM-BRSW23-20100908	0.05	8.5
UBM-BRSW29-20100910	0.24	8
UBM-BRSW38-20100910	0.44	7.92
UBM-BRSW3A-20100908	0.1	7.77
UBM-BRSW3B-20100910	0.05	7.67
UBM-BRSW48-20100908	0.52	8
UBM-BRSW01-20101215	0.09	9
UBM-BRSW23-20101216	0.1	8
UBM-BRSW29-20101216	0.44	8
UBM-BRSW38-20101216	0.67	8
UBM-BRSW3A-20101215	1.31	8
UBM-BRSW3B-20101215	0.07	8
UBM-BRSW48-20101216	0.98	8

Sample ID	Iron Concentration (mg/L)	Conductivity (µS/cm)
UBM-BRSW01-20100318	0.05	320
UBM-BRSW23-20100318	0.11	415
UBM-BRSW29-20100318	0.28	368
UBM-BRSW38-20100318	0.48	388
UBM-BRSW3A-20100318	0.05	520
UBM-BRSW3B-20100318	0.05	500
UBM-BRSW48-20100318	0.81	418
UBM-TRENCH-20100318	0.51	309
UBM-BRSW01-20100608	0.05	280
UBM-BRSW02-20100608	0.27	1520
UBM-BRSW22-20100608	0.05	305
UBM-BRSW23-20100608	0.43	352
UBM-BRSW29-20100608	0.15	301
UBM-BRSW38-20100608	0.26	327
UBM-BRSW3A-20100608	0.18	772
UBM-BRSW3B-20100608	0.11	672
UBM-BRSW48-20100608	0.5	347
UBM-BRSW01-20100908	0.05	369
UBM-BRSW02-20100908	0.43	6269
UBM-BRSW22-20100908	0.05	558
UBM-BRSW23-20100908	0.05	447
UBM-BRSW29-20100910	0.24	422
UBM-BRSW38-20100910	0.44	517
UBM-BRSW3A-20100908	0.1	559
UBM-BRSW3B-20100910	0.05	578
UBM-BRSW48-20100908	0.52	475
UBM-BRSW01-20101215	0.09	362
UBM-BRSW23-20101216	0.1	550
UBM-BRSW29-20101216	0.44	471
UBM-BRSW38-20101216	0.67	594
UBM-BRSW3A-20101215	1.31	522
UBM-BRSW3B-20101215	0.07	511
UBM-BRSW48-20101216	0.98	587

Sample ID	Lead Concentration (mg/L)	pH
UBM-BRSW01-20100318	0.0005	8.22
UBM-BRSW23-20100318	0.0065	7.85
UBM-BRSW29-20100318	0.0070	7.83
UBM-BRSW38-20100318	0.0116	7.72
UBM-BRSW3A-20100318	0.0005	7.86
UBM-BRSW3B-20100318	0.0005	7.89
UBM-BRSW48-20100318	0.0175	7.87
UBM-TRENCH-20100318	0.0050	7.84
UBM-BRSW01-20100608	0.0005	8.29
UBM-BRSW02-20100608	0.0269	8
UBM-BRSW22-20100608	0.0030	8
UBM-BRSW23-20100608	0.0057	8
UBM-BRSW29-20100608	0.0065	8
UBM-BRSW38-20100608	0.0112	8
UBM-BRSW3A-20100608	0.0013	7.23
UBM-BRSW3B-20100608	0.0009	7.2
UBM-BRSW48-20100608	0.0254	8.2
UBM-BRSW01-20100908	0.0005	8.57
UBM-BRSW02-20100908	0.0108	7.9
UBM-BRSW22-20100908	0.0058	8.45
UBM-BRSW23-20100908	0.0027	8.5
UBM-BRSW29-20100910	0.0061	8
UBM-BRSW38-20100910	0.0146	7.92
UBM-BRSW3A-20100908	0.0006	7.77
UBM-BRSW3B-20100910	0.0005	7.67
UBM-BRSW48-20100908	0.0133	8
UBM-BRSW01-20101215	0.0006	9
UBM-BRSW23-20101216	0.0036	8
UBM-BRSW29-20101216	0.0112	8
UBM-BRSW38-20101216	0.0214	8
UBM-BRSW3A-20101215	0.0097	8
UBM-BRSW3B-20101215	0.0007	8
UBM-BRSW48-20101216	0.0298	8

Sample ID	Lead Concentration (mg/L)	Conductivity (µS/cm)
UBM-BRSW01-20100318	0.0005	320
UBM-BRSW23-20100318	0.0065	415
UBM-BRSW29-20100318	0.0070	368
UBM-BRSW38-20100318	0.0116	388
UBM-BRSW3A-20100318	0.0005	520
UBM-BRSW3B-20100318	0.0005	500
UBM-BRSW48-20100318	0.0175	418
UBM-TRENCH-20100318	0.0050	309
UBM-BRSW01-20100608	0.0005	280
UBM-BRSW02-20100608	0.0269	1520
UBM-BRSW22-20100608	0.0030	305
UBM-BRSW23-20100608	0.0057	352
UBM-BRSW29-20100608	0.0065	301
UBM-BRSW38-20100608	0.0112	327
UBM-BRSW3A-20100608	0.0013	772
UBM-BRSW3B-20100608	0.0009	672
UBM-BRSW48-20100608	0.0254	347
UBM-BRSW01-20100908	0.0005	369
UBM-BRSW02-20100908	0.0108	6269
UBM-BRSW22-20100908	0.0058	558
UBM-BRSW23-20100908	0.0027	447
UBM-BRSW29-20100910	0.0061	422
UBM-BRSW38-20100910	0.0146	517
UBM-BRSW3A-20100908	0.0006	559
UBM-BRSW3B-20100910	0.0005	578
UBM-BRSW48-20100908	0.0133	475
UBM-BRSW01-20101215	0.0006	362
UBM-BRSW23-20101216	0.0036	550
UBM-BRSW29-20101216	0.0112	471
UBM-BRSW38-20101216	0.0214	594
UBM-BRSW3A-20101215	0.0097	522
UBM-BRSW3B-20101215	0.0007	511
UBM-BRSW48-20101216	0.0298	587

Sample ID	Manganese Concentration (mg/L)	pH
UBM-BRSW01-20100318	0.0050	8.22
UBM-BRSW23-20100318	0.1180	7.85
UBM-BRSW29-20100318	0.2960	7.83
UBM-BRSW38-20100318	0.6040	7.72
UBM-BRSW3A-20100318	0.0820	7.86
UBM-BRSW3B-20100318	0.0280	7.89
UBM-BRSW48-20100318	0.8860	7.87
UBM-TRENCH-20100318	0.0180	7.84
UBM-BRSW01-20100608	0.0050	8.29
UBM-BRSW02-20100608	0.7390	8
UBM-BRSW22-20100608	0.0340	8
UBM-BRSW23-20100608	0.2920	8
UBM-BRSW29-20100608	0.1900	8
UBM-BRSW38-20100608	0.3870	8
UBM-BRSW3A-20100608	3.2200	7.23
UBM-BRSW3B-20100608	2.9300	7.2
UBM-BRSW48-20100608	0.3650	8.2
UBM-BRSW01-20100908	0.0050	8.57
UBM-BRSW02-20100908	3.2400	7.9
UBM-BRSW22-20100908	0.1890	8.45
UBM-BRSW23-20100908	0.2230	8.5
UBM-BRSW29-20100910	0.5240	8
UBM-BRSW38-20100910	1.1000	7.92
UBM-BRSW3A-20100908	0.2560	7.77
UBM-BRSW3B-20100910	0.2300	7.67
UBM-BRSW48-20100908	0.8160	8
UBM-BRSW01-20101215	0.0080	9
UBM-BRSW23-20101216	0.4080	8
UBM-BRSW29-20101216	0.4730	8
UBM-BRSW38-20101216	0.9810	8
UBM-BRSW3A-20101215	0.7550	8
UBM-BRSW3B-20101215	0.3110	8
UBM-BRSW48-20101216	1.2800	8

Sample ID	Manganese Concentration (mg/L)	Conductivity (µS/cm)
UBM-BRSW01-20100318	0.0050	320
UBM-BRSW23-20100318	0.1180	415
UBM-BRSW29-20100318	0.2960	368
UBM-BRSW38-20100318	0.6040	388
UBM-BRSW3A-20100318	0.0820	520
UBM-BRSW3B-20100318	0.0280	500
UBM-BRSW48-20100318	0.8860	418
UBM-TRENCH-20100318	0.0180	309
UBM-BRSW01-20100608	0.0050	280
UBM-BRSW02-20100608	0.7390	1520
UBM-BRSW22-20100608	0.0340	305
UBM-BRSW23-20100608	0.2920	352
UBM-BRSW29-20100608	0.1900	301
UBM-BRSW38-20100608	0.3870	327
UBM-BRSW3A-20100608	3.2200	772
UBM-BRSW3B-20100608	2.9300	672
UBM-BRSW48-20100608	0.3650	347
UBM-BRSW01-20100908	0.0050	369
UBM-BRSW02-20100908	3.2400	6269
UBM-BRSW22-20100908	0.1890	558
UBM-BRSW23-20100908	0.2230	447
UBM-BRSW29-20100910	0.5240	422
UBM-BRSW38-20100910	1.1000	517
UBM-BRSW3A-20100908	0.2560	559
UBM-BRSW3B-20100910	0.2300	578
UBM-BRSW48-20100908	0.8160	475
UBM-BRSW01-20101215	0.0080	362
UBM-BRSW23-20101216	0.4080	550
UBM-BRSW29-20101216	0.4730	471
UBM-BRSW38-20101216	0.9810	594
UBM-BRSW3A-20101215	0.7550	522
UBM-BRSW3B-20101215	0.3110	511
UBM-BRSW48-20101216	1.2800	587

Sample ID	Zinc Concentration (mg/L)	pH
UBM-BRSW01-20100318	0.0100	8.22
UBM-BRSW23-20100318	0.5800	7.85
UBM-BRSW29-20100318	0.4400	7.83
UBM-BRSW38-20100318	0.8600	7.72
UBM-BRSW3A-20100318	0.1400	7.86
UBM-BRSW3B-20100318	0.1300	7.89
UBM-BRSW48-20100318	0.7500	7.87
UBM-TRENCH-20100318	0.0500	7.84
UBM-BRSW01-20100608	0.0100	8.29
UBM-BRSW02-20100608	0.3600	8
UBM-BRSW22-20100608	0.1800	8
UBM-BRSW23-20100608	0.4100	8
UBM-BRSW29-20100608	0.3100	8
UBM-BRSW38-20100608	0.5500	8
UBM-BRSW3A-20100608	2.9400	7.23
UBM-BRSW3B-20100608	3.1000	7.2
UBM-BRSW48-20100608	0.5200	8.2
UBM-BRSW01-20100908	0.0100	8.57
UBM-BRSW02-20100908	0.9200	7.9
UBM-BRSW22-20100908	1.2400	8.45
UBM-BRSW23-20100908	0.2900	8.5
UBM-BRSW29-20100910	0.5900	8
UBM-BRSW38-20100910	1.0000	7.92
UBM-BRSW3A-20100908	0.2800	7.77
UBM-BRSW3B-20100910	0.3500	7.67
UBM-BRSW48-20100908	0.4400	8
UBM-BRSW01-20101215	0.0100	9
UBM-BRSW23-20101216	0.7100	8
UBM-BRSW29-20101216	0.9400	8
UBM-BRSW38-20101216	1.4100	8
UBM-BRSW3A-20101215	0.6200	8
UBM-BRSW3B-20101215	0.4000	8
UBM-BRSW48-20101216	0.9800	8

Sample ID	Zinc Concentration (mg/L)	Conductivity (µS/cm)
UBM-BRSW01-20100318	0.0100	320
UBM-BRSW23-20100318	0.5800	415
UBM-BRSW29-20100318	0.4400	368
UBM-BRSW38-20100318	0.8600	388
UBM-BRSW3A-20100318	0.1400	520
UBM-BRSW3B-20100318	0.1300	500
UBM-BRSW48-20100318	0.7500	418
UBM-TRENCH-20100318	0.0500	309
UBM-BRSW01-20100608	0.0100	280
UBM-BRSW02-20100608	0.3600	1520
UBM-BRSW22-20100608	0.1800	305
UBM-BRSW23-20100608	0.4100	352
UBM-BRSW29-20100608	0.3100	301
UBM-BRSW38-20100608	0.5500	327
UBM-BRSW3A-20100608	2.9400	772
UBM-BRSW3B-20100608	3.1000	672
UBM-BRSW48-20100608	0.5200	347
UBM-BRSW01-20100908	0.0100	369
UBM-BRSW02-20100908	0.9200	6269
UBM-BRSW22-20100908	1.2400	558
UBM-BRSW23-20100908	0.2900	447
UBM-BRSW29-20100910	0.5900	422
UBM-BRSW38-20100910	1.0000	517
UBM-BRSW3A-20100908	0.2800	559
UBM-BRSW3B-20100910	0.3500	578
UBM-BRSW48-20100908	0.4400	475
UBM-BRSW01-20101215	0.0100	362
UBM-BRSW23-20101216	0.7100	550
UBM-BRSW29-20101216	0.9400	471
UBM-BRSW38-20101216	1.4100	594
UBM-BRSW3A-20101215	0.6200	522
UBM-BRSW3B-20101215	0.4000	511
UBM-BRSW48-20101216	0.9800	587

Sample ID	Aluminum Concentration (mg/L)	pH
UBM-TDMW01-20100317	0.03	7.09
UBM-TDMW05-20100316	2.04	8.28
UBM-TDMW2D-20100317	0.26	7.36
UBM-TDMW2S-20100317	0.03	7.08
UBM-TDMW3D-20100317	3.62	7.60
UBM-TDMW4D-20100316	1.00	7.66
UBM-TDMW01-20100610	0.03	6.81
UBM-TDMW05-20100610	6.07	8.08
UBM-TDMW2D-20100610	0.49	7.37
UBM-TDMW2S-20100610	0.06	6.86
UBM-TDMW3D-20100610	0.09	7.47
UBM-TDMW4D-20100610	1.76	7.83
UBM-TDMW01-20100913	0.03	7.25
UBM-TDMW05-20100913	5.73	8.21
UBM-TDMW2D-20100913	0.33	7.65
UBM-TDMW2S-20100913	0.25	7.29
UBM-TDMW3D-20100913	0.27	8.06
UBM-TDMW4D-20100913	0.20	8.06
UBM-TDMW01-20101221	0.08	7.35
UBM-TDMW2D-20101221	0.19	7.96
UBM-TDMW2S-20101221	0.09	7.21
UBM-TDMW3D-20101220	1.09	7.95
UBM-TDMW4D-20101220	1.17	7.93

Sample ID	Aluminum Concentration (mg/L)	Conductivity (µS/cm)
UBM-TDMW01-20100317	0.03	765
UBM-TDMW05-20100316	2.04	470
UBM-TDMW2D-20100317	0.26	404
UBM-TDMW2S-20100317	0.03	840
UBM-TDMW3D-20100317	3.62	984
UBM-TDMW4D-20100316	1.00	399
UBM-TDMW01-20100610	0.03	774
UBM-TDMW05-20100610	6.07	496
UBM-TDMW2D-20100610	0.49	464
UBM-TDMW2S-20100610	0.06	827
UBM-TDMW3D-20100610	0.09	638
UBM-TDMW4D-20100610	1.76	306
UBM-TDMW01-20100913	0.03	792
UBM-TDMW05-20100913	5.73	570
UBM-TDMW2D-20100913	0.33	439
UBM-TDMW2S-20100913	0.25	921
UBM-TDMW3D-20100913	0.27	362
UBM-TDMW4D-20100913	0.20	362
UBM-TDMW01-20101221	0.08	819
UBM-TDMW2D-20101221	0.19	423
UBM-TDMW2S-20101221	0.09	928
UBM-TDMW3D-20101220	1.09	523
UBM-TDMW4D-20101220	1.17	374

Sample ID	Arsenic Concentration (mg/L)	pH
UBM-TDMW01-20100317	0.003	7.09
UBM-TDMW05-20100316	0.003	8.28
UBM-TDMW2D-20100317	0.003	7.36
UBM-TDMW2S-20100317	0.003	7.08
UBM-TDMW3D-20100317	0.012	7.60
UBM-TDMW4D-20100316	0.003	7.66
UBM-TDMW01-20100610	0.003	6.81
UBM-TDMW05-20100610	0.003	8.08
UBM-TDMW2D-20100610	0.003	7.37
UBM-TDMW2S-20100610	0.003	6.86
UBM-TDMW3D-20100610	0.003	7.47
UBM-TDMW4D-20100610	0.005	7.83
UBM-TDMW01-20100913	0.003	7.25
UBM-TDMW05-20100913	0.003	8.21
UBM-TDMW2D-20100913	0.003	7.65
UBM-TDMW2S-20100913	0.006	7.29
UBM-TDMW3D-20100913	0.003	8.06
UBM-TDMW4D-20100913	0.003	8.06
UBM-TDMW01-20101221	0.003	7.35
UBM-TDMW2D-20101221	0.003	7.96
UBM-TDMW2S-20101221	0.003	7.21
UBM-TDMW3D-20101220	0.007	7.95
UBM-TDMW4D-20101220	0.004	7.93

Sample ID	Arsenic Concentration (mg/L)	Conductivity (µS/cm)
UBM-TDMW01-20100317	0.003	765
UBM-TDMW05-20100316	0.003	470
UBM-TDMW2D-20100317	0.003	404
UBM-TDMW2S-20100317	0.003	840
UBM-TDMW3D-20100317	0.012	984
UBM-TDMW4D-20100316	0.003	399
UBM-TDMW01-20100610	0.003	774
UBM-TDMW05-20100610	0.003	496
UBM-TDMW2D-20100610	0.003	464
UBM-TDMW2S-20100610	0.003	827
UBM-TDMW3D-20100610	0.003	638
UBM-TDMW4D-20100610	0.005	306
UBM-TDMW01-20100913	0.003	792
UBM-TDMW05-20100913	0.003	570
UBM-TDMW2D-20100913	0.003	439
UBM-TDMW2S-20100913	0.006	921
UBM-TDMW3D-20100913	0.003	362
UBM-TDMW4D-20100913	0.003	362
UBM-TDMW01-20101221	0.003	819
UBM-TDMW2D-20101221	0.003	423
UBM-TDMW2S-20101221	0.003	928
UBM-TDMW3D-20101220	0.007	523
UBM-TDMW4D-20101220	0.004	374

Sample ID	Cadmium Concentration (mg/L)	pH
UBM-TDMW01-20100317	0.00059	7.09
UBM-TDMW05-20100316	0.00048	8.28
UBM-TDMW2D-20100317	0.00008	7.36
UBM-TDMW2S-20100317	0.00058	7.08
UBM-TDMW3D-20100317	0.00052	7.60
UBM-TDMW4D-20100316	0.00010	7.66
UBM-TDMW01-20100610	0.00030	6.81
UBM-TDMW05-20100610	0.00078	8.08
UBM-TDMW2D-20100610	0.00010	7.37
UBM-TDMW2S-20100610	0.00184	6.86
UBM-TDMW3D-20100610	0.00009	7.47
UBM-TDMW4D-20100610	0.00014	7.83
UBM-TDMW01-20100913	0.00061	7.25
UBM-TDMW05-20100913	0.00077	8.21
UBM-TDMW2D-20100913	0.00008	7.65
UBM-TDMW2S-20100913	0.00230	7.29
UBM-TDMW3D-20100913	0.00013	8.06
UBM-TDMW4D-20100913	0.00008	8.06
UBM-TDMW01-20101221	0.00067	7.35
UBM-TDMW2D-20101221	0.00008	7.96
UBM-TDMW2S-20101221	0.00376	7.21
UBM-TDMW3D-20101220	0.00034	7.95
UBM-TDMW4D-20101220	0.00012	7.93

Sample ID	Cadmium Concentration (mg/L)	Conductivity (µS/cm)
UBM-TDMW01-20100317	0.00059	765
UBM-TDMW05-20100316	0.00048	470
UBM-TDMW2D-20100317	0.00008	404
UBM-TDMW2S-20100317	0.00058	840
UBM-TDMW3D-20100317	0.00052	984
UBM-TDMW4D-20100316	0.00010	399
UBM-TDMW01-20100610	0.00030	774
UBM-TDMW05-20100610	0.00078	496
UBM-TDMW2D-20100610	0.00010	464
UBM-TDMW2S-20100610	0.00184	827
UBM-TDMW3D-20100610	0.00009	638
UBM-TDMW4D-20100610	0.00014	306
UBM-TDMW01-20100913	0.00061	792
UBM-TDMW05-20100913	0.00077	570
UBM-TDMW2D-20100913	0.00008	439
UBM-TDMW2S-20100913	0.00230	921
UBM-TDMW3D-20100913	0.00013	362
UBM-TDMW4D-20100913	0.00008	362
UBM-TDMW01-20101221	0.00067	819
UBM-TDMW2D-20101221	0.00008	423
UBM-TDMW2S-20101221	0.00376	928
UBM-TDMW3D-20101220	0.00034	523
UBM-TDMW4D-20101220	0.00012	374

Sample ID	Copper Concentration (mg/L)	pH
UBM-TDMW01-20100317	0.001	7.09
UBM-TDMW05-20100316	0.030	8.28
UBM-TDMW2D-20100317	0.003	7.36
UBM-TDMW2S-20100317	0.001	7.08
UBM-TDMW3D-20100317	0.011	7.60
UBM-TDMW4D-20100316	0.034	7.66
UBM-TDMW01-20100610	0.001	6.81
UBM-TDMW05-20100610	0.099	8.08
UBM-TDMW2D-20100610	0.006	7.37
UBM-TDMW2S-20100610	0.005	6.86
UBM-TDMW3D-20100610	0.001	7.47
UBM-TDMW4D-20100610	0.033	7.83
UBM-TDMW01-20100913	0.001	7.25
UBM-TDMW05-20100913	0.083	8.21
UBM-TDMW2D-20100913	0.002	7.65
UBM-TDMW2S-20100913	0.012	7.29
UBM-TDMW3D-20100913	0.001	8.06
UBM-TDMW4D-20100913	0.005	8.06
UBM-TDMW01-20101221	0.001	7.35
UBM-TDMW2D-20101221	0.003	7.96
UBM-TDMW2S-20101221	0.008	7.21
UBM-TDMW3D-20101220	0.004	7.95
UBM-TDMW4D-20101220	0.043	7.93

Sample ID	Copper Concentration (mg/L)	Conductivity (µS/cm)
UBM-TDMW01-20100317	0.001	765
UBM-TDMW05-20100316	0.030	470
UBM-TDMW2D-20100317	0.003	404
UBM-TDMW2S-20100317	0.001	840
UBM-TDMW3D-20100317	0.011	984
UBM-TDMW4D-20100316	0.034	399
UBM-TDMW01-20100610	0.001	774
UBM-TDMW05-20100610	0.099	496
UBM-TDMW2D-20100610	0.006	464
UBM-TDMW2S-20100610	0.005	827
UBM-TDMW3D-20100610	0.001	638
UBM-TDMW4D-20100610	0.033	306
UBM-TDMW01-20100913	0.001	792
UBM-TDMW05-20100913	0.083	570
UBM-TDMW2D-20100913	0.002	439
UBM-TDMW2S-20100913	0.012	921
UBM-TDMW3D-20100913	0.001	362
UBM-TDMW4D-20100913	0.005	362
UBM-TDMW01-20101221	0.001	819
UBM-TDMW2D-20101221	0.003	423
UBM-TDMW2S-20101221	0.008	928
UBM-TDMW3D-20101220	0.004	523
UBM-TDMW4D-20101220	0.043	374

Sample ID	Iron Concentration (mg/L)	pH
UBM-TDMW01-20100317	0.03	7.09
UBM-TDMW05-20100316	6.50	8.28
UBM-TDMW2D-20100317	0.22	7.36
UBM-TDMW2S-20100317	0.08	7.08
UBM-TDMW3D-20100317	9.29	7.60
UBM-TDMW4D-20100316	1.68	7.66
UBM-TDMW01-20100610	0.05	6.81
UBM-TDMW05-20100610	17.80	8.08
UBM-TDMW2D-20100610	0.62	7.37
UBM-TDMW2S-20100610	0.57	6.86
UBM-TDMW3D-20100610	0.26	7.47
UBM-TDMW4D-20100610	2.86	7.83
UBM-TDMW01-20100913	0.05	7.25
UBM-TDMW05-20100913	19.30	8.21
UBM-TDMW2D-20100913	0.33	7.65
UBM-TDMW2S-20100913	2.05	7.29
UBM-TDMW3D-20100913	0.64	8.06
UBM-TDMW4D-20100913	0.28	8.06
UBM-TDMW01-20101221	0.15	7.35
UBM-TDMW2D-20101221	0.30	7.96
UBM-TDMW2S-20101221	0.82	7.21
UBM-TDMW3D-20101220	4.63	7.95
UBM-TDMW4D-20101220	2.36	7.93

Sample ID	Iron Concentration (mg/L)	Conductivity (µS/cm)
UBM-TDMW01-20100317	0.03	765
UBM-TDMW05-20100316	6.50	470
UBM-TDMW2D-20100317	0.22	404
UBM-TDMW2S-20100317	0.08	840
UBM-TDMW3D-20100317	9.29	984
UBM-TDMW4D-20100316	1.68	399
UBM-TDMW01-20100610	0.05	774
UBM-TDMW05-20100610	17.80	496
UBM-TDMW2D-20100610	0.62	464
UBM-TDMW2S-20100610	0.57	827
UBM-TDMW3D-20100610	0.26	638
UBM-TDMW4D-20100610	2.86	306
UBM-TDMW01-20100913	0.05	792
UBM-TDMW05-20100913	19.30	570
UBM-TDMW2D-20100913	0.33	439
UBM-TDMW2S-20100913	2.05	921
UBM-TDMW3D-20100913	0.64	362
UBM-TDMW4D-20100913	0.28	362
UBM-TDMW01-20101221	0.15	819
UBM-TDMW2D-20101221	0.30	423
UBM-TDMW2S-20101221	0.82	928
UBM-TDMW3D-20101220	4.63	523
UBM-TDMW4D-20101220	2.36	374

Sample ID	Lead Concentration (mg/L)	pH
UBM-TDMW01-20100317	0.0005	7.09
UBM-TDMW05-20100316	0.0178	8.28
UBM-TDMW2D-20100317	0.0029	7.36
UBM-TDMW2S-20100317	0.0005	7.08
UBM-TDMW3D-20100317	0.0464	7.6
UBM-TDMW4D-20100316	0.0078	7.66
UBM-TDMW01-20100610	0.0005	6.81
UBM-TDMW05-20100610	0.0242	8.08
UBM-TDMW2D-20100610	0.0098	7.37
UBM-TDMW2S-20100610	0.0068	6.86
UBM-TDMW3D-20100610	0.0017	7.47
UBM-TDMW4D-20100610	0.0105	7.83
UBM-TDMW01-20100913	0.0006	7.25
UBM-TDMW05-20100913	0.0212	8.21
UBM-TDMW2D-20100913	0.0028	7.65
UBM-TDMW2S-20100913	0.0602	7.29
UBM-TDMW3D-20100913	0.0030	8.06
UBM-TDMW4D-20100913	0.0019	8.1
UBM-TDMW01-20101221	0.0016	7.4
UBM-TDMW2D-20101221	0.0014	8.0
UBM-TDMW2S-20101221	0.0331	7.2
UBM-TDMW3D-20101220	0.0232	8.0
UBM-TDMW4D-20101220	0.0102	7.9

Sample ID	Lead Concentration (mg/L)	Conductivity (µS/cm)
UBM-TDMW01-20100317	0.0005	765
UBM-TDMW05-20100316	0.0178	470
UBM-TDMW2D-20100317	0.0029	404
UBM-TDMW2S-20100317	0.0005	840
UBM-TDMW3D-20100317	0.0464	984
UBM-TDMW4D-20100316	0.0078	399
UBM-TDMW01-20100610	0.0005	774
UBM-TDMW05-20100610	0.0242	496
UBM-TDMW2D-20100610	0.0098	464
UBM-TDMW2S-20100610	0.0068	827
UBM-TDMW3D-20100610	0.0017	638
UBM-TDMW4D-20100610	0.0105	306
UBM-TDMW01-20100913	0.0006	792
UBM-TDMW05-20100913	0.0212	570
UBM-TDMW2D-20100913	0.0028	439
UBM-TDMW2S-20100913	0.0602	921
UBM-TDMW3D-20100913	0.0030	362
UBM-TDMW4D-20100913	0.0019	362
UBM-TDMW01-20101221	0.0016	819
UBM-TDMW2D-20101221	0.0014	423
UBM-TDMW2S-20101221	0.0331	928
UBM-TDMW3D-20101220	0.0232	523
UBM-TDMW4D-20101220	0.0102	374

Sample ID	Manganese Concentration (mg/L)	pH
UBM-TDMW01-20100317	0.005	7.09
UBM-TDMW05-20100316	0.400	8.28
UBM-TDMW2D-20100317	0.028	7.36
UBM-TDMW2S-20100317	3.560	7.08
UBM-TDMW3D-20100317	0.720	7.60
UBM-TDMW4D-20100316	0.086	7.66
UBM-TDMW01-20100610	0.005	6.81
UBM-TDMW05-20100610	0.539	8.08
UBM-TDMW2D-20100610	0.067	7.37
UBM-TDMW2S-20100610	7.380	6.86
UBM-TDMW3D-20100610	0.029	7.47
UBM-TDMW4D-20100610	0.103	7.83
UBM-TDMW01-20100913	0.005	7.25
UBM-TDMW05-20100913	0.886	8.21
UBM-TDMW2D-20100913	0.019	7.65
UBM-TDMW2S-20100913	7.840	7.29
UBM-TDMW3D-20100913	0.046	8.06
UBM-TDMW4D-20100913	0.013	8.06
UBM-TDMW01-20101221	0.006	7.35
UBM-TDMW2D-20101221	0.026	7.96
UBM-TDMW2S-20101221	8.960	7.21
UBM-TDMW3D-20101220	0.370	7.95
UBM-TDMW4D-20101220	0.121	7.93

Sample ID	Manganese Concentration (mg/L)	Conductivity (µS/cm)
UBM-TDMW01-20100317	0.005	765
UBM-TDMW05-20100316	0.400	470
UBM-TDMW2D-20100317	0.028	404
UBM-TDMW2S-20100317	3.560	840
UBM-TDMW3D-20100317	0.720	984
UBM-TDMW4D-20100316	0.086	399
UBM-TDMW01-20100610	0.005	774
UBM-TDMW05-20100610	0.539	496
UBM-TDMW2D-20100610	0.067	464
UBM-TDMW2S-20100610	7.380	827
UBM-TDMW3D-20100610	0.029	638
UBM-TDMW4D-20100610	0.103	306
UBM-TDMW01-20100913	0.005	792
UBM-TDMW05-20100913	0.886	570
UBM-TDMW2D-20100913	0.019	439
UBM-TDMW2S-20100913	7.840	921
UBM-TDMW3D-20100913	0.046	362
UBM-TDMW4D-20100913	0.013	362
UBM-TDMW01-20101221	0.006	819
UBM-TDMW2D-20101221	0.026	423
UBM-TDMW2S-20101221	8.960	928
UBM-TDMW3D-20101220	0.370	523
UBM-TDMW4D-20101220	0.121	374

Sample ID	Zinc Concentration (mg/L)	pH
UBM-TDMW01-20100317	0.24	7.09
UBM-TDMW05-20100316	0.08	8.28
UBM-TDMW2D-20100317	0.01	7.36
UBM-TDMW2S-20100317	0.90	7.08
UBM-TDMW3D-20100317	0.10	7.60
UBM-TDMW4D-20100316	0.02	7.66
UBM-TDMW01-20100610	0.26	6.81
UBM-TDMW05-20100610	0.12	8.08
UBM-TDMW2D-20100610	0.03	7.37
UBM-TDMW2S-20100610	2.67	6.86
UBM-TDMW3D-20100610	0.02	7.47
UBM-TDMW4D-20100610	0.03	7.83
UBM-TDMW01-20100913	0.25	7.25
UBM-TDMW05-20100913	0.15	8.21
UBM-TDMW2D-20100913	0.01	7.65
UBM-TDMW2S-20100913	2.48	7.29
UBM-TDMW3D-20100913	0.03	8.06
UBM-TDMW4D-20100913	0.01	8.06
UBM-TDMW01-20101221	0.25	7.35
UBM-TDMW2D-20101221	0.01	7.96
UBM-TDMW2S-20101221	2.86	7.21
UBM-TDMW3D-20101220	0.04	7.95
UBM-TDMW4D-20101220	0.02	7.93

Sample ID	Zinc Concentration (mg/L)	Conductivity (µS/cm)
UBM-TDMW01-20100317	0.24	765
UBM-TDMW05-20100316	0.08	470
UBM-TDMW2D-20100317	0.01	404
UBM-TDMW2S-20100317	0.90	840
UBM-TDMW3D-20100317	0.10	984
UBM-TDMW4D-20100316	0.02	399
UBM-TDMW01-20100610	0.26	774
UBM-TDMW05-20100610	0.12	496
UBM-TDMW2D-20100610	0.03	464
UBM-TDMW2S-20100610	2.67	827
UBM-TDMW3D-20100610	0.02	638
UBM-TDMW4D-20100610	0.03	306
UBM-TDMW01-20100913	0.25	792
UBM-TDMW05-20100913	0.15	570
UBM-TDMW2D-20100913	0.01	439
UBM-TDMW2S-20100913	2.48	921
UBM-TDMW3D-20100913	0.03	362
UBM-TDMW4D-20100913	0.01	362
UBM-TDMW01-20101221	0.25	819
UBM-TDMW2D-20101221	0.01	423
UBM-TDMW2S-20101221	2.86	928
UBM-TDMW3D-20101220	0.04	523
UBM-TDMW4D-20101220	0.02	374

Appendix E

Hardness Adjusted Standards

UBMC 2010 Hardness Adjusted Surface Water Aquatic Standards

Sample ID	Hardness	Cadmium (mg/L)		Copper (mg/L)		Lead (mg/L)		Zinc (mg/L)	
	(mg/L)	Acute Standard (mg/L)	Chronic Standard (mg/L)	Acute Standard (mg/L)	Chronic Standard (mg/L)	Acute Standard (mg/L)	Chronic Standard (mg/L)	Acute Standard (mg/L)	Chronic Standard (mg/L)
UBM-BRSW01-20100318	74	0.00157069	0.00021651	0.01054119	0.00721256	0.05564960	0.00216858	0.09283599	0.09283599
UBM-BRSW23-20100318	117	0.00250234	0.00030401	0.01623096	0.01066831	0.09970815	0.00388548	0.13686431	0.13686431
UBM-BRSW29-20100318	105	0.00224166	0.00028058	0.01465764	0.00972606	0.08687684	0.00338547	0.12487342	0.12487342
UBM-BRSW38-20100318	123	0.00263285	0.00031548	0.01701406	0.01113409	0.10626231	0.00414089	0.14278840	0.14278840
UBM-BRSW3A-20100318	151	0.00324322	0.00036726	0.02064103	0.01326681	0.13796461	0.00537628	0.16988831	0.16988831
UBM-BRSW3B-20100318	138	0.00295958	0.00034356	0.01896241	0.01228450	0.12302578	0.00479414	0.15741129	0.15741129
UBM-BRSW48-20100318	128	0.00274169	0.00032493	0.01766496	0.01151971	0.11179139	0.00435635	0.14769144	0.14769144
UBM-TRENCH-20100318	96	0.00204647	0.00026256	0.01347086	0.00900910	0.07751064	0.00302048	0.11574300	0.11574300
UBM-BRSW01-20100608	69	0.00146286	0.00020557	0.00986877	0.00679403	0.05090787	0.00198381	0.08749297	0.08749297
UBM-BRSW02-20100608	449*	0.00981979	0.00082341	0.05762964	0.03366474	0.55238217	0.02152554	0.42772501	0.42772501
UBM-BRSW22-20100608	88	0.00187322	0.00024617	0.01241055	0.00836356	0.06938355	0.00270378	0.10751684	0.10751684
UBM-BRSW23-20100608	91	0.00193816	0.00025236	0.01280879	0.00860660	0.07240853	0.00282166	0.11061451	0.11061451
UBM-BRSW29-20100608	89	0.00189487	0.00024824	0.01254338	0.00844471	0.07038880	0.00274295	0.10855116	0.10855116
UBM-BRSW38-20100608	87	0.00185159	0.00024409	0.01227763	0.00828228	0.06838141	0.00266473	0.10648072	0.10648072
UBM-BRSW3A-20100608	184	0.00396499	0.00042518	0.02486628	0.01570788	0.17743657	0.00691445	0.20086139	0.20086139
UBM-BRSW3B-20100608	162	0.00348354	0.00038690	0.02205487	0.01408839	0.15088382	0.00587973	0.18031771	0.18031771
UBM-BRSW48-20100608	100	0.00213318	0.00027062	0.01399908	0.00932891	0.08164509	0.00318159	0.11981642	0.11981642
UBM-BRSW01-20100908	104	0.00221996	0.00027860	0.01452607	0.00964686	0.08582494	0.00334447	0.12386502	0.12386502
UBM-BRSW02-20100908	2510*	0.05648547	0.00294702	0.29165670	0.14650484	4.93986072	0.19249928	1.83848405	1.83848405
UBM-BRSW22-20100908	145	0.00311225	0.00035639	0.01986737	0.01281503	0.13102420	0.00510583	0.16415096	0.16415096
UBM-BRSW23-20100908	119	0.00254583	0.00030785	0.01649224	0.01082395	0.10188291	0.00397023	0.13884405	0.13884405
UBM-BRSW29-20100910	109	0.00232850	0.00028847	0.01518318	0.01004180	0.09111167	0.00355049	0.12889254	0.12889254
UBM-BRSW38-20100910	132	0.00282881	0.00033243	0.01818462	0.01182664	0.11625742	0.00453038	0.15159281	0.15159281
UBM-BRSW3A-20100908	142	0.00304681	0.00035091	0.01947984	0.01258813	0.12758309	0.00497173	0.16126876	0.16126876
UBM-BRSW3B-20100910	145	0.00311225	0.00035639	0.01986737	0.01281503	0.13102420	0.00510583	0.16415096	0.16415096
UBM-BRSW48-20100908	128	0.00274169	0.00032493	0.01766496	0.01151971	0.11179139	0.00435635	0.14769144	0.14769144
UBM-BRSW01-20101215	105	0.00224166	0.00028058	0.01465764	0.00972606	0.08687684	0.00338547	0.12487342	0.12487342
UBM-BRSW23-20101216	146	0.00313408	0.00035821	0.01999644	0.01289052	0.13217559	0.00515069	0.16510967	0.16510967
UBM-BRSW29-20101216	116	0.00248060	0.00030208	0.01610022	0.01059035	0.09862456	0.00384326	0.13587250	0.13587250
UBM-BRSW38-20101216	147	0.00315590	0.00036002	0.02012546	0.01296592	0.13332912	0.00519564	0.16606737	0.16606737
UBM-BRSW3A-20101215	152	0.00326506	0.00036906	0.02076980	0.01334185	0.13912877	0.00542165	0.17084111	0.17084111
UBM-BRSW3B-20101215	138	0.00295958	0.00034356	0.01896241	0.01228450	0.12302578	0.00479414	0.15741129	0.15741129
UBM-BRSW48-20101216	151	0.00324322	0.00036726	0.02064103	0.01326681	0.13796461	0.00537628	0.16988831	0.16988831

* Hardness > 400 mg/L use 400 m

Appendix F

Field Notes

CONTENTS

PAGE	REFERENCE	DATE

WBMC - TD20 2/16/10

9:41 am - Arrive on-site to collect pressure transducer data from prezometers & wells.

Temp = 36° F

Skies = Partly Cloudy

Ground Conditions = Heavy Snow Cover (1'-3')

Wind = steady @ 15-20 mph w/gusts to 40 mph

Location	DTW (ft)	Log ID	Description
Sump S - Alluvium	8.67'	2	1045503
Sump S - Bedrock	7.80'	3	1045500
Sump N	12.33'	on laptop	1045506

- Communication error w/ cable.
- Brought transducer back to get data and/or figure out problem

PZ-9A	- No transducer		
GW2-A	31.13'	on-laptop	1045512
GW2-B	33.00'	No comm.	
PZ02-B-C	32.92'	No Comm.	
PZ-03-B-B	35.09'	No Comm.	
PZ-03-A-A	7.32'	No Comm.	
GW1-C	42.85	4	1045489

- Barologger in GW1-C marked "GW2"

JJM
~~GW~~-

UBMC TO20 2/16/2010

- Could not locate PZ-09-13, TDMW4D or TDMW4S because of deep (5'-6') snow drift.

Location	DTW	Log ID	Description
GW1-A	39.82	5	1045306
P5	47.76	No Comm	
PZ11-13	62.36	No Comm	
TDMW2-D	13.50	No Comm	
TDMW2-S	No Transducer		

- left barologger in P5

16:15 - Leave site

UBMC TO20 2/24/10

9:11 - Arrive on-site to verify transducer programming

Weather - 34° F, Mostly Cloudy, Wind 10-15 mph. -Gusts to 40 mph (approx.)

9:15 - Unload snowmobile @ gate by George's house.

Location	Status
P-5	ok
PZ-11-B	Programmed, Re-installed
PZ-03A-A	Programmed, Re-installed
PZ-03B-B	ok
TDMW-2D	ok
TDMW-4D	ok
TDMW-4S	ok
PZ-02B-C	ok
Sump-N	ok
Sump-S - Alluvium	ok
Sump-S - Bedrock	ok
GW-02a	ok
GW-02B	ok
GW-01a	ok - Level Loader
GW-01C	ok - Level Loader

UBMC-TD20 2/24/10

- All Locations except GW-01a & GW-01c were checked by bringing transducers back to truck and verifying data collection on lap top.
- GW-01a and GW-01c were checked w/ HeadLoader

PZ-09-B was not visible and could not be located in the field using maps or GPS

15:51 - off site w/ snowmobile loaded

16:20 - Arrive @ Tool shed to return snowmobile

16:42 - Leave Lincoln

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12:03 - Arrive on-site to meet w/ Shellie and Susan Firor regarding the location(s) of the monitoring devices for discharge in the cut-off ditch and construction of a weir below the dam.

- Determined to install one depth gage above the pump discharge and the other at the "Grizzly".
- Weir to be constructed and installed in channel below the dam.

13:43 - Begin searching for TDMW-3S and TDMW-3D. Snoplow piled snow over wells. (JM & DH)

Weather - 47°F, Sunny, Slight Breeze

13:49 - Located wells. Begin digging out from under the snow.

14:19 - Uncovered TDMW-3S

TDMW-3S

DTW	Total Depth	Time
32.13'	32.4'	14:23

- Not enough water to sample
- Dry Well

12/15/09 pg 1

INSTALL LEVEL LOGGERS IN WELLS.

		INSTALLED DEPTH	DEPTH TO WATER	DESCRIPTION
SUMP-S	- ALLUVIUM	20'	8.27'	2" PIEZO
SUMP-S	- BEDROCK	56'	7.25'	2" PIEZO
SUMP-N		32'	11.41'	2" PIEZO
GW-2A		57'	29.21'	2" PIEZO
GW-2		46'	29.64'	4" WELL
GW-1A		55'	36.80'	2" PIEZO
GW-1C	SET LOGGER @	45'	35.36	2" PIEZO

WEATHER: PARTLY CLOUDY, WINDY

LOW 9°F

HIGH 28°F

ARRIVED ON SITE @ 11:05 BAD ROAD CONDITIONS

LEFT SITE @ 4:07

NOTE 1'-4' OF SNOW ON GROUND w/ DRIFTS OF @ 8'. HARD TO PACK INTO PIEZOMETERS

3/14/10 MBMC TO20 pg. 2/4

TDMW-3D

14:25 - Begin searching for well beneath snow pile

- Could not locate well TDMW-3D
- Talked to Jay about using the excavator to remove the snow pile around TDMW-3D.
- Jay stated that he would attempt to uncover the well.

15:15 · Uncovered snow drift covering TDMW-4D and TDMW-4S

TDMW-4S is dry. No water samples collected.

- left transducer deployed

TOMW-40

DTW	Total Depth	Time
	61.2'	15:35

$V = 0.041(2^2)(DTW - 61.2')$

$V = 0.041(4)(61.2 - DTW)$

$V = 0.041(4)(61.2 - 39.06) = 3.63$ gal

Purge Volume = 3 x 3.63 gal = 10.89 gal

- Water is silty @ start of purge

Temp °F	pH	SC mS/s	DO mg/L	ORP	Turb.	Gal
43.44	7.81	936	3.23	193.4	690.0	3
43.37	7.83	714	3.03	191.6	707.7	4
43.29	7.85	551	4.17	191.5	700.0	5
43.18	7.91	217	11.27	198.0	165.4	6
43.19	7.73	404	10.51	195.5	131.6	7
43.19	7.66	400	10.34	195.1	129.8	8
43.20	7.66	400	10.31	194.9	132.3	9
43.20	7.66	399	10.31	194.6	115.4	10
43.20	7.66	399	10.31	194.5	116.6	11

16:01 - Collected samples
- Water clear after purging
- downloaded transducer data

17:01 - Downloaded transducer data from GW-2
DTW in GW-2 = 28.59' BTC

17:12 - Downloaded transducer data from PZ-02B-C
DTW in PZ-02B-C = 27.98' BTC

17:16 - Downloaded transducer data from GW-02a
DTW in GW-02a = 28.29'
- only one reading recorded for transducer in GW-02a

17:30 - Reprogrammed and redeployed transducer in GW-02a

17:42 - Downloaded transducer data from Sump-S Bedrock
DTW in Sump-S Bedrock = 7.11'

17:45 - Downloaded transducer data from Sump-S Alluvium
DTW in Sump-S Alluvium = 8.25' BTC

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17:56 - Go fishing for transducer in PZ-09-B.

18:17 - Recover transducer & broken line from bottom of PZ-09-B.
- Downloaded transducer data from PZ-09-B.

18:23 - Reprogrammed Transducer, Repaired monofilament line & re-deployed transducer in PZ-09-B.
- DTW in PZ-09-B = 13.66' BTC

18:29 - Download transducer data from SumpN.
- DTW in Sump N = 11.48' BTC

18:35 - Arrive @ TDMW-5

DTW	Total Depth	Time
75.64'	106.5.	18:46

$V = 0.041\,(6")^2\,(106.5 - 75.64)$

$V = 0.041\,(36)(30.86')$

$V = 45.54$ gal

Purge Volume = 3 x 45.54 gal = 136.65 gal

- pump set at end of existing tubing found in well

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TDMW-5

Temp	pH	SC	DO	ORP	Turb	Gal.
42.12	8.21	247	11.86	177.8	82.5	3
42.36	8.31	472	11.00	184.4	83.3	5
42.45	8.30	470	10.74	193.1	90.0	6
42.96	8.28	445	11.26	195.2	59.3	8
42.96	8.28	471	10.96	193.0	57.6	9
42.94	8.28	470	10.90	191.8	58.7	9.5
42.93	8.28	470	10.90	191.9	58.9	10.0

19:10 - Collected samples from TDMW-5 after stabilization.
- Did not purge well dry because of previous knowledge and collected samples after 10.5 gallons purged/parameters stable.

19:22 - Collected Field Blank and Rinsate blank from DI water obtained @ Energy Labs.
- Rinsate blank(s) taken from water level probe.

19:45 - Packed-up & off-site.

8:45 - Arrive on-site to continue quarterly monitoring. (JM & DH)

Weather - Clear skies, 42°F, Wind 10-20 mph

9:01 - Arrive at TDMW-3D to find that Jay has moved the snow pile w/ a front-end loader and the well is visible.

DTW	Total Depth	Time
47.72'	70'	9:11

$V = 0.041\ (6)^2\ (70 - 47.72)$

$V = 0.041\ (36)\ (22.28)$

$V = 32.89$ gal

Purge volume = 3 x 32.89 = 98.66 gal

- pump set at end of existing tubing

- 9:26 begin purging TDMW-3D
- water silty @ start of pumping
- water cleared after pumping 40 gal.
- water becomes slightly silty after pumping 70 gal.
- water slightly silty @ time of sample collection

TDMW-3D

Temp	pH	SC	DO	ORP	Turb	Gal.
44.39	7.63	633	8.59	197.7	90.0	10
44.35	7.60	627	9.39	197.2	43.6	20
44.33	7.59	659	9.11	200.8	35.9	30
44.24	7.54	802	10.05	210.0	16.3	40
44.35	7.50	838	9.33	20.5	16.0	50
44.34	7.53	933	9.81	215.0	15.9	60
44.37	7.54	1045	9.11	218.4	20.6	70
44.41	7.58	1028	9.43	222.4	30.6	80
44.40	7.60	960	8.81	222.6	46.3	90
44.41	7.60	982	8.80	222.6	99.9	95
44.40	7.60	984	8.80	222.6	98.2	99

10:51 - Collect samples from TDMW-3D
- Collected duplicate from TDMW-3D

11:09 - Packed-up from TDMW-3D to begin collecting transducer data from wells/piezometers in impoundment and on top of dam.

11:18 - Downloaded data from transducer P-5

DTW in P-5 = 47.85

11:27 - Downloaded transducer data from PZ11-B.
DTW in PZ11-B = 55.52' BTC

11:33 - Downloaded transducer data from GW1-A
DTW in GW1-A = 34.64' BTC

11:39 - Downloaded transducer data from PZ03B-B
DTW in PZ-03B-B = 30.55' BTC

11:45 - Downloaded transducer data from PZ-03A-A
DTW in PZ-03A-A = 6.94' BTC

11:49 - Download transducer and barologger data from GW1-C
DTW in GW1-C = 33.19' BTC

12:00 - Return to truck to load sled for sampling TDMW 25 & 20 and TDMW-1

12:29 - Downloaded transducer data from TDMW-20

TDMW-20

DTW	Total Depth	Time
11.95'	37.50	12:31

$V = 0.041(4")^2(37.50 - 11.95)$
$V = 0.041(16)(25.55)$
$V = 16.76$ gal
Purge Volume = 3 x 16.76 gal = 50.28 ga
- set pump @ end of existing tubing
- water pumps clear @ start then silty (slight

Time	pH	SC	DO	ORP	Turb	Gal
45.72	7.48	401	9.08	182.1	8.0	10
45.74	7.36	401	8.49	184.9	24.4	20
45.87	7.36	402	8.32	188.5	38.6	30
45.80	7.35	404	7.88	194.3	42.7	40
45.76	7.36	404	7.89	194.7	41.9	45
45.79	7.36	404	7.91	195.0	39.8	50

13:03 - Collect Samples from TDMW-20

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13:10 - Measure water level in TDMW-25

DTW	Total Depth	Time
11.76'	20.46'	13:10

$V = 0.041 (2")^2 (20.46 - 11.76)$

$V = 0.041 (4)(8.7)$

$V = 1.43$ gal

Purge Volume = 4.28 gallons

- set pump @ end of tubing found in well

Temp	pH	SC	DO	ORP	Turb	Gal
43.71	7.21	863	6.93	190.2	11.3	1
43.74	7.13	851	5.29	182.1	9.9	2
43.76	7.08	842	4.37	176.1	9.2	3
43.79	7.08	840	4.36	176.3	8.7	4
43.82	7.08	840	4.36	175.9	8.9	5

- water very silty @ start of pumping
  - grayish-black in color
- cleared-up after pumping approx. 2 gal.

13:22 - Collected samples from TDMW-25

03/17/10 UBMC TO20 6/6

13:38 - Arrive @ TDMW-1

TDMW-1

DTW	Total Depth	Time
18.81'	34.88'	13:39

$V = 0.041 (4")^2 (34.88 - 18.81)$

$V = 0.041 (16)(16.07)$

$V = 10.54$ gal

Purge Volume = 3×10.54 gal = 31.63 gal

- water clear @ start of pumping & stays clear throughout purge

Temp	pH	SC	DO	ORP	Turb	Gal
46.97	7.37	767	10.22	164.1	13.0	10
46.12	7.19	767	8.32	188.7	4.1	15
46.18	7.10	766	8.39	197.4	3.4	20
46.11	7.10	765	8.79	202.6	3.3	25
46.13	7.10	765	8.76	200.6	3.3	30
46.12	7.09	765	8.76	201.4	3.6	32

13:59 - Collect samples from TDMW-1

14:33 - off-site to deliver lab samples to Energy Labs in Helena

3/18/10 UBMC- TO 20 1/3

11:00 - Arrive on-site. Meet w/ Jesse regarding plowing a road to the base of the dam for construction/monitoring of weir.

11:17 - Arrive @ BRSW-01 to begin surface water monitoring.

11:20 - OH begins checking calibration of YSI multi-meter as JM reviews program requirements and labeling bottles.

- The only open water in Bear Trap creek above the impoundment is directly below the culvert.

11:46 - Collect samples from BRSW-01

11:50 - Shellie H. & Jamie M. arrived @ BRSW-01

- Shellie requested that we sample water in the cut-off trench for the same analytes used to characterize/monitor surface water.

12:30 - Collect samples from cut-off trench

12:46 - Complete water sampling from trench.

13:01 - Take discharge measurements @ BRSW-01

3/18/10 UBMC - TO 20 2/3

13:38 - Arrive @ BRSW-22. Mike Horse creek completely frozen and covered w/ drift of snow. No samples collected from BRSW-22.

13:50 - Complete labeling sample bottles and start hike to BRSW-48

14:19 - Collect samples from BRSW-48

14:45 - Arrive @ BRSW-23

14:50 - Collect samples from BRSW-23

14:56 - Measure discharge @ BRSW-23

15:09 - Arrive @ BRSW-3A

15:15 - Collect samples from BRSW-3A

15:19 - Measure discharge @ BRSW-3A

15:28 - Arrive @ BRSW-3B

15:35 - Collect samples from BRSW-3B

15:40 - Measure discharge @ BRSW-3B

16:01 - Inspection of BRSW-2 surface water sampling location is frozen solid. No samples collected

16:15 - Arrive @ BRSW-29

16:27 - Collect samples from BRSW-29

16:35 - Measure discharge @ BRSW-29

- Collected field bank & rinsate blank @ BRSW-29
- Rinsate blank taken from hand pump

3/18/10 UBMC TO 20 3/3

17:03 - Arrive @ BRSW-38

17:05 - Collect samples from BRSW-38

17:11 - Measure discharge @ BRSW-38

17:40 - Pack-up field supplies & leave H_2O Treatment Plant to GPS the locations of power poles along Mike Horse Road

PP1 = 1st Pole towards Hwy 200 from treatment plant.

- GPS not functioning properly

18:20 - off-site

3/19/10 UBMC TO 20 1/

9:05 - Arrive on-site to measure and make material list(s) for the monitoring devices to be used for discharge monitoring in cut-off ditch.

Weather - Clear skies, 14°F, 2" new snow
- slight breeze

11:29 - Arrive back @ PP1 to GPS the location of Power Pole

- Telephone pedestal is located 6' south of power pole
- PP1 contains conduits on north side of pole that lead underground.
- poor satellite reception @ PP1

11:47 - Arrive @ PP2 to GPS location of 2nd power pole N. of H_2O treatment plant

- poor satellite reception @ PP2

11:51 - Arrive @ PP3 to GPS pole location

- poor satellite geometry @ PP3

11:55 - Arrive @ PP4 to GPS pole location

- poor satellite geometry @ PP4

3/19/10 USMC - TO21 2/2

11:58 - Arrive @ PP5 to GPS pole location
- PP5 has yellow "caution" tape tied around it.
- poor satellite geometry @ PP5

12:03 - Arrive @ PP6 to GPS pole location
- PP6 has conduits attached that lead underground on N. side of pole.
- There is a telephone pedestal located 14' north of PP6

12:10 - Arrive @ Meadow Creek Turnoff to hike in and collect a soil sample along the road cut for Jamie M.

12:25 - Collected soil sample from road cut on north side of road per map

12:42 - Back @ Truck and off-site

- weekly mileage = 422.9 @ office

3/23/10 USMC TO 20 (Mod A) 1/2

8:36 - JM & DH arrive @ BRSW-1 to begin construction/installation of discharge monitoring device in cutoff ditch.

Weather - 31° F, cloudy, slight breeze

Channel X-section

Facing upstream

11:35 - Complete construction of stream gage @/near BRSW-1.
- GPS location of gage (DH)

3/23/10 UBMC TO 20 (Mod A) 2/2

12:18 - Arrive @ trash rack to install stream gage to measure discharge of cut-off ditch during pumping

- Took GPS readings for the location of the trash rack.

Channel X-Section* (Trash Rack)

*x-section measured facing downstream

- stocked materials for weir const. near shed @ top of dam.

15:49 - off site

3/25/10 UBMC TO 20 (Mod A) 1/

8:48 - Arrive on-site to install weir below Mike Horse Dam.

Weather - 27°F, clear skies, 10-15 mph wind

- Inspected flow @ trash rack and observed that pumps aren't running.

Weir X-section (Facing upstream)

- Measuring Gage is 88" upstream from face of weir.

- Depth on gage after construction is 1' 6"

14:42 - off-site after showing Jay how to read gage behind weir.

DH

4/2/2010

11:30 Arrive on site. Conditions are 35°F, Sunny, 5-10 mph winds.

11:58 Arrive at TDMW-2D, download levellogger and Water Depth = 11.35'

12:30 Download Data from P-5
DTW = 47.48'

12:50 PZ 11-B → Downloaded
DTW = 54.03'

13:00 Arrive @ GW-1C and Barrologger Download Both
DTW = 30.81'

13:13 PZ 03B-B → Downloaded
DTW = 28.98

13:20 PZ 03A-A → Downloaded
DTW = 5.97

13:32 GW-1A → Downloaded
DTW = 32.97

14:00 Arrive @ TDMW3-D & TDMW 3-S. Re-Program and ~~re-deploy~~ DH TDMW-4S

~~TDMW-4S Depth to water~~ = DH

14:34 Sump-S-Bedrock → Downloaded
DTW = 7.61'

14:37 Sump-J-Alluvium → Downloaded
DTW = 8.84'

14:47 PZ-09B → Downloaded
DTW = 14.54'

14:58 GW-2A → Downloaded
DTW = 28.18'

15:02 GW-2 → Downloaded
DTW = 28.42'

15:13 PZ-02B-C → Downloaded
DTW = 28.08'

15:32 Sump-N → Downloaded
DTW = 21.81'

15:44 TDMW-4D → Downlo
DTW = 38.98

16:22 TDMW-4S → Re-Deployed
DTW = Dry

16:33 Arrive at South gauging station to measure streamflow.

17:02 Arrive at Trash Rack to gauge stream

17:45 - Load up truck, lock gate, Head back to Hdeva.

UBMC 30°F CLOUDY 4/28/10

10:20 ARRIVE A SUMP-5 BEDROCK AND SUMP 5-ALLUVIUM

10:35 DOWNLOAD Sump-5 BEDROCK
DTW = 4.41

10:37 DOWNLOAD Sump-5 Alluvium
DTW = 6.94 ft

10:47 DOWNLOAD Sump-N
DTW = 22.81 ft

10:59 DOWNLOAD ~~2~~ DH P209-B
DTW = 14.55 ft

11:09 DOWNLOAD GW-2A
DTW = 24.64 ft

11:12 DOWNLOAD GW-2
DTW = 24.91

11:15 DOWNLOAD TDMW-45
DTW = Dry

11:20 DOWNLOAD TDMW-4D
DTW = 35.42

11:30 DOWNLOAD P202-B-C
DTW = 25.40

~~11:31 DOWNLOAD P202-C~~ DH
~~DTW =~~ DH

11:50 ARRIVE AT STREAM GAUGE AT SOUTH END OF DAM, TAKE FLOW READING.

12:15 HEALTH & SAFETY
13:00 ARRIVE AT NORTH SAMPLE FOR FLOW READING.
13:15 TDMW - 3S - WRONG Well, NO PIEZOMETER.
13:50 ~~GW-2C~~ DH → DOWNLOADED
GW-1C DTW = 27.89'
14:00 GW-1A → Downloaded
DTW = 30.49'
14:15 DOWNLOAD P-5
DTW = 47.46'
14:20 DOWNLOAD P211-B
DTW = 51.14
ATTEMPTED TO REACH P203A-A & P203B-B But was unable due to water depth and sticky mud, even with hip waders on.
14:50 DOWNLOAD TDMW-2D
DTW = 9.38

06/08/10 UBMC TO 20 1 of 2

9:49 - DH, RM & JM arrive on-site to collect samples for quarterly monitoring
Weather - Partly Cloudy, 51°F, 10-15 mph breeze

10:00 - Collect Samples @ BRSW01
11:14 - Finish velocity measurement @ BRSW01
11:22 - Arrive @ BRSW-22
11:30 - Drive new re-bar stakes @ monitoring station
12:25 - Investigation of seeps MHTDS-1 through MHTDS-8 reveals that none of the seeps are flowing.
15:00 - Complete Sampling BRSW 48 - 3B
- No discharge (velocity) measurements taken from BRSW 3A - 3B due to lack of flow.
- Weir Gage Reading = 1'-7"
15:05 - Arrive @ BRSW-02
- Observed a frog (leopard?) and 2 leaches in impoundment near BRSW-02
15:32 - Arrive @ water treatment plant to sample BRSW-38 and BRSW-29

06/08/10 UBMC TO20 2/2

16:23 - Collect field and rinsate blanks

- Collected rinsate blank (UBM-BRSW38-444) from hand pump used to filter samples

17:42 - finish surface water sampling

17:45 - off site

DH, RM

UBMC TO 20 6/10/10

8:50 ARRIVE ON SITE TO Collect Transducer Data and SAMPLE WELLS FOR QUARTERLY MONITORING

9:00 ARRIVE @ Sump - S - Alluvium
DTW = 6.72'
Download Transducer

9:05 Sump - S - BEDROCK
DTW = 3.9'
Transducer DOWNLOADED

9:10 SUMP - N
DTW = 22.35
Transducer DOWNLOADED

9:15 P2 - 09 - B
DTW = 14.53'
TRANSDUCER DOWNLOADED

9:31 GW - 2A
DTW = 24.45
TRANSDUCER DOWNLOADED

9:40 GW - 2
DTW = 24.79'
TRANSDUCER DOWNLOADED

9:45 TDMW 4-S
DTW = DRY
TRANSDUCER DOWNLOADED

* No SAMPLES Collected, WELL DRY

6/10/10 UBMC TO 20
9:50 TDMW-4D
DTW = 35.22'
TRANSDUCER DOWNLOADED

DTW	TOTAL DEPTH	TIME
35.22	60'	9:50

V = 0.041 (2")^2 (60 - 35.22)
V = 0.041 (4) (24.78)
V = 4.064 gal

TEMP	pH	SC	DO%	ORP	TURB	GAL
45.37	7.97	307	78.7	130.2	1113.3	1
42.90	7.26	339	93.5	123.8	460.3	4
42.63	7.87	312	98.4	124.0	105.9	7
42.65	7.81	307	100.7	125.6	50.6	10
42.66	7.86	307	99.3	125.0	48.6	12
42.71	7.83	306	99.0	124.5	45.6	14

- Very cloudy water at start of purge. Cleared quickly.
- Collect SAMPLES

UBMC TO 20 6/10/10
11:00 P2-02B-C
DTW = 24.48'
TRANSDUCER DOWNLOADED
11:15 ARRIVE AT TDMW-5
DTW = 69.49 ft
NO TRANSDUCER TO DOWNLOAD

V = 0.041 (6)^2 ~~(60~~ (105 - 69.49) DH
V = 0.041 (36) (35.51)
V = 52.41 gal

TEMP	pH	SC	DO mg/L	ORP	TURB	GAL
46.05	8.05	499	12.26	179.3	89.7	2
43.64	8.11	499	12.72	184.40	83.2	5
44.02	8.10	496	12.45	180.2	105.9	8
44.32	8.08	496	12.65	179.2	130.0	11
44.63	8.08	496	12.28	175.9	130.2	13
44.67	8.08	496	12.34	173.9	128.4	15

* BOTTLES FOR TDMW5 WERE INCORRECTLY MARKED UBM-TDMW5-... INSTEAD OF UBM-TDMW05-.....
* WE'VE BEEN EXPERIENCING PROBLEMS WITH THE BLUE PUMP, IT OVERHEATED

6/10/10 UBMC TO 20

1:55 GAVE UP ON TDMW-5.
NO LUCK getting pump to get enough pressure
A FEW OF THE SAMPLES WERE COLLECTED BUT CAME TO A HALT AFTER CONNECTING THE FILTER.
BLADDER PUMP ALSO USED WITHOUT ANY WATER COMING OUT.

2:05 ARRIVE AT TDMW 1
DTW = 10.67'

TEMP	pH	SC	DO mg/L	ORP	TURB	GAL
45.94	8.12	777	10.61	204.9	12.0	3
45.43	7.11	777	9.05	194.2	8.1	5
45.07	7.27	781	10.27	177.6	25.4	8
44.91	6.92	782	8.2	175.2	13.9	10
44.86	6.83	781	8.01	176.1	12.9	11
44.83	6.83	781	8.00	177.7	10.1	12
44.84	6.82	778	7.91	179.8	7.8	14
44.83	6.81	776	7.86	182.8	6.5	15
44.83	6.81	774	7.83	185.0	5.5	16

UBMC TO 20 6/10/10

TDMW-1

$V = 0.041\ (4")^2 (35 - 10.67)$
$V = .041\ (16)\ (24.33)$
$V = 15.96$ gal

14:42 TO DH - ARRIVE AT TDMW 2-5
DTW = 9.12

$V = 0.041\ (2")^2 (20.2 - 9.12)$
$V = (.041)\ (4)\ (11.08)$
$V = 1.81712$ gal

TEMP	pH	SC	DO mg/L	ORP	TURB	GAL
46.16	7.06	625	5.06	185.5	53.3	2
46.01	7.00	785	10.83	182.8	17.6	3
45.46	6.96	745	4.16	175.2	12.7	4
45.01	6.89	807	3.06	160.2	9.4	5
44.93	6.86	837	2.07	146.3	7.8	6
44.85	6.86	836	1.95	144.0	6.3	7
44.90	6.87	830	1.98	141.2	6.0	8
44.91	6.86	827	1.94	143.1	5.5	9

6/10/10 UBMC TO 2D

TDMW-2D

15:28 ARRIVE AT TDMW 2D

DTW = 9.3

TRANSDUCER DOWNLOADED

$V = 0.041(4")^2(37-9.3)$

$V = .041(16)(27.7)$

$V = 18.17$ gal

TEMP	pH	SC	DO mg/L	ORP	TURB	GAL
46.11	7.75	483	8.34	163.1	83.6	3
45.91	7.67	454	10.36	165.3	19.7	6
45.87	7.47	465	9.35	163.9	20.2	8
46.11	7.45	464	9.51	170.3	60.9	10
46.08	7.42	465	9.43	168.0	55.1	11
46.06	7.39	464	9.24	167.0	39.8	12
46.01	7.38	465	9.20	167.2	36.3	13
46.01	7.38	464	9.15	166.6	32.0	14
46.01	7.37	464	9.14	166.7	32.0	15

16:15 ARRIVE AT P-5

DTW = 46.46

TRANSDUCER DOWNLOADED

UBMC TO 2D 6/10/1

16:20 ARRIVE AT P211-B

DTW = 51.6

TRANSDUCER DOWNLOADED

16:25 ARRIVE AT GW-1C

AND BARROLOGGER

DTW = 27.12

DOWNLOAD TRANSDUCER

DOWNLOAD BARROLOGGER

16:28 ARRIVE AT GW-1A

DTW=

DOWNLOAD TRANSDUCER

16:38 ARRIVE AT TDMW-3D

DTW = 45.87'

$V = .041(6)^2(70-45.87)$

$V = .041(36)(24.13)$

$V = 35.62$ gal

17:17 COLLECTED FIELD BLANK USING DI WATER FROM ENERGY LAB.

17:20 COLLECTED RINSATE BLANK THROUGH PUMP & TUBING.

6/10/10 UBMC TO 20

TEMP	pH	Sc	DO mg/L	ORP	TURB	GAL
44.41	7.72	638	13.63	217.0	8.0	7
44.43	7.64	633	13.81	216.4	7.4	9
44.45	7.53	625	14.14	214.8	7.3	10
44.45	7.51	625	14.21	214.4	7.4	11
44.46	7.48	624	14.29	213.4	7.8	12
44.44	7.48	637	14.81	216.5	6.3	14
44.44	7.47	638	14.87	215.8	6.4	15

17:30 ARRIVE AT TDMW - 3S
WELL IS DRY
DTW = N/A
NO SAMPLES COLLECTED

17:40 ARRIVE BACK AT TDMW-5
BEGIN RUNNING BLADDER PUMP AGAIN TO TRY AND COLLECT SAMPLES.

18:00 BLADDER PUMP IS SLOW AND SUCKS.

18:50 FINISHED QUARTERLY MONITORING. ALL SAMPLES FROM TDMW-5 ARE FINISHED.

RM, D14

UBMC TO 20 7/8/10

10:06 ARRIVE AT MIKE HORSE IMPOUNDMENT. 60°F, SUNNY AND CALM.

10:10 ARRIVE AT SUMP-S - BEDROCK
DTW = 5.83 feet
TRANSDUCER → DOWNLOADED

10:15 SUMP-S-ALLUVIUM
DTW: 7.29 ft.
TRANSDUCER → DOWNLOADED

10:22 ARRIVE AT SUMP-N
DTW = 9.21 ft.
TRANSDUCER → DOWNLOADED

10:27 ARRIVE AT PZ-08-B
DTW = 8.55 ft.
TRANSDUCER → DOWNLOADED

10:35 ARRIVE AT GW-2A
DTW = 22.85 ft.
TRANSDUCER → DOWNLOADED

10:45 ARRIVE AT GW-2
DTW = 23.14 ft
TRANSDUCER → DOWNLOADED

7/8/10 UBMC TO 20

10:50 ARRIVE AT TDMW-4S
DTW = DRY
TRANSDUCER → DOWNLOADED

11:00 ARRIVE AT TDMW-4D
DTW = 33.49
TRANSDUCER → DOWNLOADED

11:10 ARRIVE AT PZ-02B-C
DTW = 21.80 ft
TRANSDUCER → DOWNLOADED

11:40 ARRIVE AT PZ-03B-B
DTW = ~~23.85~~ 23.85
TRANSDUCER → DOWNLOADED

11:45 ARRIVE AT PZ-03A-A
DTW = 5.25 ft
TRANSDUCER → DOWNLOADED

12:15 ARRIVE AT P-5
DTW = 46.02
TRANSDUCER → DOWNLOADED

12:25 ARRIVE AT GW-1A
DTW = 28.75
TRANSDUCER → DOWNLOADED

12:35 ARRIVE AT GW-1C
DTW = 25.20
TRANSDUCER → DOWNLOADED

12:35 ARRIVE AT BARROLOGGER
TRANSDUCER → DOWNLOADED.

12:40 ARRIVE AT PZ-11-B
DTW = 50.42 feet
TRANSDUCER → DOWNLOADED

12:55 ARRIVE AT TDMW-2D
DTW = 9.63
TRANSDUCER → DOWNLOADED

8/28/10 UBMC TO 20 DH, RM

10:30 ARRIVE AT UBMC TO RE-INSTALL GW-1A

11:00 GW-1A TRANSDUCER IS RE-INSTALLED & RUNNING.

DH, RM 9/8/10

UBMC Quarterly MONITORING

12:30 ARRIVE AT SURFACE WATER SITE BRSW-01

12:45 BEGIN SAMPLING BRSW-01. Duplicate collected.

13:30 FINISH SAMPLING BRSW-01. HEAD TO BRSW-22

13:45 ARRIVE AT BRSW-22. BEGIN SAMPLING.

14:10 FINISH SAMPLING BRSW-22.

14:15 ~~BEGIN~~ ARRIVE AT BRSW-02. BEGIN SAMPLING. RINSATE BLANK TAKEN AT BRSW-02.

15:00 FINISH SAMPLING BRSW-02

15:45 BEGIN SAMPLING BRSW-48

16:15 FINISH SAMPLING BRSW-48

16:20 ARRIVE AT BRSW-23

16:30 BEGIN SAMPLING BRSW-23

17:00 ~~ARRIVE AT~~ BR DH FINISH SAMPLING BRSW-23.

17:05 ARRIVE AT BRSW-3A

17:10 BEGIN SAMPLING BRSW-3A *FLOW IS TOO LOW TO calculate.

17:20 FINISH SAMPLING BRSW-3A. RAIN STARTED

DH

DH, RM

9/10/10 UBMC Quarterly Monitoring

9:45 ARRIVE AT UBMC.
45°F Light Spotty Rain

10:00 BEGIN SAMPLING
BRSW-3B. FLOW TOO LOW
TO READ W/ FLOW meter.

10:40 FINISH SAMPLING BRSW-3B.

10:50 ARRIVE AT BRSW-28

11:00 BEGIN SAMPLING BRSW-29
FIELD BLANK TAKEN.

11:20 FINISH BRSW-29

11:30 BEGIN SAMPLING BRSW-38

11:50 FINISH SAMPLING BRSW-37.

DH, RM

UBMC Quarterly Monitoring 9/13/10

10:00 ARRIVE AT UBMC. SPEAK W/
George. 50°F partly cloudy.

10:10 ARRIVE AT TDMW-45.
DTW = DRY No Samples Collected

10:15 ARRIVE AT TDMW-40
DTW = 41.70 feet
Total Depth = 60 feet

TDMW-40

$V = 0.041\,(2")^2(60 - 41.70)$

$V = 0.041\,(4)(18.3) = \cancel{3.001}$

$V = 3.001$ gal

Purge = 9 gal.

Temp	pH	SC	DO mg/L	ORP	Turb.	Gallons
44.30	8.28	428	7.60	87.5	283.1	5
43.05	8.21	377	10.47	91.0	26.5	7
43.07	8.16	374	10.15	92.3	25.0	8
43.14	8.12	373	10.06	93.5	25.5	9
43.14	8.09	372	10.05	94.3	23.9	10
43.01	8.08	362	10.97	95.8	14.6	11
43.04	8.06	362	10.87	96.8	13.8	12

10:30 Collect Samples from TDMW-40

9/13/10 UBMC Quarterly Monitoring DH, RM

11:30 ARRIVE @ TDMW-5

DTW = 74.47 feet

Total Depth = 105 feet

$V = 0.041(6)^2(105 - 74.47)$

$V = 0.041(36)(30.53)$

$V = 45.06$ gal

Temp	pH	SC	DO mg/L	ORP	TURB.	VOL
44.51	8.28	582	12.67	110.1	62.6	10
43.60	8.23	573	13.22	110.6	93.4	20
43.92	8.20	571	13.20	114.4	108.5	25
43.93	8.21	570	13.21	110.1	116.2	27

12:30 ARRIVE AT TDMW-45

DTW = DRY

NO SAMPLES COLLECTED

12:40 ARRIVE AT TDMW4-D

DTW = 48.82

$V = 0.041(6)^2(60 - 48.82)$

$V = 0.041(36)(11.18)$

$V = 16.50$ gal

9/13/10

UBMC Quarterly Monitoring

Temp.	pH	SC	DO %	ORP	TURB	VOL
45.38	8.29	704	11.51	132.4	12.7	3
45.35	8.21	704	11.31	132.4	12.6	5
44.81	8.09	727	12.70	133.3	10.2	7
44.82	7.98	734	11.43	133.5	9.6	9
44.82	7.90	864	11.82	135.5	8.2	12
44.78	7.90	963	11.98	137.7	7.5	17
44.69	7.80	1107	11.78	139.5	7.0	22
44.69	7.74	1150	11.52	139.3	6.4	27
44.90	7.81	1220	11.73	145.6	7.6	32
44.56	7.77	1270	12.00	145.8	8.8	37
44.62	7.75	1268	11.68	145.5	9.2	42
44.66	7.76	1270	11.50	145.5	8.5	47

13:45 ARRIVE AT TDMW-1

DTW = 16.97 feet

total depth = 35'

$V = 0.041(4^2)(35 - 16.97)$

$V = 0.041(16)(18.03)$

$V = 11.83$ gallons

TEMP	pH	SC	DO mg/L	ORP	TURB	GAL

14:00 FIND OUT WE ARE OUT OF Preservative and running low on Bottles. Drive to Helena and Restock

9/13/10

16:30 ARRIVE BACK AT TDMW-1

DTW = 16.88 feet

Volume = 11.83 gal

Temp	pH	Sc	DO mg/L	ORP	TURB.	VOL
46.01	7.87	788	6.58	146.5	9.5	5
46.19	7.61	790	7.58	146.9	8.2	10
46.02	7.44	789	6.46	147.4	4.1	15
45.92	7.41	791	7.23	147.7	3.5	20
45.88	7.32	792	6.91	148.4	3.1	30
46.14	7.28	793	5.95	147.8	3.4	33
46.14	7.25	792	5.33	147.8	3.3	35
46.13	7.23	791	5.29	147.7	3.3	37
46.09	7.23	792	5.28	147.7	3.3	40

16:30 Collect Groundwater SAMPLES.

17:23 ARRIVE AT TDMW-2D

DTW = 12.64

$V = 0.041(4^2)(37 - 12.64)$

$V = 0.041(16)(24.36)$

$V = 15.98$ gal

17:30 Duplicate taken for TDMW-2D

9/13/10

Temp	pH	Sc	DO mg/L	ORP	TURB	GAL
46.07	7.97	440	9.90	138.1	35.6	20
45.95	7.80	439	8.87	139.8	32.0	25
46.05	7.68	438	8.28	140.6	18.8	30
45.95	7.66	439	8.36	140.1	16.8	35
45.98	7.65	439	8.02	139.9	16.3	40
45.93	7.67	439	9.16	140.1	21.6	45
45.96	7.65	439	8.68	140.1	19.3	46
45.98	7.65	439	8.66	140.1	20.3	47

18:00 ARRIVE AT TDMW-2S

DTW = 12.52 feet

$V = 0.041(2)^2(20.20 - 12.52)$

$V = 0.041(4)(7.68)$

$V = 1.26$ gal

Temp	pH	Sc	DO mg/L	ORP	TURB	GAL
45.00	7.39	966	10.13	113.8	9.7	5
45.97	7.34	948	7.43	111.3	7.8	6
45.97	7.32	935	7.64	109.1	8.0	7
45.98	7.36	928	7.40	107.6	7.5	8
45.99	7.29	921	7.39	106.5	7.2	9

18:30 FINISH UBMC Groundwater monitoring

9/13/10

18:45 Collect Field Blank
18:50 and Rinsate Blank
From TDMW-2S

DH

DH, RM UBMC 9/20/10

11:30 Arrive at UBMC. Road is
Blocked by Construction
of New Water Line.
Heading out on Foot Seems
to be our only option.
12:10 Arrive @ TDMW-2D
DTW = 12.78 feet
Transducer Downloaded
12:25 Arrive at P-5
Transducer Downloaded
DTW = 47.24
12:35 Arrive @ PZ-11B
DTW = 60.82
Transducer Downloaded
12:45 Arrive @ PZ-03B
DTW = 33.81
~~33.81~~ Downloaded
12:50 Arrive @ PZ-03A
DTW = 6.71 ft
Downloaded
1:00 Arrive @ GW-1 (East)
DTW = 40.22 ft.
Downloaded
Barologger Downloaded

9/20/10

13:05 ARRIVE @ GW-1 (MW-4)
DTW = 38.43
DOWNLOADED

13:15 ARRIVE @ RZ-02B
DTW = 31.73 ft.
DOWNLOADED

13:25 ARRIVE AT GW-2
DTW = 31.87
Clamp that held transducer on is gone! TRANSDUCER is LOST DOWN well.

13:30 ARRIVE AT TDMW-4S
DTW = DRY
Taken transducer to download.

13:40 ARRIVE @ TDMW-4D
DTW = 42.34 ft.

14:00 ARRIVE AT GW-2A
DTW = 30.99 ft.
GRABBED TRANSDUCER

14:10 PZ-04A
DTW = 14.44

14:20 SUMP-N
DTW - ~~12.35~~ 12.30
DH

9/20/10

14:30 SUMP-S-ALLUVIUM
DTW = 9.50

14:35 SUMP-S-BEDROCK
DTW = 8.13

15:10 RE-DEPLOY TDMW-4D

15:15 RE DEPLOY TDMW-4S

15:20 RE-DEPLOY PZ-04A

15:25 RE-DEPLOY GW-2A

15:30 RE-DEPLOY SUMP-N

15:40 RE-DEPLOY SUMP-S-ALLUVIUM

15:45 RE-DEPLOY SUMP-S-BEDROCK

DH, RM

UBMC - TO 20 12/14/10

13:00 ARRIVE AT UBMC. UNLOAD SNOWMOBILE. BIG STORM CAME IN, RETURN TO TRUCK TO WAIT FOR IT TO CALM A BIT. 35°F, VERY WINDY, RAIN/SNOW MIX.

13:20 HEAD OUT INTO STORM TO GATHER TRANSDUCERS.

14:00 GW-2 is gone, it appears the clasp holding the aircraft wire in a loop has rusted off.

14:10 Markers to find TDMW-4D AND TDMW-4S HAVE FALLEN OVER. MUST DIG TO SEARCH FOR WELLS.

15:00 All TRANSDUCERS collected with exception of GW-2 (missing) and GW-1A AND GW-1C (DOWNLOADED WITH LEVELOADER)

16:00 LOAD UP SNOWMOBILE. HEAD BACK TO LINCOLN.

DH, RM

UBMC TO 20 12/15/10

9:00 ARRIVE AT UBMC.
PUT NEW MEMBRANE ON
D.O. PROBE. 28°F, SNOW 4.

10:00 RE-Deploy SUMP-S-ALLUV.
DTW = 7.72 feet

RE-Deploy SUMP-S-BEDROCK
DTW = 6.35

10:15 RE-Deploy SUMP-N
DTW = 10.00

10:25 RE-Deploy PZ-9A
DTW = 11.84

10:35 RE-Deploy GW-2A
DTW = 27.53

10:45 Re-Deploy TDMW-4D
DTW = 38.38

10:50 Re-Deploy TDMW-4S
DTW = DRY

11:00 CHECK WATER LEVEL FOR GW-2
DTW = 27.95 feet

11:10 PZ-02-C
DTW = 27.64

11:20 Re-Deploy PZ-03B
DTW = 30.84

11:30 Re-Deploy PZ-03A
DTW = 7.98'

12/15/10 UBMC TO 20

11:40 Re-Deploy P-5
DTW = 47.99

11:50 Re-Deploy PZ-11
DTW = 56.03

12:00 Re-Deploy BARROLOGGER @ GW-1C
DTW = 34.32

12:10 WATER LEVEL @ GW-1A
DTW: 35.10

12:20 Re-Deploy TDMW-2D
DTW: 11.88

13:00 HEAD TO BRSW-01 TO COLLECT SURFACE WATER SAMPLE. DUPLICATE COLLECTED. TOO ICY TO MEASURE DISCHARGE.

14:00 HEAD TO BRSW-3B to COLLECT SURFACE WATER SAMPLE ~~TOO ICY TO MEASURE DISCHARGE~~. FLOW TOO LOW TO MEASURE, FLOW METER GIVING NEGATIVE READ

14:20 Collect SURFACE WATER SAMPLE BRSW-3A. TOO MUCH ICE TO MEASURE DISCHARGE

15:00 PROBLEM WITH SNOWMOBILE, CAN'T GET TRACK TO SPIN.

16:00 LOAD UP, HEAD TO LINCOLN

DH, RM

UBMC TO 20 12/16/

9:00 ARRIVE AT INTERSECTION OF 200 & 278 to meet ~~dan~~ DAN about fixing sled.

10:30 SLED FIXED. ARRIVE AT UBMC. 18°F, Sunny.

11:00 BEGIN SAMPLING WELL TDMW-4D.
DTW: 38.38
Well is BEING SAMPLED WITH A LOW FLOW BLADDER PUMP. THE WATER LINE HAS FROZEN AND WE CANNOT COLLECT A SAMPLE.

12:00 RETURN TO TRUCK. GRAB SURFACE WATER SAMPLING EQUIPMENT.

13:00 BEGIN SAMPLING BRSW-48 TOO ICY, NO FLOW MEASURE

13:40 BEGIN SAMPLING BRSW-23

14:30 HEAD BACK TO TRUCK

15:00 BEGIN SAMPLING BRSW-29

15:45 BEGIN SAMPLING BRSW-38

16:20 LOAD UP, HEAD BACK TO LINCOLN.

DLRM

12/20/10 UBMC TO 20

11:30 ARRIVE AT UBMC After Picking up snowmobile in Helena. BEGIN GROUNDWATER SAMPLING. 23°F, Light Winds. Overcast.

12:00 BEGIN SAMPLING TDMW-4D. ~~Well~~ DTW = 37.95'

Well too low to make water, no sample collected.

13:00 ARRIVE AT TDMW-3D.

DTW = 47.15 ft.

BEGIN SAMPLING SAMPLES COLLECTED

13:30 BEGIN SAMPLING TDMW-3S

DTW = 32.15

Pump is unable to Draw enough water to sample.

14:00 ARRIVE AT TDMW-4S

DTW = DRY

NO SAMPLES COLLECTED

15:00 HEAD BACK TO TDMW-4D

BECAUSE THE PUMP SHOULD HAVE BEEN ABLE TO PULL OUT WATER EVEN though it didn't. We will re-attempt to SAMPLE THE WELL.

DLRM

~~TDMW~~ UBMC TO 20 12/20/1

TDMW-4D

Temp	pH	SC mS	DO mg/L	TURB	ORP	VOL
41.83	8.03	377	-13.14	132.0	82.1	5.
41.83	8.01	376	-13.13	110.0	87.5	8g
41.82	7.97	375	-13.16	81.4	88.1	11
41.79	7.96	375	-13.16	71.7	90.2	12
41.85	7.93	374	-13.18	71.0	90.2	13g

SAMPLES Collected Successfully.

16:20 LOAD UP, HEAD BACK TO LINCOLN.

TDMW-4D well Volume

DTW = 37.95'

$V = 0.041(2^2)(61.2 - 37.95)$

$V = 0.041(4)(23.25)$

$V = 3.81$

DK, RM

12/20/10 UBMC TO 20

9:00 ARRIVE AT UBMC. -6°F, CALM AND CLEAR

9:30 ARRIVE AT TDMW-5

DTW = 74.16 feet.

total depth = 105 feet

V = 0.041 (6)² (105 - 74.16)

V = 0.041 (36) (30.84)

V = 45.52 gal

10:00 Collect SAMPLES

Temp	pH	SC	DO mg/L	ORP	TURB	VOL

10:30 Dedicated tubing in well is frozen at top end. UNABLE TO COLLECT SAMPLE.

11:00 ARRIVE AT TDMW-1

DTW = 16.54

V = 0.041 (4²) (35 - 16.54)

V = 0.041 (16) (18.46)

V = 12.11 gal

Temp °F	pH	SC	DO mg/L	ORP	TURB	GAL
45.47	7.97	822	-4.8	95.4	29.9	5
45.41	7.81	822	-8.20	97.6	24.1	8
45.47	7.66	821	-6.74	100.5	10.2	10
45.55	7.54	819	-6.57	103.7	5.0	15
45.62	7.44	819	-6.75	106.8	3.8	25

DK, RM

UBMC TO 20 12/21/10

Temp	pH	SC	DO mg/L	ORP	TURB	GAL
45.65	7.38	819	-4.61	108.1	3.5	28
45.66	7.36	819	-6.21	109.7	3.5	30
45.66	7.35	819	-4.04	109.2	3.4	38.

11:45 BEGIN SAMPLING TDMW-2D.

DTW = 11.68

V = 0.041 (4²) (37 - 11.68)

V = 0.041 (16) (25.31)

V = 16.60 gal

Temp	pH	SC	DO mg/L	ORP	TURB	GAL
44.30	8.26	424	-14.07	111.8	4.7	20
44.24	8.14	424	-11.97	111.7	4.8	30
44.24	8.06	424	-10.31	111.6	4.8	40
44.30	7.99	424	-9.83	111.3	4.7	45
44.41	7.88	424	-9.45	110.9	4.7	50
44.58	7.96	423	-9.20	110.7	4.8	53

SAMPLES COLLECTED.

12:15 BEGIN SAMPLING TDMW-2S

DTW = 11.49

V = 0.041 (2")² (20.20 - 11.49)

V = .041 (4) (8.71)

V = 1.43 gal

12/21/10 UBMC TO 20 DW, Rm

Temp	pH	SC	DO mg/L	ORP	TURB	GAL
43.08	7.42	1112.40	-5.14	115.9	17.2	2
43.54	7.27	1042	-2.23	112.1	7.2	4
43.63	7.24	974	-2.05	110.2	7.2	6
43.65	7.22	943	-2.10	109.2	7.6	7
43.67	7.21	928	-2.21	108.1	7.1	8

UBMC TO 20 1/4/10

THIS IS A COPY OF THE GROUNDWATER SAMPLING RECORD FOR TDMW-3D, SAMPLED ON 12/20/10. I AM RECOPYING IT INTO THE LOGBOOK WITH THE REST OF THE GROUNDWATER SAMPLING RECORDS FOR QUARTERLY MONITORING.

TDMW-3D

DTW = 47.15'

$V = .041\,(6^2)(70 - 47.15)$

$V = .041\,(36)(22.85)$

$V = 33.73$ gal

Temp	pH	SC	DO mg/L	ORP	TURB	GAL
43.48	8.51	669	2.23	83.0	16.0	60
43.48	8.41	651	3.70	82.0	21.9	70
43.53	8.29	587	4.77	81.1	27.2	80
43.46	8.17	537	6.00	81.2	22.8	90
43.48	7.96	523	4.35	83.9	30.6	100
43.44	7.95	523	4.35	84.4	30.1	105

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BBSW-01

Gage Reading: under snow Gage Time: NA

Levelogger: Yes / No (circle one)

Download Time: NA

Date: 3/18/10

Discharge Time: 13:15

Field Crew: JM/DH

Discharge Measurements

	Tape ~~(FT)~~ IN	Width ~~(FT)~~ IN	Depth FT ~~(FT)~~ ~~IN~~	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	8"						
1	3.6	5.2	0.30		0.45		
2	8.8	5.2	0.25		0.27		
3	14	5.2	0.30		0.86		
4	19.2	5.2	0.20		0.93		
5	24.4	5.2	0.20		0.44		
6	29.6	5.2	0.15		0.08		
7	34.8	5.2	0.20		0.29		
8	40.0	5.2	0.10		1.95		
9	45.2	5.2	0.05		0.30		
10	50.4	5.2	0.05		0.14		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	60"						

Total Flow:

Comments: RWE - LWE = width = 52"
width/10 = increment = 5.2"
LWE - ½ increment = starting point = 3.6"

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-48 Gage Reading: NA Gage Time: NA

Levelogger: Yes / No (circle one) Download Time: NA

Date: 03/18/10 Discharge Time: 14:26

Field Crew: JM/DH

Discharge Measurements

	Tape (~~ft~~) IN	Width (~~ft~~) IN	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	3"						
1	2.1	4.2	0.05		0.25		
2	6.3	4.2	0.10		1.13		
3	10.5	4.2	0.15		0.87		
4	14.7	4.2	0.15		0.96		
5	18.9	4.2	0.20		1.82		
6	23.1	4.2	0.30		1.83		
7	27.3	4.2	0.20		1.87		
8	31.5	4.2	0.20		1.06		
9	35.7	4.2	0.30		0.66		
10	39.9	4.2	0.20		0.08		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	45"						

Total Flow:

Comments: 45" - 3" = 42" = width
Width/10 = 4.2" = Increment
LWE - 1/2 (4.2) = 3 - 2.1 = 0.9

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-23 Gage Reading: NA Gage Time: NA

Levelogger: Yes / No (circle one) Download Time: _____

Date: 3/18/10 Discharge Time: 14:58

Field Crew: JM/DH

Discharge Measurements

	Tape (~~ft~~) IN	Width (~~ft~~) IN	Depth FT (~~ft~~)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	0						
1	~~5.0~~ 2.5	5.0	0.10		0.01		
2	7.5	5.0	0.30		0.01		
3	12.5	5.0	0.50		1.45		
4	17.5	5.0	0.60		1.70		
5	22.5	5.0	0.40		0.85		
6	27.5	5.0	0.30		0.38		
7	32.5	5.0	0.30		0.77		
8	37.5	5.0	0.35		0.80		
9	42.5	5.0	0.35		0.14		
10	47.5	5.0	0.25		0.01		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	50						

Total Flow: _____

Comments: Width = 50"
Increments = 5.0"

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-3A

Gage Reading: NA Gage Time: NA

Levelogger: Yes / (No) (circle one)

Download Time: NA

Date: ~~3/10~~ 3/18/10

Discharge Time: 15:19

Field Crew: JM/DH

Discharge Measurements

	Tape ~~(ft)~~ IN	Width ~~(ft)~~ IN	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	10						
1	11.9	3.8	0.30		0.28		
2	15.7	3.8	0.30		0.35		
3	19.5	3.8	0.25		0.14		
4	23.3	3.8	0.30		0.03		
5	27.1	3.8	0.30		0.04		
6	30.9	3.8	0.20		0.13		
7	34.7	3.8	0.20		0.22		
8	38.5	3.8	0.20		0.04		
9	42.3	3.8	0.10		0.03		
10	46.1	3.8	0.10		0.02		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	48						

Total Flow:

Comments: width = 38"
Increment = 3.8

1.9 + 10 = 11.9

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BBSW-3B

Gage Reading: NA Gage Time: NA

Levelogger: Yes / (No) (circle one)

Download Time: NA

Date: 3/19/10

Discharge Time: 15:40

Field Crew: JM/DH

Discharge Measurements

	Tape (~~ft~~)IN	Width (~~ft~~)IN	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	10						
1	11.35	2.7	0.25		0.06		
2	14.05	2.7	0.45		0.15		
3	16.75	2.7	0.45		0.16		
4	19.45	2.7	0.50		0.15		
5	22.15	2.7	0.50		0.12		
6	24.85	2.7	0.50		0.18		
7	27.55	2.7	0.45		0.22		
8	30.25	2.7	0.35		0.22		
9	32.95	2.7	0.30		0.13		
10	35.65	2.7	0.10		0.05		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	37						

Total Flow:

Comments: 37 - 10 = 27 (width)
27 ÷ 10 = 2.7 : increment.
10 + 1.35 = 11.35

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-29 Gage Reading: NA Gage Time: NA

Levelogger: Yes / No (circle one) Download Time: NA

Date: 3/18/10 Discharge Time: 14:35

Field Crew: JM/DH

Discharge Measurements

	Tape (~~ft~~) IN	Width (~~ft~~) IN	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	53						
1	50.5	5.0	0.15	~~0.31~~ 1.4	0.31		
2	45.5	5.0	0.30		0.14		
3	40.5	5.0	0.35		0.24		
4	35.5	5.0	0.45		0.19		
5	30.5	5.0	0.60		1.31		
6	25.5	5.0	0.80		2.06		
7	20.5	5.0	0.90		2.46		
8	15.5	5.0	0.70		2.82		
9	10.5	5.0	0.20		1.60		
10	5.5	5.0	0.20		0.48		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	3						

Total Flow:

Comments: width = 50"
increment = 5.0"

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-38 Gage Reading: NA Gage Time: NA

Levelogger: Yes / No (circle one) Download Time: NA

Date: 3/18/10 Discharge Time: 17:11

Field Crew: JM/DH

Discharge Measurements

	Tape (~~ft~~) IN	Width (~~ft~~) IN	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	30						
1	32.3	4.6	0.25		0.47		
2	36.9	4.6	0.40		0.93		
3	41.5	4.6	0.60		1.25		
4	46.1	4.6	0.65		1.02		
5	50.7	4.6	0.45		1.10		
6	55.3	4.6	0.45		1.42		
7	59.9	4.6	0.40		1.41		
8	64.5	4.6	0.20		0.64		
9	69.1	4.6	0.20		0.39		
10	73.7	4.6	0.30		0.04		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	76						

Total Flow:

Comments: 76 - 30 = 46"
Increment = 4.6"

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: South gauging station in trench

Gage Reading: 1/4 foot Gage Time: 16 41

Levelogger: Yes / No (circle one)

Download Time: N/A

Date: 4/2/10

Discharge Time: N/A

Field Crew: DH

Discharge Measurements

	Tape ~~(ft)~~ IN	Width ~~(ft)~~ IN	Depth ~~(ft)~~ IN	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	6						
1	~~8.5~~ 7.25	2.5	.5		.10		
2	9.75	2.5	.5		.45		
3	12.25	2.5	1		1.50		
4	14.75	2.5	1.5		2.9		
5	17.25	2.5	2.0		2.46		
6	19.75	2.5	2.5		3.22		
7	22.25	2.5	2		2.46		
8	24.75	2.5	1.5		2.65		
9	27.25	2.5	1		1.79		
10	29.75	2.5	.5		1.27		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	31						

Total Flow:

Comments:

31 - 6 = 25"

25" ÷ 10 = 2.5"

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: Trash Rack

Gage Reading: 1/4 foot Gage Time: 17:02

Levelogger: Yes / No (circle one)

Download Time: N/A

Date: 4/2/10

Discharge Time: N/A

Field Crew: DH

Discharge Measurements

	Tape (~~ft~~) IN	Width (~~ft~~) IN	Depth (~~ft~~) IN	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	0						
1	1.25	2.5	.5		.43		
2	3.75	2.5	.5		.59		
3	6.25	2.5	1		.75		
4	8.75	2.5	2		1.04		
5	11.25	2.5	2.5		1.02		
6	13.75	2.5	2		.46		
7	16.25	2.5	2		1.07		
8	18.75	2.5	1		.86		
9	21.25	2.5	.5		.80		
10	23.75	2.5	.5		.20		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	25						

Total Flow:

Comments:

25 - 0 = 25"

25 ÷ 10 = 2.5"

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: LBMC ABOVE PUMP/ upstream of pump.

Gage Reading: 6"

Gage Time: 11:05

Levelogger: Yes / No (circle one)

Download Time: NA

Date: 5/24/10

Discharge Time: ~~NA~~ 11:15

Field Crew: DH, RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	7.5						
1	7.675	.35	.05	.0175	1.77		.030975
2	8.025	.35	.1	.035	2.94		.1029
3	8.375	.35	.3	.105	4.20		.441
4	8.725	.35	.5	.175	4.66		.8155
5	9.075	.35	.5	.175	4.80		.840
6	9.425	.35	.5	.175	4.89		.85575
7	9.775	.35	.4	.14	3.49		.4886
8	10.125	.35	.3	.105	2.92		.3066
9	10.475	.35	.2	.07	2.41		.1687
10	10.825	.35	.05	.0175	.88		.0154
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	11.0						

Total Flow: 4.065425

Comments:

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: UBMC Below Pump/ Downstream of Pump

Gage Reading: 10"

Gage Time: 12:05

Levelogger: Yes / No (circle one)

Download Time: N/A

Date: 5/24/10

Discharge Time: 12:15

Field Crew: DH, RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	12.75						
1	12.95	.4	.2	.08	2.13		.1704
2	13.35	.4	.5	.2	3.36		.672
3	13.75	.4	.75	.3	2.8		.84
4	14.15	.4	.8	.32	2.71		.8672
5	14.55	.4	.7	.28	3.06		.8568
6	14.95	.4	.6	.24	2.82		.6768
7	15.35	.4	.6	.24	2.50		.6
8	15.75	.4	.4	.16	1.92		.3072
9	16.15	.4	.2	.08	1.44		.1152
10	16.55	.4	.1	.04	.78		.0312
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	16.75						

Total Flow: 5.1368

Comments:

4.0' ÷ 10 = .4'

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-01 Gage Reading: 0.83 Gage Time: 10:20

Levelogger: Yes / No (circle one) Download Time: _____

Date: 6/08/10 Discharge Time: _____

Field Crew: JM/BM/DH

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	2.0						
1	2.26	0.52	0.40		0.92		
2	2.78		0.40		1.37		
3	3.30		0.70		1.49		
4	3.82		0.80		1.20		
5	4.34		0.70		2.57		
6	4.86		0.70		3.23		
7	5.38		0.70		2.13		
8	5.90		0.70		2.04		
9	6.42		0.70		3.11		
10	6.94		0.50		0.45		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	7.2						

Total Flow: _____

Comments:

7.2 - 2.0 = 5.2 = width
width/10 = increment = 5.2/10 = 0.52'
LWE + 1/2(0.52) = 2.0 + 0.26 = 2.26

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-22 Gage Reading: NA Gage Time: 12:03

Levelogger: Yes / No (circle one) Download Time: _____

Date: 6/08/10 Discharge Time: _____

Field Crew: OH, JM, RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	2.40						
1	2.77		0.80		1.25		
2	3.50		0.70		0.30		
3	4.23		0.70		2.12		
4	4.96		0.70		3.12		
5	5.69		0.80		0.70		
6	6.42		0.90		3.79		
7	7.15		0.80		2.96		
8	7.88		1.0		2.23		
9	8.61		0.70		2.77		
10	9.34		0.50		1.09		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	9.70						

Total Flow: _____

Comments: Width = 9.70 - 2.40 = 7.30
Increment = 7.30/10 = 0.73
LWE + 1/2 (0.73) = 2.40 + 0.365 = 2.77

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-48 Gage Reading: NA Gage Time: 13:35

Levelogger: Yes / No (circle one) Download Time: _____

Date: 06/08/10 Discharge Time: _____

Field Crew: DH/JM/RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	5.10						
1	5.42		0.80		1.14		
2	6.06		0.95		1.85		
3	6.70		1.0		2.09		
4	7.34		1.0		0.92		
5	7.98		0.95		1.45		
6	8.62		1.0		1.49		
7	9.26		1.1		1.54		
8	9.90		1.05		1.17		
9	10.54		0.75		1.22		
10	11.18		0.45		1.27		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	11.50						

Total Flow:

Comments: Width = 11.50' - 5.1' = 6.4'
Increment = 6.4'/10 = 0.64'
Start = LWE + ½(.64) = 5.10 + 0.32 = 5.42'

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-23 Gage Reading: NA Gage Time: 13:50

Levelogger: Yes / ~~No~~ (circle one) Download Time: _____

Date: 06/08/10 Discharge Time: _____

Field Crew: JM/DH/RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	2.30						
1	2.77		0.40		0.72		
2	3.70		0.65		0.01		
3	4.63		0.70		1.22		
4	5.56		0.75		3.15		
5	6.49		0.60		4.36		
6	7.42		0.50		3.51		
7	8.35		0.35		1.85		
8	9.28		0.40		2.52		
9	10.21		0.45		2.13		
10	11.14		0.55		1.80		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	11.60						

Total Flow: _____

Comments: Width = 11.60 - 2.30 = 9.30
Increment = 9.30/10 = 0.93
Start = LWE + 1/2(.93) = 2.30 + 0.465 = 2.77

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-3A Gage Reading: NA Gage Time: 14:05

Levelogger: Yes / No (circle one) Download Time: _____

Date: 04/08/10 Discharge Time: _____

Field Crew: DH/JM/RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE							
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE							

Total Flow: _____

Comments: Not enough flow to measure discharge accurately
Weir Gage Reading = 1'-7"

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-3B

Gage Reading: NA

Gage Time: 14:20

Levelogger: Yes / No (circle one)

Download Time: _____

Date: 06/08/10

Discharge Time: _____

Field Crew: DH/JM/RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE							
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE							

Total Flow:

Comments: Not enough flow to measure discharge accurately
Weir Gage Reading = 1'-7"

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-29 Gage Reading: NA Gage Time: 16:00

Levelogger: Yes / No (circle one) Download Time: _____

Date: 6/09/10 Discharge Time: _____

Field Crew: JM/DH/RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	2.0						
1	2.51		0.10		0.49		
2	3.54		0.10		0.62		
3	4.57		0.20		0.84		
4	5.60		0.30		0.45		
5	6.63		0.25		0.59		
6	7.66		0.45		0.81		
7	8.69		0.40		1.06		
8	9.72		0.45		1.58		
9	10.75		0.40		1.15		
10	11.78		0.30		1.95		
11	12.81		0.40		2.20		
12	13.84		0.80		2.73		
13	14.87		0.75		2.85		
14	15.90		0.75		2.53		
15	16.93		0.85		2.51		
16	17.96		0.90		2.95		
17	18.99		0.70		3.76		
18	20.02		0.70		3.13		
19	21.05		0.70		2.42		
20	22.08		0.50		2.41		
RWE	22.5						

Total Flow: _____

Comments: Width = 22.5 - 2.0 = 20.5
Increment = 20.5/20 = 1.03
start = 2.0 + (.5125) = 2.513

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-38 Gage Reading: N/A Gage Time: 17:05

Levelogger: Yes / No (circle one) Download Time: _____

Date: 06/08/10 Discharge Time: _____

Field Crew: JM/DH/RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	3.0						
1	3.48		0.40		0.65		
2	4.43		0.50		1.36		
3	5.38		0.35		2.24		
4	6.33		0.60		2.75		
5	7.28		0.75		3.51		
6	8.23		0.70		2.61		
7	9.18		0.80		2.39		
8	10.13		0.50		1.89		
9	11.08		0.80		1.94		
10	12.03		0.75		2.03		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	12.5						

Total Flow: _____

Comments: 12.5 - 3.0 = 9.5
Increment = 9.5/10 = 0.95
start = 3.0 + 1/2(0.95) =

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: UBMC · BRSW01 Gage Reading: N/A Gage Time: —

Levelogger: Yes / No (circle one) Download Time: —

Date: 9/8/10 Discharge Time: 12:45

Field Crew: DH, Rin

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	2.00						
1	2.2		.15		.08		
2	2.6		.25		.56		
3	3.0		.25		.81		
4	3.4		.20		1.18		
5	3.8		.25		.64		
6	4.2		.20		.50		
7	4.6		.20		.53		
8	5.0		.25		.60		
9	5.4		.10		.37		
10	5.8		.10		.46		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	6.00						

Total Flow:

Comments:

6.0 - 2.0 = 4.0

4.0 ÷ 10 = .4

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-22 Gage Reading: N/A Gage Time: _____

Levelogger: Yes / No (circle one) Download Time: _____

Date: 9/8/10 Discharge Time: 13:45

Field Crew: DH, RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	1.00						
1	1.15		.10		.16		
2	1.45		.10		.08		
3	1.75		.10		.09		
4	2.05		.20		.52		
5	2.35		.20		.50		
6	2.65		.10		.27		
7	2.95		.10		.20		
8	3.25		.10		.07		
9	3.55		.10		.04		
10	3.85		.05		.04		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	4.00						

Total Flow: _____

Comments:

4.0 - 1.0 = 3.0
3.0 ÷ 10 = .3

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-02 Gage Reading: _____ Gage Time: _____

Levelogger: Yes / No (circle one) Download Time: _____

Date: _____ Discharge Time: _____

Field Crew: _____

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE							
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE							

Total Flow: _____

Comments:

No Flow, Water is in the impoundment.

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-28

Gage Reading: N/A Gage Time: _____

Levelogger: Yes / No (circle one)

Download Time: _____

Date: 9/10/10

Discharge Time: 11:00

Field Crew: DH, RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	13.5						
1	13.71		.35		.71		
2	14.14		.35		1.27		
3	14.57		.30		1.34		
4	15.00		.30		.87		
5	15.43		.30		.96		
6	15.86		.30		.74		
7	16.29		.30		.63		
8	16.62		.35		.60		
9	17.05		.30		.54		
10	17.48		.40		.68		
11	17.91		.30		.52		
12	18.34		.40		.83		
13	18.77		.30		1.18		
14	19.20		.30		1.34		
15	19.63		.20		.40		
16	20.06		.30		1.04		
17	20.49		.30		.87		
18	20.92		.30		.54		
19	21.35		.30		.46		
20	21.78		.10		.26		
RWE	22.0						

Total Flow: _____

Comments:

22 − 13.5 = 8.5

8.5 ÷ 20 = .425

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-38 Gage Reading: N/A Gage Time: _____

Levelogger: Yes / No (circle one) Download Time: _____

Date: 9/10/10 Discharge Time: 11:30

Field Crew: DH, RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	7.0						
1	7.25	.25			.75		
2	7.75	.20			1.32		
3	8.25	.25			1.07		
4	8.75	.20			.32		
5	9.25	.25			1.40		
6	9.75	.20			.69		
7	10.25	.20			.59		
8	10.75	.20			.02		
9	11.25	.25			.70		
10	11.75	.25			.89		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	12.0						

Total Flow: _____

Comments:

12.0 - 7.0 = 5.0

5.0 ÷ 10 = .5

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-3A

Gage Reading: N/A Gage Time: _____

Levelogger: Yes / (No) (circle one)

Download Time: _____

Date: 9/8/10

Discharge Time: _____

Field Crew: DH, Rm

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE							
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE							

Total Flow:

Comments:

FLOW TOO LOW to SAMPLE.

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW - 3B

Gage Reading: _____ Gage Time: _____

Levelogger: Yes / (No) (circle one)

Download Time: _____

Date: 9/10/10

Discharge Time: 10:00

Field Crew: DH, RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE							
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE							

Total Flow: _____

Comments:

Flow Too Low to to measure with Flow Meter.

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-23 Gage Reading: N/A Gage Time: _____

Levelogger: Yes / No (circle one) Download Time: _____

Date: 9/8/10 Discharge Time: 16:30

Field Crew: DH, RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	4.0						
1	4.2		.30		.20		
2	4.6		.30		.26		
3	5.0		.30		.58		
4	5.4		.40		1.01		
5	5.8		.30		.98		
6	6.2		.10		.97		
7	6.6		.10		.90		
8	7.0		.20		.64		
9	7.4		.10		.13		
10	7.8		.10		.14		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	8.0						

Total Flow: _____

Comments:

8.0 - 4.0 = 4.0

4 ÷ 10 = .4

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-48 Gage Reading: N/A Gage Time: _____

Levelogger: Yes / No (circle one) Download Time: _____

Date: 9/8/10 Discharge Time: 15:45

Field Crew: DH, RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	5.00						
1	5.25		.45		.33		
2	5.75		.50		.36		
3	6.25		.50		.40		
4	6.75		.60		.41		
5	7.25		.60		.35		
6	7.75		.50		.33		
7	8.25		.55		.34		
8	8.75		.65		.35		
9	9.25		.60		.34		
10	9.75		.40		.34		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	10.00						

Total Flow: _____

Comments:

10 - 5 = 5 feet

5.0 ÷ 10 = .5 feet

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-23 Gage Reading: N/A Gage Time: 13:40

Levelogger: Yes / No (circle one) Download Time: N/A

Date: 12/16/10 Discharge Time: N/A

Field Crew: DH, RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	1.0						
1	1.2	.4	.1		.03		
2	1.6		.1		.06		
3	2.0		.2		.13		
4	2.4		.2		.44		
5	2.8		.3		.53		
6	3.2		.2		.33		
7	3.6		.1		.51		
8	4.0		.1		.26		
9	4.4		.1		.23		
10	4.8		.1		.31		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	5.0						

Total Flow:

Comments:

5.0 − 1.0 = 4.0

4.0 ÷ 10 = .4

Section width = .4

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW - 29 Gage Reading: N/A Gage Time: N/A

Levelogger: Yes / No (circle one) Download Time: N/A

Date: 12/16/10 Discharge Time: 15:00

Field Crew: DA, RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	4.0						
1	4.2	.4	.20		.12		
2	4.6		.30		.17		
3	5.0		.20		.38		
4	5.4		.25		.54		
5	5.8		.15		.61		
6	6.2		.20		.84		
7	6.6		.20		.72		
8	7.0		.30		.92		
9	7.4		.20		.70		
10	7.8		.25		.49		
11	8.2		.35		.54		
12	8.6		.30		.06		
13	9.0		.25		.01		
14	9.4		.30		.32		
15	9.8		.15		.75		
16	10.2		.25		.61		
17	10.6		.30		.79		
18	11.0		.40		.76		
19	11.4		.30		.60		
20	11.8		.20		.27		
RWE	12.0						

Total Flow:

Comments:

12.0 - 4.0 = 8.0

8.0 ÷ 20 = 0.4

Section width = 0.40'

TerraGraphics
Stream Discharge Form

TerraGraphics
ENVIRONMENTAL ENGINEERING, INC.

Site: BRSW-38 Gage Reading: N/A Gage Time: N/A

Levelogger: Yes / No (circle one) Download Time: N/A

Date: 12/16/10 Discharge Time: 15:45

Field Crew: DH, RM

Discharge Measurements

	Tape (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Velocity (ft/sec)	Discharge (cfs)
LWE	1.8						
1	2.05	.5	.05		1.22		
2	2.55		.30		1.61		
3	3.05		.40		.34		
4	3.55		.30		.85		
5	4.05		.30		.23		
6	4.55		.20		.71		
7	5.05		.30		.05		
8	5.55		.20		.03		
9	6.05		.10		.01		
10	6.55		.10		.02		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
RWE	6.8						

Total Flow:

Comments:

6.8 - 1.8 = 5.0'

5.0 ÷ 10 = .5

TerraGraphics
Environmental Engineering, Inc.

SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO20	STATION NAME: BRSW-01
PROJECT NUMBER: 10013	SAMPLE NUMBER: UBM-BRSW01-20100318
LOCATION: UBMC	WEATHER: 31°F, Partly Cloudy, 5-10 mph wind
DATE: 03/18/10 TIME: 11:46	SAMPLERS: JM / DH

WATER QUALITY PARAMETERS

pH	Temperature (°~~C~~)F	S.C. (~~µS~~ /cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
8.22	37.5	320	12.41	92.2	162.3

SAMPLES

Analyte*	Total Metals	Dissolved Metals	Cations	Anions	Physicochemical
Sample ID	BRSW01 →	→	→	→	→
Time	11:46 →	→	→	→	→
Preservative	HNO_3 →	→	None →	→	→
Filtered?	N	Y	N	N	N
Container	250ml	250 ml	500 ml →	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Snow covered
Water Flow Type (circle one): ~~Laminar~~ Stagnant Turbulent Other(describe):
Stream-bed Description: Rocks
Water Quality Description (i.e. cloudy, odor, etc.): Clear

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

TerraGraphics
Environmental Engineering, Inc.

SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 20	STATION NAME: BRSW - 48
PROJECT NUMBER: 10013	SAMPLE NUMBER: UBM-BRSW48-20100608
LOCATION: UBMC	WEATHER: 60°F, sunny, slight breeze
DATE: 06/08/10 TIME: 13:30	SAMPLERS: DH/JM/RM

WATER QUALITY PARAMETERS

pH	Temperature (°C) F	S.C. (___/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
8.20	46.03	347	12.53	105.2	61.8

SAMPLES

Analyte*	Total Metals	Dissolved Metals	Cations	Anions	Physiochem
Sample ID	BRSW 48	→	→	→	→
Time	13:30	→	→	→	→
Preservative	HNO_3	HNO_3	Ice	Ice	Ice
Filtered?	No	yes	No	No	No
Container	250 ml	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: _____
Water Flow Type (circle one): Laminar Stagnant Turbulent Other(describe):
Stream-bed Description: _____
Water Quality Description (i.e. cloudy, odor, etc.): _____

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

TerraGraphics
Environmental Engineering, Inc.

SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 20	STATION NAME: BRSW-23
PROJECT NUMBER: 10013	SAMPLE NUMBER: UBM-BRSW23-20100608
LOCATION: UBMC	WEATHER: 60°, sunny, slight breeze
DATE: 06/08/10 TIME: 13:45	SAMPLERS: DA/JM/BM

WATER QUALITY PARAMETERS

pH	Temperature (°C) F	S.C. (___/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
8.37	45.81	352	12.5	104.8	181.1

SAMPLES

Analyte*	Total Metals	Dissolved Metals	Cations	Anions	Physicochem
Sample ID	BRSW23	→	→	→	→
Time	13:45	→	→	→	→
Preservative	HNO_3	HNO_3	Ice	Ice	Ice
Filtered?	No	Yes	No	No	No
Container	250 ml	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: _____

Water Flow Type (circle one): Laminar Stagnant Turbulent Other(describe):

Stream-bed Description: _____

Water Quality Description (i.e. cloudy, odor, etc.): _____

FLOW MEASUREMENTS:

Area (ft^2):

Velocity (ft/sec):

Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

TerraGraphics
Environmental Engineering, Inc.

SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 20	STATION NAME: BRSW-3B
PROJECT NUMBER: 10013	SAMPLE NUMBER: UBM-BRSW3B-20100608
LOCATION: UBMC	WEATHER: 60°, Sunny, slight breeze
DATE: 6/08/10 TIME: 14:15	SAMPLERS: DH/JM/RM

WATER QUALITY PARAMETERS

pH	Temperature (°~~C~~)F	S.C. (___/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
7.20	53.83	672	9.36	87.3	152.7

SAMPLES

Analyte*	Total Metals	Dissolved Metals	Cations	Anions	Physiochem
Sample ID	BRSW 3B	→	→	→	→
Time	14:15	→	→	→	→
Preservative	HNO_3	HNO_3	Ice	Ice	Ice
Filtered?	No	Yes	No	No	No
Container	250 ml	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Gentle slope, rocks, vegetation
Water Flow Type (circle one): ~~Laminar~~ Stagnant Turbulent Other(describe):
Stream-bed Description: Mud, vegetation, oxides (Al, Fe, Mn)
Water Quality Description (i.e. cloudy, odor, etc.): Clear

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

TerraGraphics
Environmental Engineering, Inc.

SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 20	STATION NAME: BRSW-02
PROJECT NUMBER: 16013	SAMPLE NUMBER: UBM-BRSW02-20100408
LOCATION: UBMC	WEATHER: Sunny, 64°F, slight breeze
DATE: 4/08/10 TIME: 15:15	SAMPLERS: JM/DH/RKI

WATER QUALITY PARAMETERS

pH	Temperature (°C) F	S.C. (___/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
7.92	69.10	1520	11.42	127.7	162.6

SAMPLES

Analyte*	Total Metals	Dissolved Metals	Cations	Anions	Physiochem
Sample ID	BRSW02	→	→	→	→
Time	15:15	→	→	→	→
Preservative	HNO_3	HNO_3	Ice	Ice	Ice
Filtered?	No	Yes	No	No	No
Container	250 ml	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Impoundment
Water Flow Type (circle one): Laminar Stagnant Turbulent Other(describe):
Stream-bed Description: NA
Water Quality Description (i.e. cloudy, odor, etc.): Clear

FLOW MEASUREMENTS: NA
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

TerraGraphics
Environmental Engineering, Inc.

SURFACE WATER SAMPLING RECORD

PROJECT: UBMC T020	STATION NAME: BRSW-29
PROJECT NUMBER: 10013	SAMPLE NUMBER: UBM-BRSW29-20100608
LOCATION: UBMC	WEATHER: 67°F, Sunny, 15-20 mph wind
DATE: 06/08/10 TIME: 15:45	SAMPLERS: JM/OH/RM

WATER QUALITY PARAMETERS

pH	Temperature (°C) °F	S.C. (µS/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
8.02	46.93	301	12.98	110.0	156.9

SAMPLES

Analyte*	Total Metals	Dissolved Metals	Cations	Anions	Physicochem
Sample ID	BRSW29	→	→	→	→
Time	15:45	→	→	→	→
Preservative	HNO_3	HNO_3	Ice	Ice	Ice
Filtered?	No	Yes	No	No	No
Container	250 ml	→	→	→	→

Analyte*	Total Metals	Dissolved Metals	Cations	Anions	Physicochem
Sample ID	BRSW29-555	→	→	→	→
Time	15:45	→	→	→	→
Preservative	HNO_3	HNO_3	ICE	ICE	ICE
Filtered?	No	Yes	No	No	No
Container	250 ml	→	→	→	→

Streambank Description: Rocks, cobbles, no vegetation
Water Flow Type (circle one): ~~Laminar~~ Stagnant Turbulent Other(describe):
Stream-bed Description: Rocks, flat bottom, No staining
Water Quality Description (i.e. cloudy, odor, etc.): clear

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES: Collected Duplicate Sample UBM-BRSW29-555-20100608

*Fill in prior to field work

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SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 20	STATION NAME: BRSW - 38
PROJECT NUMBER: 10013	SAMPLE NUMBER: UBM-BRSW38-20100
LOCATION: UBMC	WEATHER: 64°, Sunny, 10-15 mph wind
DATE: 08/08/10 TIME: 17:00	SAMPLERS: JM/DH/RM

WATER QUALITY PARAMETERS

pH	Temperature (°C)	S.C. (µS/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
7.99	44.88	327	12.20	100.9	148.9

SAMPLES

Analyte*	Total Metals	Dissolved Metals	Cations	Anions	Physiochem
Sample ID	BRSW 38	→	→	→	→
Time	17:00	→	→	→	→
Preservative	HNO_3	HNO_3	Ice	Ice	Ice
Filtered?	No	Yes	No	No	No
Container	250 ml	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Rocks, cobbles, No veg, steep banks
Water Flow Type (circle one): Laminar Stagnant Turbulent Other(describe):
Stream-bed Description: Rocks, Flat bottom, slight Fe-oxide coating
Water Quality Description (i.e. cloudy, odor, etc.): clear

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

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SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 20	STATION NAME: BRSW - 22
PROJECT NUMBER:	SAMPLE NUMBER: UBM-BRSW22-20100908
LOCATION: UBMC	WEATHER: 55°F, Cloudy
DATE: 9/8/10 TIME: 13:45	SAMPLERS: DH, RM

WATER QUALITY PARAMETERS

pH	Temperature (°C) °F	S.C. (___/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
8.45	54.68	558	10.25	96.6	140.0

SAMPLES

Analyte*	Total Metals	Dissolved Metals	CATION	ANION	ALKALINITY/HARDNESS
Sample ID	BRSW-22				
Time	13:45				
Preservative	HNO_3			None	
Filtered?	N	Y	Y	Y	N
Container	250ml				

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Rocky, Little vegetation
Water Flow Type (circle one): Laminar Stagnant Turbulent Other(describe):
Stream-bed Description: Muddy
Water Quality Description (i.e. cloudy, odor, etc.): Clear, A Little bad odor

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

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SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 2d	STATION NAME: BRSW-02
PROJECT NUMBER:	SAMPLE NUMBER: UBM-BRSW02-20100908
LOCATION: UBMC	WEATHER: Cloudy, 55°F
DATE: 9/8/10 TIME: 14:15	SAMPLERS: DH, RM

WATER QUALITY PARAMETERS

pH	Temperature (°C)	S.C. (__/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
7.90	66.87	6269	9.33	103.6	145.9

SAMPLES

Analyte*	Total Metals	Dissolved Metals	CATIONS	ANIONS	ALK/HARDNESS
Sample ID	BRSW02	→	→	→	→
Time	14:15	→	→	→	→
Preservative	HNO_3	→	→	NONE	→
Filtered?	N	Y	Y	Y	N
Container	250mL	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Rocky, muddy
Water Flow Type (circle one): Laminar Stagnant Turbulent Other(describe):
Stream-bed Description: Rocky, muddy
Water Quality Description (i.e. cloudy, odor, etc.): Clear

FLOW MEASUREMENTS: No Flow, Impounded Water.
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

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Environmental Engineering, Inc.

SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 20	STATION NAME: BRSW-38
PROJECT NUMBER:	SAMPLE NUMBER:
LOCATION: UBMC	WEATHER: Rainy, 45°F
DATE: 4/10/10 TIME: 11:30	SAMPLERS: DH, RM

WATER QUALITY PARAMETERS

pH	Temperature (°C)	S.C. (µ/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
7.92	47.35	517	10.95	93.7	61.3

SAMPLES

Analyte*	Total Metals	Dissolved Metals	CATION	ANION	ALK / HARDNESS
Sample ID	BRSW-38	→	→	→	→
Time	11:30	→	→	→	→
Preservative	HNO_3	→	→	None	→
Filtered?	NO	Y	Y	Y	N
Container	250mL	→	→	→	9

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Rocky
Water Flow Type (circle one): Laminar Stagnant Turbulent Other(describe):
Stream-bed Description: Rocky and muddy
Water Quality Description (i.e. cloudy, odor, etc.): Clear

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

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SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 20	STATION NAME: BRSW-29
PROJECT NUMBER:	SAMPLE NUMBER: UBM-BRSW29-20100810
LOCATION: UBMC	WEATHER: Cloudy, 45°F
DATE: 9/10/10 TIME: 11:00	SAMPLERS: DH, RM

WATER QUALITY PARAMETERS

pH	Temperature (°C) °F	S.C. (µ/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
8.00	46.82	422	11.12	94.6	65.8

SAMPLES

Analyte*	Total Metals	Dissolved Metals	CATION	ANION	ALK/HARD
Sample ID	BRSW29	→	→	→	→
Time	11:00	→	→	→	→
Preservative	HNO_3	→	→	None	→
Filtered?	N	Y	Y	Y	N
Container	250mL	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Rocky
Water Flow Type (circle one): Laminar Stagnant Turbulent Other(describe):
Stream-bed Description: Muddy and Rocky
Water Quality Description (i.e. cloudy, odor, etc.): Clear

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

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Environmental Engineering, Inc.

SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 20	STATION NAME: BRSW-3B
PROJECT NUMBER:	SAMPLE NUMBER: UBM-BRSW 3B- 20100910
LOCATION: UBMC	WEATHER: Light Rain, 45°F
DATE: 9/10/10 TIME: 10:00	SAMPLERS: DH, RM

WATER QUALITY PARAMETERS

pH	Temperature (°C)	S.C. (µ/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
7.67	45.93°F	578	7.62	64.0	109.8

SAMPLES

Analyte*	Total Metals	Dissolved Metals	CATION	ANION	ALK / Hardness
Sample ID	BRSW 3B	→	→	→	→
Time	10:00	→	→	→	→
Preservative	HNO_3	→	→	NONE	→
Filtered?	N	Y	Y	Y	N
Container	250ml	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Rocky, Muddy
Water Flow Type (circle one): Laminar Stagnant Turbulent Other(describe):
Stream-bed Description: Muddy and overgrown
Water Quality Description (i.e. cloudy, odor, etc.): Clear, little odor

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

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SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 20	STATION NAME: BRSW-23
PROJECT NUMBER:	SAMPLE NUMBER: UBM-BRSW23-20100908
LOCATION: UBMC	WEATHER: 60°F Cloudy
DATE: 9/8/10 TIME: 16:30	SAMPLERS: DH, RM

WATER QUALITY PARAMETERS

pH	Temperature (°C) °F	S.C. (µ/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
8.50	50.77	447	11.20	100.3	103.5

SAMPLES

Analyte*	Total Metals	Dissolved Metals	Cation	Anion	Physiochem
Sample ID	BRSW-23	→	→	→	→
Time	16:30	→	→	→	→
Preservative	HNO_3	→	→		
Filtered?	N	Y	Y	Y	N
Container	250ml	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Rocky, Little Vegetation
Water Flow Type (circle one): ~~Laminar~~ Stagnant Turbulent Other(describe):
Stream-bed Description: Rocky and Muddy
Water Quality Description (i.e. cloudy, odor, etc.): Clear

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

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SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO20	STATION NAME: BRSW 48
PROJECT NUMBER:	SAMPLE NUMBER: UBM-BRSW48-20100808
LOCATION: UBMC	WEATHER: 60°F CLOUDY
DATE: 8/8/10 TIME: 15:45	SAMPLERS: DH, RM

WATER QUALITY PARAMETERS

pH	Temperature °C/°F	S.C. (µ/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
8.25	52.46	475	10.77	98.2	-6.8

SAMPLES

Analyte*	Total Metals	Dissolved Metals	Cation	Anion	Alk / Hardness
Sample ID	BRSW48	→	→	→	→
Time	15:45	→	→	→	→
Preservative	HNO_3	→	→	None	→
Filtered?	N	Y	Y	Y	N
Container	250mL	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Rocky
Water Flow Type (circle one): Laminar Stagnant Turbulent Other(describe):
Stream-bed Description: Muddy
Water Quality Description (i.e. cloudy, odor, etc.): Clear

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

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SURFACE WATER SAMPLING RECORD

PROJECT: UBMC T020	STATION NAME: BRSW - 01
PROJECT NUMBER:	SAMPLE NUMBER: UBM BRSW01- 20101215
LOCATION: UBMC	WEATHER: 25°F, Light Snow
DATE: 12/15 TIME: 13:00	SAMPLERS: DH, RM

WATER QUALITY PARAMETERS

pH	Temperature (°C) °F	S.C. (µ/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
8.50	32.79	362	8.87	61.5	166.2

SAMPLES

Analyte*	Total Metals	Dissolved Metals	CATION	ANION	Physiochem
Sample ID	BRSW-01	→	→	→	→
Time	13:00	→	→	→	→
Preservative	HNO_3	→	→	None	→
Filtered?	N	Y	Y	Y	N
Container	250ml	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Snowy
Water Flow Type (circle one): Laminar Stagnant Turbulent Other(describe):
Stream-bed Description: Rocky
Water Quality Description (i.e. cloudy, odor, etc.): Clear

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs): TOO MUCH ICE TO MEASURE FLOW

NOTES:

*Fill in prior to field work

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SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 20	STATION NAME: BRSW - 3B
PROJECT NUMBER:	SAMPLE NUMBER: UBM-BRSW3B-20101215
LOCATION: UBMC	WEATHER: 25°F, windy
DATE: 12/15/10 TIME: 14:00	SAMPLERS: DH, RM

WATER QUALITY PARAMETERS

pH	Temperature (°C)	S.C. (µ/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
8.14	39.88	511	5.85	45.0	232.8

SAMPLES

Analyte*	Total Metals	Dissolved Metals	CATION	ANION	Physiochem
Sample ID	BRSW-3B	→	→	→	→
Time	14:00	→	→	→	→
Preservative	HNO_3	→	→	None	→
Filtered?	N	Y	Y	Y	N
Container	250mL	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Snowy
Water Flow Type (circle one): Laminar Stagnant Turbulent Other(describe):
Stream-bed Description: ~~Rock~~ MUD AND Weeds
Water Quality Description (i.e. cloudy, odor, etc.): Clear

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

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SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 20	STATION NAME: BRSW-34
PROJECT NUMBER:	SAMPLE NUMBER:
LOCATION: UBMC	WEATHER:
DATE: 12/15/10 TIME: 14:20	SAMPLERS: DH, RM

WATER QUALITY PARAMETERS

pH	Temperature (°C) °F	S.C. (µ/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
8.05	37.23	522	6.15	45.6	213.7

SAMPLES

Analyte*	Total Metals	Dissolved Metals	CATION	ANION	Physio
Sample ID	BRSW-34	→	→	→	→
Time	14:20	→	→	→	→
Preservative	HNO_3	→	→	None	→
Filtered?	N	Y	Y	Y	N
Container	250mL	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Snowy
Water Flow Type (circle one): ~~Laminar~~ Stagnant Turbulent Other(describe):
Stream-bed Description: Mud and Weeds
Water Quality Description (i.e. cloudy, odor, etc.): Clear

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

Too icy to measure flow

*Fill in prior to field work

SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 20	STATION NAME: BRSW-48
PROJECT NUMBER:	SAMPLE NUMBER: UBM.BRSW48.20101216
LOCATION: UBMC	WEATHER: 25°F, Calm
DATE: 12/16/10 TIME: 13:00	SAMPLERS: DH, RM

WATER QUALITY PARAMETERS

pH	Temperature (°C) °F	S.C. (µ/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
8.20	34.02	587	-4.57	-32.5	14.8

SAMPLES

Analyte*	Total Metals	Dissolved Metals	CATION	ANION	PHYSIO
Sample ID	BRSW-48	→	→	→	→
Time	13:00	→	→	→	→
Preservative	HNO_3	→	→	None	→
Filtered?	N	Y	Y	Y	N
Container	250mL	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Snowy
Water Flow Type (circle one): Laminar Stagnant Turbulent Other(describe):
Stream-bed Description: Rocky
Water Quality Description (i.e. cloudy, odor, etc.): Clear

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs): too much ice to measure discharge.

NOTES:

*Fill in prior to field work

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SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 20	STATION NAME: BRSW-23
PROJECT NUMBER:	SAMPLE NUMBER: UBM-BRSW23-20101216
LOCATION: UBMC	WEATHER: 25°F, Calm
DATE: 12/16/10 TIME: 13:40	SAMPLERS: DH, RM

WATER QUALITY PARAMETERS

pH	Temperature (°C)	S.C. (µ/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
8.20	34.96	550	-4.61	-33.1	60.1

SAMPLES

Analyte*	Total Metals	Dissolved Metals	CATION	ANION	Physochem
Sample ID	BRSW-23 →	→	→	→	→
Time	13:40 →	→	→	→	→
Preservative	HNO_3 →	→	→	None →	→
Filtered?	N	Y	Y	Y	N
Container	250mL →	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Snow 4
Water Flow Type (circle one): Laminar Stagnant Turbulent Other(describe):
Stream-bed Description: Rock
Water Quality Description (i.e. cloudy, odor, etc.): Clear

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

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SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 20	STATION NAME: BRSW-29
PROJECT NUMBER:	SAMPLE NUMBER: UBM-BRSW29-20101216
LOCATION: UBMC	WEATHER: 25°F, Cloudy
DATE: 12/16 TIME: 15:00	SAMPLERS: DH, RM

WATER QUALITY PARAMETERS

pH	Temperature (°C) °F	S.C. (µ/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
8.10	33.24	471	8.63	60.1	83.0

SAMPLES

Analyte*	Total Metals	Dissolved Metals	CATION	ANION	Physiochem
Sample ID	BRSW-29	→	→	→	→
Time	15:00	→	→	→	→
Preservative	HNO_3 →	→	→	NONE →	→
Filtered?	N	Y	Y.	Y	N
Container	250 mL →	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: SNOWY
Water Flow Type (circle one): (Laminar) Stagnant Turbulent Other(describe):
Stream-bed Description: ROCKY
Water Quality Description (i.e. cloudy, odor, etc.): Clear

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

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SURFACE WATER SAMPLING RECORD

PROJECT: UBMC TO 20	STATION NAME: BRSW-38
PROJECT NUMBER:	SAMPLE NUMBER: UBM · BRSW38 · 20101216
LOCATION: UBMC	WEATHER: 25°F, Cloudy
DATE: 12/16/10 TIME: 15:45	SAMPLERS: DH, RM

WATER QUALITY PARAMETERS

pH	Temperature (°C) °F	S.C. (µ/cm)	D.O. (mg/l)	D.O. (% Sat)	ORP (mV)
7.83	32.62	594	5.05	35.1	98.1

SAMPLES

Analyte*	Total Metals	Dissolved Metals	CATION	ANION	Physiochem
Sample ID	BRSW-38 →	→	→	→	→
Time	15:45 →	→	→	→	→
Preservative	HNO_3 →	→	→	NONE →	→
Filtered?	N	Y	Y	Y	N
Container	250mL →	→	→	→	→

Analyte*					
Sample ID					
Time					
Preservative					
Filtered?					
Container					

Streambank Description: Snowy
Water Flow Type (circle one): Laminar Stagnant Turbulent Other(describe):
Stream-bed Description: Rocky
Water Quality Description (i.e. cloudy, odor, etc.): Clear

FLOW MEASUREMENTS:
Area (ft^2):
Velocity (ft/sec):
Discharge (Q) (cfs):

NOTES:

*Fill in prior to field work

Appendix G

Transducer Data

UBMC Piezometer P-5
Water Surface Elevation (ft.)
5464.0
5462.0
5460.0
5458.0
5456.0
5454.0
5452.0
5450.0
3/28/09
7/6/09
10/14/09
1/22/10
5/2/10
8/10/10
11/18/10
2/26/11
Date

UBMC Piezometer PZ-11B
Water Surface Elevation (ft.)
5470.0
5465.0
5460.0
5455.0
5450.0
5445.0
5440.0
3/28/09
7/6/09
10/14/09
1/22/10
5/2/10
8/10/10
11/18/10
2/26/11
Date

UBMC Piezometer PZ-03A-A
Water Surface Elevation (ft.)
5484.0
5482.0
5480.0
5478.0
5476.0
5474.0
5472.0
5470.0
5468.0
5466.0
3/28/09
7/6/09
10/14/09
1/22/10
5/2/10
8/10/10
11/18/10
2/26/11
Date

UBMC Piezometer PZ-03B-B
Water Surface Elevation (ft.)
5480.0
5475.0
5470.0
5465.0
5460.0
5455.0
5450.0
3/28/09
7/6/09
10/14/09
1/22/10
5/2/10
8/10/10
11/18/10
2/26/11
Date

UBMC Monitoring Well TDMW-2D
Water Surface Elevation (ft.)
5440.0
5435.0
5430.0
5425.0
5420.0
5415.0
5410.0
3/28/09
7/6/09
10/14/09
1/22/10
5/2/10
8/10/10
11/18/10
2/26/11
Date

UBMC Monitoring Well TDMW-4D
Water Surface Elevation (ft.)
5480.0
5475.0
5470.0
5465.0
5460.0
5455.0
5450.0
5445.0
3/28/09
7/6/09
10/14/09
1/22/10
5/2/10
8/10/10
11/18/10
2/26/11
Date

UBMC Monitoing Well TDMW-4S
Water Surface Elevation (ft.)
5479.0
5478.0
5477.0
5476.0
5475.0
5474.0
5473.0
3/28/09
7/6/09
10/14/09
1/22/10
5/2/10
8/10/10
11/18/10
2/26/11
Date

UBMC Piezometer PZ-02-C
Water Surface Elevation (ft.)
5480.0
5475.0
5470.0
5465.0
5460.0
5455.0
5450.0
3/28/09
7/6/09
10/14/09
1/22/10
5/2/10
8/10/10
11/18/10
2/26/11
Date

UBMC Piezometer PZ-09
Water Surface Elevation (ft.)
5476.0
5474.0
5472.0
5470.0
5468.0
5466.0
5464.0
5462.0
5460.0
3/28/09
7/6/09
10/14/09
1/22/10
5/2/10
8/10/10
11/18/10
2/26/11
Date

UBMC Monitoring Well Sump-N
Water Surface Elevation (ft.)
5485.00
5480.00
5475.00
5470.00
5465.00
5460.00
5455.00
1/2/2010
3/13/2010
5/22/2010
7/31/2010
10/9/2010
12/18/2010
2/26/2011
Date

UBMC Monitoring Well Sump-S-Alluvium
Water Surface Elevation (ft.)
5496.00
5492.00
5488.00
5484.00
5480.00
5476.00
5472.00
1/22/2010
3/23/2010
5/22/2010
7/21/2010
9/19/2010
11/18/2010
1/17/2011
Date

UBMC Monitoring Well Sump-S-Bedrock
Water Surface Elevation (ft.)
5500.00
5490.00
5480.00
5470.00
5460.00
5450.00
5440.00
5430.00
1/22/2010
3/23/2010
5/22/2010
7/21/2010
9/19/2010
11/18/2010
1/17/2011
Date

UBMC Monitoring Well GW-02a
Water Surface Elevation (ft.)
5470.00
5465.00
5460.00
5455.00
5450.00
5445.00
5440.00
1/22/2010
3/23/2010
5/22/2010
7/21/2010
9/19/2010
11/18/2010
1/17/2011
Date

UBMC Monitoring Well GW-2
Water Surface Elevation (ft.)
5470.00
5465.00
5460.00
5455.00
5450.00
5445.00
5440.00
5435.00
1/22/2010
3/13/2010
5/2/2010
6/21/2010
8/10/2010
9/29/2010
Date

UBMC Monitoring Well GW-1a
Water Surface Elevation (ft.)
5445.00
5440.00
5435.00
5430.00
5425.00
5420.00
1/22/2010
3/13/2010
5/2/2010
6/21/2010
8/10/2010
9/29/2010
11/18/2010
1/7/2011
Date

UBMC Monitoring Well GW-01c
Water Surface Elevation (ft.)
5480.00
5470.00
5460.00
5450.00
5440.00
1/2/2010
3/13/2010
5/22/2010
7/31/2010
10/9/2010
12/18/2010
2/26/2011
Date