## MONITORING REPORT FOR 2016

### **CLARK FORK RIVER OPERABLE UNIT**

prepared for

Montana Department of Environmental Quality Remediation Division Federal Superfund and Construction Bureau P.O. Box 200901 Helena, MT 59620-0901

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# MONITORING REPORT FOR 2016 CLARK FORK RIVER OPERABLE UNIT

by

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Montana Department of Environmental Quality | Remediation Division Federal Superfund and Construction Bureau 1225 Cedar Street | Helena, MT 59620-0901 This performance monitoring program evaluates the progress of remedial actions in the Clark Fork River Operable Unit (CFROU) of the Milltown Reservoir/Clark Fork River Superfund sites toward meeting performance goals or identified reference values. Environmental media monitored in 2016 included surface water, instream sediment, macroinvertebrates, periphyton, fish, and birds. This report summarizes results of data collected for each of these environmental media and evaluates progress toward attainment of performance goals or in relation to reference values as of 2016.

Environmental damages to the upper Clark Fork River were summarized in the Record of Decision (ROD) for the Clark Fork River Operable Unit. Contamination occurred due to heavy metals originating from historic mining, milling, and smelting processes associated with operations in Butte and Anaconda accumulated in the Clark Fork River streambanks and floodplain over a period of at least 100 years. The primary sources of contamination were tailings and contaminated sediments mixed with soils in the streambanks and floodplains, which eroded during high streamflow events and entered the river and other surface waters. In addition to erosion, heavy metals were leached from the contaminated sediments and tailings directly into the groundwater and eventually to surface water. These contaminant transport pathways resulted in impacts to terrestrial and aquatic life along the Clark Fork River.

The Montana Department of Environmental Quality (MDEQ), as lead agency and in consultation with the U.S. Environmental Protection Agency (USEPA) and the National Park Service, oversees, manages, coordinates, designs, and implements remedial actions for the Clark Fork River site. The MDEQ coordinates with the Natural Resource Damage Program (NRDP) of the Montana Department of Justice regarding implementation and integration of restoration components to supplement the remedial actions. The MDEQ coordinates with the Natural Park Service to implement remedial actions on the Grant-Kohrs Ranch.

Data collected in 2016 represents the seventh year of monitoring in the CFROU. Monitoring under this program was first conducted by MDEQ and RESPEC personnel in the spring of 2010, prior to initiation of any remediation actions within the CFROU. Since 2010, some monitoring sites have been added to the monitoring program in Clark Fork River tributaries. In addition, this monitoring program has been coordinated with long-term monitoring by the U.S. Geological Survey (USGS) to complement data collected by the USGS and minimize data duplication by each program. Monitoring methods and quality assurance protocols guiding collection and analysis of the data described in this report are summarized in the project sampling and analysis plan (SAP) and the project quality assurance project plan (QAPP).

The CFROU monitoring network in 2016 included seventeen sample sites; seven mainstem sites and ten tributary sites. Not all sites were sampled for each environmental medium or for each analyte of each environmental medium (e.g., some surface water sites were only sampled for mercury and methylmercury rather than the full suite of analytes). The monitoring network has been largely consistent since 2014. One new site in the Clark Fork River mainstem (CFR-34; Clark Fork River at Williams-Tavenner Bridge) was added in 2015 downstream from the

Grant-Kohrs Ranch National Park property. Site CFR-34 was added to provide a more detailed assessment of water and instream sediment chemistry and aquatic biota that may be related to remediation planned for Phase 15 and 16. In addition, one site was added on Silver Bow Creek (SS-19; Silver Bow Creek at Frontage Road) immediately upstream from the Warm Springs Ponds inlet. Site SS-19 is sampled during some period under the Streamside Tailings Operable Unit monitoring program and in other periods under this monitoring program.

Surface water and instream sediment monitoring is primarily intended to describe concentrations of metal contaminants of concern (COCs; arsenic, cadmium, copper, lead, and zinc). For surface water, additional data was collected including nutrient and common ion concentrations, and other field parameters (e.g., acidity). Surface water samples were collected during each calendar quarter with two additional samples collected during the spring snowmelt runoff period. Sediment samples were collected during the first and third quarters. Macroinvertebrate and periphyton samples were collected during the summer (third quarter). Fisheries data, collected by Montana Fish Wildlife and Parks, included trout population monitoring, microchemistry, wild fish tissue burdens from metals, *in situ* mortality of confined fish at selected sites, and stream chemistry data. Bird monitoring data, collected by GoBirdMontana, included monitoring of bird diversity at five sites in Reach A of the CFROU.

Streamflows in the upper Clark Fork River watershed were approximately normal through the spring runoff period but subsided earlier than normal and summer low streamflows were generally lower than normal. At some sites, late summer and fall streamflows were extremely low compared to the long-term median. For example, streamflows in Flint Creek reached a summer minimum of <7 ft<sup>3</sup>/s, which is approximately three times lower than the long-term median minimum summer flow at the site

In the Clark Fork River mainstem sites, no exceedances of surface water performance goals occurred for any COCs except arsenic and lead. Of 36 samples collected in the mainstem Clark Fork River in 2016 (from six sites during six sample periods), no samples (0%) had cadmium, copper, or zinc concentrations exceeding the performance goals. Three samples (8%) had lead concentrations exceeding the performance goal in the mainstem all of which occurred during the rising limb of the spring runoff hydrograph. Arsenic commonly exceeded performance goals in Reach A but no exceedances occurred in Reach C at Turah. Of 30 samples collected in the Clark Fork River in Reach A (five sites during six sample periods), 77% exceeded the dissolved arsenic performance goal and 37% exceeded the total recoverable arsenic performance goal. Sources of arsenic to the Clark Fork River in Reach A appear to be the Mill-Willow Creek watersheds and the Warm Springs Ponds. In Mill-Willow Creek, 83% (10 of 12) of the samples exceeded the dissolved arsenic and 67% (8 of 12) exceeded the total recoverable arsenic performance goals in those sites. Arsenic concentrations in Mill-Willow Creek were approximately the same at sites above and below the Mill-Willow Bypass suggesting that arsenic loading occurs in the upper portion of the watershed rather than in the Bypass reach. At one site in Silver Bow Creek immediately upstream from the Warm Springs Ponds, no samples exceeded the dissolved or total recoverable arsenic standards in 2016. However, immediately downstream from the Warm Springs Ponds in the pond outfall upstream from the Mill-Willow Creek confluence, 67% (4 of 6) of the samples exceeded the dissolved arsenic and 33% (2 of 6) exceeded the total recoverable arsenic performance goals.

Sediment COC concentrations in the Clark Fork River mainstem were high relative to reference values at all sites during both sample periods of 2016. Exceedances of reference values for each COC occurred at all sites during each sample period in 2016. Based on a grouping of all samples from each mainstem site collected from 2014-2016, the highest cationic COC (i.e., cadmium, copper, lead, zinc) concentrations have tended to occur in the uppermost portion of Reach A (near Galen). Cationic COC concentrations have generally decreased with downstream distance from the upstream end of Reach A. Arsenic concentrations in the mainstem also have tended to decrease with downstream distance from the upstream end of Reach A, was even more pronounced compared to the cationic COCs.

Overall biotic impairment of the macroinvertebrate community was either "none" or "slight" at all Clark Fork River mainstem sites in 2016 (score range: 87-98 out of 100) and at all tributary sites (score range: 76-94) with the exception of Silver Bow Creek at Frontage Road (above the Warm Springs Ponds). In Silver Bow Creek at Frontage Road, overall biotic impairment was "moderate" (score = 57). For metals sensitivity, index classifications in the mainstem were "none" or "slight" at all sites(score range: 85-94). Metals sensitivity index classifications in the tributary sites were "none" or "slight" (score range: 68-90) at all sites except Silver Bow Creek at Frontage Road, which was "moderate" (score = 61). Nutrient sensitivity index classifications were "none" or "slight" at all sites (score range: 79-99). except Silver Bow Creek at Frontage Road which was "slight".

Periphyton monitoring included bioindices to evaluate the sensitivity of diatom algae assemblages to sediment, metals, and nutrients. Impairment was more likely than not (i.e.,  $\geq 51\%$ ) for sediment at four tributary sites: both Mill-Willow Creek sites located above and below the Mill-Willow Bypass, in Silver Bow Creek at Warm Springs, and in the Little Blackfoot River. Impairment from sediment was more likely than not at two Clark Fork River mainstem sites: (near Galen and at the Williams-Tavenner Bridge. Impairment from metals was more likely than not at all tributary sites except the Mill-Willow Creek site above the Mill-Willow Bypass and at all mainstem sites except at Deer Lodge and at the Williams-Tavenner Bridge. Impairment from nutrients was more likely than not at three tributary sites: Mill-Willow Creek below the Bypass, Silver Bow Creek at Warm Springs, and the Little Blackfoot River. Impairment form nutrients was also more likely than or not at four mainstem sites: near Galen, at Galen Road, at Gemback Road, and at Turah.

Fish population monitoring results indicated that brown trout population abundance were relatively low in 2016, especially compared to estimates from 2013 and 2014. The relatively high brown trout abundance in 2013 and 2014 was presumably due to strong year classes from 2010 and 2011 which were good water years. Streamflows in 2012 and 2013 were lower, particularly during the summer, likely causing high mortality for juvenile brown trout. Fish population estimates were also conducted at 77 tributary sampling sections in 2015 and 2016. M

Patterns from caged fish monitoring did not indicate any acute negative effects from cleanup activities. Mortality patterns in caged fish from 2016 were consistent with caged fish studies in previous years. Mortalities tend to peak as streamflows subsided and temperatures increased.

Tissue metals burdens were generally similar between sites. One exception was brown trout zinc burdens at the Pond 2 site, which were relatively high despite relatively low zinc concentrations in the Pond 2 outflow. This phenomenon was also observed in 2014 suggesting that zinc accumulation in fish below the Pond 2 outflow is not simply a function of water column zinc concentrations.

Water quality data collected during the caged fish monitoring study indicated that pH in Silver Bow Creek immediately below the ponds routinely exceeds 9 during the summer creating unfavorable and potentially toxic conditions for trout. Extended exposure to pH >9 may be harmful to trout. In addition, dissolved oxygen concentrations observed at the Racetrack site, were low and low concentrations at this site have been observed before. Continued water quality monitoring at these sites is recommended.

Bird monitoring was conducted in the CFROU for the second year. Monitoring was conducted in Phases 1, 3, 4, 7, 8, and 15. Phases 1, 7, and 15 were also monitored in 2015. In total, 89 species were observed in 2016 and 102 total species were observed in the CFROU since 2015. In 2016, species richness was similar among phases (range: 47-58 species). Of the phases monitored, richness was lowest in Phase 1, which was recently remediated whereas remediation had not been completed at any other sites. However, there were relatively few sample sites in Phase 1 in 2016 and thus the lower richness may have been simply due to the lower sampling effort (or chance). Five species observed are listed as species of concern by the state of Montana: the common loon, American white pelican, great blue heron, Franklin's gull, and bobolink. All are believed to be stable or common globally, but at risk in Montana.

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The Record of Decision (ROD) for the Clark Fork River Operable Unit (CFROU) identified a 120-mile section of the Clark Fork River as a distinct Superfund operable unit [USEPA, 2004]. The CFROU extends from the Silver Bow Creek and Warm Springs Creek confluence to the former Milltown Reservoir site at the Clark Fork River and Blackfoot River confluence [Figure 1-1]. Historic mining, milling, and smelting activities in Butte and Anaconda resulted in heavy metal (cadmium, copper, lead, and zinc) and arsenic contamination in the floodplain soils and streambanks of the CFROU [Bartkowiak et al., 2011]. Sources of metal contaminants of concern (COCs) in the CFROU are tailings mixed with soil within the historic 100-year floodplain (primary source), contaminated surface water and shallow groundwater, contaminated instream sediments, and contaminants in irrigation ditches adjacent to the CFROU [USEPA, 2004]. In 2008, a consent decree was negotiated between the state of Montana, the U.S. Government, and the Atlantic Richfield Company for cleanup of the CFROU [Montana v. AR, 2008; U.S.A. v. AR, 2008]. The consent decree established that the state of Montana, through the Montana Department of Environmental Quality (MDEQ), would serve as lead agency to develop and implement the remedial design, remedial action, and operation and maintenance of the remedy for the CFROU [Montana v. AR, 2008; U.S.A. v. AR, 2008].

Specific remediation standards were establishend in the CFROU ROD for surface water, groundwater, and vegetation but not for other environmental media [USEPA, 2004]. In lieu of specific standards, reference values have been adopted by MDEQ for instream sediment, geomorphology, periphyton, macroinvertebrates, and fish. The MDEQ has established this monitoring program to assess the effectiveness of contaminant removal from remediation on attainment of remediation standards or reference values. Data is collected to describe abiotic (surface water, instream sediment, river geomorphology) and biotic (terrestrial vegetation, periphyton, aquatic macroinvertebrate, and fish) conditions in the CFROU to evaluate if remediation standards or reference values are met and evaluate if conditions are improving over time. Data collected in 2016 represents the seventh year of data collected for this monitoring program, which began in 2010. The following paragraphs provide a brief summary of remedial work conducted in the CFROU to date.

Remediation activities in Phase 1 [Figure 1-2] of the CFROU began in 2013 and project construction was completed in spring 2014. Revegetation in Phase 1 was completed in fall 2014. Phase 1 consists of the upstream-most 1.6 river miles of the Clark Fork River, immediately downstream from the Warm Springs Creek and Silver Bow Creek confluence. In total, approximately 330,000 cubic yards of contaminated material was removed from a 60 acre project area.

Remediation of Phase 2 [Figure 1-3] began in the summer of 2015 and construction was in progress throughout the remainder of the year. Phase 2 consists of the river banks and floodplain along a 1.9 river mile section (88 acres) of the Clark Fork River, immediately downstream from Phase 1. Construction activities in Phase 2 were completed in 2016. Revegetation activities were also completed in fall 2016. The volume of contaminated material removed from Phase 2 was approximately 403,000 cubic yards.

Remedial plans for Phases 3A, 3B, and 4 [Figure 1-4] are currently in the design phase. These phases together consist of a 4.5 mile river length and an accompanying floodplain area of 261 acres. Construction activities for Phase 3A are anticipated to begin within five years.

Remediation of Phases 5 and 6 [Figure 1-5] began in the summer of 2014 and construction was in progress throughout 2015. Phases 5 and 6 consist of the river banks and floodplain along a 4.3 river mile section (125 acres) of the Clark Fork River, immediately downstream from Phase 4. Construction and revegetation activities were completed in Phases 5 and 6 in 2016.

Remedial plans for Phase 7 [Figure 1-6] are currently in the design phase. Phase 7 consists of a 1.9 mile river length and an accompanying floodplain area of approximately 84 acres.

Remedial plans for Phases 8 and 9 [Figure 1-7] are currently in the sampling and site characterization phase. Phases 8 and 9 consist of a 5.1 mile river length and accompanying floodplain area.

Remediation occurred in 2012 and 2015 in the "Eastside Road" pasture areas adjacent to Phases 12 and 13 [Figure 1-8]. This work consisted of removal of contaminated material from pastures in an area of approximately 100 acres that had been flood irrigated with contaminated water from the Clark Fork River. This project area is located outside the Clark Fork River floodplain. Ongoing monitoring of vegetation establishment and weed control is being conducted in the Eastside Road and pastures. That monitoring work is not described within this report.

Remedial plans for the "Arrowstone Park" area [Figure 1-9] in the town of Deer Lodge, Montana are currently in the sampling and site characterization phase. The Arrowstone Park project area consists of a 1.2 mile river length and accompanying floodplain area. The start date for construction activities in the Arrowstone Park area is yet to be determined.

Remediation occurred in residential yards and the "Trestle" area of Deer Lodge, Montana in a portion of Phase14 [Figure 1-10]. This work consisted of removal of contaminated material from residential yards and a recreational area along the Clark Fork River in the City of Deer Lodge. The work was completed in 2011 and approximately 10,000 cubic yards of contaminated soils were removed.

Remedial plans for Phases 15 and 16 [Figure 1-11] are currently in the design phase. These phases together consist of a 2.6 mile river length and an accompanying floodplain area of approximately 120 acres, which lie within the boundary of the Grant-Kohrs Ranch National Historic Site. Construction activities are anticipated to begin in these phases in 2017 and a total estimated volume of 400,000 cubic yards of contaminated material will be removed.



Figure 1-1. Remedial reaches of the Clark Fork River Operable Unit [Source: USEPA, 2004].



Figure 1-2. Phase 1 project area in the Clark Fork River Operable Unit.



Figure 1-3. Phase 2 project area in the Clark Fork River Operable Unit.



Figure 1-4. Phase 3 and 4 project areas in the Clark Fork River Operable Unit.



Figure 1-5. Phase 5 and 6 project areas in the Clark Fork River Operable Unit.



Figure 1-6. Phase 7 project area in the Clark Fork River Operable Unit.



Figure 1-7. Phases 8 and 9 project areas in the Clark Fork River Operable Unit.



Figure 1-8. Eastside Road project area in the Clark Fork River Operable Unit.



Figure 1-9. Arrowstone Park project area in the Clark Fork River Operable.


Figure 1-10. Trestle project area in the Clark Fork River Operable Unit.



Figure 1-11. Phase 15 and 16 project areas in the Clark Fork River Operable Unit.

# 2.1 INTRODUCTION

Performance goals were established in the CFROU ROD for surface water [USEPA, 2004]. The goal for surface water quality is for concentrations of all metal contaminants of concern (COCs) to be below the concentrations identified in the CFROU ROD [Table 2-1]. The remedy for the Clark Fork River is expected to achieve these goals through the removal of contaminated floodplain soils (i.e., "slickens"), *in situ* (i.e., on site) treatment of floodplain soils with relatively low COC concentrations, and streambank stabilization. Additional removals of contaminated floodplain materials, proposed as part of remediation, may reduce arsenic concentrations as well. When the remediation activities are completed, surface water quality in the Clark Fork River is expected to fully support the growth and propagation of coldwater fishes (e.g., salmonids) and associated aquatic life. Surface waters will be monitored at specific locations along the Clark Fork River. Performance goals must be met at each location in order for the remedial actions to be considered successful.

This report evaluates progress toward attainment of surface water performance goals as defined in the CFROU ROD [Table 2-1]. Water chemistry data were collected in 2016 to evaluate COC concentrations in order to make direct comparisons to relevant performance standards. In addition to COC concentrations, data are collected to describe other water quality constituents which influence the toxicity of metal contaminants or otherwise influence the ecology of the Clark Fork River. Other water quality constituents described include total suspended sediment, common ion, and nutrient concentrations and other physical properties of water (e.g., acidity).

	Performance Goal				
Contaminant of Concern	Aquatic Lif	Human Health or			
	Chronic (µg/L)	Acute (µg/L)	Drinking Water Standard (µg/L)		
Arsenic	150	340	10/182		
Cadmium	0.25	2	5		
Copper <sup>3</sup>	9	13	1,300		
Lead	3.2	81	15		
Zinc	119	119	2,100		

Table 2-1. Remediation performance goals for surface water in the Clark Fork River Operable Unit [USEPA, 2004].

# 2.2 METHODS

The purpose of the surface water monitoring program is to collect data describing the temporal and spatial variation of metal and nutrient concentrations, and other physical properties of surface water in the CFROU. These data provide a long-term record of environmental conditions in the CFROU. As of 2016, seven years of CFROU surface water data (2010-2016) have been collected under this monitoring program. This long-term record provides a dataset to evaluate the effect of remediation on environmental conditions in the CFROU over time. Changes to the surface water monitoring program have occurred over time and a record of these changes is provided in the project sampling and analysis plan (SAP) [RESPEC, 2016a].

#### 2.2.1 Monitoring Locations

Surface water was monitored at 15 CFROU sites in 2016 [Figure 2-1]. The monitoring network included seven sites in the Clark Fork mainstem and eight sites on tributary streams [Figure 2-1; Table 2-2].

# 2.2.1.1 Clark Fork River Mainstem

Each of the mainstem sample site locations were selected for a specific monitoring objective. The five mainstem Clark Fork River monitoring sites in Reach A (CFR-03A, CFR-07D, CFR-11F, CFR-27H, CFR-34) were included to provide a detailed spatial representation of conditions in Reach A where the remedial work is occurring [Figure 2-1]. Site CFR-34 was added to the

<sup>&</sup>lt;sup>1</sup> The aquatic life standards for cadmium, copper, lead, and zinc vary in relation to water hardness. The values displayed in this table correspond to a water hardness of 100 mg/L.

 $<sup>^2</sup>$  The performance standard includes both the federal maximum contaminant level (MCL; 10  $\mu$ g/L; dissolved concentration) and the state of Montana standard (18  $\mu$ g/L; total recoverable concentration).

<sup>&</sup>lt;sup>3</sup> Based on the federal ambient water quality criteria (USEPA [1986]; dissolved concentration).

monitoring network in 2015 to monitor upcoming remedial work planned in Phases 15 and 16 [Figure 1-11]. The Reach C site (CFR-116A) represents conditions in Reach C at the downstream end of the Clark Fork River mainstem in the CFROU [Figure 2-1]. Currently, no remedial actions are planned for Reach C. One mainstem site is located downstream from the Flint Creek tributary (CFR-84F) [Figure 2-1]. Site CFR-84F is intended to assess the influence of the Flint Creek inflow which typically has elevated mercury concentrations [Langer et al., 2012; RESPEC, 2014; 2015; 2016b] on water quality in the mainstem.

# 2.2.1.2 Tributaries

Tributary site locations were selected to assess the significance of COC or nutrient loading from sources outside the CFROU. Each tributary has one sample site located near the tributary confluence with the Clark Fork River. Mill-Willow Creek and Silver Bow Creek also have additional sites located further upstream in each tributary [Figure 2-1].

#### 2.2.1.2.1 Silver Bow Creek

Silver Bow Creek is the upstream-most tributary of the Clark Fork River. Silver Bow Creek historically was the primary source of COCs to the Clark Fork River [MDEQ and USEPA, 1995] but it has undergone extensive remediation since 1998 and COC concentrations are reduced compared to historic levels [Sando et al., 2014; RESPEC, 2016c]. All streamflow from Silver Bow Creek is captured by the Warm Springs Ponds and treated to reduce metal loading to the Clark Fork River [see: <u>www.cfrtac.org</u>].

Three sample sites are included on Silver Bow Creek; Silver Bow Creek at Frontage Road (SS-19) located immediately above the Warm Springs Ponds; Silver Bow Creek at the Pond 2 outfall (SBC-P2) located immediately below the primary spillway of the Warm Springs Ponds, and Silver Bow Creek at Warm Springs (SS-25) located immediately below the confluence of Silver Bow Creek and Mill-Willow Creek [Figure 2-1]. During some sample periods, site SS-19 was sampled as part of the Streamside Tailings Operable Unit monitoring program. Sample collection methods for site SS-19 are described in the SSTOU sampling and analysis plan [RESPEC, 2016a].

#### 2.2.1.2.2 Mill-Willow Creek

Mill-Willow Creek is a tributary to Silver Bow Creek and flows into Silver Bow Creek immediately downstream from the Warm Springs Pond outfall [Figure 2-1]. Historically, Mill and Willow Creeks confluenced with Silver Bow Creek upstream from the Warm Springs Ponds. However, because contaminant levels in Mill and Willow Creeks were low relative to Silver Bow Creek, streamflows from Mill and Willow Creek were routed around the Warm Springs Pond system through a designed channel commonly referred to as the "Mill-Willow Bypass". The Mill-Willow Bypass was remediated between 1990 and 1995 to remove tailings and contaminated soils along the stream channel and floodplain and to reduce toxic discharges to Silver Bow Creek and the upper Clark Fork River [see: www.cfrtac.org].

Two sample sites are located in Mill-Willow Creek: MCWC-MWB and MWB-SBC [Figure 2-1]. Site MCWC-MWB is located at the upstream end of the Mill-Willow Bypass to demonstrate

background water quality conditions in Mill-Willow Creek. Site MWB-SBC is located near the Silver Bow Creek confluence. Increases in contaminant concentrations between MCWC-MWB and MWB-SBC suggest that contaminant loading is occurring in the Mill-Willow Bypass reach of Mill-Willow Creek.

# 2.2.1.2.3 Warm Springs Creek

The Clark Fork River mainstem begins at the confluence of Silver Bow Creek and Warm Springs Creek [Figure 2-1]. Warm Springs Creek is a major tributary to the Clark Fork River in Reach A. Warm Springs Creek typically has relatively low nutrient concentrations and relatively cool streamflows. Water chemistry in Warm Springs Creek is monitored at site WSC-SBC [Figure 2-1].

# 2.2.1.2.4 Little Blackfoot River

The Little Blackfoot River is a major tributary to the Clark Fork River. The Little Blackfoot River and Clark Fork River confluence is located at the boundary between CFROU Reach A and Reach B [Figure 2-1]. Water quality and quantity in the Little Blackfoot River may be influenced by a variety of land uses including agriculture and irrigation in lower portions of the watershed and abandoned mining in headwater portions of the watershed [Montana Engineer's Office, 1959; Lyden, 1987; Ingman, 2002; MDEQ and USEPA, 2011; 2014]. Monitoring in the Little Blackfoot River occurred at LBR-CFR-02 [Figure 2-1].

# 2.2.1.2.5 Flint Creek

Flint Creek enters the Clark Fork River near the boundary between Reach B and Reach C [Figure 2-1]. Flint Creek is a major source of mercury to the Clark Fork River [Langner et al., 2012; RESPEC, 2014; 2015; 2016b]. Site FC-CFR monitors water chemistry in Flint Creek [Figure 2-1].



Figure 2-1. Surface water sampling locations in the Clark Fork River Operable Unit, 2016.

# Table 2-2. Surface water sampling locations in the Clark Fork River Operable Unit, 2016. Streamflows were measured at all sites which did not a have co-located USGS streamflow gauge.

Site ID	Site Location	Co-located USGS Streamflow	Location (GPS coordinates, NAD 83)			
		Gauge	Latitude	Longitude		
Mainstem Sites						
CFR-03A	Clark Fork River near Galen	12323800	46.20877	-112.76740		
CFR-07D	Clark Fork River at Galen Road	none	46.23725	-112.75302		
CFR-11F	Clark Fork River at Gemback Road	none	46.26520	-112.74430		
CFR-27H	Clark Fork River at Deer Lodge	12324200	46.39796	-112.74283		
CFR-34	Clark Fork River at Williams-Tavenner Bridge	none	46.47119	-112.72492		
CFR-84F	Clark Fork near Drummond	12331800	46.71204	-113.33137		
CFR-116A	Clark Fork at Turah	12334550	46.82646	-113.81424		
Tributary Sites						
SS-19 <sup>4</sup>	Silver Bow Creek at Frontage Road	none	46.12247	-112.80032		
SBC-P2	Silver Bow Creek at Pond 2 outfall	none	46.17840	-112.78190		
SS-25	Silver Bow Creek at Warm Springs	12323750	46.18123	-112.77917		
MCWC-MWB	Mill-Willow Creek at Frontage Road	none	46.12649	-112.79876		
MWB-SBC	Mill-Willow Bypass near mouth	none	46.17839	-112.78270		
WSC-SBC	Warm Springs Creek near mouth	12323770	46.18041	-112.78592		
LBR-CFR-02 <sup>5</sup>	Little Blackfoot River at Beck Hill Road	none	46.53710	-112.72443		
FC-CFR	Flint Creek near mouth	12331500	46.62891	-113.15151		

# 2.2.2 Monitoring Schedule

At least one monitoring event occurred during each calendar quarter of 2016. Each quarterly monitoring event occurred near the end of each quarter. The first monitoring event (Q1) occurred in the late winter from March 14-15. Three monitoring events were conducted in the second quarter (Q2) to approximate the rising (Q2-Rising), peak (Q2-Peak), and falling (Q2-Falling) portions of the spring runoff hydrograph. The Q2 monitoring events were conducted on April 27-28 (Q2-Rising), May 31-June 1 (Q2-Peak), and June 20-21 (Q2-Falling). The late summer (Q3) monitoring event occurred from September 12-13. The late fall (Q4) monitoring event occurred from December 12-13. During some monitoring periods, SS-19 was sampled on the following day after sampling in the other CFROU sites was completed.

<sup>&</sup>lt;sup>4</sup> In 2015, site SS-19 was sampled under the Streamside Tailings Operable Unit (SSTOU) monitoring program four times per year.

<sup>&</sup>lt;sup>5</sup> Site LBR-CFR (GPS Location: 46.51964, -112.79312; co-located USGS gauge: 12324590) was replaced by site LBR-CFR-02 in 2014.

#### 2.2.3 Monitoring Parameters

Surface water samples were analyzed for the parameters and analytes listed in Table 2-3. Parameters and analytes were the same at all sites with the exception of FC-CFR and CFR-84F. At site FC-CFR, mercury and methylmercury concentrations were analyzed in addition to all other analytes. At site CFR-84F, a surface water sample was collected but only analyzed for mercury and methylmercury concentrations. All parameters listed in Table 2-3 were monitored as well as some additional parameters as described in RESPEC [2016a].

Eight monitoring stations in the MDEQ Clark Fork River monitoring network were colocated with active USGS streamflow gauging stations [Table 2-2]. USGS streamflow records were accessed and included in this report. Streamflows at monitoring stations without colocated USGS gauges were measured manually.

Table 2-3. Sampling parameters and analytes for surface water monitoring of the Clark Fork River Operable Unit, 2016.

Parameter	Analytes		
Metal concentrations (total recoverable and dissolved) <sup>6</sup>	Arsenic, cadmium, copper, lead, zinc, mercury, methylmercury		
Nutrient concentrations	Nitrogen (total nitrogen, nitrate plus nitrite, ammonia), phosphorus (total), and carbon (dissolved organic; DOC)		
Common ion concentrations (total)	Sulfate, chloride, alkalinity, bicarbonate, magnesium, potassium, sodium		
Field parameters	Total suspended sediment (TSS) concentration, hardness, water temperature, pH, specific conductivity, dissolved oxygen (DO) concentrations, turbidity		

# 2.2.4 Sample Collection and Analysis

Sample collection, analysis, and quality assurance procedures were described in the quality assurance project plan [Atkins, 2013]. Methods generally followed standard operating procedures (SOPs) developed for the Clark Fork River [AR, 1992]. Field sampling procedures were in accordance with MDEQ [2012a] and followed "clean hands/dirty hands" procedures to minimize sample contamination as described in USGS [2006]<sup>7</sup>. Composited surface water samples were collected using width-depth integration according to methods described in USGS [2006]. When streamflows were high and samples could not be safely collected by wading, samples were collected with the aid of a crane mounted D-95 sampler operated from road bridges. Field parameters (water temperature, pH, dissolved oxygen concentration, and

<sup>&</sup>lt;sup>6</sup> At CFR-84F, no nutrient or metal concentrations were measured except mercury and methylmercury. At FC-CFR, mercury and methylmercury were measured in addition to all other analytes.

<sup>&</sup>lt;sup>7</sup> We deviated from the USGS [2006] protocols to minimize sample contamination (Section 4.0.2) in two regards. First, we did not collect samples sequentially in the order of least to greatest potential for contamination. Second, samples were processed outside the sampling vehicles, rather than within an enclosed space.

conductivity) were measured during each monitoring event with a field multimeter (YSI Professional Plus or YSI 556). Turbidity was measured with a field turbidity meter (Hach Model 2100P Portable Turbidimeter). Streamflows were measured using a portable electromagnetic streamflow meter (Marsh-McBirney Flo-Mate 2000). Calibration methods for field meters, data recording and handling methods, and quality assurance and quality control procedures are described in the quality assurance project plan [Atkins, 2013]. Samples were analyzed by Energy Laboratories (Helena, Montana). Requested laboratory analysis procedures for each analyte are presented in Table 2-4.

# Table 2-4. Analytes, methods, and reporting limits for surface water samples in the Clark Fork River Operable Unit, 2016. All samples were analyzed by Energy Laboratories in Helena, Montana.

Analyte	Requested Method	Requested Reporting Limit (mg/L) <sup>8</sup>	Holding Time (days)	Bottle	Preservative			
Water Samples - Physical Properties and Inorganics								
Solids, Total Suspended (at 105C)	A 2540 D	1	7	1 L HDPE				
Alkalinity, Total (as CaCO3)	A 2320 B	4	14	500 mL HDPE	$4 \pm 2$ C			
Alkalinity, Bicarbonate (as HCO3)	A 2320 B	4	14					
Chloride	EPA 300.0	1	28					
Sulfate	EPA 300.0	1	28					
Hardness (as CaCO3)	A 2340 B	1	180					
	Water Samp	les – Nutrients	5					
Carbon, Dissolved Organic	A 5310 C	0.5	7	250 mL brown glass	H3PO4 to pH <2, 4 ± 2 C			
Nitrogen, Ammonia (as N)	EPA 350.1	0.05			$4 \pm 2$ C			
Nitrogen, Nitrate-Nitrite (as N)	EPA 353.2	0.02	28	250  mL	H2SO4 to pH<2, 4 ± 2 C			
Nitrogen, Total	A 4500 N-C	0.05	30	HDPE	$4 \pm 2$ C			
Phosphorus, Total	EPA 365.1	0.003	28		H2SO4 to pH<2, 4 ± 2 C			
Water Samples - Dissolved Metals (0.45 µm filtered)								
Arsenic	EPA 200.8	0.001			HNO3 to pH <2			
Cadmium	EPA 200.8	0.00003		250 mL HDPE				
Copper	EPA 200.8	0.001	180					
Lead	EPA 200.8	0.0003						
Zinc	EPA 200.8	0.008						
Wate	r Samples - Tot	al Recoverabl	e Metals					
Total Recoverable Metals Digestion	EPA 200.2	-	-	-	-			
Arsenic	EPA 200.8	0.001			) mL HNO3 DPE to pH <2			
Cadmium	EPA 200.8	0.00003						
Calcium	EPA 200.7	1		250 mL				
Copper	EPA 200.8	0.001	180 2					
Lead	EPA 200.8	0.0003		HDPE				
Magnesium	EPA 200.7	1		IIDI L				
Potassium	EPA 200.7	1						
Sodium	EPA 200.7	1						
Zinc	EPA 200.8	0.008						
Mercury	EPA 245.1	0.000005	28	250 mL HDPE	HNO3 to pH <2,			
Methylmercury	EPA 1630	$0.05~\mathrm{ng/L}$	28	250 mL FLPE	HCl to pH <2,			

<sup>&</sup>lt;sup>8</sup> Requested reporting limits are either the required reporting limit of MDEQ [2012b] or MDEQ [2014], or the lowest reporting limit previously provided by the analytical laboratory, whichever is lower.

#### 2.2.5 Data Analysis

Data analysis approaches included evaluation of remedial performance goal exceedances (for COCs) or relevant regulatory standards (for non-COC constituents) and evaluation of spatial and temporal trends.

Exceedances were assessed by comparing constituent concentrations to the relevant performance goal or regulatory standard. For some COCs and for ammonia concentrations, the relevant goal or standard is based on site- and time-specific conditions (e.g., hardness-based standards; MDEQ [2012b]) which were measured concomitantly with each sample collected. Evaluation of some performance goals and regulatory standards requires the assumption that the measured constituent concentration was consistent over a specific period of time (e.g., the chronic aquatic life standard is typically based on 96-hour mean concentration [MDEQ, 2012b]. However, in this monitoring program analyte concentrations were measured at a specific point in time and mean concentrations over time are unknown. Therefore, assessments of performance goal or regulatory standard exceedances assume that the measured concentration was representative of the required period of time as relates to each specific goal or standard.

Boxplots were created to evaluate spatial trends. Statistics summarized in each boxplot include the median (midline of each box), quartiles (ends of each box), outlier extent (whiskers which extend 1.5 times the interquartile range or to the most extreme observation if no observations extend beyond 1.5 times the interquartile range), and outliers (circles above or below the whiskers which are any observations >1.5 times the interquartile range). Boxplots were only generated for data with more than five observations. If there were fewer than six observations at a particular site, a circle is displayed for each observation. Temporal trends were also evaluated (for COCs) plotting all observations in scatterplots at each site for the period of record.

Some COCs (i.e., cadmium, copper, lead, and zinc) have performance goals which vary in relation to water hardness. For those COCs, boxplots and scatterplots were generated for the sample concentrations as well as for the performance goal compliance ratio. A compliance ratio is the ratio of the sample concentration (numerator) to a particular standard (denominator). A compliance ratio of 1 indicates that the sample concentration was equal to the standard and a ratio of 5 indicates that the sample exceeded the standard by 5 times.

A substantial portion of the constituent concentrations were below analytical reporting limits and therefore the precise concentration was unknown. In those cases, values were substituted at half the reporting limit to create boxplots and calculate summary statistics (e.g., medians). Additionally, some sites were not sampled during all the same sample periods. Differences in sample periods may bias statistical analysis to some degree but in order to evaluate the most comprehensive data set we included all data collected to provide the greatest possible context. For example, some important tributary sites were not sampled during any year except 2012 (e.g., Rock Creek) whereas others have been sampled annually (e.g., Warm Springs Creek). Despite the relatively small data set at sites such as Rock Creek, we believe inclusion of those data is relevant to provide the most complete picture of water quality in the basin to date.

#### 2.2.6 Data Validation

Data quality objectives (DQOs) were established in the CFROU monitoring project quality assurance project plan (QAPP) for data "representativeness", "comparability", "completeness", "sensitivity", "precision", "bias", and "accuracy" [Atkins, 2013]. Methods for field and laboratory quality assurance and quality control (QA/QC) procedures are also described in detail in the project QAPP. A completed QA/QC checklist, summary tables of field duplicate and field blank results, and assessments of data quality objectives are included in Appendix A.

# 2.3 RESULTS

#### 2.3.1 Streamflows

Streamflows in 2016 are depicted for each CFROU site with a co-located USGS streamflow gauge: Silver Bow Creek at Warm Springs (USGS 12323750) [Figure 2-2], Warm Springs Creek at Warm Springs (USGS 12323770) [Figure 2-3], Clark Fork River near Galen (USGS 12323800) [Figure 2-4], Clark Fork River at Deer Lodge (USGS 12324200) [Figure 2-5], Flint Creek (USGS 12331500) [Figure 2-6], Clark Fork River near Drummond (USGS 12331800) [Figure 2-7], and Clark Fork River at Turah (USGS 12334550) [Figure 2-8].

At all sites, spring runoff subsided earlier in the year compared to the long term median. In general, the early spring runoff period started earlier, and ended earlier compared to the long-term median. Additionally, summer and fall streamflows were generally low compared to the long-term median and in Silver Bow Creek and Warm Springs Creek, fall streamflows were extremely low compared to the long-term median [Figure 2-2; Figure 2-3]. Streamflows in Flint Creek in reached a summer minimum of <7 ft<sup>3</sup>/s which is approximately three times lower than the long-term median minimum summer flow at the site [Figure 2-6].



Figure 2-2. Hydrograph for Silver Bow Creek at Warm Springs, 2016.



Figure 2-3. Hydrograph for Warm Springs Creek at Warm Springs, 2016.



Figure 2-4. Hydrograph for Clark Fork near Galen, 2016.



Figure 2-5. Hydrograph for Clark Fork River at Deer Lodge, 2016.



Figure 2-6. Hydrograph for Flint Creek, 2016.



Figure 2-7. Hydrograph for Clark Fork River near Drummond, 2016.



Figure 2-8. Hydrograph for Clark Fork at Turah Bridge, 2016.

# 2.3.2 Field Parameters

### 2.3.2.1 Water Temperature

At the time samples were collected in 2016, Clark Fork River mainstem water temperatures ranged from 0-18.7 C [Figure 2-9]. The highest maximum water temperatures occurred at the Reach A site at Deer Lodge during the Q2-Falling sample period. During the Q4 sample period water temperatures in the mainstem ranged from 0-0.4 C at all sites except at CFR-84F (near Drummond) where water temperature was 3.1 C.

Water temperatures in the Clark Fork River tributaries ranged from 0-20.2 C [Figure 2-10]. Comparisons of water temperatures among tributaries are confounded by variation in sample timing during the day, particularly during warm periods when diel temperature swings may be substantial (>10 C). Despite that confounding factor, it appears that water temperatures in Warm Springs Creek were consistently cooler than in other tributaries [Figure 2-10].



Figure 2-9. Boxplots of surface water temperatures in the Clark Fork River mainstem by river mile, 2016.



Figure 2-10. Boxplots of surface water temperatures in tributaries of the Clark Fork River, 2016.

#### 2.3.2.2 pH

Clark Fork River mainstem pH ranged from 7.76-8.98 in 2016 [Figure 2-11]. Potential water discharge restrictions could occur in the mainstem Clark Fork River between the Cottonwood Creek confluence (at Deer Lodge) and Little Blackfoot River confluence when pH exceeds 8.5 as this stream reach is designated as a C-1 water-use classification stream. One site is sampled in that reach which had pH >8.5 in 2016: CFR-34 (at Williams-Tavenner Bridge) during the Q1, Q2-Peak, and Q3 sample periods.

In the Clark Fork River tributaries, pH ranged from 7.68-9.95 in 2016 [Figure 2-12]. Potential water discharge restrictions could occur in the Mill-Willow Creek drainage (designated as a B-1 water-use classification stream; ARM 17.30.607) when pH >8.5. In the Mill-Willow Creek sites, pH exceeded 8.5 at the MCWC-MWB (at Frontage Road) site during the Q3 sample period and at the MWB-SBC (near mouth) site during the Q1, Q2-Rising, Q2-Falling, and Q3 sample periods. Potential water discharge restrictions could occur in Silver Bow Creek (designated as an I water-use classification stream; ARM 17.30.607) when pH >9.5. In Silver Bow Creek at the pond 2 outfall (SBC-P2), pH exceeded 9.5 during the Q2-Peak and Q3 sample periods.



Figure 2-11. Boxplots of pH in the Clark Fork River mainstem by river mile, 2016.



Figure 2-12. Boxplots of pH in tributaries of the Clark Fork River, 2016.

### 2.3.2.3 Conductivity

Conductivity in the Clark Fork River mainstem ranged from 159-535  $\mu$ S/cm in 2016 [Figure 2-13]. Annually, conductivity varied by approximately 200  $\mu$ S/cm at each site [Figure 2-13] and was generally highest during low water periods in Q1 or Q4. Longitudinally, median conductivity increased at each mainstem site from near Galen (CFR-03A) to Gemback Road (CFR-11F) and then gradually decreased downstream to Turah (CFR-116A) [Figure 2-13].

In the Clark Fork River tributaries, conductivity ranged from 101-598  $\mu$ S/cm in 2016 [Figure 2-14]. In Silver Bow Creek, median conductivity decreased by about 60  $\mu$ S/cm between sites above (at Frontage Road; SS-19) and below (at Pond 2 outfall; SBC-P2) the Warm Springs Ponds [Figure 2-14]. In contrast, median conductivity nearly doubled in Mill-Willow Creek between sites above (at Frontage Road; MCWC-MWB) and below (near mouth; MWB-SBC) the Mill-Willow Bypass [Figure 2-14].



Figure 2-13. Boxplots of conductivity in the Clark Fork River mainstem by river mile, 2016.



Figure 2-14. Boxplots of conductivity in tributaries of the Clark Fork River, 2016.

# 2.3.2.4 Dissolved Oxygen

Dissolved oxygen concentrations in the Clark Fork River mainstem ranged from 8.4-15.9 mg/L in 2016 [Figure 2-15]. Most sites had variance of nearly 5 mg/L annually but the sites from Gemback Road (CFR-11F) upstream had relatively low variance [Figure 2-15]. In the Clark Fork River tributaries, dissolved oxygen concentrations ranged from 8.6-14.2 mg/L in 2016 [Figure 2-16]. All dissolved oxygen concentrations measured in the CFROU in 2016 were compliant with the most restrictive freshwater aquatic life standard for dissolved oxygen MDEQ [2012b]<sup>9</sup>.



Figure 2-15. Boxplots of dissolved oxygen concentrations at mainstem sampling sites in the Clark Fork River Operable Unit, 2016.

<sup>&</sup>lt;sup>9</sup> The most restrictive dissolved oxygen standard is the 1-day minimum for waters classified as A-1, B-1, B-2, C-1, or C-2 where early life stages of fish are present (8.0 mg/L).



Figure 2-16. Boxplots of dissolved oxygen concentration at tributary sampling sites in the Clark Fork River Operable Unit, 2016.

# 2.3.2.5 Turbidity

Turbidity in the Clark Fork River mainstem ranged from 0.9-29.3 NTU in 2016 [Figure 2-17]. The highest median and variation in turbidity occurred at the Williams-Tavenner Bridge site (CFR-34) [Figure 2-17]. Turbidity throughout the CFROU was generally high during the runoff events and also was elevated in Q4 at some sites.

In the Clark Fork River tributaries, turbidity ranged from 0.7-27.8 mg/L in 2016 [Figure 2-18]. The highest tributary turbidity measurement, by more than double, occurred in Flint Creek during the Q2-Rising sample event.



Figure 2-17. boxplots of turbidity at mainstem sampling sites in the Clark Fork River Operable Unit, 2016.



Figure 2-18. Boxplots of turbidity at tributary sampling sites in the Clark Fork River Operable Unit, 2016. N

# 2.3.3 Total Suspended Sediment

Total suspended sediment concentrations in the Clark Fork River mainstem in 2016 ranged from <1-53 mg/L [Figure 2-19]. As with turbidity, the highest median and variation in total suspended sediment concentrations occurred at the Williams-Tavenner Bridge site (CFR-34). Concentrations at all sites tended to be highest during the Q2 and Q4 sample periods.

Total suspended sediment concentrations in the Clark Fork River tributaries in 2016 ranged from 1-58 mg/L [Figure 2-20]. The highest sample concentration was at Flint Creek during the Q2-Rising sample event and corresponded to the high turbidity measurement.



Figure 2-19. Boxplots of total suspended sediment concentrations at mainstem sampling sites in the Clark Fork River Operable Unit, 2016.



Figure 2-20. Boxplots of total suspended sediment concentrations at tributary sampling sites in the Clark Fork River Operable Unit, 2016.

# 2.3.4 Common lons

# 2.3.4.1 Hardness

Water hardness in the Clark Fork River mainstem in 2016 ranged from 90-265 mg/L [Figure 2-21]. Median water hardness in the mainstem tended to increase at each site downstream to Gemback Road (CFR-11F) and then decreased downstream to Turah (CFR-116A) [Figure 2-21]. Hardness levels in the mainstem would be classified as ranging from "moderately hard" to "very hard"<sup>10</sup>.

Water hardness in the Clark Fork River tributaries in 2016 ranged from 59-248 mg/L [Figure 2-22]. Median hardness was lowest in Mill-Willow Creek at Frontage Road and in the Little Blackfoot River [Figure 2-22]. In the other tributaries median hardness was similar [Figure 2-22]. Between Mill-Willow Creek sites above (at Frontage Road; MCWC-MWB) and below (near mouth; MWB-SBC) the Mill-Willow Bypass median water hardness essentially doubled [Figure 2-22]. Hardness levels in the tributaries would be classified as ranging from "soft" (at the very lowest level in Mill-Willow Creek) to "very hard".



Figure 2-21. Boxplots of water hardness at mainstem sampling sites in the Clark Fork River Operable Unit, 2016.

<sup>&</sup>lt;sup>10</sup> Hardness classifications: 0-60 mg/L is "soft"; 61-120 mg/L is "moderately hard"; 121-180 mg/L is "hard"; and >180 mg/L is "very hard" [USGS, 2015].



Figure 2-22. Boxplots of water hardness at tributary sampling sites in the Clark Fork River Operable Unit, 2016.

# 2.3.4.2 Alkalinity and Bicarbonate

In 2016, alkalinity in the Clark Fork River ranged from 71-180 mg/L [Figure 2-23] and from 59-230 mg/L in the tributaries [Figure 2-24]. Bicarbonate alkalinity ranged from 86-210 mg/L in the mainstem [Figure 2-25] and from 47-270 mg/L in the tributaries [Figure 2-26]. Alkalinity and bicarbonate alkalinity was generally lowest during runoff periods and highest during low water periods.



Figure 2-23. Boxplots of alkalinity at mainstem sampling sites in the Clark Fork River Operable Unit, 2016.


Figure 2-24. Boxplots of alkalinity at tributary sampling sites in the Clark Fork River Operable Unit, 2016.



Figure 2-25. Boxplots of bicarbonate alkalinity at mainstem sampling sites in the Clark Fork River Operable Unit, 2016.



Figure 2-26. Boxplots of bicarbonate alkalinity at tributary sampling sites in the Clark Fork River Operable Unit, 2016.

# 2.3.4.3 Sulfate

Sulfate concentrations in the Clark Fork River mainstem in 2016 ranged from 23-121 mg/L [Figure 2-27]. Median sulfate concentrations increased at each of the first three mainstem sites and then decreased at each site downstream to Turah (CFR-116A) [Figure 2-27]. The lowest median sulfate concentrations were observed at Turah. Seaonally, sulfate concentrations tended to be highest during the low water sample periods and lowest during runoff periods.

Sulfate concentrations in the Clark Fork River tributaries in 2016 ranged from 10-145 mg/L [Figure 2-28]. As in the mainstem, sulfate concentrations were generally highest during low water periods and lowest during runoff periods. Between Silver Bow Creek sites above (at Frontage Road; SS-19) and below (at Pond 2 outfall; SBC-P2) the Warm Springs Ponds there was a modest increase in median sulfate concentrations [Figure 2-28]. However, between Mill-Willow Creek sites above (at Frontage Road; MCWC-MWB) and below (near mouth; MWB-SBC) the Mill-Willow Bypass median sulfate concentrations increased by approximately four times [Figure 2-28]. Sulfate concentrations were relatively low (i.e., <50 mg/L) in other tributary sites [Figure 2-28].



Figure 2-27. Boxplots of sulfate concentrations at mainstem sampling sites in the Clark Fork River Operable Unit, 2016.



Figure 2-28. Boxplots of sulfate concentrations at tributary sampling sites in the Clark Fork River Operable Unit, 2016.

## 2.3.5 Nutrients

## 2.3.5.1 Total Nitrogen

Total nitrogen concentrations in the Clark Fork River mainstem in 2016 ranged from 0.13-0.91 mg/L [Table 2-5]. Median total nitrogen concentrations increased at each Reach A site downstream to the Williams-Tavenner Bridge site at river mile 34 (CFR-34) and then decreased downstream at Turah [Figure 2-29]. At all sites between river mile 7 and 34 (CFR-07D, CFR-11F, CFR-27H, and CFR-34), median total nitrogen concentrations in 2016 were above the total nitrogen standard [Figure 2-29] although that standard only technically applied to the Q3 samples. In Q3, only the mainstem sample from Deer Lodge (CFR-27H) actually exceeded the standard [Table 2-5].

Total nitrogen concentrations in the Clark Fork River tributaries in 2016 ranged from <0.05-1.89 mg/L [Table 2-5]. All Silver Bow Creek samples in 2016 exceeded the total nitrogen standard although that standard technically only applies during Q3 [Figure 2-30]. Total nitrogen concentrations in Silver Bow Creek above the Warm Springs ponds (at Frontage Road; SS-19) were substantially higher than either site downstream from the ponds [Figure 2-30]. Total nitrogen concentrations in the two Mill-Willow Creek sites were similar [Figure 2-30].

24				Sample	e Period		
Site ID	Site Location	01	2	<b>Q</b> 2			04
		Q1	Rising	Peak	Falling	Q3	ષ્ટ્ર4
92 (1)	Mair	nstem Sit	es		29 ÷		14 
CFR-03A	Clark Fork River near Galen	0.40	0.36	0.25	0.22	0.20	0.23
CFR-07D	Clark Fork River at Galen Road	0.40	0.42	0.26	0.23	0.18	0.36
CFR-11F	Clark Fork River at Gemback Road	0.50	0.40	0.29	0.23	0.19	0.38
CFR-27H	Clark Fork River at Deer Lodge	0.44	0.51	0.32	0.25	0.35	0.64
CFR-34	Clark Fork River at Williams- Tavenner Bridge	0.50	0.57	0.34	0.29	0.21	0.91
CFR-116A	Clark Fork River at Turah	0.33	0.24	0.24	0.13	0.17	0.23
Tributary Sites							
SS-19	Silver Bow Creek at Frontage Road	1.82	0.67	0.59	0.35	1.04	1.89
SBC-P2	Silver Bow Creek at Pond 2 outfall	0.63	0.57	0.34	0.56	0.61	0.40
SS-25	Silver Bow Creek at Warm Springs	0.51	0.43	0.32	0.32	0.35	0.33
MCWC-MWB	Mill-Willow Creek at Frontage Road	0.20	0.24	0.25	0.18	0.14	0.38
MWB-SBC	Mill-Willow Bypass near mouth	0.22	0.27	0.25	0.24	0.13	0.22
WSC-SBC	Warm Springs Creek near mouth	0.17	0.11	0.08	0.15	ND	0.14
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	0.15	0.24	0.14	0.12	0.09	ND
FC-CFR	Flint Creek near mouth	0.29	0.31	0.21	0.31	0.21	0.29

Table 2-5. Total nitrogen concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2016.

--- Not sampled.

ND Not detected at analytical reporting limit.

Exceeds Clark Fork River total nitrogen standard (0.30 mg/L; applies June 21 to September 21; ARM 17.30.631) and Middle Rockies Ecoregion total nitrogen standard (also 0.30 mg/L; applies July 1 to September 30; MDEQ [2014]).



Figure 2-29. Boxplots of total nitrogen concentrations (mg/L) at Clark Fork River mainstem monitoring stations, 2016. Horizontal line represents total nitrogen standard [MDEQ, 2014].



Figure 2-30. Boxplots of total nitrogen concentrations (mg/L) at Clark Fork River tributary monitoring stations, 2016. Horizontal line represents total nitrogen standard [MDEQ, 2014].

### 2.3.5.2 Nitrate Plus Nitrite Nitrogen

Nitrate plus nitrite nitrogen concentrations in the Clark Fork River mainstem in 2016 ranged from <0.02-0.46 mg/L [Table 2-6]. In the mainstem, median nitrate plus nitrite concentrations were highest at Deer Lodge (CFR-27H) and lowest near Galen (CFR-03A) [Figure 2-31]. At all mainstem sites, nitrate plus nitrite nitrogen concentrations which were highest during Q4.

Nitrate plus nitrite nitrogen concentrations in the Clark Fork River tributaries in 2016 ranged from <0.02-1.73 mg/L [Table 2-6]. In the tributaries, all sites except Silver Bow Creek at Frontage Road (SS-19) had nitrate plus nitrite nitrogen concentrations which were <0.14 mg/L [Table 2-6]. In Silver Bow Creek at Frontage Road, nitrate plus nitrite nitrogen concentrations were substantially higher than all other sites in the CFROU [Figure 2-31; Figure 2-32].

				Sample	e Period						
Site ID	Site Location	01	$\mathbf{Q}2$			01	04				
		Ri	Rising	Peak	Falling	હુર	<b>Q</b> 4				
	Mai	nstem Sit	tes								
CFR-03A	Clark Fork River near Galen	ND	0.04	ND	ND	ND	0.09				
CFR-07D	Clark Fork River at Galen Road	0.13	0.09	ND	ND	ND	0.27				
CFR-11F	Clark Fork River at Gemback Road	0.14	0.09	ND	ND	ND	0.30				
CFR-27H	Clark Fork River at Deer Lodge	0.18	0.14	0.03	ND	0.16	0.46				
CFR-34	Clark Fork River at Williams- Tavenner Bridge	0.14	0.16	0.03	ND	ND	0.46				
CFR-116A	Clark Fork River at Turah	0.02	0.06	ND	ND	ND	0.11				
	Trib	utary Si	tes		-	-	-				
SS-19	Silver Bow Creek at Frontage Road	1.32	0.20	0.12	0.03	0.88	1.73				
SBC-P2	Silver Bow Creek at Pond 2 outfall	ND	0.11	ND	ND	ND	ND				
SS-25	Silver Bow Creek at Warm Springs	ND	0.07	ND	ND	ND	0.06				
MCWC-MWB	Mill-Willow Creek at Frontage Road	ND	ND	ND	ND	ND	0.14				
MWB-SBC	Mill-Willow Bypass near mouth	ND	ND	ND	ND	ND	0.13				
WSC-SBC	Warm Springs Creek near mouth	0.07	0.03	ND	0.03	ND	0.14				
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	ND	ND	ND	ND	ND	ND				
FC-CFR	Flint Creek near mouth	ND	0.07	ND	ND	ND	0.25				

Table 2-6. Nitrate plus nitrite nitrogen concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2016.

--- Not sampled.

ND Not detected at analytical reporting limit.



Figure 2-31. Boxplots of nitrate plus nitrite nitrogen concentrations (mg/L) at Clark Fork River mainstem monitoring stations, 2016.





# 2.3.5.3 Total Ammonia

All samples from the CFROU in 2016 had total ammonia concentrations below the analytical reporting limit (0.05 mg/L) except for the sample from the Clark Fork River at Williams-Tavenner Bridge in Q4 (0.12 mg/L).

#### 2.3.5.4 Total Phosphorus

Total phosphorus concentrations in the Clark Fork River mainstem in 2016 ranged from 0.013-0.073 mg/L [Table 2-7]. Median total phosphorus concentrations were highest at the Williams-Tavenner Bridge site at river mile 34 (CFR-34) [Figure 2-33]. At all sites in the mainstem, median total phosphorus concentrations in 2016 were above the total phosphorus Clark Fork River standard [Figure 2-33] although that standard only technically applied to the Q3 samples. In Q3, the mainstem samples at Williams-Tavenner Bridge (CFR-34) and near Galen (CFR-03A) exceeded the standard [Table 2-7]. The sample from CFR-03A in Q3 also exceeded the Middle Rockies Ecoregion-specific total phosphorus standard [Table 2-7].

Total phosphorus concentrations in the Clark Fork River tributaries in 2016 ranged from <0.003-0.279 mg/L [Table 2-7]. All Silver Bow Creek samples in 2016 exceeded the Middle Rockies Ecoregion-specific total phosphorus standard although that standard technically only applies during Q3 [Figure 2-34]. Median total phosphorus concentrations in Silver Bow Creek above the Warm Springs ponds (at Frontage Road; SS-19) were nearly approximately three times higher than either site downstream from the ponds [Figure 2-34]. Total phosphorus concentrations in the two Mill-Willow Creek sites were similar [Figure 2-34]. In Q3, total phosphorus concentrations in the Little Blackfoot River and Flint Creek exceeded the Clark Fork River-specific total phosphorus standard [Table 2-7].

54				Sample	e Period		
Site ID	Site Location	01		<b>Q</b> 2			04
		Risi	Rising	Peak	Falling	43	ષ્ટ્ર4
92 (1)	Mair	nstem Sit	es		21 · · · ·	18	
CFR-03A	Clark Fork River near Galen	0.029	0.040	0.048	0.029	0.038	0.020
CFR-07D	Clark Fork River at Galen Road	0.023	0.037	0.047	0.028	0.019	0.016
CFR-11F	Clark Fork River at Gemback Road	0.027	0.043	0.041	0.026	0.018	0.021
CFR-27H	Clark Fork River at Deer Lodge	0.024	0.059	0.046	0.021	0.013	0.032
CFR-34	Clark Fork River at Williams- Tavenner Bridge	0.029	0.073	0.053	0.028	0.026	0.069
CFR-116A	Clark Fork River at Turah	0.025	0.051	0.039	0.017	0.017	0.025
Tributary Sites							
SS-19	Silver Bow Creek at Frontage Road	0.175	<b>0.18</b> 2	0.156	0.167	0.279	0.279
SBC-P2	Silver Bow Creek at Pond 2 outfall	0.056	0.055	0.065	0.156	0.129	0.029
SS-25	Silver Bow Creek at Warm Springs	0.032	0.047	0.054	0.053	0.076	0.029
MCWC-MWB	Mill-Willow Creek at Frontage Road	0.027	0.034	0.043	0.034	0.014	0.038
MWB-SBC	Mill-Willow Bypass near mouth	0.022	0.038	0.045	0.029	0.017	0.016
WSC-SBC	Warm Springs Creek near mouth	0.008	0.013	0.012	0.012	ND	0.014
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	0.021	0.038	0.025	0.018	0.023	0.021
FC-CFR	Flint Creek near mouth	0.027	0.054	0.044	0.051	0.056	0.035

Table 2-7. Total phosphorus concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2016.

--- Not sampled.

ND Not detected at analytical reporting limit.

Exceeds the Middle Rockies Ecoregion total phosphorus standard (0.030 mg/L; applies July 1 to September 30; MDEQ [2014]).

Exceeds Clark Fork River total phosphorus standard (0.020 mg/L; applies to mainstem sites from June 21 to September 21; ARM 17.30.631).



Figure 2-33. Boxplots of total phosphorus concentrations (mg/L) at Clark Fork River mainstem monitoring stations, 2016. Horizontal line represents total phosphorus standard [ARM 17.30.631].



Figure 2-34. Boxplots of total phosphorus concentrations (mg/L) at Clark Fork River tributary monitoring stations, 2016. Horizontal line represents total phosphorus standard [MDEQ, 2014].

## 2.3.6 Contaminants of Concern

# 2.3.6.1 Arsenic

In the Clark Fork River mainstem in 2016, dissolved arsenic concentrations ranged from 0.004-0.019 mg/L [Table 2-8] and total recoverable concentrations ranged from 0.006-0.025 mg/L [Table 2-9]. Exceedances of the dissolved arsenic performance goal occurred at all Reach A sites (i.e., CFR-03A, CFR-07D, CFR-11F, CFR-27H, and CFR-34) during all Q2 and Q3 sample periods and at three of five Reach A sites in Q1 [Table 2-8]. Exceedances of the total recoverable arsenic performance goal were less frequent compared to the dissolved performance goal and were isolated to the Q2 sample periods [Table 2-8; Table 2-9].

Dissolved and total recoverable arsenic concentrations at each Clark Fork River mainstem site were similar in 2016 compared to prior monitoring years [Figure 2-35; Figure 2-36]. Over the period of monitoring at these mainstem sites, there do not appear to be any temporal trends at these sites in either dissolved or total recoverable arsenic concentrations given the variability in these data [Figure 2-35; Figure 2-36].

Longitudinally, mainstem sites Reach A sites (i.e., sites sampled between river mile 3-42) appear to have substantially higher median arsenic concentrations compared to mainstem sites downstream from Reach A based on data collected between 2010-2016 [Figure 2-37; Figure 2-38].

In the Clark Fork River tributaries in 2016, dissolved arsenic concentrations ranged from 0.003-0.039 mg/L [Table 2-8] and total recoverable concentrations ranged from 0.004-0.041 mg/L [Table 2-9]. Exceedances of the dissolved arsenic performance goal occurred in both Silver Bow Creek sites located downstream from the Warm Springs Ponds (i.e., SBC-P2 and SS-25) during all Q2 and Q3 sample periods and the total recoverable performance goal as well in some of those samples [Table 2-8; Table 2-9]. Exceedances of the dissolved arsenic performance goal also occurred in both Mill-Willow Creek sites during all sample periods except Q4 [Table 2-8] and samples from those sites exceeded the total recoverable performance goal in all Q2 and Q3 sample periods [Table 2-9].

Dissolved and total recoverable arsenic concentrations at each Clark Fork River tributary site were similar in 2016 compared to prior monitoring years although at the Silver Bow Creek sites located downstream from the Warm Springs Ponds and the Mill-Willow Creek sites arsenic concentrations have been highly variable [Figure 2-39; Figure 2-40]. Over the period of monitoring at these tributary sites, there do not appear to be any temporal trends at any of these sites in either dissolved or total recoverable arsenic concentrations given the variability in these data [Figure 2-39; Figure 2-40].

Based on samples collected in Clark Fork River tributaries between 2010-2016, median dissolved and total recoverable arsenic concentrations increased by more than double between paired sites in Silver Bow Creek above (SS-19) and below (SBC-P2) the Warm Springs Ponds [Figure 2-41; Figure 2-42]. In Mill-Willow Creek, between paired sites above (MCWC-MWB) and below (MWB-SBC) the Mill-Willow Bypass, median dissolved and total recoverable arsenic concentrations were similar [Figure 2-41; Figure 2-42]. The Silver Bow Creek sites below the Warm Springs Ponds (SBC-P2 and SS-25) and the two Mill-Willow Creek sites had the highest median arsenic concentrations of any tributary sites followed by Lost Creek and Flint Creek

[Figure 2-41; Figure 2-42]. The lowest median arsenic concentrations occurred in Racetrack Creek, the Little Blackfoot River sites, and Rock Creek [Figure 2-41; Figure 2-42].

			73	Sample	e Period		
Site ID	Site Location	01	Q2			0.0	0.1
		Q1	Rising	Peak	Falling	હર	હ્ય્ય
	Main	nstem Sit	tes				
CFR-03A	Clark Fork River near Galen	0.010	0.013	0.016	0.017	0.017	0.007
CFR-07D	Clark Fork River at Galen Road	0.012	0.013	0.018	0.018	0.015	0.008
CFR-11F	Clark Fork River at Gemback Road	0.012	0.013	0.018	0.017	0.017	0.008
CFR-27H	Clark Fork River at Deer Lodge	0.010	0.013	0.019	0.017	0.015	0.008
CFR-34	Clark Fork River at Williams- Tavenner Bridge	0.011	0.013	0.019	0.018	0.016	0.009
CFR-116A	Clark Fork River at Turah	0.006	0.004	0.006	0.006	0.006	0.006
	Trib	utary Sit	tes			· · ·	
SS-19	Silver Bow Creek at Frontage Road	0.005	0.006	0.007	0.007	0.008	0.005
SBC-P2	Silver Bow Creek at Pond 2 Outfall	0.006	0.012	0.014	0.023	0.037	0.006
SS-25	Silver Bow Creek at Warm Springs	0.009	0.016	0.025	0.036	0.027	0.008
MCWC-MWB	Mill-Willow Creek at Frontage Road	0.020	0.021	0.036	0.039	0.016	0.009
MWB-SBC	Mill-Willow Bypass near mouth	0.020	0.021	0.038	0.039	0.018	0.010
WSC-SBC	Warm Springs Creek near mouth	0.005	0.004	0.003	0.004	0.006	0.004
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	0.004	0.004	0.004	0.004	0.005	0.003
FC-CFR	Flint Creek near mouth	0.007	0.006	0.006	0.009	0.008	0.007

Table 2-8. 1	Dissolved	arsenic conce	ntrations (mg/L)	at Clark H	Fork River (	<b>Operable Unit</b>
monitoring	g stations,	2016.				

Not sampled.

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Exceeds specified arsenic surface water performance goal for dissolved concentration (0.010 mg/L) [USEPA, 2004].

Table 2-9. Total recoverable arsenic concentrations (mg/L) at Clark Fork River **Operable Unit monitoring stations, 2016.** 

				Sample	e Period							
Site ID	Site Location	01	5	Q2			04					
		Q1	Rising	Peak	Falling	(y)	હ્ય્ય					
	Mair	nstem Sit	es		29 B	19 9	1					
CFR-03A	Clark Fork River near Galen	0.012	0.015	0.019	0.018	0.016	0.008					
CFR-07D	Clark Fork River at Galen Road	0.015	0.017	0.021	0.019	0.014	0.009					
CFR-11F	Clark Fork River at Gemback Road	0.015	0.018	0.022	0.020	0.016	0.009					
CFR-27H	Clark Fork River at Deer Lodge	0.014	0.022	0.025	0.019	0.013	0.011					
CFR-34	Clark Fork River at Williams- Tavenner Bridge	0.014	0.022	0.024	0.020	0.012	0.015					
CFR-116A	Clark Fork River at Turah	0.007	0.009	0.007	0.006	0.006	0.007					
Tributary Sites												
SS-19	Silver Bow Creek at Frontage Road	0.006	0.007	0.008	0.008	0.008	0.006					
SBC-P2	Silver Bow Creek at Pond 2 Outfall	0.007	0.014	0.015	0.024	0.035	0.008					
SS-25	Silver Bow Creek at Warm Springs	0.012	0.017	0.028	0.036	0.026	0.009					
MCWC-MWB	Mill-Willow Creek at Frontage Road	0.021	0.023	0.040	0.040	0.016	0.013					
MWB-SBC	Mill-Willow Bypass near mouth	0.022	0.024	0.041	0.040	0.018	0.012					
WSC-SBC	Warm Springs Creek near mouth	0.005	0.005	0.005	0.005	0.006	0.005					
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	0.004	0.005	0.005	0.005	0.005	0.004					
FC-CFR	Flint Creek near mouth	0.008	0.020	0.010	0.010	0.008	0.007					
	Not sampled.											

Exceeds specified arsenic surface water performance goal for total recoverable concentration (0.018 mg/L) [USEPA, 2004].



Figure 2-35. Dissolved arsenic concentrations at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016. Horizontal line represents the arsenic surface water performance goal for dissolved concentration [USEPA, 2004].



Figure 2-36. Total recoverable arsenic concentrations at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016. Horizontal line represents the arsenic surface water performance goal for total recoverable concentration [USEPA, 2004].



Figure 2-37. Boxplots of dissolved arsenic concentration by river mile at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>11</sup>. Horizontal line represens the arsenic surface water performance goal for dissolved concentration [USEPA, 2004].

<sup>&</sup>lt;sup>11</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: river mile 7 and 11 (2013-2016), river mile 34 (2015-2016), river mile 42 (2010-2014), river mile 53 (2010-2012), and river mile 84 (2010-2012 and 2014).



Figure 2-38. Boxplots of total recoverable arsenic concentration by river mile at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>12</sup>. Horizontal line represens the arsenic surface water performance goal for total recoverable concentration [USEPA, 2004].

<sup>&</sup>lt;sup>12</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: river mile 7 and 11 (2013-2016), river mile 34 (2015-2016), river mile 42 (2010-2014), river mile 53 (2010-2012), and river mile 84 (2010-2012 and 2014).



Figure 2-39. Dissolved arsenic concentrations at tributary sampling sites<sup>13</sup> in the Clark Fork River Operable Unit, 2010-2016. Horizontal line represents the arsenic surface water performance goal for dissolved concentration [USEPA, 2004].

<sup>&</sup>lt;sup>13</sup> Tributary abbreviations: SBC = Silver Bow Creek, MWC = Mill-Willow Creek, and LBR = Little Blackfoot River.



Figure 2-40. Total recoverable arsenic concentrations at tributary sampling sites<sup>14</sup> in the Clark Fork River Operable Unit, 2010-2016. Horizontal line represents the arsenic surface water performance goal for total recoverable concentration [USEPA, 2004].

<sup>&</sup>lt;sup>14</sup> Tributary abbreviations: SBC = Silver Bow Creek, MWC = Mill-Willow Creek, and LBR = Little Blackfoot River.



Figure 2-41. Boxplots of dissolved arsenic concentration by river mile at tributary sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>15</sup>. Horizontal line represents the arsenic surface water performance goal for dissolved concentration [USEPA, 2004].

<sup>&</sup>lt;sup>15</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: Silver Bow Creek at Frontage Road (2014-2016), at Pond 2 outfall (2013-2016), and at Warm Springs (2011-2016); Mill-Willow Creek sites, Warm Springs Creek and Flint Creek (2012-2016); Lost Creek, Racetrack Creek, and Rock Creek (2012); Little Blackfoot River near mouth (2012-2014) and at Beck Hill Road (2014-2016).



Figure 2-42. Boxplots of total recoverable arsenic concentration by river mile at tributary sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>16</sup>. Horizontal line represents the arsenic surface water performance goal for total recoverable concentration [USEPA, 2004].

<sup>&</sup>lt;sup>16</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: Silver Bow Creek at Frontage Road (2014-2016), at Pond 2 outfall (2013-2016), and at Warm Springs (2011-2016); Mill-Willow Creek sites, Warm Springs Creek and Flint Creek (2012-2016); Lost Creek, Racetrack Creek, and Rock Creek (2012); Little Blackfoot River near mouth (2012-2014) and at Beck Hill Road (2014-2016).

### 2.3.6.2 Cadmium

In the Clark Fork River mainstem in 2016, total recoverable cadmium concentrations ranged from <0.00003-0.00040 mg/L [Table 2-10]. No exceedances of the cadmium performance goal occurred in the mainstem in 2016 [Table 2-10].

Total recoverable cadmium concentrations at each Clark Fork River mainstem site were generally similar in 2016 compared to prior monitoring years, although in some prior years (particularly 2011 and 2012) some Q2 samples had elevated concentrations relative to the other samples [Figure 2-43].

Over the period of monitoring at these mainstem sites, there do not appear to be any temporal trends at these sites in total recoverable cadmium concentrations given the variability in these data [Figure 2-43]. Longitudinally, median concentrations at these mainstem sites increased gradually through Reach A from river mile 3 (Clark Fork River near Galen; CFR-03A) to river mile 34 (Clark Fork River at Williams-Tavenner Bridge; CFR-34) and then decreased downstream to river mile 116 (Clark Fork River at Turah; CFR-116A) [Figure 2-44].

Cadmium chronic compliance ratios in the mainstem samples since 2010 have only rarely exceeded 1 and all exceedances occurred prior to 2013 [Figure 2-45]. As with concentrations, there does not appear to be a monotonic trend in cadmium compliance ratios at any mainstem sites [Figure 2-45]. Longitudinally in the mainstem Clark Fork River, the trend in median compliance ratios is similar to the trend for concentrations [Figure 2-44; Figure 2-46].

In the Clark Fork River tributaries in 2016, total recoverable cadmium concentrations ranged from <0.00003-0.00038 mg/L [Table 2-10]. No exceedances of the total recoverable cadmium performance goal occurred in any Clark Fork River tributaries in 2016 [Table 2-10].

Total recoverable cadmium concentrations at each Clark Fork River tributary site were similar in 2016 compared to prior monitoring years with the exception of the Silver Bow Creek site above the Warm Springs Ponds (SS-19; Silver Bow Creek at Frontage Road [Figure 2-47]. At that site, total recoverable cadmium concentrations appear to be decreasing steadily since monitoring began in 2014 [Figure 2-47].

Based on samples collected in Clark Fork River tributaries between 2010-2016, median total recoverable cadmium concentrations decreased by more than double between paired sites in Silver Bow Creek above (SS-19) and below (SBC-P2) the Warm Springs Ponds [Figure 2-48]. Similarly, in Mill-Willow Creek between paired sites above (MCWC-MWB) and below (MWB-SBC) the Mill-Willow Bypass, median total recoverable cadmium concentrations decreased by approximately double although the magnitude of the decrease between the Silver Bow Creek sites was much greater [Figure 2-48]. Besides the Silver Bow Creek site above the Warm Springs Ponds (SS-19), only thee samples collected in Clark Fork River tributaries have exceeded the cadmium performance goal [Figure 2-49]. The highest median compliance ratios in the tributary sites (by about double) have occurred in Silver Bow Creek at Frontage Road [Figure 2-50] although compliance ratios at that site have steadily decreased since 2014 [Figure 2-49].

Table 2-10. Total recoverable cadmium concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2016.

78				Sample	Period		
Site ID	Site Location	01	<b>Q</b> 2			02	01
		Q1	Rising	Peak	Falling	цэ	ષ્ટ્ર4
	Mai	nstem Site	<b>S</b>				
CFR-03A	Clark Fork River near Galen	0.00016	0.00017	0.00014	0.00007	0.00004	0.00006
CFR-07D	Clark Fork River at Galen Road	0.00013	0.00019	0.00014	0.00006	0.00004	0.00007
CFR-11F	Clark Fork River at Gemback Road	0.00015	0.00019	0.00016	0.00006	ND	0.00007
CFR-27H	Clark Fork River at Deer Lodge	0.00017	0.00038	0.00024	0.00007	0.00004	0.00015
CFR-34	Clark Fork River at Williams- Tavenner Bridge	0.00018	0.00040	0.00023	0.00008	ND	0.00037
CFR-116A	Clark Fork River at Turah	0.00009	0.00022	0.00010	0.00003	0.00003	0.00010
	outary Site	s					
SS-19	Silver Bow Creek at Frontage Road	0.00038	0.00029	0.00021	0.00013	0.00031	0.00024
SBC-P2	Silver Bow Creek at Pond 2 Outfall	0.00011	0.00025	0.00015	0.00004	0.00004	0.00011
SS-25	Silver Bow Creek at Warm Springs	0.00012	0.0002	0.00013	0.00006	0.00003	0.00008
MCWC-MWB	Mill-Willow Creek at Frontage Road	0.00006	0.00008	0.0001	0.00007	0.00004	0.00018
MWB-SBC	Mill-Willow Bypass near mouth	ND	0.00011	0.0001	0.00007	ND	0.00004
WSC-SBC	Warm Springs Creek near mouth	0.00004	0.00006	0.00006	0.00005	0.00027	0.00005
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	ND	0.00003	ND	0.00004	ND	ND
FC-CFR	Flint Creek near mouth	0.00003	0.00017	0.00005	ND	ND	ND
	Not sampled.		-7 52			~	

ND

Not detected at analytical reporting limit.

Exceeds chronic aquatic life standard [MDEQ, 2012b].



Figure 2-43. Total recoverable cadmium concentrations at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016. Dashed line represents the chronic aquatic life standard<sup>17</sup> [MDEQ, 2012b].

 $<sup>^{17}</sup>$  Assuming water hardness is 100 mg/L as CaCO3.



Figure 2-44. Boxplots of total recoverable cadmium concentration by river mile at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>18</sup>. Dashed line represents the chronic aquatic life standard<sup>19</sup> [MDEQ, 2012b].

<sup>&</sup>lt;sup>18</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: river mile 7 and 11 (2013-2016), river mile 34 (2015-2016), river mile 42 (2010-2014), river mile 53 (2010-2012), and river mile 84 (2010-2012 and 2014).

<sup>&</sup>lt;sup>19</sup> Assuming water hardness is 100 mg/L as CaCO3.



Figure 2-45. Total recoverable cadmium chronic compliance ratios through time at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016. The compliance ratio is the ratio of the sample concentration to the chronic aquatic life standard [MDEQ, 2012b] represented by the gray line.



Figure 2-46. Boxplots of total recoverable cadmium chronic compliance ratios at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>20</sup>. The compliance ratio is the ratio of the sample concentration to the chronic aquatic life standard [MDEQ, 2012b] represented by the gray line.

<sup>&</sup>lt;sup>20</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: river mile 7 and 11 (2013-2016), river mile 34 (2015-2016), river mile 42 (2010-2014), river mile 53 (2010-2012), and river mile 84 (2010-2012 and 2014).



Figure 2-47. Total recoverable cadmium concentrations at tributary sampling sites<sup>21</sup> in the Clark Fork River Operable Unit, 2010-2016. Dashed line represents the chronic aquatic life standard<sup>22</sup> [MDEQ, 2012b].

<sup>&</sup>lt;sup>21</sup> Tributary abbreviations: SBC = Silver Bow Creek, MWC = Mill-Willow Creek, and LBR = Little Blackfoot River.

 $<sup>^{\</sup>rm 22}$  Assuming water hardness is 100 mg/L as CaCO3.



Figure 2-48. Boxplots of total recoverable cadmium concentration at tributary sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>23</sup>. Dashed line represents the chronic aquatic life standard<sup>24</sup> [MDEQ, 2012b].

<sup>&</sup>lt;sup>23</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: Silver Bow Creek at Frontage Road (2014-2016), at Pond 2 outfall (2013-2016), and at Warm Springs (2011-2016); Mill-Willow Creek sites, Warm Springs Creek and Flint Creek (2012-2016); Lost Creek, Racetrack Creek, and Rock Creek (2012); Little Blackfoot River near mouth (2012-2014) and at Beck Hill Road (2014-2016).

<sup>&</sup>lt;sup>24</sup> Assuming water hardness is 100 mg/L as CaCO3.



Figure 2-49. Total recoverable cadmium chronic compliance ratios through time at tributary sampling sites<sup>25</sup> in the Clark Fork River Operable Unit, 2010-2016. The compliance ratio is the ratio of the sample concentration to the chronic aquatic life standard [MDEQ, 2012b] represented by the gray line.

<sup>&</sup>lt;sup>25</sup> Tributary abbreviations: SBC = Silver Bow Creek, MWC = Mill-Willow Creek, and LBR = Little Blackfoot River.


Figure 2-50. Boxplots of total recoverable cadmium chronic compliance ratios at tributary sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>26</sup>. The compliance ratio is the ratio of the sample concentration to the chronic aquatic life standard [MDEQ, 2012b] represented by the gray line.

<sup>&</sup>lt;sup>26</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: Silver Bow Creek at Frontage Road (2014-2016), at Pond 2 outfall (2013-2016), and at Warm Springs (2011-2016); Mill-Willow Creek sites, Warm Springs Creek and Flint Creek (2012-2016); Lost Creek, Racetrack Creek, and Rock Creek (2012); Little Blackfoot River near mouth (2012-2014) and at Beck Hill Road (2014-2016).

# 2.3.6.3 Copper

In the Clark Fork River mainstem in 2016, dissolved copper concentrations ranged from 0.002-0.014 mg/L [Table 2-11]. No exceedances of the copper performance goal occurred in the mainstem in 2016 [Table 2-11].

Dissolved copper concentrations at each Clark Fork River mainstem site were generally similar in 2016 compared to prior monitoring years [Figure 2-51]. One exception in 2016 occurred at Galen Road in Q3 which had an abnormally elevated copper concentration [Figure 2-51].

Over the period of monitoring at these mainstem sites, there do not appear to be any temporal trends at these sites in dissolved copper concentrations given the variability in these data [Figure 2-51]. Longitudinally, median concentrations at these mainstem sites generally increased gradually through Reach A from river mile 3 (Clark Fork River near Galen; CFR-03A) to river mile 42 (Clark Fork River at Garrison; CFR-42F) and then decreased downstream to river mile 116 (Clark Fork River at Turah; CFR-116A) [Figure 2-52].

Copper chronic compliance ratios in the mainstem samples since 2010 have rarely exceeded 1 at any sites although there were samples at all mainstem sites (except at Galen Road and at Gemback Road) which have exceeded 1 [Figure 2-53]. As with concentrations, there does not appear to be a monotonic trend in copper compliance ratios at any mainstem sites [Figure 2-53]. Longitudinally in the mainstem Clark Fork River, the trend in median compliance ratios is similar to the trend for concentrations [Figure 2-52; Figure 2-54].

In the Clark Fork River tributaries in 2016, dissolved copper concentrations ranged from <0.001-0.013 mg/L [Table 2-11]. One exceedance of the dissolved copper performance goal occurred in the Clark Fork River tributaries in 2016: in Silver Bow Creek at Frontage Road during the Q2-Falling sample period [Table 2-11].

Dissolved copper concentrations at each Clark Fork River tributary site were similar in 2016 compared to prior monitoring years with the exception of the Silver Bow Creek site above the Warm Springs Ponds (SS-19; Silver Bow Creek at Frontage Road [Figure 2-55]. At that site, dissolved copper concentrations appear to be decreasing steadily since monitoring began in 2014 [Figure 2-55].

Based on samples collected in Clark Fork River tributaries between 2010-2016, median dissolved copper concentrations decreased by about double between paired sites in Silver Bow Creek above (SS-19) and below (SBC-P2) the Warm Springs Ponds [Figure 2-56]. In Mill-Willow Creek between paired sites above (MCWC-MWB) and below (MWB-SBC) the Mill-Willow Bypass, median dissolved copper concentrations were approximately equal [Figure 2-56]. Exceedances of the copper performance goal in tributary samples have been rare [Figure 2-57]. The highest median compliance ratios in the tributary sites (by about double) have occurred in Silver Bow Creek at Frontage Road [Figure 2-58] although compliance ratios at that site have steadily decreased since 2014 [Figure 2-57].

# Table 2-11. Dissolved copper concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2016.

		Sample Period						
Site ID	Site Location	Q1		<b>Q</b> 2	0.0			
			Rising	Peak	Falling	Q3	<b>Q</b> 4	
	Mainster	n Sites						
CFR-03A	CFR-03A Clark Fork River near Galen				0.004	0.003	0.003	
CFR-07D	Clark Fork River at Galen Road	0.004	0.005	0.007	0.005	0.014	0.003	
CFR-11F	Clark Fork River at Gemback Road	0.005	0.005	0.007	0.005	0.005	0.003	
CFR-27H	Clark Fork River at Deer Lodge	0.007	0.008	0.010	0.007	0.008	0.005	
CFR-34	Clark Fork River at Williams- Tavenner Bridge	0.007	0.008	0.011	0.008	0.007	0.005	
CFR-116A	Clark Fork River at Turah	0.003	0.003	0.004	0.004	0.002	0.002	
Tributary Sites								
SS-19	Silver Bow Creek at Frontage Road		0.010	0.008	0.009	0.007	0.011	
SBC-P2	Silver Bow Creek at Pond 2 Outfall	0.003	0.007	0.010	0.004	0.003	0.005	
SS-25	Silver Bow Creek at Warm Springs	0.003	0.006	0.007	0.003	0.003	0.003	
MCWC-MWB	Mill-Willow Creek at Frontage Road	0.003	0.004	0.005	0.003	0.002	ND	
MWB-SBC	Mill-Willow Bypass near mouth	0.002	0.004	0.005	0.003	0.001	ND	
WSC-SBC	Warm Springs Creek near mouth	0.002	0.003	0.003	0.003	0.002	0.002	
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	ND	0.001	ND	ND	ND	ND	
FC-CFR	Flint Creek near mouth	ND	ND	ND	0.001	ND	ND	
2. 2.77770	Not sampled.			06 - 8	04	50. 		

ND

Not detected at analytical reporting limit.

Exceeds federal ambient water quality criteria for chronic toxicity [USEPA, 1986].

Exceeds federal ambient water quality criteria for acute toxicity [USEPA, 1986].



Figure 2-51. Dissolved copper concentrations at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016. Horizontal lines represent the chronic (dashed) and acute (solid) aquatic life standards<sup>27</sup> [MDEQ, 2012b].

 $<sup>^{27}</sup>$  Assuming water hardness is 100 mg/L as CaCO3.



Figure 2-52. Boxplots of dissolved copper concentration by river mile at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>28</sup>. Horizontal lines represent the chronic (dashed) and acute (solid) aquatic life standards<sup>29</sup> [MDEQ, 2012b].

<sup>&</sup>lt;sup>28</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: river mile 7 and 11 (2013-2016), river mile 34 (2015-2016), river mile 42 (2010-2014), river mile 53 (2010-2012), and river mile 84 (2010-2012 and 2014).

<sup>&</sup>lt;sup>29</sup> Assuming water hardness is 100 mg/L as CaCO3.



Figure 2-53. Dissolved copper chronic compliance ratios through time at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016. The compliance ratio is the ratio of the sample concentration to the chronic aquatic life standard [MDEQ, 2012b] represented by the gray line.



Figure 2-54. Boxplots of dissolved copper chronic compliance ratios at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>30</sup>. The compliance ratio is the ratio of the sample concentration to the chronic aquatic life standard [MDEQ, 2012b] represented by the gray line.

<sup>&</sup>lt;sup>30</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some: river mile 7 and 11 (2013-2016), river mile 34 (2015-2016), river mile 42 (2010-2014), river mile 53 (2010-2012), and river mile 84 (2010-2012 and 2014).



Figure 2-55. Dissolved copper concentrations at tributary sampling sites<sup>31</sup> in the Clark Fork River Operable Unit, 2010-2016. Horizontal lines represent the chronic (dashed) and acute (solid) aquatic life standards<sup>32</sup> [MDEQ, 2012b].

<sup>&</sup>lt;sup>31</sup> Tributary abbreviations: SBC = Silver Bow Creek, MWC = Mill-Willow Creek, and LBR = Little Blackfoot River.

 $<sup>^{32}</sup>$  Assuming water hardness is 100 mg/L as CaCO3.



# Figure 2-56. Boxplots of dissolved copper concentration at tributary sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>33</sup>. Lines represent the chronic (dashed) and acute (solid) aquatic life standards<sup>34</sup> [MDEQ, 2012b].

<sup>&</sup>lt;sup>33</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: Silver Bow Creek at Frontage Road (2014-2016), at Pond 2 outfall (2013-2016), and at Warm Springs (2011-2016); Mill-Willow Creek sites, Warm Springs Creek and Flint Creek (2012-2016); Lost Creek, Racetrack Creek, and Rock Creek (2012); Little Blackfoot River near mouth (2012-2014) and at Beck Hill Road (2014-2016).

<sup>&</sup>lt;sup>34</sup> Assuming water hardness is 100 mg/L as CaCO3.



Figure 2-57. Dissolved copper chronic compliance ratios through time at tributary sampling sites<sup>35</sup> in the Clark Fork River Operable Unit, 2010-2016. The compliance ratio is the ratio of the sample concentration to the chronic aquatic life standard [MDEQ, 2012b] represented by the gray line.

<sup>&</sup>lt;sup>35</sup> Tributary abbreviations: SBC = Silver Bow Creek, MWC = Mill-Willow Creek, and LBR = Little Blackfoot River.



Figure 2-58. Boxplots of dissolved copper chronic compliance ratios at tributary sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>36</sup>. The compliance ratio is the ratio of the sample concentration to the chronic aquatic life standard [MDEQ, 2012b] represented by the gray line.

<sup>&</sup>lt;sup>36</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: Silver Bow Creek at Frontage Road (2014-2016), at Pond 2 outfall (2013-2016), and at Warm Springs (2011-2016); Mill-Willow Creek sites, Warm Springs Creek and Flint Creek (2012-2016); Lost Creek, Racetrack Creek, and Rock Creek (2012); Little Blackfoot River near mouth (2012-2014) and at Beck Hill Road (2014-2016).

#### 2.3.6.4 Lead

In the Clark Fork River mainstem in 2016, total recoverable lead concentrations ranged from <0.0003-0.0139 mg/L [Table 2-12]. Exceedances of the lead performance goal occurred in the mainstem during the Q2-Rising sample period at Deer Lodge, at Williams-Tavenner Bridge, and at Turah [Table 2-12].

Total recoverable lead concentrations at each Clark Fork River mainstem site were generally similar in 2016 compared to prior monitoring years, although the elevated Q2 concentrations in 2016 were generally low compared to the elevated Q2 samples in 2010, 2011, and 2012 [Figure 2-59].

Over the period of monitoring at these mainstem sites, there do not appear to be any temporal trends in total recoverable lead concentrations given the variability in these data [Figure 2-59]. Longitudinally, median concentrations at these mainstem sites increased gradually through Reach A from river mile 3 (Clark Fork River near Galen; CFR-03A) to river mile 34 (Clark Fork River at Williams-Tavenner Bridge; CFR-34) and then decreased downstream to river mile 116 (Clark Fork River at Turah; CFR-116A) [Figure 2-60].

Lead chronic compliance ratios in the mainstem samples since 2010 have have occaissionally exceeded 1 although some exceedances between 2010 and 2012 were quite elevated [Figure 2-61]. As with concentrations, there does not appear to be a monotonic trend in lead compliance ratios at any mainstem sites [Figure 2-45]. Longitudinally in the mainstem Clark Fork River, the trend in median compliance ratios is similar to the trend for concentrations [Figure 2-60; Figure 2-62].

In the Clark Fork River tributaries in 2016, total recoverable lead concentrations ranged from <0.0003-0.0177 mg/L [Table 2-12]. Exceedances of the total recoverable lead performance goal occurred in Mill-Willow Creek at Frontage Road (Q2-Rising and Q4) and in Flint Creek (Q2-Rising and Q2-Peak) in 2016 [Table 2-12].

Total recoverable lead concentrations at each Clark Fork River tributary site were similar in 2016 compared to prior monitoring years [Figure 2-63]. One site with temporal trends in total recoverable lead concentrations which deviates somewhat from other sites in the CFROU is the Mill-Willow Creek at Frontage Road site where the highest concentrations have occurred in Q4 rather than in Q2 [Figure 2-59; Figure 2-63]. This trend has also been observed in Silver Bow Creek sites in the SSTOU where generally the highest total recoverable COC concentrations occur during Q4 and are accompanied by high total suspended sediment concentrations [RESPEC, 2016b].

Based on samples collected in Clark Fork River tributaries between 2010-2016, median total recoverable lead concentrations decreased by about double between paired sites in Silver Bow Creek above (SS-19) and below (SBC-P2) the Warm Springs Ponds [Figure 2-64]. Similarly, in Mill-Willow Creek between paired sites above (MCWC-MWB) and below (MWB-SBC) the Mill-Willow Bypass, median total recoverable lead concentrations decreased substantially [Figure 2-64]. Lead concentrations and compliance ratios in some tributary sites (i.e., Mill-Willow Creek at Frontage Road, Racetrack Creek, and Flint Creek) have been highly variable [Figure 2-65]. The highest lead compliance ratios in the tributary sites have occurred in Flint Creek with compliance ratios reaching nearly 14 [Figure 2-66].

Table 2-12. Total recoverable lead concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2016.

93		Sample Period						
Site ID	Site Location	Q1	8	Q2	02	04		
			Rising	Peak	Falling	હુર	ષ્ય	
27 74	Mair	nstem Sit	es		2	22 - 2	1	
CFR-03A	Clark Fork River near Galen	0.0022	0.0024	0.0023	0.0012	ND	0.0007	
CFR-07D	Clark Fork River at Galen Road	0.0026	0.0042	0.0028	0.0011	ND	0.0008	
CFR-11F	Clark Fork River at Gemback Road	0.0032	0.0047	0.0032	0.0010	ND	0.001	
CFR-27H	Clark Fork River at Deer Lodge	0.0039	0.0139	0.0054	0.0011	0.0004	0.0035	
CFR-34	Clark Fork River at Williams- Tavenner Bridge	0.0044	0.0120	0.0058	0.0012	ND	0.0097	
CFR-116A	Clark Fork River at Turah	0.0023	0.0063	0.0025	0.0004	0.0006	0.0016	
Tributary Sites								
SS-19	Silver Bow Creek at Frontage Road	0.0018	0.0031	0.0021	0.0006	0.0021	0.0008	
SBC-P2	Silver Bow Creek at Pond 2 Outfall	0.0019	0.0022	0.0007	0.0003	0.0004	0.0009	
SS-25	Silver Bow Creek at Warm Springs	0.0016	0.0021	0.0013	0.0009	ND	0.0008	
MCWC-MWB	Mill-Willow Creek at Frontage Road	0.0014	0.0017	0.0019	0.0010	0.0013	0.0060	
MWB-SBC	Mill-Willow Bypass near mouth	0.0008	0.0022	0.0019	0.0010	0.0004	0.0006	
WSC-SBC	Warm Springs Creek near mouth	0.0003	0.0010	0.0013	0.0011	ND	0.0006	
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	ND	0.0013	0.0005	ND	ND	ND	
FC-CFR	Flint Creek near mouth	0.0037	0.0177	0.0053	0.0013	0.0004	0.0009	
1000	Not sampled							

ND

Not detected at analytical reporting limit.

Exceeds chronic aquatic life standard [MDEQ, 2012b].

Exceeds acute aquatic life standard [MDEQ, 2012b].



Figure 2-59. Total recoverable lead concentrations at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016. Dashed line represents the chronic aquatic life standard<sup>37</sup> [MDEQ, 2012b].

 $<sup>^{37}</sup>$  Assuming water hardness is 100 mg/L as CaCO3.



Figure 2-60. Boxplots of total recoverable lead concentration by river mile at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>38</sup>. Dashed line represents the chronic aquatic life standard<sup>39</sup> [MDEQ, 2012b].

<sup>&</sup>lt;sup>38</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: river mile 7 and 11 (2013-2016), river mile 34 (2015-2016), river mile 42 (2010-2014), river mile 53 (2010-2012), and river mile 84 (2010-2012 and 2014).

 $<sup>^{\</sup>rm 39}$  Assuming water hardness is 100 mg/L as CaCO3.



Figure 2-61. Total recoverable lead chronic compliance ratios through time at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016. The compliance ratio is the ratio of the sample concentration to the chronic aquatic life standard [MDEQ, 2012b] represented by the gray line.



Figure 2-62. Boxplots of total recoverable lead chronic compliance ratios at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>40</sup>. The compliance ratio is the ratio of the sample concentration to the chronic aquatic life standard [MDEQ, 2012b] represented by the gray line.

<sup>&</sup>lt;sup>40</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: river mile 7 and 11 (2013-2016), river mile 34 (2015-2016), river mile 42 (2010-2014), river mile 53 (2010-2012), and river mile 84 (2010-2012 and 2014).



Figure 2-63. Total recoverable lead concentrations at tributary sampling sites<sup>41</sup> in the Clark Fork River Operable Unit, 2010-2016. Dashed line represents the chronic aquatic life standard<sup>42</sup> [MDEQ, 2012b].

<sup>&</sup>lt;sup>41</sup> Tributary abbreviations: SBC = Silver Bow Creek, MWC = Mill-Willow Creek, and LBR = Little Blackfoot River.

 $<sup>^{\</sup>rm 42}$  Assuming water hardness is 100 mg/L as CaCO3.



Figure 2-64. Boxplots of total recoverable lead concentration at tributary sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>43</sup>. Dashed line represents the chronic aquatic life standard<sup>44</sup> [MDEQ, 2012b].

<sup>&</sup>lt;sup>43</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: Silver Bow Creek at Frontage Road (2014-2016), at Pond 2 outfall (2013-2016), and at Warm Springs (2011-2016); Mill-Willow Creek sites, Warm Springs Creek and Flint Creek (2012-2016); Lost Creek, Racetrack Creek, and Rock Creek (2012); Little Blackfoot River near mouth (2012-2014) and at Beck Hill Road (2014-2016).

 $<sup>^{44}</sup>$  Assuming water hardness is 100 mg/L as CaCO3.



Figure 2-65. Total recoverable lead chronic compliance ratios through time at tributary sampling sites<sup>45</sup> in the Clark Fork River Operable Unit, 2010-2016. The compliance ratio is the ratio of the sample concentration to the chronic aquatic life standard [MDEQ, 2012b] represented by the gray line.

<sup>&</sup>lt;sup>45</sup> Tributary abbreviations: SBC = Silver Bow Creek, MWC = Mill-Willow Creek, and LBR = Little Blackfoot River.



Figure 2-66. Boxplots of total recoverable lead chronic compliance ratios at tributary sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>46</sup>. The compliance ratio is the ratio of the sample concentration to the chronic aquatic life standard [MDEQ, 2012b] represented by the gray line.

<sup>&</sup>lt;sup>46</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: Silver Bow Creek at Frontage Road (2014-2016), at Pond 2 outfall (2013-2016), and at Warm Springs (2011-2016); Mill-Willow Creek sites, Warm Springs Creek and Flint Creek (2012-2016); Lost Creek, Racetrack Creek, and Rock Creek (2012); Little Blackfoot River near mouth (2012-2014) and at Beck Hill Road (2014-2016).

# 2.3.6.5 Zinc

In the Clark Fork River mainstem in 2016, total recoverable zinc concentrations ranged from <0.008-0.080 mg/L [Table 2-13]. No exceedances of the zinc performance goal occurred in the mainstem sites [Table 2-13].

Total recoverable zinc concentrations at each Clark Fork River mainstem site were generally similar in 2016 compared to prior monitoring years, although the elevated Q2 concentrations in 2016 were generally low compared to the elevated Q2 samples in 2010, 2011, and 2012 [Figure 2-67].

Over the period of monitoring at these mainstem sites, there do not appear to be any temporal trends in total recoverable zinc concentrations given the variability in these data [Figure 2-67]. Longitudinally, median concentrations at these mainstem sites increased gradually through Reach A from river mile 3 (Clark Fork River near Galen; CFR-03A) to river mile 34 (Clark Fork River at Williams-Tavenner Bridge; CFR-34) and then decreased downstream to river mile 116 (Clark Fork River at Turah; CFR-116A) [Figure 2-68].

Zinc chronic compliance ratios in the mainstem samples since 2010 have only rarely exceeded 1 but all of those exceedances occurred prior to 2013. As with concentrations, there does not appear to be a monotonic trend in zinc compliance ratios at any mainstem sites.

Longitudinally in the mainstem Clark Fork River, the trend in median compliance ratios is similar to the trend for concentrations [Figure 2-68; Figure 2-70].

In the Clark Fork River tributaries in 2016, total recoverable zinc concentrations ranged from <0.008-0.119 mg/L [Table 2-13]. No exceedances of the total recoverable zinc performance goal occurred in the Clark Fork River tributaries in 2016 [Table 2-13].

Total recoverable zinc concentrations at each Clark Fork River tributary site were similar in 2016 compared to prior monitoring years with the possible exception of Silver Bow Creek at Frontage Road [Figure 2-71]. At the Silver Bow Creek at Frontage Road site there may be a decreasing trend but there is a high degree of variability in the zinc concentrations at the site which makes a trend difficult to discern [Figure 2-71].

Based on samples collected in Clark Fork River tributaries between 2010-2016, median total recoverable zinc concentrations decreased by seven times between paired sites in Silver Bow Creek above (SS-19) and below (SBC-P2) the Warm Springs Ponds [Figure 2-72]. Similarly, in Mill-Willow Creek between paired sites above (MCWC-MWB) and below (MWB-SBC) the Mill-Willow Bypass, median total recoverable zinc concentrations decreased but not by nearly as large a margin as in Silver Bow Creek [Figure 2-72]. Zinc compliance ratios in Silver Bow Creek at Frontage Road appear to be decreasing through time but do not appear to be changing through time at other tributary sites [Figure 2-73]. The highest median zinc compliance ratios in the tributary sites have occurred in Silver Bow Creek at Frontage Road (by a large margin) although no samples at that site have compliance ratios >1 [Figure 2-74]. The only sample collected in any tributary sites with a compliance ratio >1 was collected in Flint Creek in 2012 [Figure 2-73].

Table 2-13. Total recoverable zinc concentrations (mg/L) at Clark Fork River Operable Unit monitoring stations, 2016.

		Sample Period							
Site ID	Site Location	Q1		<b>Q</b> 2	01	04			
			Rising	Peak	Falling	હુર	ષ્ટ્ર4		
	Mair	nstem Sit	es	=	-				
CFR-03A	Clark Fork River near Galen	0.022	0.025	0.023	0.009	ND	0.009		
CFR-07D	Clark Fork River at Galen Road	0.022	0.031	0.025	0.010	ND	0.011		
CFR-11F	Clark Fork River at Gemback Road	0.027	0.036	0.029	0.010	ND	0.013		
CFR-27H	Clark Fork River at Deer Lodge	0.033	0.072	0.040	0.010	ND	0.031		
CFR-34	Clark Fork River at Williams- Tavenner Bridge	0.034	0.080	0.041	0.011	ND	0.069		
CFR-116A	Clark Fork River at Turah	0.022	0.045	0.022	ND	ND	0.017		
Tributary Sites									
SS-19	Silver Bow Creek at Frontage Road	0.119	0.069	0.057	0.020	0.064	0.100		
SBC-P2	Silver Bow Creek at Pond 2 Outfall	0.021	0.044	0.022	ND	ND	0.016		
SS-25	Silver Bow Creek at Warm Springs	0.017	0.031	0.018	ND	ND	0.011		
MCWC-MWB	Mill-Willow Creek at Frontage Road	0.011	0.009	0.012	ND	ND	0.024		
MWB-SBC	Mill-Willow Bypass near mouth	ND	0.012	0.011	ND	0.008	ND		
WSC-SBC	Warm Springs Creek near mouth	ND	ND	ND	ND	ND	ND		
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	ND	0.008	ND	ND	ND	ND		
FC-CFR	Flint Creek near mouth	0.012	0.053	0.016	ND	ND	ND		

ND Not detected at analytical reporting limit.



Figure 2-67. Total recoverable zinc concentrations at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016. Line represents the chronic/acute aquatic life standard<sup>47</sup> [MDEQ, 2012b].

 $<sup>^{47}</sup>$  Assuming water hardness is 100 mg/L as CaCO3.



Figure 2-68. Boxplots of total recoverable zinc concentration by river mile at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>48</sup>. Line represents the chronic/acute aquatic life standard<sup>49</sup> [MDEQ, 2012b].

<sup>&</sup>lt;sup>48</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: river mile 7 and 11 (2013-2016), river mile 34 (2015-2016), river mile 42 (2010-2014), river mile 53 (2010-2012), and river mile 84 (2010-2012 and 2014).

<sup>&</sup>lt;sup>49</sup> Assuming water hardness is 100 mg/L as CaCO3.



Figure 2-69. Total recoverable zinc chronic compliance ratios through time at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016. The compliance ratio is the ratio of the sample concentration to the chronic/acute aquatic life standard [MDEQ, 2012b] represented by the gray line.



Figure 2-70. Boxplots of total recoverable zinc chronic/acute compliance ratios at mainstem sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>50</sup>. The compliance ratio is the ratio of the sample concentration to the chronic/acute aquatic life standard [MDEQ, 2012b] represented by the gray line.

<sup>&</sup>lt;sup>50</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: river mile 7 and 11 (2013-2016), river mile 34 (2015-2016), river mile 42 (2010-2014), river mile 53 (2010-2012), and river mile 84 (2010-2012 and 2014).



Figure 2-71. Total recoverable zinc concentrations at tributary sampling sites<sup>51</sup> in the Clark Fork River Operable Unit, 2010-2016. Line represents the chronic/acute aquatic life standard<sup>52</sup> [MDEQ, 2012b].

<sup>&</sup>lt;sup>51</sup> Tributary abbreviations: SBC = Silver Bow Creek, MWC = Mill-Willow Creek, and LBR = Little Blackfoot River.



Figure 2-72. Boxplots of total recoverable zinc concentration at tributary sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>53</sup>. Line represents the chronic/acute aquatic life standard<sup>54</sup> [MDEQ, 2012b].

<sup>&</sup>lt;sup>52</sup> Assuming water hardness is 100 mg/L as CaCO3.

<sup>&</sup>lt;sup>53</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: Silver Bow Creek at Frontage Road (2014-2016), at Pond 2 outfall (2013-2016), and at Warm Springs (2011-2016); Mill-Willow Creek sites, Warm Springs Creek and Flint Creek (2012-2016); Lost Creek, Racetrack Creek, and Rock Creek (2012); Little Blackfoot River near mouth (2012-2014) and at Beck Hill Road (2014-2016).



Figure 2-73. Total recoverable zinc chronic/acute compliance ratios through time at tributary sampling sites<sup>55</sup> in the Clark Fork River Operable Unit, 2010-2016. The compliance ratio is the ratio of the sample concentration to the chronic/acute aquatic life standard [MDEQ, 2012b] represented by the gray line.

 $<sup>^{54}</sup>$  Assuming water hardness is 100 mg/L as CaCO3.

<sup>&</sup>lt;sup>55</sup> Tributary abbreviations: SBC = Silver Bow Creek, MWC = Mill-Willow Creek, and LBR = Little Blackfoot River.



Figure 2-74. Boxplots of total recoverable zinc chronic/acute compliance ratios at tributary sampling sites in the Clark Fork River Operable Unit, 2010-2016<sup>56</sup>. The compliance ratio is the ratio of the sample concentration to the chronic/acute aquatic life standard [MDEQ, 2012b] represented by the gray line.

<sup>&</sup>lt;sup>56</sup> Not all sites were sampled each year or necessarily at the same time of year. The following sites were sampled only during some years: Silver Bow Creek at Frontage Road (2014-2016), at Pond 2 outfall (2013-2016), and at Warm Springs (2011-2016); Mill-Willow Creek sites, Warm Springs Creek and Flint Creek (2012-2016); Lost Creek, Racetrack Creek, and Rock Creek (2012); Little Blackfoot River near mouth (2012-2014) and at Beck Hill Road (2014-2016).

# 2.3.7 Other Metals

# 2.3.7.1 Mercury

In the Clark Fork River near Drummond in 2016, total mercury concentrations ranged from 0.000007-0.000190 mg/L and an exceedance of the mercury HHSWS occurred in the Q2-Rising sample period [Table 2-14]. The concentrations observed at the near Drummond site in 2016 were similar to prior monitoring years at the site since 2012 [Figure 2-75]. Compared to mainstem sites upstream from the near Drummond site, specifically the Deer Lodge and Gold Creek sites, mercury concentrations were not substantially different at Drummond in 2012 [Figure 2-76]. However, the Deer Lodge and Gold Creek sites were not sampled after 2012 [Figure 2-76]. Three has been a high degree of variability in the mercury concentrations at the near Drummond site, although about 75% of the samples at the near Drummond site were below the human health surface water standard [Figure 2-76].

In Flint Creek in 2016, total mercury concentrations ranged from 0.000012-0.000830 mg/L and exceedances of the mercury HHSWS occurred in Q1 and all Q2 sample periods [Table 2-14]. The concentrations observed at the site in 2016 were similar to prior monitoring years at the site since 2012 [Figure 2-77]. Compared to all mainstem and tributary sites, total mercury concentrations in Flint Creek were substantially higher [Figure 2-76; Figure 2-78]. Median mercury concentrations in Flint Creek are approximately double the HHSWS [Figure 2-78] and mean concentrations in Flint Creek were approximately four times higher than the HHSWS between 2012-2016.

Table 2-14.	Total	mercury	concentrations	(mg/L)	at Cl	lark	Fork	River	Operable	Unit
monitoring	static	ons, 2016.								

	Sample Period										
Site Location	Q1	50	<b>Q</b> 2	03	01						
		Rising	Peak	Falling	Q3	ષ્ટ્ર4					
Mainstem Sites											
Clark Fork River near Drummond	0.000035	0.000190	0.000037	0.000007	0.000023	0.000008					
Tributary Sites											
Flint Creek near mouth	0.000140	0.000830	0.000420	0.000057	0.000012	0.000018					
	Site Location Clark Fork River near Drummond Flint Creek near mouth	Site Location Q1 Ma Clark Fork River near Drummond 0.000035 Tr Flint Creek near mouth 0.000140	Site Location Q1 Rising Clark Fork River near Drummond 0.000035 0.000190 Tributary Site Flint Creek near mouth 0.000140 0.000830	Site Location Q1 Q1 Q2 Rising Peak Clark Fork River near Drummond 0.000035 0.000190 0.000037 CIark Fork River near Drummond 0.000035 0.000190 0.000037 CIark Fork River near 0.000140 0.000830 0.000420 CIark Fork River near 0.000140 0.000830 0.000420 CIark Fork River near CIArk Fork Rive	Sample Period           Site Location         Q1         Q2           Rising         Peak         Falling           Mainstem Sites           Clark Fork River near Drummond         0.000035         0.000190         0.000037         0.000007           Tributary Sites           Flint Creek near mouth         0.000140         0.000830         0.000420         0.000057	Sample Period           Site Location         Q1         Q2         Q3           Rising         Peak         Falling         Q3           Clark Fork River near Drummond         0.000035         0.000190         0.000037         0.000007         0.000023           Flint Creek near mouth         0.000140         0.000830         0.000420         0.000057         0.000012					

Exceeds human health surface water standard [0.000050 mg/L; MDEQ, 2012b].



Figure 2-75. Total mercury concentrations at mainstem sampling sites in the Clark Fork River Operable Unit, 2012-2016. Horizontal line represents the mercury human health surface water standard [MDEQ, 2012b].



Figure 2-76. Boxplots of total mercury concentration by river mile at mainstem sampling sites in the Clark Fork River Operable Unit, 2012-2016<sup>57</sup>. Horizontal line represents the arsenic surface water performance goal for dissolved concentration [USEPA, 2004].

<sup>&</sup>lt;sup>57</sup> All sites were sampled only in 2012 except at river mile 84 which was sampled from 2012-2016.



Figure 2-77. Total mercury concentrations at tributary sampling sites in the Clark Fork River Operable Unit, 2012-2016. Horizontal line represents the mercury human health surface water standard [MDEQ, 2012b].



Figure 2-78. Boxplots of total mercury concentration at tributary sampling sites in the Clark Fork River Operable Unit, 2012-2016<sup>58</sup>. Horizontal line represents the arsenic surface water performance goal for dissolved concentration [USEPA, 2004].

<sup>&</sup>lt;sup>58</sup> All sites were sampled only in 2012 except Silver Bow Creek at Frontage Road (2014-2016) and Flint Creek (2012-2016).
### 2.3.7.2 Methylmercury

In the Clark Fork River near Drummond in 2016, methylmercury concentrations ranged from 0.234-0.1.750 ng/L [Table 2-15]. The concentrations observed at the near Drummond site in 2016 were generally similar to prior monitoring years at the site [Figure 2-79]. However, the Q2-Rising 2016 sample near Drummond had the highest methylmercury concentration since monitoring began in 2012 [Figure 2-79]. With the exception of that sample, methylmercury concentrations at the near Drummond site have not appeared to differ substantially from concentrations at the Deer Lodge and Gold Creek sites although there have been a small number of samples collected at those two upstream sites [Figure 2-79].

In Flint Creek in 2016, methylmercury concentrations ranged from 0.413-4.050 ng/L [Table 2-15]. The concentrations observed at the site in 2016 were similar to prior monitoring years at the site since 2012 [Figure 2-81]. Compared to all mainstem and tributary sites, median methylmercury concentrations in Flint Creek were substantially higher [Figure 2-80; Figure 2-81].

Table 2-15. Methylmercury concentrations (ng/L) at Clark Fork River Operable Unit monitoring stations, 2016.

Site ID	Site Location	01		$\mathbf{Q2}$		02	04	
		QI	Rising	Peak	Falling	હુર	<b>પ</b> 4	
Mainstem Sites								
CFR-84F	Clark Fork River near Drummond	0.444	1.750	0.543	0.180	0.443	0.234	
Tributary Sites								
FC-CFR	Flint Creek near mouth	1.170	4.050	1.460	0.997	0.414	0.413	



Figure 2-79. Methylmercury concentrations at mainstem sampling sites in the Clark Fork River Operable Unit, 2012-2016.



Figure 2-80. Boxplots of methylmercury concentration by river mile at mainstem sampling sites in the Clark Fork River Operable Unit, 2012-2016<sup>59</sup>.

<sup>&</sup>lt;sup>59</sup> All sites were sampled only in 2012 except at river mile 84 which was sampled from 2012-2016.



Figure 2-81. Methylmercury concentrations at tributary sampling sites in the Clark Fork River Operable Unit, 2012-2016.



Figure 2-82. Boxplots of methylmercury concentration at tributary sampling sites in the Clark Fork River Operable Unit, 2012-2016<sup>60</sup>.

<sup>&</sup>lt;sup>60</sup> All sites were sampled only in 2012 except Flint Creek which was sampled from 2012-2016.

### 2.3.8 Data Validation

Data derived from laboratory analysis of surface water samples collected at upper Clark Fork River locations were validated through field quality control samples (i.e., field duplicates and field blanks) and laboratory control samples (lab duplicates, blanks, spikes, and reference and calibration standards. Analysis of field quality measures are described in Appendix A. Results of laboratory quality control measures are described in Appendix B. Data quality objectives (DQOs) were evaluated for accuracy and precision. These DQOs were largely met in 2016 with a few exceptions.

Analyte concentrations were measured in field blanks to evaluate sampling accuracy and the extent to which the field techniques may have contaminated the samples. Twelve field blank samples were collected in 2016 and twenty-five analytes were analyzed in each. Six field blanks were also analyzed for total mercury and methylmercury concentrations. Therefore, in total 312 analyte concentrations were evaluated in the field blanks and 3.5% (11 of 312) of the analytes had concentrations equal to or greater than the respective analytical reporting limit. Total phosphorus was detected in 1% (2 of 12) of the field blank samples with concentrations of 0.004 mg/L and 0.008 mg/L= (reporting limit [RL] = 0.003 mg/L). Dissolved zinc was detected in 75% (9 of 12) of the field blank samples; detectable dissolved zinc concentrations in field blanks ranged from 0.008-0.012 mg/L (mean of detectable concentrations = 0.010 mg/L; RL = 0.008 mg/L).

Analyte concentrations were compared in field sample and field duplicate pairs to evaluate overall sampling precision. Twelve field sample and field duplicate pairs were collected in 2016 and twenty-five analytes were analyzed in each. Six field sample and field duplicate pairs were also analyzed for total mercury and methylmercury concentrations. Therefore, in total 312 comparisons were made between field sample and field duplicate pairs in 2016. The relative percent difference (RPD) of each of those pairs exceeded 25% in 1.6% (5 of 312) of the pairs. Some pairs had RPD  $\geq$ 25% but either the field sample, field duplicate, or both had a concentration that was less than five times greater than the RL and therefore the RPD from those pairs were disregarded. Field sample and field duplicate pairs with RPD  $\geq$ 25%, and sample and duplicate concentrations  $\geq$ 5 times the RL included: total mercury at FC-CFR on March 14, 2016 (RPD = 35.3%); total recoverable lead at CFR-11F on April 28, 2016 (RPD = 59.7%), total nitrogen at FC-CFR on May 31, 2016 (RPD = 32.0%), total phosphorus at CFR-11F on September 13, 2016 (RPD = 58.8%), and total phosphorus at FC-CFR on March 14, 2016 (RPD = 25.0%).

# 2.4 DISCUSSION

# 2.4.1 Streamflows

Compared to long-term median streamflows at the upper Clark Fork River sites, streamflows in 2016 were generally characterized by relatively strong streamflows during the winter, earlier than normal runoff and subsidence of runoff, and lower than normal summer streamflows. At some sites, summer and early fall lows were extreme. For example, in Flint Creek streamflows reached a summer minima which was approximately one third of the long-term median.

# 2.4.2 Field Parameters

### 2.4.2.1 Water Temperature

Water temperature has considerable chemical and biological significance in riverine systems. Stream temperatures reflect seasonal changes in net solar radiation as well as daily changes in air temperature, and vary as a function of stream morphological characteristics, groundwater inputs, shading, the presence of particulate matter in the water column, and other variables. Optimal water temperatures for most trout species is approximately 12–14 C. Sustained temperatures in the 20–25 C temperature range can be fatal for trout.

Temperature monitoring results for the upper Clark Fork River monitoring stations during 2016 indicated modest seasonal and spatial variations that periodically were higher than the preferred range for cold water organisms such as trout. The maximum recorded water temperatures in the mainstem reached 18.7 C (at Deer Lodge) and 20.2 C in the tributaries (Silver Bow Creek).

However, stream temperatures are extremely variable as a result of weather and diel variation and this monitoring program is not intended to characterize extreme temperature variations. More detailed hourly temperature data collected by Montana Fish, Wildlife and Parks has indicated that water temperatures in the Clark Fork River and tributaries are often were extremely stressful for trout, regularly exceeding 20 C and occasionally exceeding 25 C in the summer months at many of these sites.

During Q4, water temperature in the mainstem Clark Fork River at the near Drummond site were approximately 3 C warmer than at any other mainstem site. At that time, all other mainstem sites had water temperatures of 0-0.4 C. It is not possible that diel warming was the cause of the warmer temperatures at the near Drummond site because during the sample period air temperatures remained at  $\leq 25$  C throughout. Therefore, it appears this river section appears to receive relatively large proportion of groundwater. We have also observed that during the winter this reach of the Clark Fork River generally remains free of ice even when other river sections upstream and downstream are covered in ice.

### 2.4.2.2 pH

Water pH measures the acidity of water as the concentration of hydrogen ions on a logarithmic scale. Acidity is influenced by water temperature, although the relationship is not linear, and typically shows a weak inverse relationship to streamflow as concentrations of base minerals tend to become diluted during runoff conditions. Acidity typically fluctuates on a diel cycle in relation to stream metabolism, with pH highest during the day. As dissolved carbon dioxide (a weak acid) levels increase during the night (because photosynthesis does not occur), pH levels decrease. Stream pH has direct and indirect effects on water chemistry and the biota

of aquatic systems. Declines in pH below 6.5 may reduce salmonid egg production and hatching success, and may reduce the emergence of some aquatic insects. The solubility of some metals varies with pH. This is important in systems such as the Clark Fork River where metal concentrations in sediments are elevated. Stream pH also affects a variety of other instream chemical equilibria, for example the proportion of ammonia present in the toxic (un-ionized) form.

MDEQ stream classifications in the upper Clark Fork River watershed vary by stream and recommended pH levels differ based on the classification. In the Clark Fork River mainstem downstream from Deer Lodge recommended pH is a range of 6.5-8.5 and upstream from Deer Lodge the recommended range is 6.5-9.0 [ARM 17.30.607]. One mainstem site had pH exceeding the recommended range: at Williams-Tavenner Bridge during three sample periods of 2016. Based on those exceedances, MDEQ could potentially enact restrictions for any discharges to the river which were above 8.5. Causes of the elevated pH at this site may have been related to increased primary productivity from nutrient enrichment.

In addition, two tributary sites had pH above maximum recommended levels according to the MDEQ stream classifications: both Mill-Willow Creek sites (classified as "B-1"; recommended pH range is 6.5-8.5) and Silver Bow Creek at the Pond 2 outfall (classified as "T"; recommended pH range is 6.5-9.5) [ARM 17.30.607]. In the outfall of the Warm Springs Ponds, pH in Silver Bow Creek is known to commonly exceed 9.0 during the summer (S. Lubick, Pioneer-Technical Services, *unpublished data*). Elevated daytime pH may be the result of excessive liming, diel cycles related to high productivity from nutrient enrichment, or both [Nimmick et al., 2011; Chatham, 2012].

# 2.4.2.3 Conductivity

Conductivity is a quantitative measure of the ability of an aqueous solution to convey an electrical current, and is a function of water temperature and the concentration of dissolved ions in water. Conductivity provides an approximation of the concentration of dissolved solids in water as well as its potential suitability for uses that may be limited by excessive salinity. Conductivity also gives general insight into spatial and seasonal changes in water chemistry.

Elevated levels of conductivity reflecting high dissolved solids may limit some water uses, such as irrigation or drinking water. Very low conductivity, as affected by watershed geology, may contribute to low productivity of associated biological systems. Conductivity tends to be inversely proportional to streamflow due to dilution from spring snowmelt runoff, and we observed that conductivity was generally highest during the late summer sample period when streamflows were lowest. Conductivity measured in the Clark Fork River mainstem in 2016 ranged from 159-535  $\mu$ S/cm. In comparison, the USEPA states, "Studies of inland fresh waters indicate that streams supporting good mixed fisheries have a (conductivity) range between 150 and 500  $\mu$ S/cm" [USEPA, 2015].

### 2.4.2.4 Dissolved Oxygen

Dissolved oxygen refers to the amount of oxygen dissolved in water. The capacity of water to hold oxygen in solution is inversely proportional to water temperature. In addition to water temperature, instream dissolved oxygen concentrations are affected by respiration of organisms, photosynthesis of aquatic plants, the biochemical oxygen demand of substances in the water, and the solubility of atmospheric oxygen. Dissolved oxygen levels fluctuate seasonally and over diel cycles due to variation in rates of stream metabolism.

Adequate dissolved oxygen concentrations are required by biological stream communities and for the decomposition of organic matter in the stream. Acceptable levels of dissolved oxygen for the protection of aquatic life are defined in the Montana water quality standards [MDEQ, 2012b].

No dissolved oxygen concentrations in the CFROU in 2016 indicated water quality or water use limitations associated with low oxygen concentrations (range: 8.4-15.9 mg/L). However, the lowest dissolved oxygen concentrations are expected to occur in the pre-dawn hours and monitoring occurred in the daytime at all sites.

Recent work indicates that anoxic conditions along the stream bottom of the Clark Fork River beneath *Cladophora* mats in Reach C [M. Vallett, University of Montana, *unpublished data*]. It is not known if those conditions also occur in other portions of the Clark Fork River but *Cladophora* growth is prolific in Reach A and B of the CFROU as well. These anoxic conditions may have a strong influence on stream ecology in the Clark Fork River.

# 2.4.2.5 Turbidity

Turbidity refers to the amount of light that is absorbed or scattered by water. Increasing turbidity or "cloudiness" in surface waters usually results from the presence of suspended silt or clay particles, organic matter, colored organic compounds, or microorganisms. Turbidity usually, but not always, correlates closely with the total suspended sediment concentration which measures the weight of suspended matter in solution. The lack of correlation between those parameters may be due to variation in particle sizes, weights, or refractive properties of the substances that contribute to turbidity.

Turbidity is an important parameter for drinking water. Elevated turbidity may impede recreational and aesthetic uses of water. High turbidity may adversely affect feeding, growth, and habitat quality for salmonids and other fishes, and may influence surface water temperatures. The MDEQ has established maximum allowable increases above naturally occurring turbidity. The allowable increase is 10 nephelometric turbidity units (NTU) for C-2 class streams (Clark Fork River from Warm Springs Creek to Cottonwood Creek), and five units for C-1 (Clark Fork River from Cottonwood Creek to the Little Blackfoot River) and B-1 (remainder of Clark Fork) class streams [ARM 17.30.623; ARM 17.30.626–627].

Turbidity during the 2016 monitoring events was generally low although during the Q2-Rising and Q4 sample periods it was relatively high. During those sample periods there wre relatively large increases in turbidity between mainstem sites at Gemback Road (CFR-11F) and Deer Lodge (CFR-27H) although those sites were not sampled on the same day. In Q4, turbidity increased by 12.3 NTU between the Deer Lodge (CFR-27H) and Williams-Tavenner Bridge (CFR-34) which were each sampled within hour.

# 2.4.3 Total Suspended Sediment

Total suspended sediment measures the mass of material suspended in a given volume of water. Suspended sediment measures sediment in the water column as opposed to sediment transported along the stream bottom, which is known as bedload. Suspended sediment in streams generally includes a range of particle sizes which may vary with watershed geology, stream velocity, bed form, and turbulence. Excess fine sediment interferes with most water uses and may have particularly adverse effects on benthic invertebrate and salmonid fish growth and reproduction. Increased suspended sediment reduces light penetration and may affect primary production by aquatic plants and the morphology of alluvial stream channels. In the Clark Fork River system, many COC concentrations are directly correlated with suspended sediment concentrations.

In general, total suspended sediment concentrations had spatial and seasonal patterns very similar to those for turbidity. The highest mainstem suspended sediment concentrations occurred in the lower half of Reach A at Deer Lodge and at Williams-Tavenner Bridge.

#### 2.4.4 Common lons

Common ions describe basic water chemistry. Certain ions, such as sulfate, may indicate the presence of mine related contaminants. Calcium and magnesium ions contribute to water hardness, which helps to buffer the toxic effects of some metals. Aquatic life toxicity criteria for metal COCs vary directly in relation to hardness. Hardness mitigates metals toxicity by impeding the rate at which aquatic organisms absorb metals through the gills. Carbonate and bicarbonate alkalinity contribute to the buffering system of surface waters to resist changes in pH. Levels of water hardness and alkalinity also strongly influence the productivity of aquatic systems. Western freshwater fisheries typically have alkalinity of 100–200 mg/L. In 2016, the Clark Fork mainstem alkalinity ranged from 90-220 mg/L. Based on previous monitoring, calcium is the dominant cation at the upper Clark Fork River monitoring network stations.

Water hardness in the Clark Fork River mainstem stations in 2016 ranged from "moderately hard" to "very hard". In comparison, most rivers in western Montana have "moderately hard" to "hard" water [USGS, 2015]. The moderately elevated water hardness in the Clark Fork River relative to other regional rivers is likely beneficial overall for aquatic life because water hardness mitigates toxicity of heavy metals [USEPA, 1986]. Alkalinity in the upper mainstem Clark Fork River was moderate to high which reflects a well buffered system, with good potential for fish production barring other limitations.

In Mill-Willow Creek sulfate concentrations increased by nearly six times from above to below the Mill-Willow Bypass section of Mill-Willow Creek (between sites MCWC-MWB and MWB-SBC). Substantial increases occurred during all monitoring periods but the increases were most significant during low water periods Q3 and Q4. These results suggest that remnant sources of sulfate persist along the Mill-Willow Bypass stream corridor.

### 2.4.5 Nutrients

Numeric water quality standards have been adopted for nutrients in the Clark Fork River from the Warm Springs Creek confluence to the Blackfoot River confluence, a river section which encompasses most of the CFROU [ARM 17.30.631]. The standards apply only to the summer season (June 21 through September 21). The standards for this segment of the Clark Fork River are 0.300 mg/L for total nitrogen and 0.020 mg/L for total phosphorus [ARM 17.30.631]. The standards do not apply to sample sites located on tributaries to the Clark Fork River. Instead, summertime base numeric nutrient standards for the Middle Rockies Ecoregion apply to the tributaries during the July 1 to September 30 time period. These standards are 0.300 mg/L for total nitrogen and 0.030 mg/L for total phosphorus [MDEQ, 2014].

The highest median and maximum total nitrogen concentrations observed in the Clark Fork River mainstem in 2016 occurred at the Williams-Tavenner Bridge in Q4. This site is located approximately five river miles downstream from the Deer Lodge sewage treatment lagoons. One mainstem site exceeded the relevant total nitrogen standard (which is applicable in Q3): at Deer Lodge (CFR-27H). In Q3, all mainstem sites had non-detectable concentrations of ammonia (except the Williams-Tavenner Bridge site; CFR-34) and nitrate plus nitrite (except the Deer Lodge site; CFR-27H).

Nutrient levels in Silver Bow Creek at Frontage Road, upstream from the Warm Springs Ponds, exceeded the total nitrogen standard by approximately three times in Q3. In Q4 at the same site, total nitrogen levels were approximately five times higher than at any site in the CFROU monitoring network, and essentially 90% of the nitrogen was bioavailable (i.e., primarily nitrate plus nitrite).

Two of six mainstem sites (near Galen and at Williams-Tavenner Bridge) had total phosphorus concentrations exceeding the Clark Fork River mainstem-specific total phosphorus standard in Q3 2016. It is unknown if this phosphorus in the Clark Fork River is primarily derived from natural (i.e., geologic) characteristics in the watershed or from nutrient enrichment from anthropogenic influences. In contrast, the Silver Bow Creek site at Frontage Road exceeded the total phosphorus standard by an order of magnitude in Q3 and most of this phosphorus is presumably derived from the Butte wastewater treatment plant.

### 2.4.6 Contaminants of Concern

Overall, Reach A, extending from the Warm Springs Creek confluence to the Little Blackfoot River confluence, has the largest volume of streamside tailings in the CFROU. In particular, the uppermost portion of the river located upstream from the town of Deer Lodge has been identified as an area of relatively heavy COC loading to the Clark Fork River [Sando et al., 2014]. Surface water monitoring data collected in 2016 represents the seventh year of monitoring in the CFROU for this monitoring program.

Monitoring from 2010-2012 represented baseline conditions in the CFROU immediately prior to the start of remediation. Because remedial activities were just beginning in 2013, it was considered unlikely that monitoring in 2013 would demonstrate much change in COC levels in the river. The 2014 monitoring was the first year following complete cleanup of the Phase 1 project area. In 2015, remedial actions were in progress in additional river sections (Phases 2, 5, and 6) stretching approximately 6.4 miles in total and those cleanup actions were completed by the end of 2016. Remedial actions in other portions of Reach A are likely to occur over a ten-year period.

In 2016, exceedances of performance goals were rare for all COCs except arsenic and copper. Of 36 samples collected in the Clark Fork River mainstem in 2016 (from six sites during six sample periods), no samples (0%) had cadmium, copper, or zinc concentrations exceeding the performance goals but 8% (3 of 36) of the samples had lead concentrations exceeding the performance goal. Lead exceedances occurred only during the Q2-Rising sample period and occurred at Deer Lodge, Williams-Tavenner Bridge, and Turah. Lead performance goal, which is based on total recoverable concentrations, exceedances at Deer Lodge and Williams-Tavenner Bridge corresponded to large total suspended sediment concentrations during the runoff period. Exceedances at Turah may nave been related to very high inputs of lead from Flint Creek during that sample period.

Arsenic commonly exceeded the performance goals for both dissolved and total recoverable concentrations in 2016 in mainstem sites in Reach A. Of 30 samples collected in the Clark Fork River in Reach A (five sites during six sample periods), 77% exceeded the dissolved arsenic and 37% exceeded the total recoverable arsenic performance goals. Silver Bow Creek below the Warm Springs Ponds and Mill-Willow Creek were clearly sources of arsenic to the Clark Fork River as 75% (18 of 24) of the samples from sites in those stream sections exceeded the dissolved arsenic performance goal and 54% (13 of 24) of the samples exceeded the total recoverable performance goal. Arsenic concentrations in Silver Bow Creek entering the Warm Springs Ponds (at Frontage Road) were generally lower than the concentrations leaving the ponds (at Warm Springs), particularly during warm periods (Q2 and Q3), indicating that arsenic is likely remobilized in the ponds as described by others [Chatham, 2012]. These results also support findings of the USGS monitoring program which identified the Warm Springs Ponds, the Mill-Willow Bypass, and groundwater in the vicinity of the Warm Springs Ponds as substantial arsenic sources to the upper Clark Fork River [Sando et al., 2014].

Examination of spatial and temporal compliance ratio trends for each COC is perhaps the most important analysis in this monitoring program because improved compliance with water quality standards was a primary impetus for the remedy in the CFROU. Based on evaluation of plotted data, it does not appear that compliance ratios for any COCs have changed through time at any CFROU site at this point. In contrast, a relatively short sample period in Silver Bow Creek at Frontage Road (which is part of the SSTOU monitoring network where remedial actions have largely been completed) demonstrates fairly clearly that cadmium, copper, and zinc compliance ratios have decreased. We did not conduct any formal statistical analysis on these data because we believe those analyses are premature at this time in the CFROU. Instead, this report describes our own observations about the data from the plots presented. In the Clark Fork mainstem, it appears that the variability in the data would likely swamp any ability to discern changes in mean COC concentrations through time given the relatively short period of monitoring to date and the variability in the data.

# 2.4.7 Other Metals

Monitoring data continues to implicate Flint Creek as a primary source of mercury and methylmercury to the Clark Fork River.

# 2.4.8 Data Validation

Generally, this monitoring program has satisfied the data quality objectives and data quality indicators specified in the QAPP [Atkins, 2013]. However, quality control procedures have consistently demonstrated that trace level contamination of dissolved field samples with zinc occurs. The zinc contamination is isolated in the dissolved samples (strongly suggesting that the filtering apparatus is responsible) which are not used for evaluation of performance goals. Generally zinc contamination levels are very low and data quality objectives and data quality indicators for all other constituents are very good. Therefore, we do not recommend any changes to field, analysis, or quality assurance methods in the future.

# 3.1 INTRODUCTION

No specific remediation performance standards were established within the CFROU ROD for concentrations of COC metals in instream sediments [USEPA, 2004]. In lieu of performance standards the "threshold effect concentration" (TEC) and "probable effect concentration" (PEC), consensus-based sediment quality guidelines for benthic organisms [MacDonald et al., 2000], provide useful reference values for instream sediment quality [Table 3-1]. At metal COC concentrations above the TEC, benthic organisms may be affected by that COC. At metal COC concentrations above the PEC, benthic organisms are likely to be affected by that COC.

Remedial actions to remove floodplain tailings deposits and reduce streambank erosion within the CFROU are expected to result in reduced COC concentrations in instream sediments within the Clark Fork River. Therefore, instream sediment COC concentrations will be monitored in the CFROU prior to, during, and following remediation. This report reviews spatial and temporal trends in instream sediment metals concentrations in the CFROU during 2016 and prior monitoring years.

Table 3-1. Reference values for contaminant of concern (COC) concentrations (expressed as dry weight concentrations [DW]) in instream sediments within the Clark Fork River Operable Unit. The threshold effect concentration (TEC) and probable effect concentration (PEC) were described in MacDonald et al. [2000].

Contaminant of Concern	Threshold Effect Concentration (mg/kg-DW)	Probable Effect Concentration (mg/kg-DW)
Arsenic	9.79	33
Cadmium	0.99	4.98
Copper	31.6	149
Lead	35.8	128
Zinc	121	459

# 3.2 METHODS

# 3.2.1 Monitoring Locations

Instream sediment was monitored at 14 CFROU sites in 2016 [Table 3-2; Figure 3-1]. The monitoring network includes six sites on the Clark Fork River mainstem and eight sites on tributary streams [Table 3-2]. The monitoring site locations in 2016 were the same as the monitoring site locations in 2015. Some monitoring site changes have occurred in prior monitoring years. Please see the project sampling and analysis plan for details of those changes [RESPEC, 2016a].

Table	3-2.	Instream	ı sedi	iment	sampling	locatio	ons in	the	Clark	Fork	River	· Operable
Unit,	2016	. Stream	lows	were	measured	at all	sites	whick	n did	not a	have	co-located
USGS	stre	amflow g	auge	•								

Site ID	Site Location	Co-located USGS Streamflow	Location (GPS coordinates, NAD 83)	
		Gauge	Latitude	Longitude
	Mainstem Sites			
CFR-03A	Clark Fork River near Galen	12323800	46.20877	-112.76740
CFR-07D	Clark Fork River at Galen Road	none	46.23725	-112.75302
CFR-11F	Clark Fork River at Gemback Road	none	46.26520	-112.74430
CFR-27H	Clark Fork River at Deer Lodge	12324200	46.39796	-112.74283
CFR-34	Clark Fork River at Williams-Tavenner Bridge	none	46.47119	-112.72492
CFR-116A	Clark Fork at Turah	12334550	46.82646	-113.81424
	Tributary Sites			
$SS-19^{61}$	Silver Bow Creek at Frontage Road	none	46.12247	-112.80032
SS-25	Silver Bow Creek at Warm Springs	12323750	46.18123	-112.77917
MCWC-MWB	Mill-Willow Creek at Frontage Road	none	46.12649	-112.79876
MWB-SBC	Mill-Willow Bypass near mouth	none	46.17839	-112.78270
WSC-SBC	Warm Springs Creek near mouth	12323770	46.18041	-112.78592
$LC-7.5^{62}$	Lost Creek near mouth	12323850	46.21862	-112.77384
RTC-1.5 <sup>63</sup>	Racetrack Creek near mouth	none	46.28395	-112.74921
LBR-CFR-02 <sup>64</sup>	Little Blackfoot River at Beck Hill Road	none	46.53710	-112.72443

<sup>&</sup>lt;sup>61</sup> In 2015, site SS-19 was sampled under the Streamside Tailings Operable Unit (SSTOU) monitoring program four times per year.

 $<sup>^{62}</sup>$  Site LC-7 (GPS Location: 46.22665, -112.76017) was replaced by site LC-7.5 in 2013.

<sup>&</sup>lt;sup>63</sup> Site RTC-1 (GPS Location: 46.28406, -112.74484) was replaced by site RTC-1.5 in 2013.

<sup>&</sup>lt;sup>64</sup> Site LBR-CFR (GPS Location: 46.51964, -112.79312; co-located USGS gauge: 12324590) was replaced by site LBR-CFR-02 in 2014.



Figure 3-1. Instream sediment sampling locations in the Clark Fork River Operable Unit, 2016.

### 3.2.2 Monitoring Schedule

At least one surface water monitoring event occurred during each calendar quarter of 2016. Instream sediment samples were collected during the first quarter (Q1) and third quarter (Q3) surface water monitoring events. The first monitoring event (Q1) occurred in the late winter, prior to spring runoff from March 14-15. The late summer (Q3) monitoring event occurred during low streamflow conditions from September 12-13.

# 3.2.3 Monitoring Parameters

Instream sediment samples were analyzed for dry weight (DW) total extractable metal (arsenic, cadmium, copper, lead, and zinc) concentrations.

### 3.2.4 Sample Collection and Analysis

Sediment samples were collected by compositing subsamples from at least five deposition zones in wadeable locations at each monitoring site. Sediment was scooped from the streambed with a plastic spoon following the MDEQ standard operating procedure [MDEQ, 2012a]. The fine fraction (particle diameter <0.065 mm) portion of each sample was isolated from each composite sample by wet sieve in the laboratory shortly after collection and retained for analysis of metal concentrations. Each sample was analyzed for total extractable dry weight concentrations (mg/kg-DW) of arsenic, cadmium, copper, lead, and zinc following methods identified in Table 3-3 The relative proportion (by weight) of the fine fraction sediment in each sample was also determined. Sediment samples were analyzed by Energy Laboratories (Helena, Montana). Prior to 2013, each sediment sample was sieved into three size fractions (<0.065 mm, 0.065-1 mm, and 1-2 mm), and each size fraction was independently analyzed for metal concentrations.

Analyte	Requested Method	Requested Reporting Limit (mg/kg- DW)	Holding Time (days)	Bottle	Preservative
Total Metals Digestion	EPA 3050	-	-	-	-
Arsenic	SW 6010B	5			
Cadmium	SW 6010B	0.2		1000 mL cloar	4 + 2 C during
Copper	SW 6010B	5	180	glass wide	shipment; -15
Lead	SW 6010B	5		mouth jars	C in laboratory
Zinc	SW 6010B	5			

Table 3-3. Analytes, methods, and reporting limits for instream sediment sampling in the Clark Fork River Operable Unit, 2016.

### 3.2.5 Data Analysis

Data were analyzed to assess spatial and temporal trends in sediment COC concentrations (for all samples collected between 2014-2016) and to evaluate the frequency and magnitude TEC and PEC reference value exceedances. To evaluate spatial trends, boxplots were created for each COC at each site. Statistics summarized in each boxplot include the median (midline of each box), quartiles (ends of each box), outlier extent (whiskers which extend 1.5 times the interquartile range), and outliers (circles above or below the whiskers which are any observations >1.5 times the interquartile range). Boxplots were only generated for data with at least five observations. If there were fewer than five observations at a particular site, a circle is displayed for each observation. To evaluate temporal trends, scatterplots of COC concentrations at each sample site were created.

# 3.2.6 Data Validation

Data quality objectives (DQOs) were established in the CFROU quality assurance project plan (QAPP) for "data representativeness", "comparability", "completeness", "sensitivity", "precision", "bias", and "accuracy" [Atkins, 2013]. Methods for field and laboratory quality assurance and quality control (QA/QC) procedures are also described in detail in the project QAPP. A completed QA/QC checklist, summary tables of field duplicate and field blank results, and assessments of data quality objectives are included in Appendix A.

Variability in sediment metals concentrations among samples was assessed by comparing field duplicate samples to field samples. Field duplicate samples were collected at the same location and at the same time as field samples and were processed and analyzed by the same methods. The relative percent difference (RPD) between the concentration in the field duplicate and field sample pair was determined for each metal. Two field duplicate samples were collected during each sampling event and RPD statistics were calculated for each field duplicate and field sample pair.

# 3.3 RESULTS

# 3.3.1 Sample Size Fraction

The proportion of sediment by size fraction in each 2016 CFROU sediment sample is displayed in Table 3-4.

Table 3-4. Proportion	of each sample	collected in th	e Clark Fork	River Operable	Unit
composed of fine frac	tion (<0.065 mm)	) sediment par	ticles, 2016.		

		Sample prop	portion (%)
Site ID	Site Location	Q1	Q3
	Mainstem Sites	-	-
CFR-03A	Clark Fork River near Galen	13.5	2.6
CFR-07D	Clark Fork River at Galen Road	18.0	2.4
CFR-11F	Clark Fork River at Gemback Road	20.4	2.0
CFR-27H	Clark Fork River at Deer Lodge	20.7	1.3
CFR-34	Clark Fork River at Williams-Tavenner Bridge	8.0	2.3
CFR-116A	Clark Fork River at Turah	54.3	5.3
	Tributary Sites		
SS-19	Silver Bow Creek at Frontage Road	1.7	3.7
SS-25	Silver Bow Creek at Warm Springs	2.0	3.0
MCWC-MWB	Mill-Willow Creek at Frontage Road	40.7	13.4
MWB-SBC	Mill-Willow Bypass near mouth	3.0	2.3
WSC-SBC	Warm Springs Creek near mouth	15.5	29.4
LC-7.5	Lost Creek near mouth	23.2	8.2
RTC-1.5	Racetrack Creek near mouth	2.6	1.5
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	5.1	1.2

# 3.3.2 Contaminants of Concern

# 3.3.2.1 Arsenic

In the Clark Fork River mainstem, fine fraction (<0.065 mm) sediment arsenic concentrations ranged from 37-302 mg/kg-DW in 2016 [Table 3-5]. Exceedances of the TEC and PEC reference values occurred at all sites during both sample periods in 2016 [Table 3-5]. Arsenic concentrations at each site were similar in 2016 compared to prior monitoring years although there appears to be a high degree of variability at some sites (particularly near Galen and at Galen Road) [Figure 3-2]. Given the small number of dry weight samples (i.e.,  $\leq 6$ ), and the variability of these samples, we do not believe it is reasonable to evaluate temporal trends at these sites yet. However, longitudinally there does appear to be evidence that median sediment arsenic concentrations are decreasing, in approximately an exponential fashion, between Clark Fork River mainstem sites at Galen (river mile 0) and Turah (river mile 116), with the possible exception of a slight increase at the Williams-Tavenner Bridge site (river mile 34) [Figure 3-3].

In the Clark Fork River tributaries, fine fraction (<0.065 mm) sediment arsenic concentrations ranged from 26-314 mg/kg-DW in 2016 [Table 3-5]. Exceedances of the TEC and PEC reference values occurred at all sites during both sample periods in 2016 with the exception of the Little Blackfoot River, which exceeded the TEC but not the PEC, during both sample periods [Table 3-5]. Arsenic concentrations at each tributary site were similar in 2016 compared to prior monitoring years, although at some sites arsenic concentrations in 2016 were generally in the upper part of the range for that site (e.g., Mill-Willow Bypass near mouth) [Figure 3-4]. Given the small number of dry weight samples (i.e.,  $\leq 6$ ), and the variability of these samples, we do not believe it is reasonable to evaluate temporal trends at these sites yet. Among paired tributary sites in Silver Bow Creek (at Frontage Road and at Warm Springs) and Mill-Willow Creek (at Frontage Road and near mouth), median arsenic concentrations were about twice as high in Mill-Willow Creek at the downstream site (at Warm Springs) and also about twice as high in Mill-Willow Creek at the downstream site (near mouth) [Figure 3-5].

Site ID		Sample concentration (mg/kg-DW)		
Site ID	Site Location	Q1	<b>Q</b> 3	
	Mainstem Sites			
CFR-03A	Clark Fork River near Galen	192	302	
CFR-07D	Clark Fork River at Galen Road	206	218	
CFR-11F	Clark Fork River at Gemback Road	136	191	
CFR-27H	Clark Fork River at Deer Lodge	157	169	
CFR-34	Clark Fork River at Williams-Tavenner Bridge	178	127	
CFR-116A	Clark Fork River at Turah	110	37	
	Tributary Sites			
SS-19	Silver Bow Creek at Frontage Road	156	117	
<b>SS</b> -25	Silver Bow Creek at Warm Springs	191	153	
MCWC-MWB	Mill-Willow Creek at Frontage Road	130	135	
MWB-SBC	Mill-Willow Bypass near mouth	314	285	
WSC-SBC	Warm Springs Creek near mouth	129	115	
LC-7.5	Lost Creek near mouth	76	88	
RTC-1.5	Racetrack Creek near mouth	39	34	
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	27	26	
	Exceeds threshold effect concentration [MacDons	ald et al., 2000].		

Table 3-5. Total arsenic concentrations (mg/kg dry weight) in fine fraction (<0.065 mm) instream sediment samples from the Clark Fork River Operable Unit, 2016.

Exceeds probable effect concentration [MacDonald et al., 2000].



Figure 3-2. Time series of total arsenic concentrations (dry weight) at each Clark Fork River mainstem monitoring site, 2014-2016. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].



Figure 3-3. Boxplots of total arsenic concentration (dry weight) at each Clark Fork River mainstem monitoring site, 2014-2016. River miles are measured downstream from the Silver Bow Creek-Warm Springs Creek confluence. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].



Figure 3-4. Time series of total arsenic concentrations (dry weight) in tributaries of the Clark Fork River, 2014-2016. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].



Figure 3-5. Boxplots of total arsenic concentration (dry weight) in Clark Fork River tributary monitoring sites, 2014-2016. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].

### 3.3.2.2 Cadmium

In the Clark Fork River mainstem, fine fraction (<0.065 mm) sediment cadmium concentrations ranged from 3.7-12.6 mg/kg-DW in 2016 [Table 3-6]. Exceedances of the TEC and PEC reference values occurred at all sites during both sample periods in 2016 except for site CFR-116A (Clark Fork River at Turah) which did not exceed the PEC in Q3 [Table 3-6]. Cadmium concentrations at each site were similar in 2016 compared to prior monitoring years [Figure 3-6]. Given the small number of dry weight samples (i.e.,  $\leq 6$ ) collected to date at these sites, and the variability of these samples, we do not believe it is reasonable to evaluate temporal trends at these sites yet. Longitudinally, there appears to be a slight declining trend in median sediment cadmium concentrations between Clark Fork River mainstem sites at Galen (river mile 0) and Turah (river mile 116) with the exception of the Williams-Tavenner Bridge site (river mile 34) where concentrations appear to be relatively high [Figure 3-7].

In the Clark Fork River tributaries, fine fraction (<0.065 mm) sediment cadmium concentrations ranged from 1.7-15.0 mg/kg-DW in 2016 [Table 3-6]. Exceedances of the cadmium TEC occurred in all tributary sites in both sample periods of 2016, but PEC exceedances occurred only in the Silver Bow Creek, Mill-Willow Creek, and Warm Springs Creek sites [Table 3-6]. Cadmium concentrations in most tributary sites were similar in 2016 to prior monitoring years, although at some sites cadmium concentrations have been highly variable, particularly the Silver Bow Creek sites [Figure 3-8]. Given the small number of dry weight samples (i.e.,  $\leq 6$ ), and the variability of these samples, we do not believe it is reasonable to evaluate temporal trends at these sites yet. Among paired tributary sites in Silver Bow Creek (at Frontage Road and at Warm Springs), median cadmium concentrations were about 50% higher in Silver Bow Creek above the Warm Springs Ponds (at Frontage Road) compared to the site downstream from the ponds (at Warm Springs) [Figure 3-9]. However, median cadmium concentrations in Lost Creek, Racetrack Creek, the Little Blackfoot River, and Flint Creek have been well below the PEC since 2014 [Figure 3-9].

Site ID	8'4. I	Sample concentration (mg/kg-WW)			
Site ID	Site Location	Q1	<b>Q</b> 3		
	Mainstem Sites				
CFR-03A	Clark Fork River near Galen	10.1	8.5		
CFR-07D	Clark Fork River at Galen Road	9.4	7.3		
CFR-11F	Clark Fork River at Gemback Road	5.9	9.1		
CFR-27H	Clark Fork River at Deer Lodge	7.1	5.9		
CFR-34	Clark Fork River at Williams-Tavenner Bridge	10.5	12.6		
CFR-116A	Clark Fork River at Turah	6.8	3.7		
Tributary Sites					
SS-19	Silver Bow Creek at Frontage Road	14.1	15.0		
SS-25	Silver Bow Creek at Warm Springs	10.6	10.6		
MCWC-MWB	Mill-Willow Creek at Frontage Road	7.1	8.0		
MWB-SBC	Mill-Willow Bypass near mouth	8.8	6.9		
WSC-SBC	Warm Springs Creek near mouth	5.5	6.8		
LC-7.5	Lost Creek near mouth	2.9	2.6		
RTC-1.5	Racetrack Creek near mouth	2.5	1.8		
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	1.7	2.4		
	Exceeds threshold effect concentration [MacDonald et al., 2000].				

Table 3-6. Total cadmium concentrations (mg/kg dry weight) in fine fraction (<0.065 mm) instream sediment samples from the Clark Fork River Operable Unit, 2016.

Exceeds probable effect concentration [MacDonald et al., 2000].



Figure 3-6. Time series of total cadmium concentrations (dry weight) at each Clark Fork River mainstem monitoring site, 2014-2016. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].



Figure 3-7. Boxplots of total cadmium concentration (dry weight) at each Clark Fork River mainstem monitoring site, 2014-2016. River miles are measured downstream from the Silver Bow Creek-Warm Springs Creek confluence. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].



Figure 3-8. Time series of total cadmium concentrations (dry weight) in tributaries of the Clark Fork River, 2014-2016<sup>65</sup>. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].

<sup>&</sup>lt;sup>65</sup> One sample from the Silver Bow Creek at Frontage Road site collected on March 26, 2015 had an unusually high cadmium concentration (97 mg/kg-DW) and is not displayed.



Figure 3-9. Boxplots of total cadmium concentration (dry weight) in Clark Fork River tributary monitoring sites, 2014-2016<sup>66</sup>. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].

<sup>&</sup>lt;sup>66</sup> One sample from the Silver Bow Creek at Frontage Road site collected on March 26, 2015 had an unusually high cadmium concentration (97 mg/kg-DW) and is not displayed.

### 3.3.2.3 Copper

In the Clark Fork River mainstem, fine fraction (<0.065 mm) sediment copper concentrations ranged from 412-2,330 mg/kg-DW in 2016 [Table 3-7]. Exceedances of the TEC and PEC reference values occurred at all sites during both sample periods in 2016 [Table 3-7]. Copper concentrations at each site were generally similar in 2016 compared to prior monitoring years [Figure 3-10]. Given the small number of dry weight samples (i.e.,  $\leq 6$ ) collected to date at these sites, and the variability of these samples, we do not believe it is reasonable to evaluate temporal trends at these sites yet. Longitudinally, there appears to be a declining trend in median sediment copper concentrations between Clark Fork River mainstem sites at Galen (river mile 0) and Turah (river mile 116) with the exception of the Williams-Tavenner Bridge site (river mile 34) where concentrations appear to be relatively high [Figure 3-3].

In the Clark Fork River tributaries, fine fraction (<0.065 mm) sediment copper concentrations ranged from 55-1,780 mg/kg-DW in 2016 [Table 3-7]. Exceedances of the copper TEC and PEC occurred in all tributary sites except sites in Racetrack Creek and the Little Blackfoot River [Table 3-7]. In Racetrack Creek and the Little Blackfoot River, all samples exceeded the TEC in 2016 [Table 3-7]. Copper concentrations in most tributary sites were similar in 2016 to prior monitoring years, although at the Silver Bow Creek at Frontage Road site the copper concentrations have been quite variable [Figure 3-12]. Given the small number of dry weight samples (i.e.,  $\leq 6$ ), and the variability of these samples, we do not believe it is reasonable to evaluate temporal trends at these sites yet. Among paired tributary sites in Silver Bow Creek, median copper concentrations were about twice as high in Silver Bow Creek below the Warm Springs Ponds (at Warm Springs) compared to the site upstream from the ponds (at Frontage Road) [Figure 3-13]. In Mill-Willow Creek, median copper concentrations were similar between sites [Figure 3-13]. Median copper concentrations in Racetrack Creek, the Little Blackfoot River, and Flint Creek have been below the PEC since 2014 [Figure 3-13]. The highest median copper concentrations in sediments since 2014 have occurred in Warm Springs Creek [Figure 3-13].

Site ID	Site Location	Sample concentration (mg/kg-DW)			
Site ID	Site Location	Q1	Q3		
	Mainstem Sites				
CFR-03A	Clark Fork River near Galen	1550	2330		
CFR-07D	Clark Fork River at Galen Road	1790	1950		
CFR-11F	Clark Fork River at Gemback Road	1150	1450		
CFR-27H	Clark Fork River at Deer Lodge	1470	1270		
CFR-34	Clark Fork River at Williams-Tavenner Bridge	1770	1760		
CFR-116A	Clark Fork River at Turah	1010	412		
Tributary Sites					
SS-19	Silver Bow Creek at Frontage Road	1780	979		
SS-25	Silver Bow Creek at Warm Springs	485	892		
MCWC-MWB	Mill-Willow Creek at Frontage Road	541	554		
MWB-SBC	Mill-Willow Bypass near mouth	374	285		
WSC-SBC	Warm Springs Creek near mouth	1160	1320		
LC-7.5	Lost Creek near mouth	390	551		
RTC-1.5	Racetrack Creek near mouth	122	72		
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	55	71		
	Exceeds threshold effect concentration [MacDonald et al., 2000].				

Table 3-7. Total copper concentrations (mg/kg dry weight) in fine fraction (<0.065 mm) instream sediment samples from the Clark Fork River Operable Unit, 2016.

Exceeds probable effect concentration [MacDonald et al., 2000].



Figure 3-10. Time series of total copper concentrations (dry weight) at each Clark Fork River mainstem monitoring site, 2014-2016. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].



Figure 3-11. Boxplots of total copper concentration (dry weight) at each Clark Fork River mainstem monitoring site, 2014-2016. River miles are measured downstream from the Silver Bow Creek-Warm Springs Creek confluence. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].



Figure 3-12. Time series of total copper concentrations (dry weight) in tributaries of the Clark Fork River, 2014-2016<sup>67</sup>. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].

<sup>&</sup>lt;sup>67</sup> One sample from the Silver Bow Creek at Frontage Road site collected on March 26, 2015 had an unusually high copper concentration (35,700 mg/kg-DW) and is not displayed.


Figure 3-13. Boxplots of total copper concentration (dry weight) in Clark Fork River tributary monitoring sites, 2014-2016<sup>68</sup>. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].

<sup>&</sup>lt;sup>68</sup> One sample from the Silver Bow Creek at Frontage Road site collected on March 26, 2015 had an unusually high copper concentration (35,700 mg/kg-DW) and is not displayed.

#### 3.3.2.4 Lead

In the Clark Fork River mainstem, fine fraction (<0.065 mm) sediment lead concentrations ranged from 3.7-12.6 mg/kg-DW in 2016 [Table 3-8]. Exceedances of the TEC and PEC reference values occurred at all sites during both sample periods in 2016 except for site CFR-116A (Clark Fork River at Turah) which did not exceed the PEC in Q3 [Table 3-8]. lead concentrations at each site were similar in 2016 compared to prior monitoring years [Figure 3-14]. Given the small number of dry weight samples (i.e.,  $\leq 6$ ) collected to date at these sites, and the variability of these samples, we do not believe it is reasonable to evaluate temporal trends at these sites yet. Longitudinally, there appears to be a slight declining trend in median sediment lead concentrations between Clark Fork River mainstem sites at Galen (river mile 0) and Turah (river mile 116) with the exception of the Williams-Tavenner Bridge site (river mile 34) where concentrations appear to be relatively high [Figure 3-15].

In the Clark Fork River tributaries, fine fraction (<0.065 mm) sediment lead concentrations ranged from 69-471 mg/kg-DW in 2016 [Table 3-8]. Exceedances of the lead PEC occurred in all 2016 tributary samples except from Lost Creek and the Little Blackfoot River in Q1 [Table 3-8]. All tributary samples exceeded the lead TEC [Table 3-8]. Lead concentrations in most tributary sites were similar in 2016 to prior monitoring years, although at some sites lead concentrations have been highly variable, particularly the Silver Bow Creek sites [Figure 3-16]. Given the small number of dry weight samples (i.e.,  $\leq 6$ ), and the variability of these samples, we do not believe it is reasonable to evaluate temporal trends at these sites yet. Among paired tributary sites in Silver Bow Creek and Mill-Willow Creek it appears that lead concentrations were similar [Figure 3-17]. The lowest median lead concentrations occurred in the Little Blackfoot River [Figure 3-17].

Site ID	Site Legation	Sample concentration (mg/kg-WW)					
Site ID	Site Location	Q1	Q3				
	Mainstem Sites						
CFR-03A	Clark Fork River near Galen	274	335				
CFR-07D	Clark Fork River at Galen Road	270	323				
CFR-11F	Clark Fork River at Gemback Road	206	312				
CFR-27H	Clark Fork River at Deer Lodge	238	345				
CFR-34	Clark Fork River at Williams-Tavenner Bridge	278	313				
CFR-116A	Clark Fork River at Turah	211	139				
	Tributary Sites						
SS-19	Silver Bow Creek at Frontage Road	466	371				
<b>SS-25</b>	Silver Bow Creek at Warm Springs	471	376				
MCWC-MWB	Mill-Willow Creek at Frontage Road	184	268				
MWB-SBC	Mill-Willow Bypass near mouth	214	241				
WSC-SBC	Warm Springs Creek near mouth	154	175				
LC-7.5	Lost Creek near mouth	74	152				
RTC-1.5	Racetrack Creek near mouth	251	136				
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	69	137				
	Exceeds threshold effect concentration [MacDonald et al., 2000].						

Table 3-8. Total lead concentrations (mg/kg dry weight) in fine fraction (<0.065 mm) instream sediment samples from the Clark Fork River Operable Unit, 2016.

Exceeds probable effect concentration [MacDonald et al., 2000].



Figure 3-14. Time series of total lead concentrations (dry weight) at each Clark Fork River mainstem monitoring site, 2014-2016. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].



Figure 3-15. Boxplots of total lead concentration (dry weight) at each Clark Fork River mainstem monitoring site, 2014-2016. River miles are measured downstream from the Silver Bow Creek-Warm Springs Creek confluence. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].



Figure 3-16. Time series of total lead concentrations (dry weight) in tributaries of the Clark Fork River, 2014-2016 Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].



Figure 3-17. Boxplots of total lead concentration (dry weight) in Clark Fork River tributary monitoring sites, 2014-2016. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].

#### 3.3.2.5 Zinc

In the Clark Fork River mainstem, fine fraction (<0.065 mm) sediment zinc concentrations ranged from 932-1,900 mg/kg-DW in 2016 [Table 3-9]. Exceedances of the PEC reference value occurred at all sites during both sample periods in 2016 [Table 3-9]. Zinc concentrations at each site were similar in 2016 compared to prior monitoring years [Figure 3-18]. Given the small number of dry weight samples (i.e.,  $\leq 6$ ) collected to date at these sites, and the variability of these samples, we do not believe it is reasonable to evaluate temporal trends at these sites yet. Longitudinally, there appears to be a slight declining trend in median sediment zinc concentrations between Clark Fork River mainstem sites at Galen (river mile 0) and Turah (river mile 116) with the exception of the Williams-Tavenner Bridge site (river mile 34) where concentrations appear to be relatively high [Figure 3-19].

In the Clark Fork River tributaries, fine fraction (<0.065 mm) sediment zinc concentrations ranged from 161-3,140 mg/kg-DW in 2016 [Table 3-9]. Exceedances of the zinc TEC occurred in all tributary sites in both sample periods of 2016, but PEC exceedances occurred only in the Silver Bow Creek, Mill-Willow Creek, and Warm Springs Creek sites [Table 3-9]. Zinc concentrations in most tributary sites were similar in 2016 to prior monitoring years, although in the Silver Bow Creek sites, zinc concentrations have been highly variable [Figure 3-20]. Given the small number of dry weight samples (i.e.,  $\leq 6$ ), and the variability of these samples, we do not believe it is reasonable to evaluate temporal trends at these sites yet. Among paired tributary sites in Silver Bow Creek, median zinc concentrations were slightly lower at the downstream site (at Warm Springs) [Figure 3-21]. Median zinc concentrations were nearly twice as high in Mill-Willow Creek at the downstream site (near mouth) [Figure 3-21]. The lowest median zinc concentrations occurred in Racetrack Creek and the Little Blackfoot River [Figure 3-21].

Site ID	Site Location	Sample concentration (mg/kg-WW)					
Site ID	Site Location	Q1	<b>Q</b> 3				
	Mainstem Sites						
CFR-03A	Clark Fork River near Galen	1570	1900				
CFR-07D	Clark Fork River at Galen Road	1570	1530				
CFR-11F	Clark Fork River at Gemback Road	1150	1670				
CFR-27H	Clark Fork River at Deer Lodge	1310	1260				
CFR-34	Clark Fork River at Williams-Tavenner Bridge	1710	1600				
CFR-116A	Clark Fork River at Turah	1510	932				
	Tributary Sites	(					
SS-19	Silver Bow Creek at Frontage Road	2460	3140				
<b>SS-25</b>	Silver Bow Creek at Warm Springs	1610	2020				
MCWC-MWB	Mill-Willow Creek at Frontage Road	746	830				
MWB-SBC	Mill-Willow Bypass near mouth	1360	1030				
WSC-SBC	Warm Springs Creek near mouth	535	789				
LC-7.5	Lost Creek near mouth	292	375				
RTC-1.5	Racetrack Creek near mouth	198	174				
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	203	161				
	Exceeds threshold effect concentration [MacDonald et al., 2000].						

Table 3-9. Total zinc concentrations (mg/kg dry weight) in fine fraction (<0.065 mm) instream sediment samples from the Clark Fork River Operable Unit, 2016.

Exceeds probable effect concentration [MacDonald et al., 2000].



Figure 3-18. Time series of total zinc concentrations (dry weight) at each Clark Fork River mainstem monitoring site, 2014-2016. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].



Figure 3-19. Boxplots of total zinc concentration (dry weight) at each Clark Fork River mainstem monitoring site, 2014-2016. River miles are measured downstream from the Silver Bow Creek-Warm Springs Creek confluence. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].



Figure 3-20. Time series of total zinc concentrations (dry weight) in tributaries of the Clark Fork River, 2014-2016<sup>69</sup>. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].

<sup>&</sup>lt;sup>69</sup> One sample from the Silver Bow Creek at Frontage Road site collected on March 26, 2015 had an unusually high zinc concentration (15,000 mg/kg-DW) and is not displayed.



Figure 3-21. Boxplots of total zinc concentration (dry weight) in Clark Fork River tributary monitoring sites, 2014-2016<sup>70</sup>. Horizontal lines represent the "threshold effect concentration" (TEC; dashed line) and the "probable effect concentration" (PEC; solid line) [MacDonald et al., 2000].

<sup>&</sup>lt;sup>70</sup> One sample from the Silver Bow Creek at Frontage Road site collected on March 26, 2015 had an unusually high cadmium concentration (15,000 mg/kg-DW) and is not displayed.

#### 3.3.3 Data Validation

The quantitative portion of the data quality objectives (DQOs) for sampling precision consist of comparisons between field sample and field duplicate concentrations for each analyte in the monitoring program. In 2016, four field sample and field duplicate pairs were collected. In each pair, five comparisons were made, one for each metal in the fine fraction (<0.065 mm). In total, there were 20 analytes where field sample and duplicate relative percent difference (RPD) comparisons were made. Of those, 0 of 20 (0.0%) had an RPD greater than the DQO specified for sampling precision (40%). The range of RPD statistics among the 20 pairs was 0.0-34.5% (mean = 11.7%; SD = 11.6%).

#### 3.4 DISCUSSION

### 3.4.1 Sample Size Fraction

Variability in sediment metals concentrations at any given monitoring site during any particular sampling event may be influenced by channel morphology and depositional processes. These factors may cause variability in the size composition of the sample, which in turn influences the concentrations of metals in the sample as size fraction is strongly related (inversely) to metal concentration in sediment samples in the CFROU. The proportion of sediment in the fine size fraction (<0.065 mm) was highly variable among sites and among sample periods. Sediment samples in the CFROU were analyzed in only the fine size fraction to minimize variability due to size fraction.

## 3.4.2 Contaminants of Concern

At each site, results of 2016 sediment sampling for dry weight sediment COC concentrations were generally consistent with previous dry weight results from 2014 and 2015. At this time, we do not believe there are enough samples at these sites to evaluate temporal trends in COC concentrations with a reasonable level of confidence.

Exceedances of the more lenient reference value (the TEC) occurred in all CFROU samples for all COCs and exceedances of the more restrictive reference value (the PEC) were also quite common for all COCs. All mainstem sites exceeded the PEC for each COC during both sample periods with one exception: at Turah (CFR-116A) in Q3 cadmium did not exceed the PEC. In some tributaries, exceedances of the PEC were just as frequent as in the mainstem sites. All Silver Bow Creek, Mill-Willow Creek, and Warm Springs Creek samples exceeded the PEC for each COC. Exceedances of the PECs were less common in Lost Creek, Racetrack Creek, and particularly the Little Blackfoot River which only exceeded the PEC for zinc.

In the Clark Fork River mainstem since 2014, the highest cationic COC concentrations (cadmium, copper, lead, zinc) have tended to occur in the uppermost portion of Reach A (near Galen). Cation COC concentrations have generally decreased with downstream distance from

the near Galen site (CF3-03A) with the exception of the Williams-Tavenner Bridge site (CFR-34). At CFR-34, cation COC concentrations were slightly higher than expected given the prevailing trend. However, sampling at CFR-34 did not begin until 2015 and therefore the sample size at CFR-34 is lower (4) than at the other mainstem sites (6). Arsenic concentrations in the mainstem also decreased with downstream distance from site CFR-03A but the decrease with distance was even more pronounced. As with the cationic COCs, arsenic concentrations at CFR-34 were a bit higher than expected given the overall trend.

Based on the median sediment COC concentrations observed in the tributaries and mainstem since 2014, it appears that certain tributaries may be sources of COCs; specifically, arsenic in the Mill-Willow Bypass, cadmium and zinc in Silver Bow Creek, and lead in Warm Springs Creek. Median arsenic concentrations in the Mill-Willow Bypass near mouth (MWB-SBC), median cadmium and zinc concentrations in Silver Bow Creek at Warm Springs (SS-25), and median lead concentrations in Warm Springs Creek (WSC-SBC) were higher than at any mainstem sites. Additionally, arsenic concentrations in Silver Bow Creek at Warm Springs and cadmium concentrations in the Mill-Willow Bypass have been similar to concentrations in the mainstem sites immediately downstream indicating that those tributaries also likely contribute a substantial amount of contamination.

In addition to loading from the tributaries, arsenic concentrations increased substantially (approximately doubling) in Silver Bow Creek between sites above and below the Warm Springs Ponds and between sites in Mill-Willow Creek above and below the Mill-Willow Bypass (adjacent to the Warm Springs Ponds). These results may warrant further investigation to evaluate linkages between arsenic contamination in surface water in the ponds, groundwater, and instream sediment.

#### 3.4.3 Data Validation

All field sample and field duplicate pairs in 2016 had RPD statistics within 40% and therefore satisfied the project goal for "overall precision" for 100% of the data collected in 2016. A complete analysis of data validation procedures and results is described in Appendix A.

# **4.1 INTRODUCTION**

This chapter describes results of periphyton (benthic algae) monitoring within the Clark Fork River Operable Unit (CFROU) in 2016. A total of fourteen sites were sampled, including six sites on the Clark Fork River and eight sites on tributary streams. Periphyton monitoring is one element of the Montana Department of Environmental Quality program for evaluating the influence of remediation on the ecology of the Clark Fork River.

Periphyton samples were analyzed for non-diatom (soft-bodied) algae, and diatom algae taxonomy and community structure. A suite of analytical metrics was applied to the diatom data to assess the degree of impairment from metals, nutrients, and sedimentation. These metrics included a stressor-specific tool developed for the Middle Rockies Ecoregion [Teply, 2010a; 2010b] and adopted by MDEQ as a periphyton standard operating procedure for determining the probability of sediment impairment [MDEQ, 2011]. In addition, a variety of diatom metrics developed for Montana mountain streams were used [Bahls et al., 1992; Bahls, 1993; Teply and Bahls, 2005] which are based on autecological preferences or requirements of freshwater diatoms [Lowe, 1974; Van Dam et al., 1994; Bahls, 2006].

Potential water quality or habitat stressors at each site, indicated by the taxonomic and functional composition of the algal flora, are described in a series of site-specific narratives.

# 4.2 METHODS

#### 4.2.1 Sampling

In September 2016, the periphyton community was sampled at six sites on the Clark Fork River and eight sites on tributary streams [Table 4-1]. Tributary sites were located in Silver Bow Creek (two sites), Mill and Willow Creeks (two sites), Warm Springs Creek, Lost Creek, Racetrack Creek, and the Little Blackfoot River. The sites sampled in 2016 were the same as those sampled in 2015. Project staff collected periphyton samples from September 19-20, 2016 except at one site on Silver Bow Creek (at Frontage Road; SS-19) which was sampled on September 14, 2016. One composite periphyton sample was collected from multiple substrates and habitat types at each monitoring site. Periphyton samples were collected following the MDEQ PERI-1 method for flowing streams where a defined reach has not been established [MDEQ, 2011]. Periphyton samples were preserved in the field with Lugols IKI solution and were transported to the laboratory on ice.

Site ID	Site Location	Co-located USGS Streamflow Gauge	Location (GPS coordinates, NAD 83)			
		Gauge	Latitude	Longitude		
	Tributary Sit	tes				
SS-19	Silver Bow Creek at Frontage Road	none	45.98523	-112.50772		
SS-25	Silver Bow Creek at Warms Springs	12323750	46.18123	-112.77917		
MCWC-MWB	Mill-Willow Creek at Frontage Road	none	46.12649	-112.79876		
MWB-SBC	Mill-Willow Bypass near mouth	none	46.17839	-112.78270		
WSC-SBC	Warms Springs Creek near mouth	12323770	46.18041	-112.78592		
LC-7.5	Lost Creek at Frontage Road	12323850	46.21862	-112.77384		
RTC-1.5	Racetrack Creek at Frontage Road	none	46.28395	-112.74921		
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	none	46.53710	-112.72443		
	Mainstem Sit	tes				
CFR-03A	Clark Fork River near Galen	12323800	46.20877	-112.76740		
CFR-07D	Clark Fork River at Galen Road	none	46.23725	-112.75302		
CFR-11F	Clark Fork River at Gemback Road	none	46.26520	-112.74430		
CFR-27H	Clark Fork River at Deer Lodge	12324200	46.39796	-112.74283		
CFR-34	Clark Fork at Williams-Tavenner Bridge	none	4647119	-112.72492		
CFR-116A	Clark Fork River at Turah	12334550	46.82646	-113.81424		

# 4.2.2 Laboratory Analysis

# 4.2.2.1 Non-Diatom Algae

To prepare samples for analysis of soft-bodied algae, raw periphyton samples were vigorously shaken in the original sample container to homogenize the sample. The contents were then emptied into a porcelain evaporating dish. A small, random subsample of the liquid fraction containing suspended algal material (approximately 3-5 drops) was dispensed onto a welled glass microscope slide using a disposable plastic dropper. Visible (i.e., macroscopic) soft-bodied algae were teased apart and subsampled in proportion to their estimated importance relative to the total volume of algal material in the sample, and this material was added to the liquid fraction on the slide. The assembled subsample was then covered with a 22x30 mm cover slip, and the completed wet mount was analyzed for soft-bodied algae using an Olympus BHT compound microscope as described below.

The cover slip was scanned at 100X following a set pattern in the approximate shape of an hourglass (upper and lower horizontal transects linked by diagonal transects); magnification was increased to 200X or 400X as necessary to resolve detail in smaller specimens. All soft-

bodied algae were identified to genus. The relative abundance of each soft-bodied algal genus (and of all diatom genera collectively) was estimated for comparative purposes, according to the following system:

- rare (r): represented by a single occurrence in the subsample;
- occasional (o): represented by multiple occurrences, but infrequently observed;
- common (c): represented by multiple occurrences, regularly observed;
- frequent (f): present in nearly every field of view;
- abundant (a): multiple occurrences in every field of view;
- dominant (d): multiple occurrences in every field of view in abundances beyond practical limits of enumeration.

Soft-bodied genera (and the diatom component) were also ranked numerically according to their estimated contribution to the total algal biovolume present in each sample.

## 4.2.2.2 Diatom Algae

To prepare samples for diatom analysis, organic matter was oxidized and permanent fixed mounts of cleaned diatom material were prepared. Each raw periphyton sample was vigorously shaken in the original sample container to thoroughly homogenize the material, and a subsample of approximately 20 mL was poured into a 250 mL Pyrex beaker. Each beaker was treated with 30-50 mL of concentrated sulfuric acid (H<sub>2</sub>SO<sub>4</sub>), and a small quantity of 5% hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) and granulated potassium dichromate (K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub>) was added to each beaker. Samples were then covered with a Pyrex watch glass and gently heated to near-boiling for 1-2 hours to completely oxidize all organic matter in the sample. Samples were allowed to cool, and then were topped off with deionized water. The diatom material was allowed to settle for at least eight hours, and the clear supernatant decanted; this process was repeated at least five times to thoroughly flush all traces of oxidants from the diatom material.

Subsample volumes were adjusted to ensure manageable densities of diatom cells in suspension, and a small amount of each sample was dispersed onto clean 22-mm square glass cover slips. The cover slips were air dried, heated to 150 F, and affixed onto standard glass microscope slides with Naphrax mounting medium to create a permanent mount of diatom cells (frustules). To ensure a high quality mount for diatom identification and to make replicates available for archiving, at least two slide mounts were made from each sample; one of the replicates was selected from each sample batch for analysis. An Olympus BHT compound microscope with a SPlan oil immersion objective (1000X total magnification) was used for diatom identifications and counts. A proportional count of 800 diatom valves (400 frustules) was performed along a vertical transect line across the exact center of the fixed cover slip. The starting point on the top edge was determined with the aid of the microscope's stage micrometer and recorded, and all diatoms observed within a one-field-of-view width were identified and counted. Diatoms were identified to the lowest practical taxonomic level, generally to species.

### 4.2.3 Data Analysis

## 4.2.3.1 Non-Diatom Algae Taxonomy

Non-diatom algal data from each site in 2016 is available in Appendix E. Appendix E includes the estimated relative abundance and biovolume rank of each non-diatom algal division by site as well as the same information for the diatom algae in the division Bacillariophyta for comparison. The estimated relative abundance and estimated biovolume rank of each non-diatom algal division were tabulated by site and summarized with stacked histograms to compare results between sites.

#### 4.2.3.2 Diatom Algae Taxonomy

All diatom count and relative abundance data from each site in 2016 is available in Appendix E. The percent relative abundance (PRA) values were based on the proportional count of 800 diatom valves (400 frustules) as described in Section 6.2.2.2. In addition to the diatom count and relative abundance data, Appendix E also includes summaries of diatom metrics and bioindices which will be described in Section 6.2.3.3. Diatom species richness and Shannon diversity values were calculated from the data in Appendix E and those results were summarized with histograms to compare sites.

# 4.2.3.3 Diatom Bioassessment Indices

#### 4.2.3.3.1 Increaser Taxa

Diatom taxa counts were evaluated to determine the probability of impairment from sediment, nutrients, and metals. Sediment impairment was evaluated by using a list of sediment tolerant diatoms recognized for cold water streams in the Middle Rockies Ecoregion [Teply, 2010a; 2010b]. Sediment increaser taxa identified by Teply [2010a; 2010b] are species with autecological preferences for sediment impaired conditions. To calculate a sediment impairment score at each site, the relative abundance proportion of all identified sediment increaser taxa was combined. If the relative abundance of all combined sediment increaser taxa exceeded 15.34% the site was considered "sediment impaired". In addition, the relative abundance proportion was transformed following recommendations of Teply [2010a; 2010b] to an impairment probability score. Similarly, Teply and Bahls [2005] proposed lists of diatom taxa that would increase in relative abundance in response to impairment from metals or nutrients in Montana mountain streams. Although these bioindices are informative, the nutrient and metals increaser taxa bioindices of Teply and Bahls [2005] were not adopted as standard operating procedures (SOPs) by MDEQ because the likelihood for meeting performance criteria may be low, and because these bioindices may have limited ability to differentiate between specific causes of impairment. The relative abundance proportions and impairment probabilities of the sediment, nutrient, and metals increaser taxa are summarized with histograms.

#### 4.2.3.3.2 Association Metrics

In addition to the increaser taxa bioindices, we have selected seven diatom association metrics to provide additional assessments of environmental quality at these sites [Table 4-2] as well as an evaluation of overall biointegrity at each site. Results of these metrics from each site were tabulated, and sites with impaired conditions have been highlighted. The following paragraphs describe each metric.

Species richness is a common measure of environmental impairment with greater diversity reflecting more heterogeneous environmental conditions whereas low diversity reflects environmental homogeneity potentially due to impairment from a specific stressor such as metal contamination. Bahls [1979] utilized species richness as a measure of diatom biointegrity.

The diversity index [Bahls, 1993] is based on the Shannon diversity index [Weber, 1979] which includes measures of species evenness and species richness and is sensitive to variation in water quality [Bahls, 1993].

The pollution index [Bahls, 1993] synthesizes the three pollution tolerance groups defined by Lange-Bertalot [1979] with diatom autecological profiles described by Lowe [1974] and unpublished Montana diatom data described in Bahls [2006]. Diatom species are assigned on an ordinal scale from 1-3 with a score of 1 corresponding to "most-tolerant", 2 corresponding to "less-tolerant", and 3 corresponding to "sensitive" for tolerance to nutrient enrichment, mineral salts, elevated temperatures, or metal toxicity.

A large number of diatom taxa are motile (i.e., capable of locomotion). The siltation index [Bahls, 1993] is calculated as the total percent abundance of motile diatom taxa which include species belonging to the genera *Navicula*, *Nitzschia*, *Surirella* and other closely related taxa. Motility may be an adaptation to siltation, as a mechanism that allows individual diatom cells to avoid inundation by deposited sediment.

The disturbance index [Barbour et al., 1999] considers the percent relative abundance of the diatom *Achnanthidium minutissimum*, which is highly specialized in the post-disturbance recolonization of stream substrates. Elevated numbers may be indicative of recent environmental stress caused by elevated or highly variable stream flows, water velocities, and water temperatures at a site.

In addition to the metrics described [Table 4-2], an overall biointegrity rating was assigned for each monitoring site. This rating essentially provides a summary of the seven metrics from Table 4-2 and is determined in a series of steps. First, at each site, scores were assigned for each diatom association metric [Table 4-2] on an ordinal scale: "excellent" = 3, "good" = 2, "fair" = 1, and "poor" = 0. Second, the mean score of those seven metrics at each site was calculated. The mean score of the seven metrics was then used as the overall biointegrity rating on another ordinal scale: "excellent" >2.7, "good" = 1.7-2.7, "fair" = 0.7-1.7, and "poor" <0.7. Table 4-2. Diatom association metrics to evaluate biological integrity in mountain streams: references range of values, expected response to increasing impairment or natural stress, and criteria for rating levels of biological integrity.

		Biological	Integrity					
	Excellent	Good	Fair	Poor				
		Impairmen	t or Stress	D	Expected	Defe		
Metric	None	Minor	Moderate	Severe	Kange	Response	Keference	
		Use Su	pport					
	Full	Full	Partial	None				
Species Richness <sup>71</sup>	>29	20-29	19-10	<10	0-100+	decrease <sup>72</sup>	Bahls, 1979	
Diversity Index <sup>73</sup>	>2.99	2.00-2.99	1.00-1.99	<1.00	0-5+	decrease <sup>74</sup>	Bahls, 1993	
Pollution Index <sup>75</sup>	>2.50	2.01-2.50	1.50-2.00	<1.5	1-3	decrease	Bahls, 1993	
Siltation Index <sup>76</sup>	<20.0	20.0-39.9	40.0-59.9	>59.9	0-90+	increase	Bahls, 1993	
Disturbance Index <sup>77</sup>	<25.0	25.0-49.9	50.0-74.9	>74.9	0-100	increase	Barbour et al., 1999	
Dominant Species (%) <sup>78</sup>	<25.0	25.0-49.9	50.0-74.9	>74.9	~5-100	increase	Barbour et al., 1999	
Abnormal Valves (%) <sup>79</sup>	0	>0.0, <3.0	3.0-9.9	>9.9	0-30+	increase	McFarland et al., 1997	

# 4.2.3.3.3 Additional Association Metrics

Van Dam et al. [1994] developed specific metrics to evaluate the response of periphyton assemblages to nutrient enrichment. Three of these nutrient enrichment metrics have been applied to the diatom count data; these results are summarized in histograms. First, the degree to which the diatom assemblage had been structured by variation in trophic state from nutrient

<sup>&</sup>lt;sup>71</sup> Based on a proportional count of 400 cells (800 valves).

 $<sup>^{72}</sup>$  May increase somewhat in mountain streams in response to slight to moderate increases in nutrients or sediment

<sup>&</sup>lt;sup>73</sup> Base 2 [bits] [Weber, 1973].

 $<sup>^{74}</sup>$  May increase somewhat in mountain streams in response to slight to moderate increases in nutrients or sediment

<sup>&</sup>lt;sup>75</sup> Composite numeric expression of the pollution tolerances assigned by Lange-Bertalot [1979] to the common diatom species.

<sup>&</sup>lt;sup>76</sup> Sum of the percent abundances of all species in the genera Navicula, Nitzschia and Surirella.

<sup>&</sup>lt;sup>77</sup> Percent abundance of Achnanthidium minutissimum (synonym: Achnanthes minutissima).

<sup>&</sup>lt;sup>78</sup> Percent abundance of the species with the largest number of valves in the proportional count.

<sup>&</sup>lt;sup>79</sup> Valves with an irregular outline, with abnormal ornamentation, or both.

enrichment was determined by assessment of the percent relative abundance of diatom taxa which are tolerant of nutrient enriched conditions.

Second, the degree to which the diatom assemblage had been structured by metabolic nitrogen processes, which determines the degree of organic nitrogen tolerance for those organisms, was evaluated by the percent relative abundance of diatom taxa tolerant of enriched organic nitrogen conditions. Enrichment by organically-derived nitrogen compounds can influence the composition of the algal community. Diatoms exhibit a broad range of tolerance to organic nitrogen. Most diatoms are nitrogen autotrophs that are unable to directly utilize organic nitrogen, and for these organisms elevated nitrogen levels may be toxic. Some diatoms are metabolic specialists and are able to directly assimilate organic nitrogen in addition to, or as an alternative to, inorganic nitrogen (i.e., facultative nitrogen heterotrophs). The presence of nitrogen-heterotrophic diatom species does not necessarily indicate elevated organic nitrogen; however, a scarcity of nitrogen-autotrophic diatom species with a low tolerance to organic nitrogen, relative to more tolerant forms, may indicate the likelihood of organic nitrogen pollution.

Third the degree to which the diatom assemblage had been structured by hypoxic (low dissolved oxygen concentrations) conditions was determined by assessing the percent abundance of taxa intolerant to elevated biochemical oxygen demand (BOD) and hypoxia. Additionally, the relative abundance of diatoms requiring oligosaprobous to 8-mesosaprobous conditions are low to moderately-low levels of organic matter decomposition, moderately-high to high dissolved oxygen concentrations, and predominantly inorganic forms of nitrogen.

# 4.2.3.4 Ecological Interpretations

Finally, at each site the diatom assemblage data are interpreted, and potential water quality impairments are discussed. These narrative interpretations are based on the taxonomic composition, autecological preferences, and functional organization of non-diatom and diatom components of the periphyton assemblage at each monitoring site.

Varying tolerance to inorganic and organic nutrients has been established among non-diatom and diatom algae; some taxa are sensitive to nutrient enrichment, and other taxa are indifferent to, or tolerant of nutrient enrichment [Prescott, 1962; Wehr and Sheath, 2003; Bahls, 2006].

Many soft-bodied algae are sensitive to dissolved metals, particularly copper. Filamentous green algae (Chlorophyta) generally are more sensitive to copper than are colonial (i.e., matforming) blue-green algae (Cyanobacteria). Colonial blue-green algae (e.g., *Nostoc* and *Rivularia*) can tolerate metals due to a protective gelatinous mucilage (i.e., slime coating). However, some green algae (e.g., *Cladophora, Mougeotia, Scenedesmus, Stigeoclonium* and *Ulothrix* sp.) have demonstrated high tolerances to dissolved metals [Shaw, 1990].

Diatom assemblages may also indicate metal contamination. Diatom species that increase in abundance in response to heavy metals pollution were identified by Teply and Bahls [2006] and Stoermer and Smol [1999]. Elevated metals can cause teratological growth forms (i.e., abnormalities in cell walls) in diatoms [Falasco et al., 2009].

# 4.3 RESULTS

#### 4.3.1 Non-Diatom Algae

A total of 34 genera of non-diatom algae representing five algal divisions were identified from the CFROU sites monitored in 2016 [Appendix E]. The number of non-diatom algae genera identified at each site are presented in Table 4-3 and Figure 4-1. The complete list of nondiatom algae genera identified at each site in 2016, with their estimated relative abundance and biovolume rank, are presented in Appendix E. The relative importance of each algal division, by estimated biovolume, at each site is presented in Figure 4-2.

At the tributary sites, the number of non-diatom algae genera ranged from 8-16 [Table 4-3; Figure 4-1]. The fewest number of genera (8) occurred at site MCWC-MWB (Mill-Willow Creek at Frontage Road), and the greatest number (16) occurred at site LBC-CFR-02 (Little Blackfoot River at Beck Hill Road). At the mainstem Clark Fork River sites, the number of non-diatom algae genera ranged from 9-16 [Table 4-3; Figure 4-1]. The fewest number of non-diatom algae genera (9) occurred at site CFR-03A (Clark Fork River near Galen). The highest number of genera occurred at site CFR-34 (Clark Fork River at Williams-Tavenner Bridge). Among all sites, Chlorophyta (green algae) and Cyanobacteria (Cyanophyta; blue-green algae) were most numerous and Phaeophyta (brown algae), Rhodophyta (red algae) and Xanthophyta (yellow-green algae) were relatively scarce [Table 4-3; Figure 4-1]. Chlorophyta were either more common, or at least as common, as Cyanobacteria at most tributary and mainstem sites. No site had more than four genera in the Phaeophyta, Rhodophyta, and Xanthophyta divisions cumulatively. Three mainstem sites and three tributary sites had no genera belonging to the Rhodophyta, Xanthophyta, or Phaeophyta divisions [Table 4-3; Figure 4-1].

The relative importance of dominant non-diatom algae divisions, based on estimated biovolume contributed by genera within the divisions, is presented in Figure 4-2. Diatom algae are also included to illustrate their relative importance at each site in 2016. At six tributary sites, and four mainstem sites, Chlorophyta (green algae) comprised the largest portion of the algal biovolume present [Figure 4-2]. Blue-green algae (Cyanophyta) exceeded green algae in estimated biovolume at two tributary sites: Mill-Willow Creek at Frontage Road (MCWC-MWB) and Mill-Willow Bypass near mouth (MWB-SBC) [Figure 4-2]. Blue-green algae (Cyanophyta) exceeded green algae in estimated biovolume at two mainstem Clark Fork River sites: near Galen (CFR-03A) and at Galen Road (CFR-07D) [Figure 4-2]. At site LBC-CFR-02 (Little Blackfoot River at Beck Hill Road), green algae and blue green algae were similar in estimated biovolume, and diatom algae were of lesser importance. At mainstem site CFR-03A (Clark Fork River near Galen), diatoms, green algae and blue-green algae were similar in estimated biovolume [Figure 4-2].

Table 4-3.	Number	of	non-diatom	algae	genera,	by	algal	division,	present	at	Clark	Fork	River	Operable	Unit
monitoring	sites, 20	16.													

		Algal Division									
Site ID	Site Location	Chlorophyta (Green Algae)	hlorophyta Cyanobacteria Phaeophyta (Green <sup>80</sup> (Blue-green (Brown Algae) Algae) Algae)		Xanthophyta (Yellow- green Algae)	Rhodophyta (Red Algae)	Total Genera				
		Tribu	tary Sites								
SS-19	Silver Bow Creek at Frontage Road	4	3	0	0	0	7				
MCWC-MWB	Mill-Willow Creek at Frontage Road	4	4	0	0	0	8				
MWB-SBC	Mill-Willow Bypass near mouth	6	6	1	1	0	14				
SS-25	Silver Bow Creek at Warms Springs	7	3	0	1	0	11				
WSC-SBC	Warms Springs Creek near mouth	10	2	0	1	2	15				
LC-7.5	Lost Creek near mouth	7	2	0	1	1	11				
RTC-1.5	Racetrack Creek near mouth	11	3	0	0	2	16				
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	4	3	0	0	0	7				
		Mains	stem Sites								
CFR-03A	Clark Fork River near Galen	3	6	0	0	0	9				
CFR-07D	Clark Fork River at Galen Road	5	5	0	0	0	10				
CFR-11F	Clark Fork River at Gemback Road	7	4	0	0	1	12				
CFR-27H	Clark Fork River at Deer Lodge	7	5	0	0	0	12				
CFR-34	Clark Fork River at Williams-Tavenner Bridge	10	4	0	0	2	16				
CFR-116A	Clark Fork River at Turah	7	4	0	1	2	14				

<sup>&</sup>lt;sup>80</sup> Formerly classified as Cyanophyta.



Figure 4-1. Number of non-diatom algae genera, by algal division, present at Clark Fork River Operable Unit sites in 2016.



Figure 4-2. Relative importance of non-diatom algal divisions and diatoms, based on estimated biovolume ranking, at Clark Fork River Operable Unit sites in 2016.

# 4.3.2 Diatom Bioassessment Indices

# 4.3.2.1 Diatom Increaser Taxa

The percent relative abundance and probability of impairment for diatom increaser taxa are plotted for sediment [Figure 4-3], metals [Figure 4-4], and nutrients [Figure 4-5] at the sites monitored in 2016.

# 4.3.2.1.1 Sediment

Sediment increaser diatom taxa [Figure 4-3] were most abundant overall in Mill-Willow Creek at Frontage Road (MCWC-MWB) and in the mainstem at the Clark Fork River near Galen (CFR-03A) [Figure 4-3]. The probability of impairment by sediment exceeded the impairment threshold at four tributary sites: both Mill-Willow Creek sites (MCWC-MWB and MWB-SBC), in Silver Bow Creek at Warm Springs (SS-25), and in the Little Blackfoot River (LBR-CFR-02) [Figure 4-3].



Figure 4-3. Total percent abundance and probability of impairment for diatom sediment increaser taxa bioassessment index [Teply, 2010a] at Clark Fork River Operable Unit sites in 2016.

# 4.3.2.1.2 Metals

Metals increaser diatom taxa [Figure 4-4] were most abundant overall in Silver Bow Creek at Frontage Road (SS-19) and in the mainstem at the Clark Fork River at Gemback Road (CFR-11F) [Figure 4-4]. The probability of impairment by metals exceeded 50% at all tributary sites except Mill-Willow Creek at Frontage Road (MCWC-MWB) and in Racetrack Creek (RTC-1.5) and in all mainstem sites except at Deer Lodge (CFR-27H) and at Williams-Tavenner Bridge (CFR-34) [Figure 4-4].



Figure 4-4. Total percent abundance and probability of impairment for diatom metals increaser taxa bioassessment index [Teply and Bahls, 2005] at Clark Fork River Operable Unit sites in 2016.

# 4.3.2.1.3 Nutrients

Nutrient increaser diatom taxa [Figure 4-5] were most abundant overall in the Clark Fork River at Gemback Road (CFR-11F) and in the tributaries in the Mill-Willow Bypass (MWB-SBC) [Figure 4-5]. The probability of impairment by nutrients exceeded 50% at three tributary sites: Mill-Willow Bypass near mouth (MWB-SBC), Silver Bow Creek at Warm Springs (SS-25), and in the Little Blackfoot River at Beck Hill Road (LBR-CFR-02) [Figure 4-5]. The probability of impairment by nutrients exceeded 50% at all Clark Fork River mainstem sites except at Deer Lodge (CFR-27H) and at Williams-Tavenner Bridge (CFR-34) [Figure 4-5].



Figure 4-5. Total percent abundance and probability of impairment for diatom nutrient increaser taxa bioassessment index [Teply and Bahls, 2005] at Clark Fork River Operable Unit sites in 2016.

# 4.3.2.2 Diatom Association Metrics for Montana Mountain Streams

Overall, biological integrity was rated "good" at all mainstem sites and at all but one tributary site: Silver Bow Creek at Frontage Road (SS-19) which was rated "fair" [Table 4-4]. A biological integrity rating of "good" indicates minor impairment to aquatic life.

The worst impairment ratings for the various diatom association metrics were "minor" for all sites with the exception of Silver Bow Creek at Frontage Road (SS-19) [Table 4-4]. At SS-19, impairment was rated "moderate" based on the Shannon diversity index, dominant taxon, and proportion of abnormal cells metrics, and "severe" based on the pollution and siltation indices [Table 4-4].

No CFROU sites were considered impaired based on the species richness metric, and only one site (Clark Fork River at Deer Lodge; CFR-27H) had "minor" impairment based on the disturbance index [Table 4-4]. All sites had "minor" impairment based on the proportion of abnormal cells (except for SS-19 which had "moderate" impairment) [Table 4-4]. "Minor" impairment was common at mainstem and tributary sites based on the Shannon diversity, pollution, and siltation indices, and the proportions of dominant taxon and abnormal cells [Table 4-4]. Table 4-4. Diatom association metrics and impairment ratings<sup>81</sup> for Clark Fork River Operable Unit monitoring sites, 2016 (after Bahls [1993]).

Site ID	Site Location	Diatom Species Richness	Shannon Diversity Index	Pollution Index	Siltation Index	Disturbance Index	Dominant Taxon (%)	Abnormal Cells (%)	Biological Integrity
	Tribut	ary S	ites						
SS-19	Silver Bow Creek at Frontage Road	30	1.60	1.41	90.6	0	56.9	5.8	Fair
MCWC-MWB	Mill-Willow Creek at Frontage Road	70	3.48	2.49	37.5	10.4	13.3	1.3	Good
MWB-SBC	Mill-Willow Bypass near mouth	50	3.04	2.66	30.5	2.0	19.3	2.0	Good
SS-25	Silver Bow Creek at Warm Springs	49	3.12	2.50	21.5	0.4	12.6	2.4	Good
WSC-SBC	Warms Springs Creek near mouth		3.21	2.67	35.0	9.0	12.6	1.1	Good
LC-7.5	Lost Creek near mouth		2.68	2.62	5.6	9.8	32.1	2.1	Good
RTC-1.5	Racetrack Creek near mouth		2.13	2.71	2.8	23.5	25.1	0.6	Good
LBR-CFR-02	Little Blackfoot River at Beck Hill Road	60	3.32	2.58	27.3	1.0	17.0	0.8	Good
	Mainst	tem S	ites						
CFR-03A	Clark Fork River near Galen	57	2.86	2.59	38.6	1.8	24.9	1.8	Good
CFR-07D	Clark Fork River at Galen Road	50	3.08	2.54	33.8	2.1	26.9	0.8	Good
CFR-11F	Clark Fork River at Gemback Road	54	2.63	2.67	20.1	0.8	36.6	0.5	Good
CFR-27H	Clark Fork River at Deer Lodge	43	2.25	2.58	8.6	40.5	40.5	1.3	Good
CFR-34	Clark Fork at Williams-Tavenner Bridge	58	3.25	2.38	21.1	3.0	19.0	1.4	Good
CFR-116A	Clark Fork River at Turah	59	2.96	2.49	27.4	4.9	29.6	1.9	Good
	Metric score indicates no impairment. Metric score indicates minor impairment. Metric score indicates moderate impairment.								

# 4.3.2.3 Additional Diatom Association Metrics

Diatom taxa intolerant to inorganic nutrients were rare (<6%) at all Clark Fork River mainstem sites [Figure 4-6]. In the tributaries, nutrient intolerant taxa were rare (1.13%) in Silver Bow Creek above the Warm Springs Ponds (at Frontage Road; SS-19) and in both Mill-Willow Creek sites (MCWC-MWB and MWB-SBC; <1.4% at each site) [Figure 4-6]. Nutrient intolerant taxa relative abundance ranged from 4.5-13% in Silver Bow Creek at Warm Springs

<sup>&</sup>lt;sup>81</sup> Numeric criteria of biological integrity for each diatom metric are summarized in Table 4-2.

(SS-25), Warm Spring Creek (WSC-SBC), Lost Creek (LC-7.5), and the Little Blackfoot River (LBR-CFR-02) [Figure 4-6]. Nutrient intolerant taxa were substantially more abundant (29%) in Racetrack Creek (RTC-1.5) than in all other sites [Figure 4-6].

In general, the relative abundance of nutrient tolerant taxa appeared to be inversely related to the relative abundance of nutrient intolerant taxa, but with a couple of exceptions [Figure 4-6]. In relation to that general trend, relative abundance of nutrient tolerant taxa was somewhat lower than expected in Mill-Willow Creek at Frontage Road (MCWC-MWB), in the Clark Fork River at the Williams-Tavenner Bridge (CFR-34), and especially in the Clark Fork River at Deer Lodge (CFR-27H) [Figure 4-6].

With the exception of Silver Bow Creek at Frontage Road (SS-19), nitrogen-autotrophic diatoms were dominant (>68% relative abundance) at all sites monitored in 2016 [Figure 4-7]. At SS-19, nitrogen-autotrophic diatom relative abundance was at least six times lower (11%) compared to all other sites [Figure 4-7]. In contrast, nitrogen-heterotrophic diatom relative abundance was generally the inverse of nitrogen-autotrophic diatom relative abundance [Figure 4-7]. Nitrogen-autotrophic diatom relative abundance was low ( $\leq 20\%$ ) at all sites except SS-19 [Figure 4-7]. At SS-19, relative abundance nitrogen-heterotrophic diatoms was at least four times higher (87%) than all other sites [Figure 4-7].

The relative abundance of diatoms requiring oligosaprobous to 6-mesosaprobous conditions (i.e., low to moderately low levels of organic matter decomposition, moderately-high to high dissolved oxygen concentrations, and predominantly inorganic forms of nitrogen) at tributary sites was highly variable in the tributaries ranging from a low of 8.5% in Silver Bow Creek at Silver Bow Creek at Frontage Road (SS-19) to a high of 77% in the Little Blackfoot River (LBR-CFR-02) [Figure 4-8]. In the mainstem, relative abundance of diatoms requiring oligosaprobous to 6-mesosaprobous conditions was less variable, compared to the tributaries, and ranged from 53-84% [Figure 4-8].

Relative abundance of diatoms requiring water that is >75% saturated with dissolved oxygen were variable in the tributaries ranging from a low of 32% in Racetrack Creek (RTC-1.5) to a high of 68% in Warm Springs Creek (WSC-SBC) [Figure 4-8]. In the mainstem, relative abundance of diatoms requiring water that is >75% saturated with dissolved oxygen was less variable, compared to the tributaries, and ranged from 46-69% [Figure 4-8].



Figure 4-6. Variation in diatom trophic state tolerance among Clark Fork River Operable Unit monitoring sites, 2016; percent abundance of taxa tolerant to elevated inorganic nutrients (after Van Dam et al. [1994]).



Figure 4-7. Variation in diatom nitrogen metabolism among Clark Fork River Operable Unit monitoring sites, 2016; percent abundance of taxa tolerant of organic nitrogen (after Van Dam et al. [1994]).



Figure 4-8. Variation in diatom oxygen demand among Clark Fork River Operable Unit monitoring sites, 2016; percent abundance of taxa intolerant to elevated biochemical oxygen demand (BOD) and hypoxia (after Van Dam et al. [1994]).

# 4.4 DISCUSSION

# 4.4.1 Ecological Interpretations of Periphyton Assemblages

# 4.4.1.1 Non-Diatom Algae

Chlorophyta (green algae) are generally indicative of cool, moderately nutrient-rich water. Many of these species are relatively tolerant of elevated nutrients, acidity, metals, or combinations of those conditions. Stigeoclonium and Ulothrix have been observed in streams with elevated zinc concentrations [Shaw, 1990]. Scenedesmus is known to tolerate elevated copper concentration, and Cladophora and Ulothrix are resistant to copper used in paint for watercraft and ship hulls [Shaw, 1990]. From four to eleven genera of Chlorophyta were present in the CFROU monitoring sites in 2016. A total of eighteen genera of microscopic Chlorophyta were identified in the 2016 CFROU samples, including: the filamentous genera Cladophora, Klebsormidium, Microspora, Mougeotia, Oedogonium, Spirogyra, Stigeoclonium, Ulothrix and Zygnema; the colonial genera Coelastrum, Gloeocystis, Oocystis, Pediastrum and Scenedesmus; the single-celled genus Ankistrodesmus, and the desmid genera Closterium, Cosmarium and Staurastrum.

Two particularly important Chlorophyta in the CFROU are Cladophora and Oedogonium. Cladophora forms large masses (often 30 cm or more in length) composed of numerous, microscopic, highly branched filaments. When prolific, Cladophora filaments provide extensive surface area habitat for diatoms and other microalgae. Oedogonium occurs as macroscopic masses of microscopic, unbranched filaments that are also frequently colonized by microalgae. Both Cladophora and Oedogonium prefer cool, flowing water with an alkaline pH and moderately high levels of inorganic nutrients. Cladophora was an important taxon at all mainstem Clark Fork River sites and at six tributary sites. Oedogonium was common at three mainstem sites and five tributary sites. Estimated biovolume for Cladophora ranked within the top four taxa (including diatom algae as a whole) at all mainstem sites and four tributary sites: Mill-Willow Creek at Frontage Road (MCWC-MWB), Mill-Willow Bypass near mouth (MWB-SBC), Silver Bow Creek at Warm Springs (SS-25), and Lost Creek (LC-7.5). Estimated biovolume for Oedogonium ranked within the top five taxa at three mainstem sites (CFR-07D, CFR-27H, CFR-34) and at three tributary sites (MWB-SBC, SS-25, LBR-CFR-02.

The genus Nostoc, a Cyanobacterium (blue-green algae), was an important taxon in the CFROU. Nostoc is generally indicative of cool, moderately nutrient-rich, relatively unpolluted water. Masses of Nostoc trichomes (i.e. filaments composed of individual cells) are encased in a tough colonial mucilage that is resistant to scour and desiccation. More importantly, Nostoc possesses specialized cells called heterocytes that permit fixation of atmospheric nitrogen through enzyme reactions. This provides Nostoc with a competitive advantage over other nondiatom algae in water with low inorganic nitrogen concentrations. From two to six genera of Cyanobacteria were present at each CFROU monitoring site in 2016. A total of eleven genera of microscopic Cyanobacteria were identified in the 2016 CFROU samples, including: Chamaesiphon, Dichothrix, Heteroleibleinia, Leptolyngbya, Nostoc, Phormidium and Tolypothrix. Of the Cyanobacteria, the genus Nostoc was an important taxon at nine monitoring sites including five mainstem sites. Nostoc ranked within the top five taxa in estimated biovolume at all mainstem sites where it was identified: near Galen (CFR-03A), at Galen Road (CFR-07D), at Gemback Road (CFR-11F), at Deer Lodge (CFR-27H), and at Williams-Tavenner Bridge (CFR-34). Nostoc ranked within the top five taxa in estimated biovolume at the two tributary sites where it was identified: Mill-Willow Creek at Frontage Road (MCWC-MWB) and Warm Springs Creek (WSC-SBC).

Phormidium is a cosmopolitan Cyanobacterium that occurs within a relatively broad range of habitats and water quality conditions and can form extensive macroscopic growths. Phormidium occurred at all tributary sites upstream from Deer Lodge except Lost Creek (i.e., SS-19, SS-25, MCWC-MWB, MWB-SBC, WSC-SBC, RTC-1.5). Phormidium occurred at all tributary sites upstream from Deer Lodge except Lost Creek (i.e., SS-19, SS-25, WSC-SBC, RTC-1.5). Phormidium occurred at all tributary sites upstream from Deer Lodge except Lost Creek (i.e., SS-19, SS-25, MCWC-MWB, MWB-SBC, WSC-SBC, RTC-1.5). Phormidium occurred at two Clark Fork River mainstem sites: at Galen Road (CFR-07D) and at Deer Lodge (CFR-27H).

Tolypothrix is a filamentous Cyanobacterium that often occurs in relatively unpolluted freshwaters attached to stones, macrophytes or other algae, sometimes forming wooly mats or tufts. Tolypothrix also possesses specialized cells (heterocytes) that permit fixation of atmospheric nitrogen. Tolypothrix occurred at three CFROU tributary sites in 2016 and at five Clark Fork River mainstem sites.

#### 4.4.1.2 Diatom Algae

Diatom algae were dominant components of the periphyton assemblage at all CFROU sites in 2016. A total of 156 species and varieties of diatoms were identified among the CFROU sites in 2016. Of the 156 diatom taxa identified, approximately 17% had a relative abundance of  $\geq 5\%$  in one or more samples. Dominant ( $\geq 5\%$  relative abundance) included: Achnanthidium minutissimum, Achnanthidium pyrenaicum, Cocconeis pediculus, Cocconeis placentula, Cymbella affinis, Diatoma moniliformis, Diatoma vulgaris, Encyonema minutum, Encyonema silesiacum, Encyonema ventricosum, Epithemia sorex, Epithemia turgid, Rhopalodia gibba, Fragilaria capucina, Gomphoneis minuta, Gomphoneis minuta, Melosira varians, Navicula capitatoradiata, Navicula caterva, Navicula cryptotenella, Nitrschia archibaldii, Nitrschia dissipata, Nitrschia fonticola, Nitrschia paleacea, Staurosira construens var. pumila, Ulnaria acus, Ulnaria contracta, Ulnaria oxyrhynchus, and Ulnaria ulna.

Variation in abundance of some of these diatoms may be indicative of water quality conditions. For example, Achnanthidium minutissimum is a specialist in recolonizing stream substrates that have been subjected to physical disturbance such as scour or dewatering. The percent relative abundance of A. minutissimum is the basis for the disturbance index [Bahls, 1993]. Heavy metal concentrations may be related to the relative abundance of the following diatoms (all of which were observed in at least one site with  $\geq 5\%$  relative abundance): Achnanthidium pyrenaicum, Encyonema minutum, E. silesiacum, E. ventricosum, Gomphoneis minuta, Melosira varians, Nitrschia archibaldii, N. dissipata, N. fonticola, and N. paleacea. Nutrient concentrations may be related to the relative abundance of the following diatoms (all of which were observed in at least one site with  $\geq 5\%$  relative abundance): Coccone is pediculus, C. placentula, Cymbella affinis, Diatoma moniliformis, D. vulgaris, Epithemia sorex, E. turgid, Rhopalodia gibba, Fragilaria capucina, Gomphoneis minuta Melosira varians, Navicula capitatoradiata, Navicula caterva and N. avicula cryptotenella, Nitrschia archibaldii, Nitrschia dissipata, Nitrschia fonticola, Nitrschia paleacea, Staurosira construens var. pumila. Sediment concentrations may be related to the relative abundance of the following diatoms (all of which were observed in at least one site with  $\geq 5\%$  relative abundance): Fragilaria capucina, Gomphoneis minuta, Melosira varians, Navicula capitatoradiata, Navicula caterva, Navicula cryptotenella, Nitrschia archibaldii, Nitrschia dissipata, Nitrschia fonticola, Nitrschia. paleacea, Staurosira construens var. pumila, Ulnaria acus, U. contracta, U. oxyrhynchus, and U. ulna.

#### 4.4.2 Site Specific Narratives

The following narratives briefly summarize results of the various diatom metrics and bioindices at each site in relation to the water quality stressors of interest (primarily metals, nutrients, and sediments). The array of bioindices and metrics applied to the sample results in this report are intended to provide insight into the likelihood of impairment to the diatom assemblage from various stressors. These bioindices and metrics are not necessarily conclusive, and some metrics or bioindices may contradict others due to the complexities and uncertainties of biomonitoring application and limitations in the science at this time. Therefore, a variety of these tools have been applied and assessed to evaluate the degree of agreement or convergence of results for these metrics and indices at each site.

# 4.4.2.1 Silver Bow Creek at Frontage Road (SS-19)

Based on the various indices and metrics, the diatom assemblage at SS-19 appeared most strikingly different and had the most impaired diatom assemblage of all the sites monitored in the Clark Fork River monitoring program in 2016. Site SS-19 was rated as having the most impaired conditions by a number of different metrics including: the highest metals impairment probability (98%) according to the metals increaser taxa bioindex, the lowest Shannon diversity index score (1.6), the lowest pollution index score (1.61), the highest siltation index score (90.6), the highest dominant taxon proportion (56.9%), the highest proportion of abnormal cells (5.8%), the worst overall biointegrity rank ("fair"), the highest proportion of nutrient tolerant taxa (96%) and lowest proportion of nutrient intolerant taxa (1.13%), the lowest proportion of Nautotroph taxa (11%) and highest proportion of N-heterotroph taxa (87%), and the lowest proportion of oligosaprobous and  $\beta$ -mesosaprobous taxa (9%). Based on those scores, it appears highly likely that SS-19 was metal impaired and was strongly nutrient enriched with substantial decomposition of organic material. Evidence of sediment impairment was mixed; although SS-19 had the highest siltation index score the site also had one of the lowest sediment impairment probabilities (15%) according to the sediment increaser taxa bioindex. General indices of diatom assemblage health suggested, at least relative to other sites, biointegrity was lower and the diatom assemblage considerably more homogenous. Site SS-19 also had the lowest disturbance index score which suggests that, although conditions are impaired for metals and nutrients, streamflows and habitat conditions were relatively stable.

#### 4.4.2.2 Mill Willow Creek at the Mill-Willow Bypass (MCWC-MWB)

The diatom assemblage at MCWC-MWB suggests water quality at the site may be slightly impaired by sediment and nutrients. This site had a sediment impairment probability of 70% according to the sediment increaser taxa bioindex and a siltation index of 37.5 suggesting a modest response in the diatom assemblage to slightly sediment-rich conditions. Evidence that the assemblage has responded to nutrient enrichment was similarly modest, although fairly consistent among the various metrics. Evidence suggesting modest impairment from nutrients included the relatively high proportion (61%) of nutrient tolerant taxa, the relatively low proportion (1.38%) of nutrient intolerant taxa, the relatively low proportion (68%) of Nautotroph taxa, the relatively high proportion (13%) of N-heterotroph taxa, and the relatively low proportion (36%) of taxa intolerant to hypoxia (i.e., low oxygen saturation).

Despite evidence of sediment and nutrient impairment, overall biointegrity at the site was rated "good". However, the high (2.49) pollution index score and the high proportion (1.3%) of abnormal cells in diatoms at this site suggested some mild degradation of habitat conditions occurred. The low disturbance index score suggested that habitat conditions were relatively stable.

# 4.4.2.3 Mill Willow Bypass near Mouth (MWB-SBC)

The diatom assemblage at MWB-SBC suggests water quality at the site may be moderately impaired by metals, sediment, and nutrients. This site had a metals impairment probability of 90% according to the metals increaser taxa bioindex. The sediment impairment probability was 95% and the siltation index was 30.5; each of these measures suggesting some level of response in the diatom assemblage to sediment-rich conditions. Evidence that the assemblage has responded to nutrient enrichment was not uniform among the metrics. However, specific metrics suggested a fairly strong response to nutrient enrichment. Evidence suggesting moderate impairment from nutrients included the high impairment probability (85%) according to the nutrient increaser taxa bioindex, relatively high proportion (84%) of nutrient tolerant taxa, the low proportion (0.25%) of nutrient intolerant taxa, and the relatively high proportion (11%) of N-heterotroph taxa. However, other measures of nutrient enrichment (i.e., the proportion of N-autotroph taxa, the proportion of taxa requiring oligosaprobous to  $\beta$ -mesosaprobous conditions, and the proportion of taxa requiring oxygen saturation >75%) did not suggest nutrient impairment.

Despite evidence of metals, sediment, and nutrient impairment, overall biointegrity at the site was rated "good". However, the high proportion (2.0%) of abnormal cells in diatoms at this site suggested some mild degradation of habitat conditions occurred. The low disturbance index score suggested that habitat conditions were relatively stable.

#### 4.4.2.4 Silver Bow Creek at Warm Springs (SS-25)

The diatom assemblage at SS-25 suggests water quality at the site may be mildly impaired by metals, sediment, and nutrients. This site had a metals impairment probability of 80% according to the metals increaser taxa bioindex. The sediment impairment probability was 70% and the siltation index was 21.5; each of these measures suggesting some minor level of response in the diatom assemblage to sediment-rich conditions. Evidence that the assemblage has responded to nutrient enrichment was not uniform among the metrics. However, specific metrics suggested a modest response to nutrient enrichment. Evidence suggesting mild impairment from nutrients included the high impairment probability (75%) according to the nutrient increaser taxa bioindex, relatively high proportion (66%) of nutrient tolerant taxa, the low proportion (9.38%) of nutrient intolerant taxa, the relatively high proportion (10%) of Nheterotroph taxa, and the relatively low proportion (42%) of taxa requiring oxygen saturation >75%. However, other measures of nutrient enrichment (i.e., the proportion of N-autotroph taxa and the proportion of taxa requiring oligosaprobous to 8-mesosaprobous conditions) did not suggest nutrient impairment.

Despite evidence of metals, sediment, and nutrient impairment, overall biointegrity at the site was rated "good". However, the low (2.5) pollution index score and the high proportion (2.4%) of abnormal cells in diatoms at this site suggested some mild degradation of habitat conditions occurred. The low disturbance index score suggested that habitat conditions were relatively stable.
## 4.4.2.5 Warm Springs Creek near Mouth (WSC-SBC)

The diatom assemblage at WSC-SBC suggests water quality at the site may be mildly impaired by metals. This site had a metals impairment probability of 80% according to the metals increaser taxa bioindex. Evidence of sediment and nutrient impairment was inconclusive.

Despite evidence of metals impairment, overall biointegrity at the site was rated "good". However, the proportion (1.1%) of abnormal cells in diatoms at this site suggested some mild degradation of habitat conditions occurred. The low disturbance index score suggested that habitat conditions were relatively stable.

### 4.4.2.6 Clark Fork River near Galen (CFR-03A)

The diatom assemblage at CFR-03A suggests water quality at the site may be mildly impaired by metals, sediment, and nutrients. This site had a metals impairment probability of 70% according to the metals increaser taxa bioindex. The sediment impairment probability was 65% and the siltation index was 38.6; each of these measures suggesting some minor level of response in the diatom assemblage to sediment-rich conditions. Evidence that the assemblage has responded to nutrient enrichment was mixed. Some metrics suggested mild nutrient impairment: the high impairment probability (70%) according to the nutrient increaser taxa bioindex, the relatively high proportion (85%) of nutrient tolerant taxa, relatively low proportion (1.88%) of nutrient intolerant taxa, the relatively high proportion (20%) of N-heterotroph taxa, and the relatively low proportion (49%) of taxa requiring oxygen saturation >75%. However, other measures of nutrient enrichment (i.e., the proportions of N-autotroph taxa and taxa requiring oligosaprobous to  $\beta$ -mesosaprobous conditions) did not suggest nutrient impairment.

Despite evidence of metals, sediment, and nutrient impairment, overall biointegrity at the site was rated "good". However, the low Shannon diversity score (2.86) and high proportion (1.8%) of abnormal cells in diatoms at this site suggested some mild degradation of habitat conditions. The low disturbance index score suggested that habitat conditions were relatively stable.

## 4.4.2.7 Clark Fork River at Galen Road (CFR-07D)

The diatom assemblage at CFR-07D suggests water quality at the site may be mildly impaired by metals and nutrients. This site had a metals impairment probability of 80% according to the metals increaser taxa bioindex. Evidence that the assemblage has responded to nutrient enrichment was mixed. Some metrics suggested moderate nutrient impairment: the high impairment probability (90%) according to the nutrient increaser taxa bioindex, the relatively high proportion (76%) of nutrient tolerant taxa, and the relatively low proportion (3.5%) of nutrient intolerant taxa. However, other measures of nutrient enrichment (i.e., the proportions of N-autotroph and N-heterotroph taxa, taxa requiring oxygen saturation >75%, and taxa requiring oligosaprobous to  $\beta$ -mesosaprobous conditions) did not suggest nutrient impairment. Despite evidence of metals and nutrient impairment, overall biointegrity at the site was rated "good". However, the high proportion of dominant taxon (26.9%) and high proportion (0.8%) of abnormal cells in diatoms at this site suggested some mild degradation of habitat conditions. The low disturbance index score suggested that habitat conditions were relatively stable.

# 4.4.2.8 Lost Creek at Frontage Road (LC-7.5)

The diatom assemblage at LC-7.5 suggests water quality at the site may be mildly impaired by metals. This site had a metals impairment probability of 80% according to the metals increaser taxa bioindex. There was little evidence of sediment or nutrient impairment.

Despite evidence of metals impairment, overall biointegrity at the site was rated "good". However, the low Shannon diversity score (2.68) and high dominant taxon proportion (32.1%) suggested a fairly homogenous assemblage at the site. In addition, the high proportion (2.1%) of abnormal cells in diatoms at this site suggested some mild degradation of habitat conditions occurred. The low disturbance index score suggested that habitat conditions were relatively stable.

# 4.4.2.9 Clark Fork River at Gemback Road (CFR-11F)

The diatom assemblage at CFR-11F suggests water quality at the site may be impaired by metals and nutrients. This site had a metals impairment probability of 95% according to the metals increaser taxa bioindex and suggesting likely metals impairment. Evidence that the assemblage has responded to nutrient enrichment was mixed. Some metrics suggested moderate nutrient impairment: the high impairment probability (95%) according to the nutrient increaser taxa bioindex, the relatively high proportion (82%) of nutrient tolerant taxa, and the relatively low proportion (5.13%) of nutrient intolerant taxa. However, other measures of nutrient enrichment (i.e., the proportions of N-autotroph and N-heterotroph taxa, taxa requiring oxygen saturation >75%, and taxa requiring oligosaprobous to  $\beta$ -mesosaprobous conditions) did not suggest nutrient impairment.

Despite evidence of metals and nutrient impairment, overall biointegrity at the site was rated "good". However, the low Shannon diversity score (2.63), high proportion of dominant taxon (36.6%), and high proportion (0.5%) of abnormal cells in diatoms at this site suggested some mild degradation of habitat conditions. The low disturbance index score suggested that habitat conditions were relatively stable.

## 4.4.2.10 Racetrack Creek at Frontage Road (RTC-1.5)

The diatom assemblage at RTC-1.5 provided little evidence that water quality is impaired by metals, sediment or nutrients. Overall biointegrity at the site was rated "good". However, the low (2.13) Shannon diversity score and high dominant taxon proportion (25.1%) suggested a fairly homogenous assemblage at the site. In addition, the high proportion (0.6%) of abnormal cells in diatoms at this site suggested some mild degradation of habitat conditions occurred. The disturbance index score at this site was higher than all other tributary sites suggesting that

habitat at this site is more unstable than other tributary sites, potentially due to dewatering, ice scour, or some other physical disturbance.

### 4.4.2.11 Clark Fork River at Deer Lodge (CFR-27H)

The diatom assemblage at CFR-27H provided little evidence that water quality is impaired by metals, sediment or nutrients. Overall biointegrity at the site was rated "good". However, the low Shannon diversity score (2.25), high proportion of dominant taxon (40.5%), and high proportion (1.3%) of abnormal cells in diatoms at this site suggested some mild degradation of habitat conditions. Unlike other mainstem sites, the disturbance index score at this site was high (41) suggesting that habitat at this site is more unstable than other mainstem sites, potentially due to dewatering, ice scour, or some other physical disturbance.

### 4.4.2.12 Little Blackfoot River at Beck Hill Road (LBR-CFR-02)

The diatom assemblage at LBR-CFR-02 suggests water quality at the site may be mildly impaired by metals, sediment, and nutrients. This site had a metals impairment probability of 70% according to the metals increaser taxa bioindex. The sediment impairment probability was 75% and the siltation index was 27.3; each of these measures suggesting some minor level of response in the diatom assemblage to sediment-rich conditions. Evidence that the assemblage has responded to nutrient enrichment was inconclusive. Two metrics suggested mild nutrient impairment: the high impairment probability (80%) according to the nutrient increaser taxa bioindex and the relatively high proportion (66%) of nutrient tolerant taxa. However, other measures of nutrient enrichment (i.e., the proportions of nutrient intolerant taxa, N-heterotroph and N-autotroph taxa, taxa requiring oxygen saturation >75%, and taxa requiring oligosaprobous to  $\beta$ -mesosaprobous conditions) did not suggest nutrient impairment.

Despite evidence of metals, sediment, and nutrient impairment, overall biointegrity at the site was rated "good". However, the high proportion (0.8%) of abnormal cells in diatoms at this site suggested some mild degradation of habitat conditions occurred. The low disturbance index score suggested that habitat conditions were relatively stable.

#### 4.4.2.13 Clark Fork River at Williams-Tavenner Bridge (CFR-34)

The diatom assemblage at CFR-34 suggests water quality at the site may be mildly impaired by sediment and nutrients. The sediment impairment probability was 65% and the siltation index was 21.1; each of these measures suggesting some minor level of response in the diatom assemblage to sediment-rich conditions. Evidence that the assemblage has responded to nutrient enrichment was mixed. Some metrics suggested mild nutrient impairment: the slightly elevated impairment probability (50%) according to the nutrient increaser taxa bioindex, the relatively high proportion (57%) of nutrient tolerant taxa, relatively low proportion (2.38%) of nutrient intolerant taxa, the relatively high proportion (10%) of N-heterotroph taxa, and the relatively low proportion (46%) of taxa requiring oxygen saturation >75%. However, other measures of nutrient enrichment (i.e., the proportions of N-autotroph taxa and taxa requiring oligosaprobous to 8-mesosaprobous conditions) did not suggest nutrient impairment.

Despite evidence of possible sediment and nutrient impairment, overall biointegrity at the site was rated "good". However, the pollution index score (2.38) and high proportion (1.4%) of abnormal cells in diatoms at this site suggested some mild degradation of habitat conditions. The low disturbance index score suggested that habitat conditions were relatively stable.

# 4.4.2.14 Clark Fork River at Turah (CFR-116A)

The diatom assemblage at CFR-116A suggests water quality at the site may be mildly impaired by metals and nutrients. This site had a metals impairment probability of 60% according to the metals increaser taxa bioindex. Evidence that the assemblage has responded to nutrient enrichment was mixed. Some metrics suggested moderate nutrient impairment: the high impairment probability (80%) according to the nutrient increaser taxa bioindex, the relatively high proportion (78%) of nutrient tolerant taxa, and the relatively low proportion (2.75%) of nutrient intolerant taxa. However, other measures of nutrient enrichment (i.e., the proportions of N-autotroph and N-heterotroph taxa, taxa requiring oxygen saturation >75%, and taxa requiring oligosaprobous to  $\beta$ -mesosaprobous conditions) did not suggest nutrient impairment.

Despite evidence of mild metals and nutrient impairment, overall biointegrity at the site was rated "good". However, the site had some evidence of homogenization of the diatom assemblage (Shannon diversity score of 2.96 and dominant taxon proportion of 29.6%) and general impairment (pollution index score of 2.49 and proportion of abnormal cells in diatoms of 1.9%) suggesting mild degradation of habitat conditions. The low disturbance index score suggested that habitat conditions were relatively stable.

# **5.1 INTRODUCTION**

The Clark Fork River, a major tributary of the Columbia River, has been impacted by mining and mineral operations occurring in its headwaters at the confluence of Warm Springs and Silver Bow Creeks in Deer Lodge County, Montana. In the late 1800's and early 1900's these tributaries carried wastes to the Clark Fork from mining, milling and smelting operations in the Butte and Anaconda areas. Wastes included hazardous substances such as arsenic, cadmium, copper, lead, and zinc that contaminate large areas of the Clark Fork floodplain, river sediments and surface water.

Investigations of the character and extent of the contamination on the Clark Fork River began in 1995, subsequent to the EPA designation of a portion of the river from the Warm Springs ponds on Silver Bow Creek to upstream of Milltown Reservoir as a distinct operable unit of the Milltown Reservoir Superfund Site. These investigations showed that natural resources in and around the river were impacted by the release of hazardous substances, prompting the development of an adaptive, comprehensive long-term monitoring plan for evaluating the success of restoration and remediation activities [PBSJ, 2010]. The plan will be implemented over the next decade and includes monitoring techniques and remediation goals for surface water, ground water, in-stream sediment, vegetation, and aquatic biota.

Stream benthic macroinvertebrates are major components of the aquatic biota present in the Clark Fork drainage and thus, play an important role in the comprehensive monitoring plan. The overall goal of the plan for macroinvertebrates "is a reduction of acute and chronic risks to aquatic life as measured by.... benthic macroinvertebrate community integrity...... An absence of impacts to macroinvertebrate organisms will be reflected by a balanced, integrated, and adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of the natural habitat of the regions [Karr and Dudley, 1981]." Attainment of this goal will be reflected by progressive increases in biological integrity [PBSJ, 2010]. Specifically, the goal for the macroinvertebrate community is "to attain and maintain a 'nonimpaired' bioassessment rating (>80%) based on the metrics subset indicating metals pollution which was established by McGuire [McGuire, 2010]". Although metals pollution will be used as the primary benchmark for evaluation of the condition of the macroinvertebrate community relative to remediation measures, other metrics will also be used to evaluate overall community integrity.

This report describes the analysis of a subset of the benthic macroinvertebrate monitoring program, specifically the samples collected in the Clark Fork drainage in 2016. The benthic invertebrate fauna was analyzed using an index developed specifically for the Clark Fork drainage [McGuire, 2010]. This index has been applied over a long course of sampling dating

<sup>&</sup>lt;sup>82</sup> Chapter 5 was prepared by Billie Kerans and Wease Bollman with Rhithron with minor editing and formatting by RESPEC.

from 1986. The index is divided into three parts: a general subset, an organic pollution subset and a metals subset. In addition, the taxonomic and functional composition of the benthic fauna was investigated to gain information about probable stressors to water quality and habitat integrity. This information is described in a series of site-specific narratives. The results of several other biotic assessment tools are also presented in Appendix H.

# 5.2 METHODS

# 5.2.1 Sampling

Benthic macroinvertebrates were sampled at four Clark Fork River headwater sites, five sites on the mainstem Clark Fork River, and three sites on tributaries of the Clark Fork on September 19 and 20, 2016. Four sample replicates were collected at each site, using a Hess sampling device. Sites are described in Table 5-1. Samples were delivered to Rhithron Associates, Inc. (Rhithron) for processing and identification. In addition, data are included for one site (Silver Bow Creek at Frontage Road; SS-19) that was sampled on September 14, 2016. Only one replicate was taken from this site, and a traveling kick-net (D-frame) was used to collect the sample. Sampling methods for site SS-19 are described in [RESPEC, 2017].

Table 5-1. Macroinvertebrate	sampling sites	in the Clar	k Fork River	basin,	September
19-20, 2016.					

Site description	Site ID	Co-located USGS gauge	Latitude (NAD 83)	Longitude (NAD 83)
Mill-Willow Creek at Frontage Road	MCWC-MWB	NA	46.12649	-112.79876
Mill-Willow Creek Bypass near mouth	MWB-SBC	NA	46.17839	-112.78270
Warm Springs Creek near mouth	WSC-SBC	12323770	46.18041	-112.78592
Silver Bow Creek at Frontage Road	SS-19	NA	45.98523	-112.50772
Silver Bow Creek at Warm Springs	SS-25	12323750	46.18123	-112.77917
Clark Fork River near Galen	CFR-03A	12323800	46.20877	-112.76740
Clark Fork River at Galen Road	CFR-07D	12323800	46.20877	-112.76740
Clark Fork River at Gemback Road	CFR-11F	NA	46.26520	-112.74430
Clark Fork River at Williams-Tavenner Bridge	CFR-34	NA	46.47119	-112.72492
Clark Fork River at Turah	CFR-116A	12334550	46.49340	-113.48480
Lost Creek at Frontage Road	LC-7.5	12323850	46.21862	-112.77384
Racetrack Creek at Frontage Road	RTC-1.5	NA	46.28395	-112.74921
Little Blackfoot River at Beck Hill Road	LBR-CFR-02	12324590	46.51964	-112.79312

# 5.2.2 Laboratory Analysis

Samples that were collected using the Hess sampler were completely picked of organisms, following procedures consistent with previous Clark Fork River biomonitoring projects processed at Rhithron [Bollman, 2010]. Similar to the most recent studies [Bollman and

Sullivan, 2013; Bollman et al., 2014], densities of abundant taxa were not estimated, but actual counts were obtained for all organisms. Caton trays [Caton, 1991] were used to distribute the samples for sorting. Each individual sample was thoroughly mixed in its jar(s), poured out and evenly spread into the Caton tray. Grids were systematically selected, and grid contents were examined under stereoscopic microscopes using 10x-30x magnification (Leica S6E and Leica EZ4 stereoscopic dissecting microscopes). All invertebrates were sorted from the substrate, and placed in 80% ethanol for subsequent identification. Laboratory analysis methods for the sample at SS-19 are described in [RESPEC, 2017].

Organisms were individually examined by certified taxonomists, using 10x - 80x stereoscopic dissecting scopes (Leica S8E) and identified to the lowest practical level consistent with previous Clark Fork River biomonitoring projects [McGuire, 2010], using appropriate published taxonomic references and keys. Midges and worms were carefully morphotyped using 10x-80x stereoscopic dissecting microscopes (Leica S8E) and representative specimens were slide mounted and examined at 200x - 1000x magnification under compound microscopes (Olympus BX 51 with Hoffman Contrast and Leica DM1000). Slide mounted organisms were archived at the Rhithron laboratory.

Identification, counts, life stages, and information about the condition of specimens were recorded. Organisms that could not be identified to the taxonomic targets because of immaturity, poor condition, or lack of complete current regionally-applicable published keys were left at appropriate taxonomic levels that were coarser than target levels. To obtain accuracy in richness measures, these organisms were designated as "not unique" if other specimens from the same group could be taken to target levels. Organisms designated as "unique" were those that could be definitively distinguished from other organisms in the sample. Identified organisms were preserved in 80% ethanol in labeled vials, and archived at the Rhithron laboratory.

#### 5.2.3 Data Analysis

Taxa lists and counts for each sample were constructed. Standard metric calculations were made using customized database software. McGuire's indices are ".....specifically designed to evaluate water quality in the Clark Fork River Basin" [McGuire, 2010]. The indices comprise 11 metrics. Two subsets of three metrics each are scored and summed separately to obtain values for organic/nutrient impairment and for metals impairment. Individual metrics and the expected response of each to environmental stress are described in the project sampling and analysis plan [RESPEC, 2016a]. For comparative purposes, the results of other bioassessment indices and tools are presented in an appendix to this report [Appendix H].

#### 5.2.4 Quality Assurance Systems

Quality control procedures for macroinvertebrate sample processing involved checking sorting efficiency on quality control samples that were randomly selected from the 12 sites sampled using the Hess sampler. These checks were conducted by trained quality assurance technicians who microscopically re-examined 100% of sorted substrate from each quality control sample. Sorting efficiency was evaluated by applying the following calculation:

$$SE = \frac{n_1}{n_1 + n_2} \times 100$$

where: SE is the sorting efficiency, expressed as a percentage,  $n_1$  is the total number of specimens in the first sort, and  $n_2$  is the total number of specimens in the second sort.

Quality control procedures for taxonomic determinations of invertebrates involved checking accuracy, precision and enumeration. Two samples were randomly selected and all organisms were re-identified and counted by an independent taxonomist. Taxa lists and enumerations were compared by calculating a Bray-Curtis similarity statistic [Bray and Curtis, 1957] for each selected sample. The percent taxonomic disagreement (PTD) and percent difference in enumeration (PDE) were also calculated [Stribling et al., 2003].

Quality control and quality assurance results are reported in Appendix F.

## 5.2.5 Ecological Interpretations: Approach

We use narrative interpretations of taxonomic and functional composition of invertebrate assemblages to reveal the probable stressors in the Clark Fork River Operable Unit. These narratives were performed on a composite of the four replicate samples collected from each site. Often canonical procedures are used for stressor identification; however, the substantial data required for such procedures (e.g., surveys of habitat, historical and current data related to water quality, land use, point and non-point source influences, soils, hydrology, geology) were not readily available for this study. Instead our narrative interpretations are based on demonstrated associations between assemblage components and habitat and water quality variables gleaned from the published literature, the writer's own research (especially Bollman [1998]) and professional judgment, and the research (especially Wisseman [1996]) and professional judgment of other expert sources.

We use attributes of invertebrate taxa that are well substantiated in diverse literature, and that are generally accepted by regional aquatic ecologists as evidence of water quality, and instream and reach-scale habitat conditions. The approach to this analysis uses some assemblage attributes that are interpreted as evidence of water quality and other attributes that are interpreted as evidence of habitat integrity. To arrive at impairment classifications, attributes are considered individually, so information is maximized by not relying on a single cumulative score which may mask stress on the biota. Such an approach also minimizes the possibility of using inappropriate assessment strategies when the biota at a site is atypical of "characteristic" sites in a region. Replicate samples were electronically combined into composited samples for this analysis. Below we describe the invertebrate attributes that were used and their relationships to water quality and habitat conditions.

Mayfly taxa richness, the Hilsenhoff Biotic Index (HBI) value [Hilsenhoff, 1987], the richness and abundance of hemoglobin-bearing taxa, and the richness of sensitive taxa are often used as indicators of water quality. Mayfly taxa richness has been demonstrated to be significantly correlated with chemical measures of dissolved oxygen, pH, and conductivity (e.g., Bollman [1998]; Fore et al. [1996]; Wisseman [1996]). The HBI has a long history of use and validation [Cairns and Pratt, 1993; Smith and Tran, 2010; Johnson and Ringler, 2014]. In Montana foothills, the HBI was demonstrated to be significantly associated with conductivity, pH, water temperature, sediment deposition, and the presence of filamentous algae [Bollman, 1998]. Nutrient enrichment in Montana streams often results in large crops of filamentous algae [Watson, 1988]. Thus in these samples, when macroinvertebrates associated or dependent on filamentous algae (e.g., Anderson [1976]; LeSage and Harrison [1980]) are abundant, the presence of filamentous algae and nutrient enrichment are also suspected. Sensitive taxa exhibit intolerance to a wide range of stressors (e.g., Hellawell [1986]; Wisseman [1996]; Friedrich [1990]; Barbour et al. [1999]), including nutrient enrichment, acidification, thermal stress, sediment deposition, habitat disruption, and others. These taxa are expected to be present in predictable numbers in functioning montane and foothills streams (e.g., Bollman [1998]). Although the abundance of invertebrates in Hess samples can be highly variable, reflecting the patchy and dynamic areal distribution of the benthos in stony-bottomed streams, McGuire's thresholds for environmental perturbation [McGuire, 2010] are cited as evidence of enrichment or impairment.

The richness and abundance of cold stenotherm taxa [Clark, 1997] and calculation of the temperature preference of the macroinvertebrate assemblage [Brandt, 2001] can predict the thermal characteristics of the sampled site. Hemoglobin-bearing taxa are also indicators of warm water temperatures [Walshe, 1947], since dissolved oxygen is directly associated with water temperature; oxygen concentrations can also vary with the degree of nutrient enrichment. Increased temperatures and high nutrient concentrations can, alone or in concert, create conditions favorable to hypoxic sediments; habitats preferred by hemoglobin-bearers.

The absence of invertebrate groups known to be sensitive to metals and the Metals Tolerance Index (MTI) [Bukantis, 1998] are considered signals of possible metals contamination. Metals sensitivity for some groups, especially the heptageniid mayflies, is well-known (e.g., Kiffney and Clements [1994]; Clements [1999]; [2004]; Montz et al. [2010]; Iwasaki et al. [2013]). In the present approach, the absence of these groups in environs where they are typically expected to occur is considered a signal of possible metals contamination, but only when combined with a measure of overall assemblage tolerance of metals. The Metals Tolerance Index ranks taxa according to their sensitivity to metals. Weighting taxa by their abundance in a sample, assemblage tolerance is estimated by averaging the tolerance of all sampled individuals.

Characteristics of the macroinvertebrate assemblages can also reveal the condition of instream and streamside habitats. Stress from sediment is evaluated by caddisfly richness and by "clinger" richness [Kleindl, 1995; Bollman, 1998; Karr and Chu, 1999; Wagenhoff et al., 2012; Leitner et al., 2015]. A newer tool, the Fine Sediment Biotic Index (FSBI) [Relyea et al., 2012] shows promise when applied to the montane and foothills regions. This index and its interpretation are modified in this report, based on the author's professional judgment, to more effectively characterize the Clark Fork River and tributaries in the sampled reaches.

The functional characteristics of macroinvertebrate assemblages are based on the morphology and behaviors associated with feeding, and are interpreted in terms of the River Continuum Concept [Vannote et al., 1980] in the narratives. Alterations from predicted patterns in montane and foothills streams may be interpreted as evidence of water quality or habitat disruption. For example, shredders and the microbes they depend on are sensitive to modifications of the riparian zone [Plafkin et al., 1989].

# 5.3 RESULTS

#### 5.3.1 Bioassessment

Mean bioassessment scores using McGuire's three-part bioassessment index and their associated impairment classifications are given in Table 5-2. Raw scores for each macroinvertebrate replicate sample are given in Appendix F.

#### 5.3.1.1 Overall Biointegrity Index

Four of the five sites on the mainstem Clark Fork River were classified as unimpaired, using the mean scores of McGuire's overall biointegrity index [Table 5-2]: the sites near Galen (CFR-03A), at Gemback Road (CFR-11F), at the Williams-Tavenner Bridge (CFR-34) and at Turah (CFR-116A). In addition, one headwater site (Warm Springs Creek near mouth; WSC-SBC) and one tributary site (Little Blackfoot River near Garrison; LBR-CFR-02), were also classified as unimpaired using this index. Two headwaters sites (Mill-Willow Creek near mouth [MCWC-MWB] and Mill-Willow Creek Bypass near mouth [MWB-SBC]), and two tributary sites (Lost Creek at Frontage Road [LC-7.5] and Racetrack Creek at Frontage Road [RTC-1.5]), were classified as slightly impaired using this index. The Silver Bow Creek at Frontage Road (SS-19) site was classified at moderately impaired.

For sites where samples were replicated (all but SS-19), there was moderate variation in overall biological integrity scores among sample replicates. The mean coefficient of variation (CV) among replicates for this index (scores as percent of maximum score) was 7.58%. Mean, maximum and minimum scores, with 95% confidence intervals, are graphed in Figure 5-1.



Figure 5-1. Variability among replicates: mean scores, maximum and minimum scores, and 95% confidence intervals for McGuire's overall biointegrity index<sup>83</sup>. Clark Fork River basin, September 19-20, 2016.

# 5.3.1.2 Metals Subset

Mean scores for McGuire's metals index [Table 5-2] indicated unimpaired conditions at 9 of the 13 sampled sites. Silver Bow Creek at Frontage Road (SS-19), Silver Bow Creek at Warm Springs (SS-25), Lost Creek at Frontage Road (LC-7.5), and Little Blackfoot River at Beck Hill Road (LBR-CFR-02) were classified as slightly impaired using this index. The mean CV among replicates for the metals subset index score (scores as percent of maximum score) was 6.56%, suggesting slightly less variability in these scores compared to the overall biointegrity scores. Mean, maximum and minimum scores, with 95% confidence intervals are graphed in Figure 5-2.

<sup>&</sup>lt;sup>83</sup> Sample collection methods differed at SS-19 from the other sites and consisted of only one replicate. At all other sites, four replicate samples were collected.



Figure 5-2. Variability among replicates: mean scores, maximum and minimum scores, and 95% confidence intervals for McGuire's metals pollution metric subset<sup>84</sup>. Clark Fork River basin, September 19-20, 2016.

# 5.3.1.3 Organic and Nutrient Subset

All sites except one were considered unimpaired using the mean scores of McGuire's organic and nutrient index [Table 5-2]. Slight impairment due to organic and nutrient enrichment was detected by the index at Silver Bow Creek at Warm Springs (SS-25). The mean CV among replicates for the organic/nutrient subset index score (scores as percent of maximum score) was 5.35%, indicating moderate variation in these scores. Mean, maximum and minimum scores, with 95% confidence intervals are graphed in Figure 5-3.

<sup>&</sup>lt;sup>84</sup> Sample collection methods differed at SS-19 from the other sites and consisted of only one replicate. At all other sites, four replicate samples were collected.



Figure 5-3. Variability among replicates: mean scores, maximum and minimum scores, and 95% confidence intervals for McGuire's organic/nutrient pollution metric subset<sup>85</sup>. Clark Fork River basin, September 19-20, 2016.

<sup>&</sup>lt;sup>85</sup> Sample collection methods differed at SS-19 from the other sites and consisted of only one replicate. At all other sites, four replicate samples were collected.

Table 5-2. Mean macroinvertebrate bioassessment scores and impairment classifications: McGuire's indices for general biointegrity, nutrient/organic impairment, and metals impairment. Scores are mean values over four replicate samples, and are expressed as the percent of maximum score<sup>86</sup>. Clark Fork River basin, September 19-20, 2016.

Site name	Site ID	McGuire biointegrity metrics [McGuire, 2010]		McGuire metals- sensitive subset [McGuire, 2010]		McGuire organic/nutrient- sensitive subset [McGuire, 2010]	
		score	impairment class	score	impairment class	score	impairment class
Mill -Willow Creek at Frontage Road	MCWC-MWB	88.3	slight	90.3	none	98.6	none
Mill-Willow Creek Bypass near mouth	MWB-SBC	85	slight	80.6	none	93.1	none
Warm Springs Creek near mouth	WSC-SBC	94.2	none	84.7	none	97.2	none
Silver Bow Creek at Frontage Road	SS-19	56.7	moderate	61.1	slight	94.4	none
Silver Bow Creek at Warm Springs	SS-25	84.2	$\operatorname{slight}$	68.1	slight	79.2	$\operatorname{slight}$
Clark Fork River near Galen	CFR-03A	92.5	none	84.7	none	91.7	none
Clark Fork River at Galen Road	CFR-07D	86.7	slight	86.1	none	98.6	none
Clark Fork river at Gemback Road	CFR-11F	97.5	none	84.7	none	87.5	none
Clark Fork River at Williams-Tavenner Bridge	CFR-34	97.5	none	91.7	none	90.3	none
Clark Fork River at Turah	CFR-116A	98.3	none	94.4	none	81.9	none
Lost Creek at Frontage Road	LC-7.5	76.7	$\operatorname{slight}$	68.1	slight	83.3	none
Racetrack Creek at Frontage Road	RTC-1.5	75.8	slight	80.6	none	97.2	none
Little Blackfoot River at Beck Hill Road	LBR-CFR-02	90.8	none	79.2	slight	97.2	none

 $<sup>^{86}</sup>$  Sample collection methods differed at SS-19 from the other sites and consisted of only one replicate.

# 5.4 DISCUSSION

# 5.4.1 Ecological Interpretation of Aquatic Invertebrate Assemblages

## 5.4.1.1 Mill-Willow Creek at Frontage Road (MCWC-MWB)

#### 5.4.1.1.1 Water Quality

The fauna at this site had some characteristics suggestive of good water quality and some suggestive of impaired water quality. At least seven distinct mayfly taxa were collected: two taxa in the family Baetidae, one in the family Ephemerellidae, two in the family Heptageniidae, one in the family Leptophlebiidae, and one in the family Leptohyphidae. Of these taxa, only the ubiquitous Baetis tricaudatus complex (1.6%) was common. The HBI (3.94) was within expectations for a low-order valley stream. Hemoglobin-bearing organisms (0.9%) were uncommon, suggesting that the sediments were well oxygenated. Two pollution-sensitive taxa were found in the composited sample, the midge Cricotopus (Nostococladius) sp. (19.7%), which was abundant, and the mayfly Drunella grandis (0.2%). However, pollution-tolerant organisms (16.0%), including the elmid beetle Optioservus sp. (12.9%), were a large component of the assemblage and collector-filterers (27.9%) were a greater than expected portion of the functional-feeding groups. These two characteristics suggest that some slight water quality impairment as a result of nutrient enrichment cannot be ruled out in this reach. Also, the high abundance of Cricotopus (Nostococladius) sp. suggests that nitrogen may be limiting here because the midge occurs in a mutualistic relationship with the blue-green algae Nostoc. The MTI (3.72) suggests little possibility of contamination by metals. Indeed, metals-intolerant taxa were present (heptageniid mayflies *Rhithrogena* sp. and *Cinvgmula* sp.) and even abundant (the caddisfly Lepidostoma sp. (23.9%), the dominant organism in the composited sample).

# 5.4.1.1.2 Thermal Condition

The midge *Cricotopus* (*Nostococladius*) sp. was the only cold-stenotherm taxon found in the composited sample; however, it was abundant, accounting for 19.4% of the sampled organisms. The estimated thermal preference of the assemblage was 14.9 C.

#### 5.4.1.1.3 Sediment Deposition

It is unlikely that the deposition of fine sediment impeded the colonization of taxa in this reach as 14 caddisfly and 22 "clinger" taxa were found in the sample. However, the FSBI (3.13) indicated that the assemblage was tolerant of fine sediment.

### 5.4.1.1.4 Habitat Diversity and Integrity

Overall taxa richness was somewhat lower than expectations: only 46 taxa were recorded in the composite sample from this reach. Only three stonefly taxa (immature Chloroperlidae, *Skwala* sp. and *Hesperoperla pacifica*) were collected and none of them were abundant: stoneflies accounted for only 0.7% of the sample. Consequently, disturbance to instream habitats, channel morphology, streambanks, and riparian function cannot be ruled out here. The presence of seven semivoltine taxa, including some that were abundant or common (e.g., the elmid beetle, *Optioservus* sp.; the caddisfly *Brachycentrus occidentalis*, 3.5%), suggests a fauna that was not substantially influenced by catastrophic dewatering, thermal extremes, or severe sediment pulses. Shredders (43.7%) dominated the functional composition of the assemblage. Although a large percentage of the shredders were *Cricotopus (Nostococladius)* sp., which does not respond to riparian inputs of large organic material, other shredders were also abundant. Shredders were followed in abundance by filter-feeders (27.9%), including many hydropsychid caddisfly taxa. These ecological characteristics suggest that both fine and coarse particulate organic matter were important energy pathways in this reach. Other functional groups occurred in expected proportions.

## 5.4.1.2 Mill-Willow Bypass near mouth (MWB-SBC)

### 5.4.1.2.1 Water Quality

As with site MCWC-MWB, there were at least seven distinct mayfly taxa collected, of which the ubiquitous *Baetis tricaudatus* complex (1.1%) was the most abundant. However, the HBI (4.77) was elevated above expectations for a low-order valley stream. Again, two pollutionsensitive taxa were collected, including the midge Cricotopus (Nostococladius) sp. (1.6%), whose abundance was much lower than site MCWC-MWB, and the mayfly Drunella grandis (0.03%), which was rare. Hemoglobin-bearing organisms (2.5%) were common, thus hypoxia in the sediments cannot be ruled out here. Pollution-tolerant organisms (49.8%) were very abundant and included the elmid beetle Optioservus sp. (19.9%, the dominant organism in the composited sample) and the isopod Caecidotea sp. (5.8%). Collector-filterers (23.0%) were more abundant than expected for this stream type. Thus, slight water quality impairment due to nutrient enrichment cannot be dismissed here. In addition, the presence of hydroptilid caddisflies (0.3%) and the commonness of midges in the genus Orthocladius sp. (2.6%) indicate that filamentous algae were probably common at the site, supporting the contention that nutrient enrichment occurred here. The fauna indicated little evidence for metals contamination as the MTI (4.40) was lower than the HBI and the metals-intolerant mayfly Heptagenia sp. and caddisfly *Lepidostoma* sp. were present.

# 5.4.1.2.2 Thermal Condition

Only one cold-stenotherm, the midge *C. (Nostococladius)* sp., was collected from this site and it accounted for only a small percentage (1.6%) of the sample. The estimated thermal preference of the assemblage was 16.7 C. Indeed, some warm-water-tolerant taxa were abundant (e.g., caddisflies *Cheumatopsyche* sp. (5.3%) and *Oecetis* sp. (3.1%)).

## 5.4.1.2.3 Sediment Deposition

Ten caddisfly taxa and 21 "clingers" were collected in this reach, thus it appears unlikely that the deposition of fine sediment impeded the colonization of invertebrates here. The FSBI (4.14) indicated an assemblage that was moderately tolerant of fine sediment.

### 5.4.1.2.4 Habitat Diversity and Integrity

Overall, 47 taxa were found in this reach, which is somewhat lower than expectations for a low-order valley stream; thus, some disturbance to instream habitats cannot be dismissed here. Only two unique stonefly taxa were found, including *Skwala* sp. (0.8%), a few other immature periodids (0.1%), and *Pteronarcella* sp. (0.1%) suggesting that channel morphology, streambanks, and riparian function may be disturbed. Catastrophes like thermal extremes, scouring floods, or dewatering appear unlikely, as six long-lived taxa were found, including the elmid *Optioservus* sp. and the caddisfly *Brachycentrus occidentalis*, both of which were abundant. Collector-filterers (25.4%) were the most abundant functional feeding group and were followed closely in abundance by the scrapers (23.4%) and the collector-gatherers (23.0%). Shredders (8.8%) were also abundant. These characteristics of the fauna suggest that fine and coarse particulate organic matter and autochthonous algal production were all important energy pathways in this reach. Predators (19.2%) were also abundant, primarily as a result of the abundance of flatworms in the class Trepaxonemata (12.2%).

### 5.4.1.3 Warm Springs Creek near mouth (WSC-SBC)

# 5.4.1.3.1 Water Quality

Most faunal indicators suggested good water quality at this site; however, there were some indicators that suggested slight impairment of water quality. Seven mayfly taxa were collected here: three unique taxa in the family Baetidae including the ubiquitous *Baetis tricaudatus* complex (3.9%), the most abundant mayfly; two taxa in the family Ephemerellidae; and two in the family Heptageniidae including Cinygmula sp. (2.6%), which was common. The HBI value (4.05) was only slightly elevated above expectations. Three pollution-sensitive taxa were collected, the mayflies Drunella grandis and Caudatella sp. and the midge Cricotopus (Nostococladius) sp., which was abundant (15.6%). This midge is assigned a relatively high HBI tolerance value (6) that may overestimate its tolerance causing at least some of the elevation in the HBI. Nitrogen was also likely a limiting nutrient, because abundant Cricotopus (Nostococladius) sp. suggests a large crop of the blue-green alga Nostoc sp. In addition, no hemoglobin-bearing taxa were collected in this reach. Alternatively, there were some indicators that suggested water quality impairment. Collector-filterers (20.4%) were abundant and the high abundance of the elmid beetle Optioservus sp (18.6%), which was the dominant organism and the only pollution-tolerant taxon, caused the percentage of pollution-tolerant organisms to be high. Finally, taxa typically associated with filamentous algae were either common (e.g., Orthocladius spp. (6.6%), worms in the subfamily Naidinae (1.2%)) or present (caddisflies in the family Hydroptilidae (0.2%). This suggests abundant filamentous algae which is often associated with nutrient enrichment. This combination of characteristics suggests that mild water quality impairment, perhaps through nutrient enrichment, cannot be ruled out. The MTI value (4.27) was higher than the HBI value, but metals-sensitive taxa such as heptageniid mayflies (2.9%) and the caddisfly Lepidostoma sp. (3.9%) were common. Based on these findings, metals contamination is probably unlikely here.

#### 5.4.1.3.2 Thermal Condition

The estimated thermal preference of the site was 14.8 C. Two cold-stenotherm taxa representing 15.6% of the assemblage were recorded: these were the abundant *Cricotopus* (*Nostococladius*) sp. and *Caudatella* sp.

### 5.4.1.3.3 Sediment Deposition

Both caddisflies (14 taxa) and "clingers" (29 taxa) were diverse suggesting that this site was unlikely to be impacted by fine sediment deposition that would limit the colonization of invertebrates. The FSBI (4.56) indicated a moderately sediment-tolerant assemblage.

#### 5.4.1.3.4 Habitat Diversity and Integrity

In general habitat characteristics appear to be good at this site. Overall taxa richness (53) was within expectations; thus, instream habitats appear to be intact. Six stonefly taxa were collected, including the perlid *Hesperoperla pacifica* (2.1%), which was common, suggesting that channel morphology, streambanks, and riparian function were intact. In addition, nine long-lived taxa were recorded, suggesting that catastrophes like dewatering or thermal stress probably did not interrupt long life cycles. Indeed, the semivoltine, elmid beetle *Optioservus* sp. (18.6%) was the most abundant taxon. Scrapers (30.8%) were the most abundant of the feeding groups followed closely by shredders (21.8%) and collector-filterers (20.4%). The most abundant shredder was *Cricotopus (Nostococladius)* sp.; however, this midge does not respond to riparian inputs of large organic material. Predators (10.7%) and collector-gatherers (16.1%) occurred in expected proportions. It is clear that autochthonous algal production and allochthonous addition of fine particulate organic matter are important to the energy flow in this reach.

### 5.4.1.4 Silver Bow Creek at Frontage Road (SS-19)

This site was sampled on September 14, 2016 as part of the Streamside Tailings Operable Unit monitoring. Both the sample collection method and the sample processing methods for this site differed from the other sites in this study. The sample was collected using a D-frame net and a traveling kick-net method. Thus the single replicate represented a much larger area of benthic substrate than the four replicates collected with a Hess sampler at the other sites. In addition, the sample was subsampled to a standard 300-organism count. Thus, the number of organisms contributing to the assessment was much smaller than at the other sites. Assessment metrics based on richness and diversity are probably not directly comparable. Differences are taken into account in the ecological narrative that follows.

# 5.4.1.5 Water Quality

Only one mayfly taxon, *Baetis rhodani* Gr. (0.3%), represented by only one individual, and no sensitive taxa were found in this sample. The biotic index value (4.39) reflected an assemblage having slight impact from organic pollution. Filter-feeders (42.2%), especially the chironomid *Microtendipes* sp. (30.3%), the dominant organism in the sample, and hemoglobin-bearing taxa (30.6%, again mostly *Microtendipes* sp.) were very common in this assemblage. These findings

suggest that water quality was impaired through nutrient enrichment and that there was additional stress associated with hypoxic conditions in the sediment. In addition, pollution-tolerant organisms accounted for 37.2% of the sample. Contamination by metals was not indicated: the MTI (3.43) was lower than the HBI and the caddisfly *Lepidostoma* sp. (8.8%) was common in the sample.

## 5.4.1.5.1 Thermal Condition

No cold-stenotherm taxa were recorded from this site. The temperature preference of the assemblage was 17.5°C.

#### 5.4.1.5.2 Sediment Deposition

Five caddisfly and eight "clinger" taxa were found in this sample. The FSBI value (3.91) indicated a moderately sediment-tolerant assemblage. Fine sediment deposition on the stony substrates may have negatively influenced colonization.

# 5.4.1.5.3 Habitat Diversity and Integrity

Overall taxa richness (20) was lower than expected. The stonefly *Skwala* sp. was present, but only two individuals were counted. Consequently, monotonous or disturbed instream habitats and unstable streambanks, loss of riparian function, or altered channel morphology are suggested. Catastrophic dewatering, thermal extremes, sediment pulses or toxic inputs can probably be ruled out: although long-lived taxa were not diverse, they were abundant. Collectorfilterers (42.2%) and scrapers (36.9%) dominated the functional composition of the assemblage suggesting that both fine particulate matter and instream algal production were the dominant energy source in this reach. All other functional groups were found in appropriate proportions.

# 5.4.1.6 Silver Bow Creek at Warm Springs (SS-25)

## 5.4.1.6.1 Water Quality

Water quality appears impaired at this site. Ephemerella excrucians, Iswaeon sp., Caenis sp. and Baetis tricaudatus complex were the only mayfly taxa recorded from the composited sample, but only the ubiquitous B. tricaudatus complex (1.9%) was common. The HBI (6.06) was elevated, and pollution-tolerant organisms (29.0%) included the elmid beetle Optioservus sp. (9.3%) and the filtering caddisfly Cheumatopsyche sp. (7.5%). Both of these were abundant. Organisms that contain hemoglobin and are tolerant of low oxygen conditions in the sediments were common (2.9%: mainly the midge Microtendipes sp.) suggesting that hypoxia in the sediments might occur. In addition, filtering collectors (13.9%) accounted for a slightly higher percentage of the feeding groups than expected, and organisms that are associated with filamentous algae (e.g., Cricotopus sp. 36.5%) were abundant. These three conditions are often linked to nutrient enrichment. Cricotopus (Nostococladius) sp. and Potthastia longimanus Gr. were the only two pollution-sensitive taxa collected and both were rare. Most results suggest that nutrient enrichment was at least part of the cause of water quality impairment at this site. The MTI (6.07) was slightly higher than the HBI and the metals-intolerant taxon Lepidostoma

sp. was represented by only four specimens; thus, metals contamination cannot be dismissed here.

# 5.4.1.6.2 Thermal Condition

*Cricotopus (Nostococladius)* sp. was the only cold-stenotherm taxon collected at this site. It accounted for only 0.1% of the fauna. The temperature preference (17.2 C) of the assemblage was the second highest of any site in the 2016 study. In addition, several organisms tolerant of warm water temperatures were common or abundant (e.g., the caddisflies *Oecetis sp.* (2.7%) and *Cheumatopsyche sp.* (7.5%)).

### 5.4.1.6.3 Sediment Deposition

Although caddisfly taxa richness (11) was high, only 16 "clinger" taxa were collected. Hence, the impact of fine sediment on the colonization of stony substrates in this reach cannot be ruled out. The FSBI (3.48) also suggests an assemblage that is tolerant of fine sediment.

# 5.4.1.6.4 Habitat Diversity and Integrity

Both overall taxa richness (48) and stonefly taxa richness (1) were lower than expected, suggesting limited or monotonous instream habitats and disruption to channel morphology, streambanks, and/or riparian function. The fact that five semivoltine taxa were collected, some of which were abundant (e.g., *Optioservus* sp.), suggests that catastrophes such dewatering, scouring sediment pulses, or thermal extremes were unlikely to have had a major impact on the fauna. Shredders (37.8%) were the dominant functional group suggesting the importance of coarse particulate organic matter to the energy flow in this reach. Collector-gatherers (22.3%), scrapers (9.6%), and collector-filterers (13.9%) were also abundant suggesting that instream algal production and fine particulate organic matter inputs were also important in the energy budget. Predators (16.2%) were also abundant mostly due to the abundance of flatworms in the class Trepaxonemata (10.1%).

### 5.4.1.7 Clark Fork River near Galen (CFR-03A)

#### 5.4.1.7.1 Water Quality

Seven mayfly taxa were recorded from this composited sample, which was within expectations for a low-to-mid-order stream in the Valley and Foothill ecoregion. Baetids included *Baetis tricaudatus* complex and *Diphetor hageni*, ephemerellids included *Drunella* grandis and Ephemerella excrucians and heptageniids included *Cinygmula* sp., *Heptagenia* sp. and *Rhithrogena* sp. Only *B. tricaudatus* complex (2.0%) and *Rhithrogena* (1.8%) were common. The HBI (3.90) was below the threshold indicating organic pollution. Indeed, the grazing caddisfly *Protoptila* sp. (22.8%) was the most abundant organism in the sample and it has a biotic index value of one indicating that it is very sensitive to organic pollution. Two pollutionsensitive taxa were collected, including the midge *Cricotopus (Nostococladius)* sp. (19.3%), which was abundant. Nitrogen was likely a limiting nutrient, because abundant *Cricotopus (Nostococladius)* sp. suggests that the site supports a large crop of the blue-green alga *Nostoc* sp. Alternatively, organisms that suggest the presence of substantial crops of filamentous algae, and thus nutrient enrichment, were common (e.g., midges *Cricotopus* sp. (5.2%) and *Orthocladius* sp. (2.9%)). In addition, hemoglobin-bearing organisms (2.6%) were common suggesting that nutrient-enrichment-driven hypoxia in the sediments cannot be ruled out. Relative abundances of collector-filterers (17.1%) and pollution-tolerant organisms (15.3%) were somewhat above expectations. Overall, some metrics suggest nutrient-enriched conditions, while others do not, thus slight nutrient enrichment cannot be dismissed here. There was little indication of metals contamination as the MTI (4.00) was only slightly higher than the HBI and some metals-intolerant taxa were common (e.g., the heptageniid mayfly *Rhithrogena*).

### 5.4.1.7.2 Thermal Condition

Cold stenotherms (the midge *Cricotopus (Nostococladius)*) accounted for 19.3% of the assemblage. The temperature preference of the assemblage was 15.5 C.

### 5.4.1.7.3 Sediment Deposition

This site supported 21"clinger" taxa and 11 caddisfly taxa, consequently it appears that stony substrates were largely free of deposited sediment in 2016. The FSBI value (4.07) indicated a moderately sediment-tolerant fauna.

#### 5.4.1.7.4 Habitat Diversity and Integrity

Forty-eight taxa were collected from this site, which is somewhat below expectations. In addition, only three stonefly taxa were recorded and only one, *Skwala* sp. (1.2%) was common. Thus, instream and reach-scale habitat features appear to be disturbed. Disasters such as dewatering, scouring sediment pulses, or thermal extremes were probably not influential here as seven long-lived taxa were recorded, some of which were abundant or common. These included elmids *Optioservus sp.* (8.7%) and *Zaitzevia sp.* (3.9%) and the caddisfly *Brachycentrus occidentalis* (3.4%). The dominant feeding groups were scrapers (36.1%) followed in abundance by shredders (27.7%). The shredder percentage is probably an overestimate of the role of riparian inputs to the energy flow in the reach because the *Cricotopus (Nostococladius)* sp. does not respond to inputs of coarse particulate matter from streamside. However, even with the midge's percentage removed from the estimate, shredders were still an important feeding guild. Collectors (30.9%) were also abundant. Thus, autochthonous algal production within the reach as well as allochthonous fine and coarse particulate organic matter are all important components of the food web of this reach.

## 5.4.1.8 Clark Fork River at Galen Road (CFR-07D)

# 5.4.1.8.1 Water Quality

As with many other sites in 2016, some indicators suggest little water quality impairment, whereas others suggested some impairment. The mayflies were diverse in this reach: nine taxa were recorded from the composited sample including five baetids, two ephemerellids, and two heptageniids. However as with the 2015 sample, none of the mayflies were common: even the ubiquitous *Baetis tricaudatus* complex accounted for only 0.4% of the assemblage. In addition to the diversity of the mayfly assemblage, the HBI (3.53) did not suggest water quality

impairment, as it was below the threshold that indicates organic pollution and, as with site CFR-03A, the caddisfly *Protoptila* sp. (24.5%), with a low BI index value, was the dominant organism in the sample. However, hemoglobin-bearing organisms (3.7%, the midge *Microtendipes* sp.) were common, pollution-tolerant taxa (37.9%) were abundant, and collector-filterers (18.4%) were somewhat above expectations for a stream with good water quality. In addition, only one pollution-sensitive taxon was collected: *Cricotopus (Nostococladius)* sp., which was common. Therefore, slight water quality impairment through nutrient enrichment cannot be ruled out at this site. The MTI (3.57) was slightly higher than the HBI, but the metals-sensitive caddisfly *Lepidostoma sp.* (2.1%) was common and heptageniid mayflies were present. These results provide little evidence for contamination by metals in this reach.

# 5.4.1.8.2 Thermal Condition

*Cricotopus* (*Nostococladius*) sp. was the only cold-stenotherm taxon in the collection, and it accounted for 5.2% of the total abundance of the sample. The temperature preference of the assemblage was 15.3 C. However, caddisflies tolerant of warmer water were common (*Oecetis* sp. (1.7%)) or abundant (*Helicopsyche* sp. (14.7%)).

### 5.4.1.8.3 Sediment Deposition

Sediment deposition probably did not influence colonization of taxa to an appreciable extent: the site supported no fewer than 10 caddisfly taxa and 19 "clinger" taxa. However, the FSBI value (3.74) indicated an assemblage that was moderately sediment-tolerant.

#### 5.4.1.8.4 Habitat Diversity and Integrity

Overall taxa richness (48) and stonefly taxa richness (2) were lower than expected, suggesting limited instream habitats and disturbed reach-scale habitat features like stream banks and riparian zones. Six semivoltine taxa were found, thus catastrophes such as dewatering, scouring sediment pulses, or thermal extremes probably did not influence the composition of the benthic fauna. Indeed, the long-lived, elmid beetle *Optioservus* sp. (16.7%) was abundant. Scrapers (59.8%) were the dominant functional group suggesting abundant algal resources and the importance of autochthonous production to the energy balance in this reach. Clearly, suspended fine particulate organic matter was also an important energy component as well, since collector-filterers (18.4%) were the next dominant group. All other functional groups were well represented

# 5.4.1.9 Clark Fork River at Gemback Road (CFR-11F)

## 5.4.1.9.1 Water Quality

Although eight mayfly taxa (at least three baetids, one ephemerellid, two heptageniids, one leptophlebiid and one leptohyphid) and two pollution-sensitive taxa (*Cricotopus* (*Nostococladius*) and *Potthastia* sp.) were recorded from this site, other metrics suggest that water quality was impaired here. Indeed, all of the mayfly taxa and the sensitive taxa were uncommon (each taxon < 0.5%) except for the mayfly *Ephemerella* sp. (1.5%). The HBI (4.64) was above the threshold indicating organic pollution may occur here. Pollution-tolerant taxa accounted for 44.3% of the

assemblage, hemoglobin-bearing organisms (8.0%, mostly the midge *Microtendipes* sp.) were common, and the relative abundance of collector-filterers (22.4%) was elevated over expectations. The presence of so many hemoglobin-bearing organisms suggests hypoxic sediments, which when combined with the high percentage of collector-filterers (mostly filtering caddisflies) supports a hypothesis that mild nutrient enrichment cannot be ruled out here. In support of this contention, organisms that are indicative of the presence of filamentous algae, like the midges *Cricotopus* sp. (5.6%) and *Orthocladius* sp. (6.3%), were common, and hydroptilid caddisflies (0.3%) were present. The presence of filamentous algae is often thought to indicate nutrient enrichment. Metals contamination is unlikely as the MTI (4.22) was lower than the HBI, metals-sensitive heptageniid mayflies were present, and the caddisfly *Lepidostoma sp.* (4.9%) was common.

# 5.4.1.9.2 Thermal Condition

Only one cold-stenotherm taxon, *Cricotopus (Nostococladius)* sp. was found in the composited sample from this reach. However, in contrast to the two upstream sites, the midge was not very abundant here. The estimated temperature preference of the assemblage was 16.4 C and several organisms tolerant of warm water conditions were abundant (e.g., the caddisflies *Oecetis* sp. (5.9%), *Cheumatopsyche* sp. (3.7%) and *Helicopsyche* sp. (8.3%)).

#### 5.4.1.9.3 Sediment Deposition

It appears that fine sediment deposition did not influence the biota in this reach, since 15 caddisfly and 21 "clinger" taxa were sampled here. However, the FSBI value (3.37), indicated a moderately sediment-tolerant assemblage.

### 5.4.1.9.4 Habitat Diversity and Integrity

Overall taxa richness (62) was high: it was the highest of all the sites in 2016, suggesting diverse and intact instream habitats. However, only two unique stonefly taxa were collected (*Claassenia sabulosa* (0.02%) and *Skwala* sp. (0.6%)) and neither were common, perhaps indicating that reach-scale habitat features like stream banks and riparian zones were disturbed. Long-lived taxa were well-represented: six such taxa were collected from this site and the elmids, *Optioservus sp.* (19.8%) and *Zaitzevia sp.* (2.6%), were common. Consequently, catastrophic dewatering or thermal extremes did not appear to be influential. Scrapers (37.8%), including the grazing caddisflies *Helicopsyche* sp. and *Protoptila* sp. (7.0%) and the elmid *Optioservus* sp., were abundant and dominated the food web. Filterers (22.4%), especially among the hydropsychid caddisflies (12.8%, including *Ceratopsyche cockerelli, Cheumatopsyche* sp., and *Hydropsyche occidentalis*), were also common. These metrics suggest that periphyton production and fine organic particulates in suspension are important to the energy budget of this reach. All other feeding groups were well represented.

# 5.4.1.10 Clark Fork River at Williams-Tavenner Bridge (CFR-34)

## 5.4.1.10.1 Water Quality

Mild water quality impairment through nutrient enrichment cannot be dismissed at this site. The HBI (4.28) was slightly elevated above expectations, hemoglobin-bearing organisms (12.7%, mainly *Microtendipes* sp.) were abundant, and collector-filterers (41.4%) dominated the food web. These metrics suggest that nutrient enrichment and hypoxia in the sediments occurred in this reach. The fact that pollution-tolerant organisms, including the caddisfly *Helicopsyche* (27.9%) the dominant organism in the sample, accounted for 58.1% of the assemblage also supports the contention that water quality was impaired here. However, not all metrics indicated impairment: nine mayfly taxa were collected (at least four unique baetids, at least two unique ephemerellids, two heptageniids, and one leptohyphid), but *Ephemerella* sp. (3.3%) was the only common mayfly taxon. Three pollution-sensitive taxa were found in the sample (*Potthastia gaedii* Gr., *Cricotopus (Nostococladius)* sp. and *Drunella grandis*), but none of them were common. There was no indication of metals contamination as the MTI (3.75) was lower than the HBI, the metals-sensitive caddisfly *Lepidostoma* sp. (2.6%) was common, and heptageniid mayflies were present.

# 5.4.1.10.2 Thermal Condition

Water temperature metrics calculated for this site were very similar to those calculated for site CFR-11F. Only one cold-stenotherm taxon, *Cricotopus (Nostococladius)* sp., was collected and it was not very abundant (0.5%). Like CFR-11F, several warm-water loving taxa were abundant, including the caddisflies *Oecetis sp.* (5.3%), *Cheumatopsyche* sp. (12.1%) and *Helicopsyche* sp. (27.9%). The calculated temperature preference of the assemblage was 16.1 C.

# 5.4.1.10.3 Sediment Deposition

Thirteen caddisfly and 22 "clinger" taxa were collected here, suggesting that sediment deposition did not impede the colonization of stony sediments in this reach. The FSBI value (3.57); however, indicated a moderately sediment-tolerant assemblage.

### 5.4.1.10.4 Habitat Diversity and Integrity

Fifty-five total taxa were reported from this site indicating intact and diverse instream habitats. Only four stonefly taxa were collected and all of them were very rare (out of 8891 total specimens only 13 were stoneflies): disturbances to reach-scale habitat features like stream banks and riparian zones cannot be ruled out. Six semivoltine species were found in the sample, including the caddisfly *Brachycentrus occidentalis* (8.8%) and the elmid beetle *Optioservus* sp. (6.9%), both of which were abundant. Dewatering or thermal stress appear unlikely here. Collector-filterers (41.4%) and scrapers (36.8%) were the dominant functional groups suggesting the importance of suspended fine particulate organic matter and autochthonous algal production to the food web here. All other functional groups were well represented.

# 5.4.1.11 Clark Fork River at Turah (CFR-116A)

## 5.4.1.11.1 Water Quality

As with many of the other sites in 2016, water quality indicators were varied in their suggestion of impairment at this site. Eight mayfly taxa were supported, including two unique baetids, two unique ephemerellids, three unique heptageniids, and one leptohyphid. Several of the taxa were common (e.g., the pollution-sensitive Drunella grandis (1.2%), the heptageniid Rhithrogena sp. (2.6%)). Pollution-sensitive fauna were represented by three taxa, Potthastia gaedii Gr, Cricotopus (Nostococladius) sp. and Drunella grandis, although only D. grandis was common. These characteristics suggest good water quality. However, the HBI value (4.62) indicated an assemblage that was mildly tolerant of organic pollution. In addition, other characteristics suggest impairment due to nutrient enrichment at this site. Collector-filterers (57.8%) strongly dominated the functional composition of the assemblage, which is not surprising given that the filtering caddisflies *Hydropsyche occidentalis* (27.2%) and Cheumatopsyche sp. (20.6%) were the two most abundant organisms in the composited sample. Caddisflies in the family Hydroptilidae (0.2%) were present and midges typically associated with filamentous algae (2.6%) were common. Hypoxia in the sediments may also be indicated as hemoglobin-bearing organisms (1.8%) were common. These metrics suggest that mild nutrient enrichment cannot be ruled out at this site. Pollution-tolerant organisms (38.6%) were also abundant. No metals contamination was indicated: the MTI (4.26) was lower than the HBI and heptageniid mayflies were common (3.9%).

## 5.4.1.11.2 Thermal Condition

The water temperature metrics of this site were very similar to the sites CFR-11F and CFR-34. Only one cold-stenotherm taxon, *Cricotopus (Nostococladius) sp.*, was collected and it was not very abundant (0.2%). The estimated temperature preference of the assemblage was 15.4 C and several organisms tolerant of warm water temperatures were abundant including the caddisflies *Oecetis* sp. (3.4%) and *Cheumatopsyche* sp.

#### 5.4.1.11.3 Sediment Deposition

The site supported at least 15 caddisfly taxa and 27 "clinger" taxa, suggesting that colonization of stony substrates was not inhibited by deposited sediment. The FSBI value (3.45) indicated a sediment-tolerant assemblage.

# 5.4.1.11.4 Habitat Diversity and Integrity

Instream and reach-scale habitats appear to be diverse and intact: taxa richness (57) was within expectations and the stonefly fauna (five taxa) was diverse. Catastrophes like dewatering or thermal stress probably did not disrupt the life cycles of long-lived organisms, as nine semivoltine taxa were recorded in this reach. As mentioned previously, collector-filterers dominated the functional mix and collector-gatherers (11.4%) were common suggesting that fine particulate organic matter dominates the energy flow in this reach. Other functional groups were well represented.

## 5.4.1.12 Lost Creek at Frontage Road (LC-7.5)

### 5.4.1.12.1 Water Quality

Impaired water quality through nutrient enrichment seems to be indicated at this site. Only five mayfly taxa were collected and none of them were common (only 20 specimens out of a total of 3503 organisms in the composited sample). The HBI value (5.33) was elevated over expectations and indicated an invertebrate assemblage that was tolerant of organic pollution. Pollution-tolerant taxa were extremely abundant (65.8%) including the dominant organism in the sample, the dipteran *Caloparyphus sp.* (27.4%). In addition, other pollution-tolerant taxa were present: among these were the caddisfly *Hydroptila* sp., the amphipod *Gammarus* sp. and the leech *Helobdella stagnalis*. *Hydroptila* sp. (2.5%) was common and is not only tolerant of pollution, but is often associated with filamentous algae. Orthocladius sp. (5.7%) and Cricotopus sp. (2.4%) were also common and are also often associated with filamentous algae. Large crops of filamentous algae may be an indication of nutrient enrichment. Only one pollution-sensitive taxon was collected: the midge Cricotopus (Nostococladius) sp. was represented by only one specimen. There was no discernible evidence of metals contamination as the MTI (4.59) was lower than the HBI.

# 5.4.1.12.2 Thermal Condition

Only one cold-stenotherm taxon *Cricotopus (Nostococladius)* sp. was found in the sample, and as mentioned previously, it was represented by only one individual. The calculated thermal preference of the fauna was 16.8 C, which was the third highest value found in the study in 2016. Several warm water tolerant taxa were common here including the caddisflies *Helicopsyche* sp. (3.9%) and *Oecetis* sp. (2.9%).

#### 5.4.1.12.3 Sediment Deposition

Both the number of caddisfly taxa (7) and "clinger" taxa (12) were lower than expectations. These findings suggest that sediment deposition may have compromised stony substrate habitats. The FSBI value (3.16) supports this contention and indicates that the fauna was tolerant of deposited sediment.

#### 5.4.1.12.4 Habitat Diversity and Integrity

Overall taxa richness (48) was somewhat lower than expected, and only one stonefly taxon, the nemourid *Malenka* sp. (0.3%) was recorded from this site and it was uncommon. Thus, instream habitats may be monotonous or disturbed and reach-scale habitat features like stream banks and riparian zones may also be disturbed. Because five semivoltine taxa were collected, some of which were abundant (e.g., *Optioservus* sp., 22.9%), catastrophes such as dewatering, scouring sediment pulses, or thermal extremes appear unlikely to have had a major impact on the fauna. All expected functional groups were present: collector-gatherers (54.4%) and scrapers (26.9%) dominated the functional mix indicating the importance of autochthonous algal production and deposited fine particulate organic matter to the energy flow in this reach. Interestingly, collector-filterers (3.3%) were not well represented.

# 5.4.1.13 Racetrack Creek at Frontage Road (RTC-1.5)

# 5.4.1.13.1 Water Quality

Six mayfly taxa were found in the composited sample: one taxon in the family Baetidae, two in the family Ephemerellidae, one in the family Heptageniidae, one in the family Leptophlebiidae and one in the family Leptohyphidae. Three of these taxa were abundant or common (*Cinygmula* sp. (8.3%), *Drunella grandis* (1.7%), *Ephemerella* sp. (2.5%)). Two pollution-sensitive taxa were collected: *D. grandis* was common, whereas only one specimen of *Cricotopus* (*Nostococladius*) sp. was collected. Hemoglobin-bearing organisms (0.5%) were uncommon and collector-filterers (0.6%) were not a major component of the assemblage. On the other hand, the HBI value (4.17) was slightly elevated over expectations and pollution-tolerant organisms accounted for 12.2% of the assemblage. In addition, the midge *Orthocladius* sp. (27.7%) was the dominant organism in the sample, the midge *Cricotopus* sp. (1.7%) was common, and caddisflies in the family Hydroptilidae were present. These taxa are often associated with filamentous algae, which itself is often associated with nutrient enrichment. Thus, some mild nutrient enrichment cannot be ruled out here. The MTI (4.31) was higher than the HBI; however, the metals-intolerant heptageniid mayfly *Cinygmula* sp. was abundant, consequently there was little evidence of metals pollution.

### 5.4.1.13.2 Thermal Condition

Only one cold-stenotherm taxon was recorded from this reach (*Cricotopus* (*Nostococladius*) sp.). It was represented by only one individual which accounted for only 0.04% of the fauna. The calculated thermal preference for the assemblage was 15.2 C.

### 5.4.1.13.3 Sediment Deposition

Eleven caddisfly taxa and 25 "clinger" taxa were collected, suggesting that sediment deposition did not appreciably limit colonization of stony substrates. The FSBI value (4.55) indicated a fauna that was moderately tolerant of fine sediment.

# 5.4.1.13.4 Habitat Diversity and Integrity

Overall the habitat characteristics of this site appear to be good. Fifty-four total taxa were collected, including seven stonefly taxa and eight semivoltine taxa many of which were common or abundant. Instream and reach-scale habitats appear intact, and catastrophes like dewatering, thermal extremes or scouring sediment pulses do not appear to have interrupted the life cycles of long-lived organisms. The functional composition of the assemblage was dominated by collector-gatherers (50.2%) indicating the importance of deposited fine particulate organic matter to the energy flow in this reach. All other functional groups were well represented except for collector-filterers.

# 5.4.1.14 Little Blackfoot River at Beck Hill Road (LBR-CFR-02)

### 5.4.1.14.1 Water Quality

Seven mayfly taxa were counted in composited sample from this site, only one of which, the pollution-sensitive *Drunella grandis* (2.3%), was common. Three pollution-sensitive taxa were recorded: *D. grandis*, *Cricotopus* (*Nostocoladius*) sp. (7.0%) and *Potthastia longimanus* Gr. (0.4%). However, the HBI (4.19) and the relative abundance of collector-filterers (16.3%) were slightly higher than expected, and hemoglobin-bearing organisms (4.1%) were common. Taxa typically associated with filamentous algae (e.g., *Cricotopus* sp. (1.9%), *Tvetenia* sp. (3.8%)) were common. Thus, the possibility of some mild nutrient enrichment and hypoxia in the sediments cannot be ruled out here. In addition, pollution-tolerant organisms made up 34.4% of the assemblage. There was no evidence of metals contamination as the MTI was 4.13 and lower than the HBI. Also, the metals sensitive caddisfly *Lepidostoma* sp. (13.5%) was abundant and the dominant organism in the sample.

#### 5.4.1.14.2 Thermal Condition

Only one cold-stenotherm, the midge *Cricotopus (Nostococladius)* sp., was found in this sample. The calculated temperature preference of the assemblage was 15.6 C.

# 5.4.1.14.3 Sediment Deposition

Fourteen caddisfly and 24 "clinger" taxa were collected at this site suggesting that the deposition of fine sediments did not influence the colonization of stony substrates in this reach. The FSBI (4.08) indicates a fauna that was moderately tolerant of fine sediment.

### 5.4.1.14.4 Habitat Diversity and Integrity

Overall taxa richness (59) was within expectations suggesting diverse and intact instream habitats. Five stonefly taxa were collected, suggesting that reach-scale habitat features were also intact. In addition, 10 long-lived taxa were counted and the elmid *Optioservus sp.* (12.2%) was abundant: year-round surface flow and absence of events that would interrupt long life cycles are indicated. Shredders (26.0%) were the most abundant functional group followed closely in abundance by scrapers (23.7%). All other expected functional groups were well represented.

### 5.5 CONCLUSIONS

Among the Clark Fork River headwaters and tributary sites, three sites had a score below 80% for the metals pollution subset: Silver Bow Creek at Warm Springs (SS-25) had a mean score of 68.1%; Lost Creek at Frontage Road (LC-7.5) had a mean score of 68.1%; and Little Blackfoot River at Beck Hill Road (LBR-CFR-02) had a mean score of 79.2%. All sampled sites on the Clark Fork River had a metals pollution subset score above 80%.

On the basis only of the taxonomic composition of the macroinvertebrate fauna and the performance of the metals tolerance index (MTI), as described in the ecological narratives, the

influence of metals contamination could not be detected with confidence at any site in 2016. However, there was some evidence to suggest metals contamination at Silver Bow Creek at Warm Springs (SS-25), although the data were inconclusive.

Table 5-3 summarizes the probable stressors suggested by the taxonomic and functional composition of macroinvertebrate assemblages at each site.

Table 5-3. Clark Fork River basin sites and probable stressors as suggested by the composition of macroinvertebrate assemblages. Clark Fork River basin, September 19-20, 2016.

Site name	Site ID	Low abundance	Nutrient and/or organic pollution	Metals	Sediment deposition	Thermal extremes	Habitat instability
Mill -Willow Creek at Frontage Road	MCWC- MWB		?				+
Mill-Willow Creek Bypass near mouth	MWB- SBC		?				+
Warm Springs Creek near mouth	WSC- SBC		?				
Silver Bow Creek at Frontage Road <sup>87</sup>	SS-19		+		?	?	+
Silver Bow Creek at Warm Springs	SS-25		+	?	?		+
Clark Fork River near Galen at Perkins Lane	CFR- 03A		?				+
Clark Fork River at Galen Road	CFR- 07D		?				+
Clark Fork River at Gemback Road	CFR- 11F		?				?
Clark Fork River at Williams- Tavenner Bridge	CFR-34		?				?
Clark Fork River at Turah	CFR- 116A		?				
Lost Creek at Frontage Road	LC-7.5		+		+		+
Racetrack Creek at Frontage Road	RTC- 1.5		?				
Little Blackfoot River at Beck Hill Road	LBR- CFR-2		?				

+ ? Composition of the assemblage suggests stress.

Evidence from the assemblage was contradictory or inconclusive.

<sup>&</sup>lt;sup>87</sup> Sample collection methods differed at SS-19 from the other sites and consisted of only one replicate. At all other sites, four replicate samples were collected.

# **6.1 INTRODUCTION**

The upper Clark Fork River was subject to extensive mining and mineral processing activities during the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. Metal contamination from these activities have reduced habitat quality and altered the fishery in the upper Clark Fork River. Fishery changes include reduced trout numbers and changes in species composition. Because of these negative impacts, angling use of the Clark Fork River is lower than other streams in western Montana. Remediation and restoration efforts are ongoing and aim to mitigate historical mining and smelting damage to natural resources in the upper Clark Fork River basin.

The primary goal for aquatic restoration in mainstem Silver Bow Creek and the upper Clark Fork River is to restore the fishery and angling resources to levels of similar rivers not impacted by mining contamination [Saffel et al., 2011; NRDP, 2012a]. Remediation and restoration in the mainstem are being completed cooperatively by the Montana Department of Environmental Quality (MDEQ) and the Natural Resource Damage Program (NRDP).

Monitoring such an extensive restoration effort requires an extensive monitoring program. In the past, fisheries data (e.g., population estimates) collection was conduced sporadically in the upper Clark Fork River basin. In 1999, Montana Fish, Wildlife and Parks (MFWP) biologists established long term monitoring sections that are representative of the upper Clark Fork River. MFWP has completed population estimates in these reaches each of the subsequent years. These mainstem population surveys provide a dataset that can be used to evaluate the mainstem Clark Fork River fishery before, during, and after restoration.

Freshwater salmonids migrate between different habitats to complete life history requirements. Therefore, enhancing the upper Clark Fork River fishery requires not only improving mainstem habitats, but also insuring that fish in the mainstem have access to quality habitats in tributaries as well. Multiple tributaries have been identified as priorities for restoration in the upper Clark Fork River basin [Saffel et al., 2011]. A variety of tributary restoration projects are underway and more are planned for the coming decades [NRDP, 2012b]. The goals of tributary restoration are to improve trout recruitment to the mainstem, provide additional angling opportunities to offset lost opportunity in the mainstem, and increase populations of native fishes. The effectiveness of tributary projects and the contribution of tributary restoration to the recovery of the mainstem fishery will be evaluated through fisheries monitoring. Detecting responses of tributary fish populations requires that fish surveys be comprehensive, both temporally and spatially, in order to differentiate the effects of restoration from natural variations in abundance.

<sup>&</sup>lt;sup>88</sup> Chapter 6 was prepared by Nathan Cook, Tracy Elam, Brad Liermann, Jason Lindstrom, and Pat Saffel of Montana Fish, Wildlife, and Parks with minor editing and formatting by RESPEC.

Information on trout abundance is valuable, but this information does not explain the mechanism by which tributary restoration may benefit the mainstem fishery. It is also important to understand all of the critical factors limiting trout recruitment in the mainstem. Knowing the location of important spawning and rearing habitats used by a salmonid population is critical to managing and restoring these populations. Telemetry studies indicated locations of brown trout spawning activity in both the mainstem upper Clark Fork River and tributary habitats [Mayfield, 2013]. However, just because a fish is in an area during spawning season does not guarantee that the fish will successfully spawn or that the resulting offspring will survive. Successful spawning and survival of juveniles (referred to as recruitment) will largely determine the abundance of adult trout in later years. Determining sources of successful recruitment requires that individual fish be assigned to these sources through genetics or other techniques such as hard part (bony tissue) microchemistry. Microchemical techniques such as laser ablation inductively coupled plasma mass spectrometry (LA-ICPMS) can determine the chemical signatures of bony structures such as fins or otoliths as those structures incorporate chemical changes in the fish's environment over a its lifetime. More specifically, this technique has been used in several studies to determine a fish's natal stream and to identify key migrations that occurred during a fish's life [Pracheil et al., 2014].

One of the primary microchemistry markers used to assess freshwater fish migrations is strontium (Sr). Otolith strontium isotope (87Sr:86Sr) ratios and Sr/Ca ratios have been found to discriminate between habitats of interest because these chemical markers are directly related to the chemistry of the water in which fish are living [Clarke et al., 2007]. Like Sr and Ca, barium (Ba) is also an alkaline earth metal, a chemical group that is readily incorporated into the aragonite (crystallized CaCO<sub>3</sub>) matrix that make up otoliths [Campana, 1999]. Thus, these alkaline earth metals show the most promise for tracing life history and movements by sampling different regions of otoliths [Gibson-Reinemer et al., 2008; Wells et al., 2015]. Concentrations of other elements within otoliths have been linked to waterborne exposure of contaminants such as Copper and lead [Milton and Chenery, 2001]. In a laboratory study of juvenile pink snapper (*Pagrus auratus* Forster), otolith concentrations of zinc were correlated to both dietary exposure and liver zinc concentrations [Ranaldi and Gagnon, 2008]. Unlike Sr, uptake of Copper, lead, and zinc within a fish and its bony structures are subject to strong physiological regulation. Thus, sampling different regions with otoliths for these contaminants may not provide a precise timeline of exposure over a fish's life, but overall otolith concentrations can still be indicative of cumulative exposure.

Caged fish studies have been used to monitor baseline survival and metals concentrations of juvenile brown trout (*Salmo trutta*) prior to restoration [Cook et al., 2015]. Restoration activities are underway on the upper Clark Fork River that will reduce metal contamination. By reducing metals inputs, clean-up activities will have long term benefits to the upper Clark Fork River fishery. However, these activities involve removing vegetation and disturbing stream banks. These disturbances have the potential to temporarily increase inputs of metal laden sediments into the Clark Fork River. Current caged fish studies have shifted focus from providing baseline data to monitoring for potential acute affects of construction related disturbances.

Results of upper Clark Fork River caged fish studies showed that fish that resided in more contaminated reaches of the upper Clark Fork River accumulated more copper and zinc compared to tributaries [Cook et al., 2014]. Studies of metals concentrations in tissues of wild brown trout from contaminated reaches of the upper Clark Fork River have shown elevated levels of copper, cadmium, zinc, lead, and arsenic compared to reference sites [Farag et al., 1995]. Elevated concentrations of these metals have been linked to oxidative stress [Farag et al., 1994], reduced growth and condition, and lower reproductive success [Couture and Pyle, 2012]. Caged fish studies have the benefit of fixing the location in which a fish lives. Knowing a fish's location over time makes it easier to determine the environmental conditions it is exposed to. However, free-ranging wild fish must also be studied, because these are the fish that will ultimately benefit from metals cleanup efforts. In the upper Clark Fork River wild fish tissues have been recently sampled for mercury for human health concerns (T. Selch, MFWP, personal *communication*), but ecological evaluations of impact of copper, zinc, lead, cadmium, and arsenic have not been conducted on wild fish in decades. So, current data tissue burden data are needed to provide background for ongoing remediation. By coupling tissue burden data with movement and life history data obtained through otolith microchemistry, we can evaluate how these factors interact. In other words, we can investigate how a fish's movements over its lifetime affect its tissue metals burdens. Since otoliths also provide growth data and we know the length and weight of the fish at capture, we can evaluate if tissue burdens are related to growth and body condition.

# 6.1.1 Objectives

To gather critical fisheries data in the upper Clark Fork River basin, an intensive monitoring program was initiated in 2015. This program continued in 2016 and had the following objectives:

- 1. Describe trout population abundances and species composition of fish communities in the upper Clark Fork River and priority tributaries.
- 2. Investigate the natal origins and sources of recruitment for brown trout in the mainstem Clark Fork River using otolith microchemistry.
- 3. Gather additional data on age, growth, condition, and mortality from brown trout otoliths.
- 4. Monitor mortality and metals uptake of fish in cages upstream and downstream of reclamation sites in the upper Clark Fork River.

# 6.1.2 Study Area

Silver Bow Creek originates from Blacktail Creek which flows from the continental divide north-east to the town of Butte [Figure 6-1]. Silver Bow Creek flows through the town of Butte, downstream of which it is joined by two major tributaries, Browns Gulch and German Gulch. A fish barrier was constructed downstream of Durant Canyon to prevent non-native brown trout and rainbow trout (*Oncorhynchus mykiss*) from downstream of the barrier from negatively interacting with the genetically pure westslope cutthroat trout (*Oncorhynchus clarkii lewisi*) upstream of the barrier. Silver Bow Creek flows into a series of set of settling ponds near Warm Springs. These ponds were constructed to trap sediments contaminated with mining waste and reduce the toxicity of metals such as copper and zinc. Restoration activities, including extensive tailings removal, have been completed on Silver Bow Creek between Butte and Warm Springs.

Warm Springs Creek joins Silver Bow Creek downstream of the Warm Springs Ponds to become the Clark Fork River. The upper Clark Fork River is often divided into three reaches based on tributary confluences [Hornberger et al., 2009; Mayfield, 2013]. Reach A is the 63 km of the upper Clark Fork River from the confluences of Warm Springs Creek to the Little Blackfoot River. Reach B is 43 km long and is bounded by the Little Blackfoot River and Flint Creek. Reach C is 84 km long and runs from Flint Creek to the Blackfoot River. Although Reach C is bounded on the downstream end by the Blackfoot River, this report focuses on monitoring activities that occur primarily upstream of Rock Creek.

Meyers Dam, located 5.5 km upstream of Anaconda is a barrier to fish migrating upstream in Warm Springs Creek. Tributaries of the upper Warm Springs Drainage originate from the south slope of the Flint Creek Range and the north slope of the Anaconda Range. Tributaries of interest in this study were the West Fork of Warm Springs, Storm Lake, Twin Lakes, Foster, and Barker creeks.

Lost and Racetrack Creeks flow east from the Flint Creek Range and join the Clark Fork River between the towns of Warm Springs and Deer Lodge. Cottonwood Creek flows out of the Boulder Mountains where it joins the Clark Fork River on the east side of Deer Lodge. The lower reaches of Lost, Racetrack, and Cottonwood creeks are impacted by dewatering during the irrigation season.

The Little Blackfoot River flows into the Clark Fork River near Garrison. The Little Blackfoot River adds significant flow to the Clark Fork River and reduces concentrations of suspended sediment and metal contaminants through dilution [Sando et al., 2014]. Downstream of the Little Blackfoot River near the town of Garrison, Warm Springs Creek (different than the Warm Springs Creek near Anaconda) and Gold Creek enter the Clark Fork.

Flint Creek starts at the outflow of Georgetown Lake. It is joined by Boulder Creek near the town of Maxville. The lower reaches of Flint Creek are heavily dewatered during the irrigation season.

Harvey Creek is a small tributary that originates in the John Long Mountain Range. A barrier near the mouth of Harvey Creek isolates native westslope cutthroat trout and bull trout (*Salvelinus confluentus*), but also prevents nonnative species present in the Clark Fork River from moving upstream and interacting with the native species.

Rock Creek is a major tributary to the upper Clark Fork River and supports a robust brown trout fishery in the lower reaches and populations of westslope cutthroat trout and bull trout in upper reaches and tributary streams. Rainbow trout are also present in the Rock Creek watershed as well as mountain whitefish (*Prosopium williamsoni*), longnose sucker (*Catostomus*), largescale sucker (*Catostomus commersonii*), northern pikeminnow (*Ptychocheilus oregonensis*), and sculpins (*Cottus spp.*).



Figure 6-1. Map of 2016 electrofishing sections in the upper Clark Fork River basin. Numbers refer to specific streams.

### 6.2 METHODS

### 6.2.1 Population Monitoring

## 6.2.1.1 Mainstem

Trout population estimates were conducted in spring 2016 at six established sections on the Clark Fork River. These sections are sampled annually by MFWP and are referred to these stations as Bearmouth, Morse Ranch, Phosphate, Williams Tavenner, Below Sager Lane, and pH Shack. A population estimate was also conducted from the bottom of pH Shack to Perkins Lane in 2016. This is an electrofishing section that has been sampled in 2009-2012 and 2015. Fish were collected using aluminum drift boats with a mounted electrofishing unit and two front boom anodes and one netter. Estimates were made using two mark runs and two recapture runs. Recapture runs were completed roughly one week after marking runs. All captured trout were identified to species, weighed (g), measured (mm), and marked with a small fin clip. A subsample of fish was collected on the final recapture runs for otoliths and tissue metal samples (see below for specific methods). Population estimates for fish  $\geq 175$  mm (~7 in) were generated using the Chapman modification [Chapman, 1951] of the Petersen method provided in MFWP's Fisheries Information System. Estimates were calculated for trout species that had a minimum of four marked fish that were recaptured. Estimates from 2016 were compared to the previous year and estimates with overlapping 95% confidence intervals were considered not to be statistically different.

# 6.2.1.2 Tributaries

Population estimates were conducted in 18 tributaries in the upper Clark Fork River basin identified as high priority in Saffel et al. [2011] [Figure 6-1]. Population estimates were generated either by mark-recapture or depletion methods. Mark-recapture estimates consisting of one mark and one recapture run were conducted on larger waters (Flint Creek, lower Little Blackfoot River, and lower Warm Springs Creek). Two- to four-pass depletion estimates [Zippin, 1958] were conducted at other sections. Fish were collected at most tributary sections using one or two backpack electrofishing units. In larger streams, a barge mounted electrofishing unit was used to collect fish. Descriptions of sampling methods, section lengths, and locations of sampling sections can be found in Appendix J.

### 6.2.2 Microchemistry

Sagittal otoliths were collected from brown trout in the upper Clark Fork River and 10 tributaries for microchemical analyses [Figure 6-2]. Whole fish were collected by electrofishing and individually tagged and frozen. Fish were partially thawed at a later date and otoliths were extracted using non-metallic forceps. Most fish were collected during annual population surveys. However, population estimates were not conducted on Racetrack Creek, Lost Creek, Warm Springs Creek (Garrison), or Mill-Willow Bypass, so separate fish collections had to be conducted on those waters.

We attempted to get 150 brown trout from the mainstem Clark Fork River divided roughly between reaches A, B, and C [Table 6-1]. There are three annual population survey sections in reach A, two in reach B, and one in reach C. Fish were collected from an additional river section between Beavertail and Rock Creek to add more otoliths to the reach C sample. When possible, we collected fish from five length categories at each mainstem sampling section. These length categories were: <175 mm, 175-249 mm, 250-324 mm, 325-399 mm, and 400+ mm, roughly corresponding to age <2-, 3-, 4-, 5-, and 6+ year-old fish. The number of fish collected in each length category was dependent on the number of sampling sections within reaches A, B, and C [Table 6-1]. Again, this sampling scheme was designed to provide roughly equal sample sizes for the different reaches of the upper Clark Fork River.

The otolith microchemical signatures of juvenile fish from tributaries will be used as the baseline to which otoliths from mainstem fish will be assigned. Unlike the mainstem, where fish of a variety of lengths were collected, only small fish were collected for otoliths from tributaries. The selection of only juvenile fish was to reduce the chance that these fish had undergone large movements, and thus been exposed to various geochemical environments, over their lifetime. We could be more confident that juvenile fish were spawned and reared near their location of capture.

The selection of tributaries and sites from which juvenile otoliths were collected were based on locations with substantial spawning activity in a brown trout telemetry study [Mayfield, 2013]. These sites often overlapped with standard annual electrofishing sections. Sixteen sites in 10 different tributaries were selected for juvenile otolith collection. The target sample size was five fish from each site.

After extraction, otoliths were wiped clean with paper towels and nylon brushes and stored in polypropylene centrifuge tubes. One otolith per fish was mounted to a microscope slide sulcus side up using Krazy Glue. Otoliths were sanded down to an even plane just above the primordium using a variety of sand paper and diamond lapping paper (1  $\mu$ m and 0.5  $\mu$ m). Sanded otoliths were rinsed with Type I (ultrapure) water and transferred and mounted to a final slide. Up to 12 sanded otoliths were mounted on each final slide to facilitate rapid processing with the LA-ICPMS.

Ratios of Sr:Ca and <sup>87</sup>Sr:<sup>86</sup>Sr within otoliths were measured using a Neptune multicollector inductively coupled plasma mass spectrometer (ICPMS) equipped with a Nu Wave Research laser ablation device. The laser sampled otolith material along a transect from edge to edge passing through the primordium to provide chemical profiles over the lifetime of the fish [Figure 6-3]. A subsample of otoliths analyzed on the Neptune were also analyzed for copper, zinc, cadmium, arsenic, and lead using an Element 2, single collector ICPMS. The laser was also used for the elemental analyses and scanned over the same transect that was ablated during the Neptune analysis. A MACS3 standard was run periodically throughout each day so that instrument drift could be accounted for.


Figure 6-2. Map of 2016 brown trout otolith collection sites. Numbers refer to specific streams.

Table 6-1. Target sample allocation of fish collected for otoliths for the upper Clark Fork River brown trout microchemistry study.

Reach	Sampling section	Number of fish	Fish per length category
	pH Shack	20	4
А	Sager Lane	20	4
	Williams-Tavenner	20	4
D	Phosphate	25	5
В	Morse Ranch	25	5
0	Bearmouth	25	5
С	*Beavertail	25	5



Figure 6-3. Example of a sanded brown trout otolith showing the location of the primordium and path of the laser ablation for ICPMS. This type of laser sampling pattern provides mirroring chemical profiles on each side of the primordium.

## 6.2.3 Mainstem Wild Fish Tissue Burdens

A subset of fish used for otolith collection were also had tissues extracted for metal burden analyses. Two fish per length category were selected for metal burden analyses. For fish in the smallest category (<175 mm), whole fish were used for metals burdens. For fish >175 mm, gills,

liver, and stomachs were collected. Stomach contents were removed and tissues were rinsed with deionized water and frozen until analysis. Samples were dissolved using microwave digestion and analyzed for copper, zinc, arsenic, lead, and cadmium concentrations using inductively coupled plasma optical emission spectrometry (ICP-OES).

#### 6.2.4 Caged Fish Monitoring

The objective of caged fish monitoring in 2016 was to monitor for acute and residual impacts of construction activities. Cage locations were selected to bracket construction in Phases 2, 5 and 6. Fish cages were placed below the outlet of Pond 2 to provide a site upstream of construction activities in Reach A and monitor habitability of water discharged by the Warm Springs Ponds. Cages were placed at Perkins Lane Bridge at the downstream boundary of Phase 2. Cages were placed at the Gemback Road Bridge, near Racetrack, at the downstream boundary of Phase 6. The most downstream cages were placed at the Kohrs Fishing Access Site. Three cages at each site received brown trout and three cages received westslope cuthroat trout. This was the first year that cuthroat trout were used in upper Clark Fork River caged fish studies. Twenty-five fish were placed in each cage. Brown trout were placed in cages on March 9, 2016 and westslope cuthroat trout were placed in cages on March 25, 2016. Fish cages were checked for mortalities twice weekly. Any fish mortalities were collected and frozen. Three live fish were collected at each site the last week of every month of the study. The final cage checks were performed on September 29, 2016 and all fish and cages were removed at this time.

A subset of fish samples collected alive was submitted to the Montana Department of Health and Human Services Environmental Laboratory in Helena for determination of whole-fish metal concentrations. Fish samples were blended to a powder to ensure homogeneity, and then the samples were weighed, dried, and reweighed to determine moisture content. The dried samples were then crushed and dissolved with nitric acid, diluted with deionized water, and analyzed for copper and zinc with ICP-OES using the U.S. Environmental Protection Agency (USEPA) Method 200.7 [USEPA, 2001]. All results were reported as  $\mu g/g$  dry weight.

#### 6.2.5 Water Quality

Water quality parameters were recorded in the Clark Fork River at caged fish sites with continuously recording multiparameter water quality probes (Hydrolab ® MS5). Hydrolab water quality parameters recorded include pH and dissolved oxygen. The precision with which the Hydrolab records total ammonia levels has been questionable in the past [T. Selch, MFWP, *personal communication*]. As a result of the questionable reliability of the ammonia sensors, ammonia data as recorded by the Hydrolabs are not presented in this report. Daily mean values are presented for pH and minimum daily values are presented for dissolved oxygen concentration.

## 6.3 RESULTS

#### 6.3.1 Population Monitoring

#### 6.3.1.1 Mainstem

Brown trout population estimates at annual sampling sections ranged from 21 fish/km at Bearmouth to 265 fish/km at pH Shack [Table 6-2]. Brown trout were the most abundant species in all estimate sections. Rainbow trout were estimated at 22 fish/km in the Bearmouth section. Westslope cutthroat trout estimates were 4 fish/km in the Bearmouth section and 2 fish/km in the Morse Ranch section. *Oncorhynchus* estimates could not be generated for other sections because fewer than four marked fish were recaptured. Brown trout 2016 estimates were not statistically different to those from 2015 at all sections [Figure 6-4]. Species compositions in all sections were also similar between 2015 and 2016 sampling.

Brown trout population estimates at the periodically sampled pH Shack to Perkins Lane section were similar to previous years' surveys, with the exception of 2009 which had an especially low estimate [Figure 6-5]. Mark recapture estimates at this section tend to be imprecise (result in large confidence intervals) due to low numbers of recaptured fish.

Table 6-2. Electrofishing data collected in 2016 from annual sampling sections on the upper Clark Fork River. Population estimates (95% confidence interval) are for trout greater than 175 mm (~ 7") in total length. Asterisks indicate species were combined for the population estimate.

Section	Species	Population Estimate (fish/km)	Fish Handled	Mean Length (mm)	Length Range (mm)	Species Composition (%)
	Brown Trout	265(152-491)	163	338	100-460	96
pH Shack	Rainbow Trout	NA	5	377	327-496	3
	Westslope Cutthroat Trout	NA	1	274	274	1
pH Shack	Brown Trout	161(99-279)	134	320	112-472	97
to Perkins Lane	Rainbow Trout	NA	4	311	290-331	3
Below Sager Lane	Brown Trout	155(114-216)	316	340	103-557	100
Williams-	Brown Trout	171(134-224)	329	366	113-489	98
Tavenner	Westslope Cutthroat Trout	NA	6	317	189-411	2
Dhaanhata	Brown Trout	178(128-257)	230	340	106-483	97
Phosphate	Westslope Cutthroat Trout	NA	6	307	243-397	3
	Brown Trout	55(45-68)	347	370	118-545	94
Morse	Rainbow Trout	NA	5	320	242 - 372	1
Ranch	Westslope Cutthroat Trout	2(1-4)	17	305	260-387	5
	Yellow Perch	NA	1	155	155	<1
	Brown Trout	21(16-27)	146	369	111-501	54
Bearmouth	Rainbow Trout	22(14-35)	99	323	196-455	37
	Westslope Cutthroat Trout	4(2-8)	23	342	181-413	9

NA Not applicable due to insufficient data.



Figure 6-4. Clark Fork River brown trout (grey bars) and *Oncorhynchus sp.* (white bars) population estimates from 2008-2016 by sample reach. Sample reaches are displayed from downstream to upstream, left to right then top to bottom. Please note that axis values are not the same for every sample reach.



Figure 6-5. Clark Fork River brown trout population estimates from the pH Shack to Perkins Lane sampling section. Asterisk indicates that only one fish was recaptured in 2012 so reliable estimate could not be calculated. Tributaries

### 6.3.1.2 Tributaries

Between July 5 and October 6, 2016, a total of 77 sections comprising 18.8 km of stream were sampled in tributaries of the upper Clark Fork River and Silver Bow Creek. Sixty-eight depletion and nine mark-recapture population estimates were conducted on these waters. Electrofishing data are presented for each watershed below. Data from Silver Bow Creek and its tributaries are presented in their own section of this report.

#### 6.3.1.2.1 Warm Springs Creek Watershed

Nineteen depletion estimates and four mark/recapture estimates were conducted in the Warm Springs Creek watershed [Table 6-3; Table 6-4; Table 6-5; Table 6-6; Table 6-7]. Five electrofishing sections were sampled on Storm Lake Creek with westslope cutthroat trout being the most abundant species in all sections comprising of 52-78% of fish [Table 6-3]. Brook trout, bull trout, brook trout-bull trout hybrids, rainbow trout and rainbow trout-westslope cutthroat trout hybrids were also present. There were no non-trout species captured in any section of Storm Lake Creek.

Five sections were sampled on Twin Lakes Creek with westslope cutthroat trout being the most common trout species throughout and one of the most commonly captured fish among all species encountered [Table 6-4]. Bull trout were present in all sections and brook trout were present in all but one section. Sculpin were found in all sections. Rocky Mountain sculpin and slimy sculpin are in the drainage with some overlap throughout the length of the stream. With the difficulty in field identification, it is possible that some sculpins were misidentified. More rigorous sculpin identification may need to be done in the future.

Three sections were sampled on Foster Creek [Table 6-5]. Westslope cutthroat trout were present in all sections and accounted for 35-92% of fish present. Brook trout were present in all sections and were the most abundant trout species in the middle section. Bull trout were only

present in the lowest section. There were brook trout-bull trout hybrids present in the lowest section as well.

Two sections were sampled on Barker Creek [Table 6-6]. Bull trout accounted for 78-81% percent of fish. Westslope cutthroat trout were present in both sections. No sculpins were captured. Estimates for bull trout increased in both sections compared to 2015.

Warms springs Creek (including the West Fork) had eight estimate sections with brown trout comprising 73-99% of fish in the three sections below Myers dam and westslope cutthroat trout accounting for 41-98% of fish in the five sections above Myers dam [Table 6-7]. Brook trout were present in five sections. Bull trout were present in six sections. Brook trout-bull trout hybrids were found in three sections. Rocky Mountain sculpin were present in the lowest two sections. Slimy sculpin were present in the middle three sections and no sculpin were observed in the upper three sections. Brown trout numbers increased in the lowest section while other fish numbers remained similar throughout the other seven sections from 2015 to 2016.

# Table 6-3. Electrofishing data collected on Storm Lake Creek in 2016. Population estimates (95% confidence interval) are for trout greater than 75 mm (~3 in) in total length.

Section	Species	Population Estimate (fish/100 m)	Fish Handled	Mean Length (mm)	Length Range (mm)	Species Composition (%)
	Westslope Cutthroat Trout	16(15-17)	16	193	139-258	52
	Brook Trout	9(8-10)	9	181	151-202	29
	Bull Trout	NA	1	144	144	3
Lower (RM 0.6)	Brook Trout x Bull Trout phenotypic hybrid	NA	1	234	234	3
	Rainbow Trout	NA	3	150	132 - 168	10
	Rainbow Trout x Westslope Cutthroat Trout phenotypic hybrid	NA	1	73	73	3
	Westslope Cutthroat Trout	23(22-24)	32	115	64-208	64
Above First	Brook Trout	9(9-9)	10	164	43-219	20
Crossing (RM	Bull Trout	NA	4	336	152-530	8
1.4)	Rainbow Trout x Westslope Cutthroat Trout phenotypic hybrid	NA	4	120	107-140	8
	Westslope Cutthroat Trout	30(29-31)	43	116	61-205	78
Lower Meadow	Rainbow Trout x Westslope Cutthroat Trout phenotypic hybrid	NA	5	120	76-150	9
(RM 4.2)	Bull Trout	NA	1	192	192	2
	Brook Trout x Bull Trout phenotypic hybrid	NA	4	184	174-193	7
	Brook Trout	NA	2	150	$145 \cdot 154$	4
	Westslope Cutthroat Trout	16(15-17)	42	87	55-188	70
	Brook Trout	NA	5	163	155 - 172	8
Above upper	Bull Trout	NA	2	241	233-249	4
Storm Lake road crossing	Brook Trout x Bull Trout phenotypic hybrid	NA	3	160	124-228	5
	Rainbow Trout x Westslope Cutthroat Trout phenotypic hybrid	NA	8	131	121-148	13

NA Not applicable because data insufficient.

# Table 6-4. Electrofishing data collected on Twin Lakes Creek in 2015. Population estimates (95% confidence interval) are for trout greater than 75 mm (~3") in total length.

Section	Species	Population Estimate (fish/100 m)	Fish Handled	Mean Length (mm)	Length Range (mm)	Species Composition (%)
	Westslope Cutthroat Trout	9(7-11)	11	157	66-287	73
Lower (RM 1.3)	Bull Trout	NA	2	187	171-203	13
× ,	Brook Trout	NA	1	187	187	7
	Rocky Mountain Sculpin	NA	1	91	91	7
	Westslope Cutthroat Trout	48(45-51)	48	141	65-228	41
Meadow (RM 2.8)	Brook Trout	31(29-33)	32	141	64-251	27
· · · · · ·	Slimy Sculpin	NA	36	unk	33-108	31
	Bull Trout	NA	1	229	229	1
	Westslope Cutthroat Trout	21(20-22)	22	141	70-345	54
Upstream of old	Brook Trout	NA	2	148	140-155	5
bridge (RM 4.6)	Rocky Mountain Sculpin	NA	12	unk	81-120	29
	Slimy Sculpin	NA	4	unk	69-92	10
	Bull Trout	NA	1	323	323	2
	Sculpin	NA	37	unk	45-95	81
Downstream of lower lake (RM	Westslope Cutthroat Trout	NA	5	129	95-150	11
7.2)	Brook Trout	NA	2	112	104-120	4
	Bull Trout	NA	2	334	230-437	4
Upstream of upper	Westslope Cutthroat Trout	39(32-46)	39	125	45-214	48
lake (RM 8.5)	Bull Trout	14(13-15)	16	161	69-583	19
	Sculpin	NA	27	unk	63-115	33
NA	Not applicable because dat	ta insufficient.				

unk Unknown.

Section	Species	Population Estimate (fish/100m)	Fish Handled	Mean Length (mm)	Length Range (mm)	Species Composition (%)
	Westslope Cutthroat Trout	94(90-98)	95	132	37-300	78
	Brook Trout x Bull Trout phenotypic hybrid	NA	4	217	151-265	3
Lower	Bull Trout	5(3-7)	5	127	120 - 135	4
(RM 1.0)	Brook Trout	NA	2	66	64-67	2
	Rainbow Trout x Westslope Cutthroat Trout phenotypic hybrid	15(13-17)	15	122	90-170	12
	Westslope Cutthroat Trout	46(43-49)	47	105	71-201	35
Middle	Brook Trout	12(13-14)	85	70	45-190	63
(RM 2.3)	Rainbow Trout x Westslope Cutthroat Trout phenotypic hybrid	NA	2	92	90-93	2
Upper	Westslope Cutthroat Trout	93(89-97)	98	125	47-219	92
(RM 3.8)	Brook Trout	7(6-8)	9	101	40-127	8

Table 6-5. Electrofishing data collected on Foster Creek in 2016. Population estimates (95% confidence interval) are for trout greater than 75 mm (~3 in) in total length.

RM River mile; measured upstream from river mouth.

Table 6-6. Electrofishing data collected on Barker Creek in 2016. Population estimates (95% confidence interval) are for trout greater than 75 mm (~3 in) in total length.

Section	Species	Population Estimate (fish/100 m)	Fish Handled	Mean Length (mm)	Length Range (mm)	Species Composition (%)
Lower (RM 0.5)	Bull Trout	51(38-64)	44	132	100-204	81
	Westslope Cutthroat Trout	10(9-11)	10	137	85-239	19
	Bull Trout	30(18-63)	25	137	86-478	78
RM 1.5	Westslope Cutthroat Trout	4(3-6)	7	149	62-229	22

NA Not applicable because data insufficient.

Table 6-7. Electrofishing data collected on Warm Springs Creek in 2016. Population estimates (95% confidence interval) are for trout greater than 75 mm (~3 in) in total length.

Section	Species	Population Estimate (fish/100 m)	Fish Handled	Mean Length (mm)	Length Range (mm)	Species Composition (%)
Wildlife	Brown Trout	99(89-110)	666	174	61-446	73
Management Area (RM 3.3)	Rainbow Trout x Westslope Cutthroat Trout phenotypic hybrid	NA	3	250	210-306	<1

	Brook Trout	NA	1	207	207	<1
	Rocky Mountain Sculpin	NA	53	unk	57-100	7
	Longnose Sucker	NA	2	216	215-217	<1
	Westslope Cutthroat Trout	NA	1	290	290	<1
	Brown Trout	93(77-115)	318	180	60-431	89
Below Airport Road	Rainbow Trout x Westslope Cutthroat Trout phenotypic hybrid	NA	2	202	135-269	<1
(RM 9.0)	Brook Trout x Bull Trout phenotypic hybrid	NA	1	234	234	<1
	Rocky Mountain Sculpin	NA	37	unk	61-118	10
	Brown Trout	94(84-107)	613	195	64-397	74
	Rainbow Trout x Westslope Cutthroat Trout phenotypic hybrid	18(10-37)	62	164	54-339	8
	Rainbow Trout	6(3-14)	30	179	108-345	4
Below Mourae Dam	Brook Trout	NA	9	175	120-244	1
Meyers Dam	Bull Trout	2(1-5)	15	382	171-570	2
	Westslope Cutthroat Trout	6(4-13)	35	195	103-331	4
	Brook Trout x Bull Trout phenotypic hybrid	NA	2	431	331-530	<1
	Slimy Sculpin	NA	57	unk	54-90	6
	Westslope Cutthroat Trout	49(40-62)	271	176	84-385	47
	Rainbow Trout x Westslope Cutthroat Trout phenotypic hybrid	20(16-27)	139	158	90-340	24
(Above	Brown Trout	5(4-9)	37	226	58-396	6
Meyers Dam)	Bull Trout	10(5-25)	36	194	108-343	6
	Rainbow Trout	4(3-8)	33	169	98-382	6
	Brook Trout	1(1-3)	11	161	103-215	2
	Slimy Sculpin	NA	52	unk	45-101	9
	Westslope Cutthroat Trout	27(23-31)	34	135	60-306	77
Above	Brook Trout	NA	2	138	126-149	5
Veronica Trail (RM	Bull Trout	NA	2	113	48-178	5
26.0)	Rainbow Trout	NA	4	171	83-237	9
	Slimy Sculpin	NA	2	79	63-95	5
	Brook Trout	9(8-10)	9	183	95-238	41
Below Upper	Westslope Cutthroat Trout	9(7-11)	9	177	80-248	41
Bridge (RM	Bull Trout	NA	2	252	244-260	9
27.4)	Brook Trout x Bull Trout phenotypic hybrid	NA	2	299	271-327	9
Below	Westslope Cutthroat Trout	58(55-61)	60	152	56-236	98
Confluence of Upper Forks	Bull Trout	NA	1	145	145	2
West E. J	Westslope Cutthroat Trout	39(37-41)	45	134	47-204	92
west fork	Bull Trout	NA	4	80	35-113	8
NA	Not applicable because data i	insufficient.				

unk Unknown.

#### 6.3.1.2.2 Warm Springs Creek Watershed

Six depletion estimates were conducted on Cottonwood Creek and one of its tributaries, Baggs Creek [Table 6-8; Table 6-9]. In Cottonwood Creek, brown trout were the only trout species captured in the lowest section. Several young of year brown trout were captured in this section. The section at river mile 3.0 was generally depauperate of fish, probably due to dewatering. Brook trout were the dominant species in the upper section making up 46% of fish. Many of the brook trout in this section were less than 75 mm and were not included in the estimate. Rocky Mountain sculpin were captured at the lower site and slimy sculpin were captured at the upper site. The sculpin captured at the middle site were not identified to species. No sculpins were captured in the Middle Fork of Cottonwood Creek. From 2015 to 2016, brown trout numbers increased from 48 (95% confidence interval [CI] = 46-52) to 117 (95% CI = 109-125) at the lower section. From 2015 to 2016, brown trout estimates in the upper two sections decreased from 52 (CI = 51-55) to 43 (CI = 27-58) and 160 (CI = 155-167) to 78 (CI = 71-85). Brook trout estimates also went down at the upper sections over this time from 31 (CI = 31-32) to 28 (CI = 27-29) and 22 (CI = 21-26) to 10 (CI = 9-11).

Two sections were sampled on Baggs Creek with brook trout being the most abundant in both sections. Brook trout made up 93% of fish in the lower section and 51% in the upper. The lowest section had very few fish which is probably due to irrigation withdraws resulting in low stream flows. No non-trout species were captured in either section. Fish numbers in the lower section were similar to 2015. The westslope cutthroat trout estimate was lower in 2016 than 2015 at the upper section, going from 81 (CI = 76-87) to 50 (CI = 45-54). Brook trout estimates also decreased slightly at this section, going from 40 (CI = 38-44) to 35 (CI = 35-38).

Section	Species	Population Estimate (fish/100 m)	Fish Handle d	Mean Length (mm)	Length Range (mm)	Species Composition (%)
School	Brown Trout	117(109-125)	124	119	55 - 255	90
(RM 0.8)	Rocky Mountain Sculpin	NA	14	unk	103-135	10
3 6: 1 11	Brown Trout	NA	2	138	122 - 154	22
Middle (PM 2 0)	Brook Trout	NA	5	105	77-160	56
(1011 0.0)	Sculpin	NA	2	94	92-95	22
<b>T</b> T	Westslope Cutthroat Trout	43(27-58)	35	127	76-215	23
(BM 6 9)	Brook Trout	28(27-29)	69	84	48-185	46
(1011 0.0)	Slimy Sculpin	NA	47	unk	43-90	31
Middle Fork	Westslope Cutthroat Trout	78(71-85)	101	114	60-203	90
	Brook Trout	10(9-11)	11	121	49-180	10

Table 6-8. Electrofishing data collected on Cottonwood Creek in 2016. Population estimates (95% CI) are for trout greater than 75 mm (~3 in) in total length.

NA Not applicable because data insufficient.

unk Unknown.

Population Mean Length Species Fish Section Species Estimate Length Range Composition Handled (fish/100 m) (mm) (mm) (%) Westslope Cutthroat Trout NA 1691697 1 RM 0.4 Brook Trout NA 138558 - 17593 Westslope Cutthroat Trout 50(45-54) 5412779-238 49RM 2.4 Brook Trout 35(35-38) 56111 50-203 51

Table 6-9. Electrofishing data collected on Baggs Creek in 2016. Population estimates (95% CI) are for trout greater than 75 mm (~3 in) in total length.

unk Unknown.

RM River mile; measured upstream from river mouth.

#### 6.3.1.2.3 Little Blackfoot River Watershed

Mark recapture estimates were conducted on two sections and depletion estimates were conducted on six sections in the Little Blackfoot River and one of its tributaries [Table 6-10; Table 6-11]. In the lower two sections of the Little Blackfoot River, brown trout were the most abundant trout species, accounting for 93-99 % of fish captured. Many mountain whitefish were observed in the lower two sections, but were not netted due to time constraints. Rocky Mountain sculpin were also present in the lower section. Overall, brown trout numbers decreased at each section further up the river. Westslope cutthroat trout were the most abundant trout species in the lowest section. Mountain whitefish were present in all but the lowest section. Mountain whitefish were present in all sections but there were fewer present in the upper sections. From 2015 to 2016, brown trout numbers increased in four of the six sections with the most notable change in the lowest section where the estimate went from 57 (CI = 46-72) to 112(CI = 100-128). Westslope cutthroat trout and brook trout increased significantly in the upper three sections from 2015 to 2016.

Two depletion estimates were done on Spotted Dog Creek. Brown trout were the most abundant species in the lower section making up 55% of fish. Slimy sculpin were abundant in both sections. Longnose suckers were present in the upper and lower section. Brook trout, largescale suckers and mountain whitefish were present in the upper section but not the lower. Brown trout numbers in the lowest section increased significantly 23 (CI = 23-24) in 2015 to 63(CI = 61-66) in 2016. Trout numbers were generally low in the most upstream section.

Section	Species	Population Estimate (fish/100 m)	Fish Handled	Mean Length (mm)	Length Range (mm)	Species Composition (%)
Rest Area -	Brown Trout	112(100-128)	800	250	77-497	99
FWP FAS	Westslope Cutthroat Trout	NA	3	279	270-290	1
Above N.	Brown Trout	32(28-37)	242	233	74-389	93
Trout	Brook Trout	NA	5	205	162 - 235	2
Creek	Westslope Cutthroat Trout	2(1-5)	13	280	232-335	5
Above Hww	Mountain Whitefish	20(20-21)	61	304	108-382	33
12 Bridge	Brown Trout	29(25-33)	79	183	98-359	42
near	Westslope Cutthroat Trout	12(11-14)	35	191	85-335	19
Elliston	Brook Trout	2(2-2)	8	137	70-220	4
(RM 26.7)	Longnose Sucker	NA	3	117	95-135	2
	Westslope Cutthroat Trout	16(14-18)	31	155	76-340	33
Above	Brown Trout	17(17-18)	34	129	86-389	37
Sunshine	Mountain Whitefish	10(7-14)	18	286	142 - 355	19
Camp	Brook Trout	4(3-6)	8	127	110-142	9
	Longnose Sucker	NA	2	89	81-90	2
Below	Westslope Cutthroat Trout	33(18-48)	33	134	68-229	45
Ontario	Brown Trout	NA	22	151	84-347	30
Creek (RM	Mountain Whitefish	6(4-8)	7	252	138-315	10
34.9)	Brook Trout	9(8-10)	11	122	87-185	15
Above	Westslope Cutthroat Trout	33(30-36)	70	140	56-287	50
Kading Campgrou nd (RM	Brook Trout	22(21-23)	45	117	71-244	32
	Brown Trout	11(11-21)	15	148	75-265	11
40.1)	Mountain Whitefish	5(4-6)	9	180	95 - 267	7

Table 6-10. Electrofishing data collected on the Little Blackfoot River in 2016. Population estimates (95% CI) are for trout greater than 75 mm (~3 in) in total length.

Section	Species	Population Estimate (fish/100 m)	Fish Handled	Mean Length (mm)	Length Range (mm)	Species Composition (%)
	Brown Trout	63(61-66)	93	185	119-420	55
DM 1 1	Westslope Cutthroat Trout	NA	2	205	200-210	1
ли 1.1	Longnose Sucker	NA	5	124	105-157	3
	Slimy Sculpin	NA	68	unk	64-105	41
	Westslope Cutthroat Trout	5(4-6)	10	155	40-213	5
	Brown Trout	7(6-8)	18	108	62-175	10
	Brook Trout	4(3-5)	6	104	77-166	3
RM 4.6	Longnose Sucker	8(6-9)	13	124	83-185	7
	Slimy Sculpin	NA	116	unk	21-104	63
	Largescale Sucker	9(6-11)	21	89	39-145	11
	Mountain Whitefish	NA	1	154	154	<1

Table 6-11. Electrofishing data collected on Spotted Dog Creek in 2016. Population estimates (95% CI) are for trout greater than 75 mm (~3 in) in total length.

unk Unknown.

RM River mile; measured upstream from river mouth.

#### 6.3.1.2.4 Flint Creek Watershed

Three mark-recapture and one depletion estimate were conducted on Flint Creek and five depletion estimates were conducted on Boulder Creek [Table 6-12; Table 6-13]. In the four Flint Creek sections, brown trout comprised 96-99% of the fish captured. Many mountain whitefish were observed in the three lowest sections, but were not netted. Westslope cutthroat trout were captured in the lower three sections, brook trout in the upper two sections and rainbow trout in the upper three sections. Rocky Mountain sculpin were observed in only the lowest section. One bull trout was captured in the lowest section. Brown trout numbers increased at the Hall and Dam sections compared to 2015. The Hall section saw the most significant increase from 175 (CI = 151-208) in 2015 to 461 (CI = 406-532) in 2016. Brown trout numbers at the Dam section increased from 51 (CI = 46-56) to 96 (CI = 87-105). Numbers in 2016 at the middle two sections were similar to the previous year.

Brown trout were the most abundant fish in the lower two sections of Boulder Creek accounting for 66% and 63% of fish captured. Bull trout were relatively abundant in the upper two sections making up 47% and 75% of fish captured. Westslope cutthroat trout were present in all four sections. Phenotypic brook trout-bull trout hybrids were observed in the section at RM 6.5. One slimy sculpin was observed in the lowest section. The brown trout estimate went from 15 (CI = 14-16) to 30 (CI = 26-34) from 2015 to 2016 at the lowest section. Estimates at the other sections were similar between years.

Table 6-12. Electrofishing data collected on Flint Creek in 2016. Population estimates (95% CI) are for trout greater than 175 mm (~7 in) in total length for the Hall, Johnson Tuning Fork and Chor.

Section	Species	Population Estimate (fish/km)	Fish Handled	Mean Length (mm)	Length Range (mm)	Species Composition (%)
	Brown Trout	461(406- 532)	531	233	77-490	99
Hall	Westslope Cutthroat Trout	NA	1	273	273	<1
	Bull Trout	NA	1	315	315	<1
	Brown Trout	382(339- 438)	394	251	93-492	99
T. 1	Rainbow Trout	NA	3	310	224 - 395	<1
Jonnson Tuning Fork	Rainbow Trout x Westslope Cutthroat Trout phenotypic hybrid	NA	1	230	230	<1
	Westslope Cutthroat Trout	NA	2	305	299-310	<1
	Brown Trout	263(240- 294)	369	254	72-490	98
Chor	Brook Trout	NA	6	237	188-310	1
	Rainbow Trout	NA	2	264	214-313	<1
	Westslope Cutthroat Trout	NA	1	261	261	<1
Dam (Above Campground)	Brown Trout	96(87-105) (fish/100 m)	89	207	96-465	96
	Rainbow Trout	NA	3	239	96-318	3
	Brook Trout	NA	1	191	191	1

Unknown.

unk

Table 6-13. Electrofishing data collected on Boulder Creek in 2016. Population estimates (95% CI) are for trout greater than 75 mm (~3 in) in total length.

Section	Species	Population Estimate (fish/100 m)	Fish Handled	Mean Length (mm)	Length Range (mm)	Species Composition (%)
Hada a	Brown Trout	30(26-34)	29	149	75-330	66
USGS Gauge (RM 0.4)	Westslope Cutthroat Trout	15(14-16)	15	183	83-353	34
	Slimy Sculpin	NA	1	89	89	<1
RM 2.0	Brown Trout	26(12-40)	25	116	56-269	63
	Westslope Cutthroat Trout	14(9-19)	15	143	44-347	37
Princeton Bridge (RM 6.5)	Bull Trout	26(20-32)	40	113	48-371	47
	Westslope Cutthroat Trout	33(25-40)	36	119	43 - 257	42
	Brook Trout x Bull Trout phenotypic hybrid	6(5-7)	7	185	165-250	8
	Brown Trout	NA	2	191	186 - 195	2
	Brook Trout	NA	1	66	66	1
Copper	Bull Trout	25(19-31)	24	123	42 - 279	75
Lakes Trailhead	Westslope Cutthroat Trout	8(5-11)	8	142	75-271	25

RM River mile; measured upstream from river mouth.

### 6.3.1.2.5 Flint Creek Watershed

There were six estimate sections on Harvey Creek [Table 6-14]. Westslope cutthroat trout made up 100 percent of trout in the lower four sections. Bull trout were present in the upper two sections and accounted for 13% and 52% of trout captured in those sections. Sculpin were present in the lower four sections, but were not enumerated. Young of the year westslope cutthroat trout were abundant in most sections. Compared to 2015, westslope cutthroat trout estimates increased in 2016 from 26 (95% CI = 25-30) to 43 (95% CI = 38-48) fish/100m at the most downstream site [Figure 6-6]. Westslope cutthroat trout numbers decreased from 121 (95% CI = 114-130) to 67 (95% CI = 60-74) fish/100m at RM 1.6. The estimate at RM 2.3 increased from 65 (95% CI = 61-72) to 112 (95% CI = 106-118) fish/100m. Westslope cutthroat trout numbers increased from 33 (95% CI = 32-36) to 40 (95% CI = 37-43) fish/100m at the most upstream site. Other westslope cutthroat trout estimates were not significantly different between years. Bull trout estimates were identical in 2015 and 2016 at the Below 8 Mile section and increased from 27 (95% CI = 27-29) in 2015 to 40 (95% CI = 39-41) in 2016.

Table 6-14. Electrofishing data collected on Harvey Creek in 2016. Population estimates (95% CI) are for trout greater than 75 mm (~3 in) in total length.

Section	Species	Population Estimate (fish/100 m)	Fish Handled	Mean Length (mm)	Length Range (mm)	Species Composition (%)
RM 0.6	Westslope Cutthroat Trout	43(38-48)	52	118	46-287	100
<b>RM</b> 1.2	Westslope Cutthroat Trout	47(45-48)	57	141	85-321	100
RM 1.6	Westslope Cutthroat Trout	67(60-74)	63	134	88-334	100
<b>RM 2.3</b>	Westslope Cutthroat Trout	112(106-118)	116	125	42-329	100
Below 8 Mile	Westslope Cutthroat Trout	77(73-82)	103	137	67-384	87
	Bull Trout	13(3-23)	15	142	55-192	13
Above FS Road	Westslope Cutthroat Trout	40(37-43)	39	129	77-253	48
	Bull Trout	40(39-41)	43	140	55-273	52



Figure 6-6. Westslope cutthroat trout population estimates at six Harvey Creek sampling sections.

#### 6.3.2 Microchemistry

Otoliths were collected from 238 brown trout from throughout the upper Clark Fork River basin. Two hundred of these otoliths were analyzed for <sup>87</sup>Sr:<sup>86</sup>Sr and Sr:Ca ratios. The remaining 38 samples will be analyzed in 2017, along with additional otoliths that will be collected during mainstem population estimates in spring 2017. Twenty five otoliths and 26 fin rays were analyzed for copper, zinc, cadmium, arsenic, and lead. Post processing of the microchemistry data, including adjusting for minor instrument drift, is in progress at the time of writing this report. Microchemistry data from 2016 and 2017 will be combined to create a model that will assign fish captured in the mainstem to spawning and rearing areas.

#### 6.3.3 Mainstem Wild Fish Tissue Burdens

Fifty-three gills, 53 stomachs, and 60 livers from brown trout were submitted to the lab for determination of copper, zinc, cadmium, arsenic, and lead concentrations. At the time of writing this report, we are still awaiting these results.

#### 6.3.4 Caged Fish Monitoring

Westslope cutthroat trout mortality was highest at Racetrack and lowest at Kohrs Bend. Brown trout mortality was highest at Pond 2 and lowest at Kohrs Bend [Table 6-15]. Overall, moralities tended to occur on the descending limb of the hydrograph as water temperatures increased over 19 C [Figure 6-7; Figure 6-8; Figure 6-9; Figure 6-10]. This is a pattern consistent with past caged fish studies in the upper Clark Fork River. Brown trout mortalities were temporally more spread out than westslope cutthroat trout mortalities. Most westslope cutthroat trout mortalities occurred on or around the July 4 cage check.

Water temperatures exceeded the upper critical temperature of 19 C for 64 days at Pond 2, 40 days at Perkins Lane, 49 days at Racetrack, and 72 days at Kohrs Bend. Water temperatures exceeded the upper incipient lethal temperature of 24.7 C for 0 days at Pond 2, 0 days at Perkins Lane, 3 days at Racetrack, and 5 days at Kohrs Bend.

Average whole body copper concentrations of caged brown trout at the four sites was 11.2 (standard deviation [SD]=8.67) ug/g. Average copper concentration of westslope cutthroat trout was 9.5 (SD=17.75). A *T*-test indicated that the difference in copper concentrations between species was not statistically significant (T=0.7312, P=0.2333). Brown trout zinc concentrations averaged 161.1 (SD=60.49) ug/g and westslope cutthroat trout concentrations averaged 86.0 (SD=26.57) ug/g. Zinc concentrations in brown trout were significantly higher compared to westslope cutthroat trout (T=8.763, P<0.0001). No one site had fish with consistently higher tissue burdens compared to other sites [Figure 6-11; Figure 6-12]. However, brown trout at the Pond 2 site did have significantly higher zinc burdens in July and September and fairly high zinc burdens in June as well. Copper burdens were generally highest in September. There was no apparent temporal trend in Zinc burdens over the course of the study.

Table 6-15. Fish added minus fish removed alive for tissue sampling and number of mortalities in 2016 fish cages in the upper Clark Fork River.

Site	Fish added/removed		Mortalities				
	Brown Trout	Westslope Cutthroat Trout	F	Brown Trout	Westslope Cutthroat Trout		
			Total	Proportion (%)	Total	Proportion (%)	
Pond 2	62	48	29	46.8	37	77.1	
Perkins	61	51	15	24.6	29	56.9	
Racetrack	56	48	6	10.7	48	100	
Kohrs	55	50	5	9.1	13	26	



Figure 6-7. Total fish mortalities, maximum daily water temperature, and mean daily discharge for Silver Bow Creek at the outlet of Pond 2. The solid red line indicates the upper critical temperature threshold and the dashed red line represents the upper incipient lethal temperature for brown trout.



Figure 6-8. Total fish mortalities, maximum daily water temperature, and mean daily discharge for the Perkins Lane site. The solid red line indicates the upper critical temperature threshold and the dashed red line represents the upper incipient lethal temperature for brown trout.



Figure 6-9. Total fish mortalities, maximum daily water temperature, and mean daily discharge for the Racetrack site. The solid red line indicates the upper critical temperature threshold and the dashed red line represents the upper incipient lethal temperature for brown trout.



Figure 6-10. Total fish mortalities, maximum daily water temperature, and mean daily discharge for the Kohrs Bend site. The solid red line indicates the upper critical temperature threshold and the dashed red line represents the upper incipient lethal temperature for brown trout.



Figure 6-11. Whole body copper concentrations of brown trout and westslope cutthroat trout from the 2016 caged fish study.



Figure 6-12. Whole body zinc concentrations of brown trout and westslope cutthroat trout from the 2016 caged fish study.

#### 6.3.5 Water Quality

From June to August, pH rapidly increased at Pond 2 and pH exceeded 10 for at least eight days[Figure 6-13]. The number of days when pH exceeded 10 at Pond 2 was lower than in previous years. For examples, pH was over 10 for 53 days in 2015 and 64 days in 2014. The reduction in extremely high pH readings by the Hydrolab maybe a reflection in the reduction in lime additions to the Warm Spring Ponds in 2016. However, pH at the Pond 2 outlet was still higher than other caged fish sites and exceeded nine for at least 135 days.

Minimum daily dissolved oxygen ranged from 2.9 to 11.7 mg/L at the four sites, with the lowest dissolved oxygen concentration occurring during the summer months [Figure 6-14]. At the Racetrack site, dissolved oxygen concentration dipped below the minimum daily aquatic life standard of 4.0 mg/L 14 times in July, August, and September. These dips in dissolved oxygen concentration at Racetrack typically lasted for 4-6 hours and occurred between 1:00 and 7:00 AM. None of the low dissolved oxygen concentrations were accompanied by major fish mortality events at Racetrack [Figure 6-9]. Daily minimum dissolved oxygen concentration was >4.3 mg/L at the other three caged fish sites.



Figure 6-13. Mean daily water pH at 2016 caged fish sites. Gaps in the graph indicate missing data due to instrument failures and calibration.



Figure 6-14. Minimum daily dissolved oxygen (DO) concentrations at 2016 caged fish sites. The red dashed horizontal line denotes the freshwater aquatic life standard minimum dissolved oxygen concentration. Gaps in the graph indicate missing data due to instrument failures and calibration.

### 6.4 DISCUSSION

Brown trout population estimates at mainstem upper Clark Fork River sections were relatively low in 2016, especially when compared to estimates from 2013 and 2014. The increases in numbers in 2013 and 2014 were due to due strong year classes from 2010 and 2011, which were good water years [Figure 6-15]. The higher flows during these years may have provided additional spawning and/or rearing habitats that are not are not available at lower flows. Flows are inversely related to water temperature in the upper Clark Fork River (Nathan Cook, *unpublished data*), so low flow years increase the thermal stress on trout. Flows during 2012 and 2013, particularly during the summer irrigation season, were much lower than the two years before. The low flow period that follows runoff in the upper Clark Fork River has been shown to be a period of high mortality for juvenile brown trout [Richards et al., 2013; Cook et al., 2014; Leon et al., 2014]. The upper Clark Fork River routinely exceeds 19 C during the summer, often for weeks at a time. The increase in fish mortality is presumably due to thermal stress, which may be exasperated by high tissue concentrations of toxic heavy metals such as copper and zinc.

Population estimates have been conducted at the 77 tributary sampling sections in this study in 2015 and 2016. Most tributary sections were not sampled annually prior to 2015, but many sections were sampled semi-annually or sporadically in the past. For example, population estimates were conducted semi-annually at the FAS and Above N. Trout Creek sections on the Little Blackfoot River from 2007-2013 [Figure 6-16]. Combined with the 2015-2016 annual sampling, these sections have been sampled six times in the last 10 years. Ten is often cited as the recommended minimum number of population estimates needed to detect trends in abundance over time [Morris and Doak, 2002; Lotts et al., 2004]. arsenic restoration and remediation progress in the upper Clark Fork River basin, detecting fishery responses will require that monitoring occur often enough and over long enough of a time period to document both natural variations in abundance and changes in abundance that are a result of improved habitat. It may not be necessary to conduct population estimates at every section annually. Some monitoring programs recommend conducting population estimates at least every 5 years (e.g., CRCT Coordination Team, 2006). However, a sampling frequency of 5 years may be insufficient to detect statistically significant trends in trout abundance, even when these sampling events take place over several decades [Cook et al., 2010]. Thus, conducting population estimates every 2-3 years would be preferable to less frequent sampling. After sampling is completed in 2017, a power analysis should be conducted to determine the appropriate sampling frequency for monitoring trout populations in tributaries of the upper Clark Fork River basin.

Patterns from caged fish monitoring did not indicate any acute negative effects from cleanup activities. Mortality patterns in 2016 caged fish monitoring were consistent with caged fish studies in previous years. Mortalities tend to peak as flows subsided and temperatures increased. Tissue metals burdens were generally similar between sites. One exception was brown trout zinc burdens at the Pond 2 site. Although water concentrations of zinc in the Pond 2 outflow are relatively low, brown trout at this site had higher zinc concentrations than 11 other caged fish sites in the upper Clark Fork River basin in 2014 [Cook et al., 2014]. It appears that the mechanism of zinc accumulation at this site is not simply a function of exposure to dissolved zinc in the water column. Macroinvertebrates are abundant at the Pond 2 outflow, and fish at this site grow quickly. Caged fish are fed pellet food twice a week, but macroinvertebrates may provide a diet subsidy. This subsidy may provide a pathway for zinc accumulation in fish residing below the Warm Springs Ponds.

Water quality data indicated that the number of days where pH exceeded 10 at the Pond 2 outflow was lower that is has been for three years. However, the pH of this water is still high (>9) during the most of summer months, creating unfavorable and potentially toxic conditions for trout. Extended exposure to pH >9 may be harmful to trout [Colt et al., 1979] and results in higher ammonia toxicity [MDEQ, 2012b]. Dissolved oxygen concentrations reached levels as low as 2.9 mg/L at the Racetrack caged fish site. The lowest dissolved oxygen levels occurred during warm summer nights when biological oxygen demand was high, and supply from photosynthesis was low. Although no fish mortalities appeared to be related to hypoxia at the Racetrack site, any dissolved oxygen concentrations less than the aquatic life standard of 4.0 mg/L are cause for concern. Water quality monitoring at Racetrack in 2015 revealed that dissolved oxygen

concentrations dipped below 4.0 mg/L for one night in August [Cook et al., 2015]. In 2016 monitoring, dissolved oxygen concentrations reached levels below 4.0 mg/L on 14 nights at Racetrack. Given the questionable water quality observed at Pond 2 and Racetrack in recent years, it is advisable to continue water quality monitoring at these sites.

Additional fisheries monitoring data will be collected in the upper Clark Fork River basin in 2017. This data collection includes repeating population estimates at mainstem and tributary sampling sections, collected and analyzing additional otoliths for the microchemistry study, and caged fish monitoring of cleanup activities. These data will be integrated into a comprehensive report that will describe the current status of trout populations in the upper Clark Fork River basin, trout recruitment dynamics and movement, and limiting environmental factors. As restoration and remediation progress in the upper Clark Fork River basin, these data will serve as a baseline and guide for future evaluations of how fish respond to improved aquatic habitats.



Figure 6-15. USGS hydrograph from the Clark Fork River gauge at Deer Lodge.



Figure 6-16. Population estimates from the FAS and Above N Trout Creek sampling sections on the Little Blackfoot River.

# 7.1 INTRODUCTION

In 2015, three bird monitoring areas were surveyed and in 2016 two additional areas were added. Each area had either two or three point count sites that were sampled weekly for a total of 13 surveys. One area was post-remediation, and the other four areas were pre-remediation. Monitoring was conducted between April 1 and June 30.



Figure 7-1. Red-winged blackbird common along Clark Fork River riparian area.

<sup>&</sup>lt;sup>89</sup> Chapter 7 was completed by Gary Swant (GoBirdMontana) with editing and formatting by RESPEC.

# 7.2 METHODS

## 7.2.1 Monitoring Locations

Five monitoring areas were chosen for bird surveys in 2016 [Table 7-1]. All five bird monitoring areas were located in the riparian zone along the river corridor.

Table 7-1. Bird count locations in the Clark Fork River Operable Unit, 2016.

Phase	Point	Latitude	Longitude	
Dhase 1	А	46.11'16.14"	112.46'07.96"	
Phase 1	В	46.11'37.17"	112.45'58.21"	
	А	46.12'58.01"	112.45'38.79"	
Phase 3 and 4	В	46.13'32.73"	112.45'32.60"	
	С	46.14'07.64"	112.45'12.63"	
Dhasa 7	А	46.16'08.16"	112.44'34.67"	
rnase 7	В	46.16'33.04"	112.43'57.66"	
	А	46.17'21.14"	112.43'26.95"	
Phase 8	В	46.17'27.56"	112.43'24.48"	
	С	46.17'33.39"	112.43'29.53"	
	А	46.24'25.47"	112.44'55.93"	
Phase 15	В	46.24'34.85"	112.44'45.73"	
	С	46.24'40.70"	112.44'46.57"	

## 7.2.1.1 Phase 1

Remediation in Phase 1 was completed in the fall of 2014. Phase 1 consists of approximately 1.6 river miles. Phase 1 was the first phase of the CFROU remediated and 2016 marks the second year post-remediation. Phase 1 contains the confluence of Warm Springs and Silver Bow Creek. Two bird point count locations were monitored in Phase 1 in 2016 [Figure 7-2]. In 2016, construction in Phase 2 (located at the downstream end of Phase 1) continued through the bird monitoring period (April to June). Those activities may have influenced bird counts at Point B near the Phase 2 boundary. Phase 1 is also located near the Warm Springs Wildlife Management Area.



Figure 7-2. Bird point count locations in Phase 1.

## 7.2.1.2 Phases 3 and 4

Phases 3 and 4 were considered one bird monitoring area and three bird count points were monitored in Phases 3 and 4 in 2016 [Figure 7-3]. All three point count sites in Phases 3 and 4 were located on private property. No active remediation was in progress in Phases 3 and 4 in 2016.



Figure 7-3. Bird point count locations in Phases 3 and 4.

## 7.2.1.3 Phase 7

Phase 7 contains the Racetrack Pond and two point count sites were monitored in this area in 2016 [Figure 7-4]. Although not under active remediation in 2016, remedial activities in Phases 5 and 6 were in progress and truck traffic and other activities may have influenced bird use in Phase 7 in 2016.



Figure 7-4. Bird point count locations in Phase 7.

## 7.2.1.4 Phase 8

Phase 8 is located immediately downstream from Phase 7 (and the Racetrack Pond) and is located entirely on private land [Figure 7-5]. Three point count sites were monitored in Phase 8 in 2016 [Figure 7-5].



Figure 7-5. Point count locations in Phase 8.
# 7.2.1.5 Phase 15

Phase 15 is located within the Grant-Kohrs Ranch National Park. Three point count sites were monitored in Phase 15 in 2016 [Figure 7-6].



Figure 7-6.Bird point count locations in Phase 15.

#### 7.2.2 Data Collection Methods

Bird monitoring data consisted of standardized bird species counts at each point count site. At each point count site a white plastic tube marker with the location code on it was driven in the ground to mark the site. Counts were conducted after a two-minute period following the surveyor arrival at each site. This period allowed birds to become accustomed to the surveyor presence.

Upon conducting each survey at each site, the GPS coordinates, date, time of survey start, and weather conditions were noted. Each survey was 10 minutes in duration. During the survey, each observed bird species was recorded based on a 4-letter ALPA abbreviation code system. Surveyors counted all observed birds within an estimated 40 m radius from the point count site marker. For those species observed within 40 m, the abundance of each species was made based on a count of individuals of each species during the 10-minute survey period. For those species that were heard (by call or song), but not seen, the species was counted but an abundance estimate was not made. Species that flew through the 40-m site radius but did not stop within it were identified as having passed through the site. The estimated height at which these species passed was also noted as either above or below 20 m. In addition, species clearly identified but not observed within the 40-m site radius were noted accordingly.

## 7.3 RESULTS AND DISCUSSION

In total, 89 different bird species were observed in the Clark Fork River Operable Unit in 2016 among all point count locations [Table 7-2]. Bird species richness (i.e., the number of species) was relatively similar among monitoring areas ranging from 47-58 species [Table 7-2]. Richness was lowest in Phase 1 and highest in Phases 3 and 4 [Table 7-2]. The relatively low species richness in Phase 1 observed in 2016 may be related to remedial activities which were only recently completed. As vegetation diversity and vigor increases, and as habitat complexity in Phase 1 increases over time, bird richness may increase.

Species richness at each point count site generally increased as the season progressed. At all sites, there were more species observed at the end of the monitoring season compared to the beginning, although the species observed often differed among sample periods.

Bird density varied by sample location and date. The highest bird density was due to swallows in point count locations in Phase 8. In general, bird density appeared to be highest in Phase 7 point count locations but there was substantial variation among sites and sample periods.

Some bird species appeared to be generalists with respect to habitat use in the Clark Fork River riparian area and were observed in a greater variety of locations than others. Of all 89 species observed in 2016, 24 (27%) were observed in all five monitoring areas [Table 7-2] including: Canada goose, spotted sandpiper, European starling, mallard, mourning dove, claycolored sparrow, cinnamon teal, northern flicker, vesper sparrow, American white pelican, eastern kingbird, song sparrow, double-crested cormorant, barn swallow, red-winged blackbird, great blue heron, black-billed magpie, Brewer's blackbird, ring-billed gull, common raven, brown-headed cowbird, killdeer, American robin, and western meadowlark. Several of these common, generalist species are year-round residents and songbirds (e.g., red-winged blackbird). Other common, generalists observed were shorebirds which use mudflats and shallow areas of the river extensively (e.g., killdeer).

Some bird species in contrast, were only observed in one monitoring area suggesting that these species are either rare or have more specific habitat requirements or preferences. In 2016, 24 species (27%) were observed in only one monitoring area, including [Table 7-2]: snow goose, common loon, western kingbird, gray partridge, red-necked grebe, American crow, common nighthawk, merlin, Swainson's thrush, Ross's goose, Forster's tern, northern waterthrush, trumpeter swan, solitaire sandpiper, common yellowthroat, American wigeon, long-billed curlew, fox sparrow, northern pintail, Eurasian-collared dove, bobolink, ring-necked duck, bufflehead, and rudy duck.

Of the species observed only in one monitoring area, several are generally rare in the upper Clark Fork basin including the merlin, Forester's tern, long-billed curlew, western kingbird, fox sparrow, and Swainson's thrush. Swainson's thrush and fox sparrow are early spring migrants and these species generally migrate further north to breed. The gray partridge, like all gallinaceous species, are elusive but not necessarily rare.

The red-necked grebe and northern waterthrush were only observed in one monitoring area in 2016 but are commonly observed near the Warm Springs. The Eurasian-collared dove is common to the upper Clark Fork River valley but is rarely observed in the riparian area. Eurasian-collared doves are typically observed near human habitations, such a buildings, lawns, and feeders. The long-billed curlew, also observed in only one monitoring area, is a grassland species and is uncommon in riparian areas.

Six species were observed only in Phase 7 point count sites. Five of those species were associated with water. During remediation, if the depth of Racetrack Pond was increased, deep water habitats would be increased and the richness and abundance of diving ducks such as grebes and loons may increase.

Six species were observed only in Phase 15 point count sites. Four of those were waterfowl observed near an oxbow of the river west of the present channel (American wigeon, northern pintail, ring-necked duck, and bufflehead). This oxbow and related wetland appears to be a valuable habitat for waterfowl. Wet hay meadows were also prevalent in Phase 15 and are preferred habitat for bobolink. These habitats are important for preservation as they provide some of the most suitable breeding habitats for bobolink (a Montana species of concern) in the upper Clark Fork River basin. It is also particularly important to minimize disturbance to bobolink breeding habitats during the breeding season (late May through July).

Bird species richness generally increased from April through June in 2015 and 2016 [Figure 7-7]. This trend is as expected as the monitoring period is generally when transient species pass through the region to breeding areas further north or at higher elevations (e.g., western tanager). The monitoring period is also when local breeding birds (e.g., norther flicker) and migrant breeding birds (e.g., mountain bluebirds and osprey) arrive in the region. The monitoring period is when breeding birds establish territories, breed, nest, and fledge young. At the beginning of the survey period in both years, species richness was low but richness increased as the season progressed and birds were more frequently observed on territory and singing. By the end of the seasons (late June), young of the year were observed.

There was a more consistent increase in bird species richness by date in 2015 compared to 2016 and overall, richness was generally higher in 2015 compared to 2016 during most of the monitoring period (particularly after mid-May), despite a greater number of sample sites in 2016. The reasons for this discrepancy in richness among years are not clear. During both years, observed species richness tended to remain approximately level after late May, suggesting that most species were present and observable by that time. Some species present in early monitoring periods were not necessarily present in later monitoring periods (e.g., yellow-rump warbler

Of all bird species monitored in the Clark Fork River Operable Unit since 2015 (102 species), five are classified as species of concern in Montana [Table 7-3]: common loon, American white pelican, great blue heron, Franklin's gull, and bobolink. All of those species are considered either secure or abundant globally [MNHP, 2017]. Within Montana however, each is considered, "potentially at risk because of limited and/or declining numbers, range, and/or habitat, even though it may be abundant in some areas" [MNHP, 2017].

Service	Monitoring Area							
Species	Phase 1	Phases 3&4	Phase 7	Phase 8	Phase 15			
Snow Goose			Х					
Ross's Goose			Х					
Canada Goose	х	x	х	х	х			
Trumpeter Swan					х			
Gadwall	х		Х		х			
American Wigeon					х			
Mallard	х	x	х	x	х			
Northern Shovelor	х			x	х			
Northern Pintail					х			
Cinnamon Teal	x	x	х	X	x			
Green-winged Teal	х		х	x	х			
Ring-necked Duck					х			
Lesser Scaup	х	x	х		х			
Bufflehead					х			
Common Goldeneye		x		x	х			
Barrow's Goldeneye			х		х			
Hooded Merganser			х		х			
Common Merganser		x	х	x	х			
Rudy Duck			x					
Gray Partridge		X						
Common Loon			X					

Table 7-2. Bird species observed by monitoring area in the Clark Fork River Operable Unit, 2016.

	Monitoring Area							
Species	Phase 1	Phases 3&4	Phase 7	Phase 8	Phase 15			
Red-necked Grebe			X					
American White Pelican	Х	х	х	x	х			
Double-crested Cormorant	Х	х	Х	X	х			
Great Blue Heron	х	x	х	X	х			
Turkey Vulture	х	x		x				
Osprey	х	х	Х	х				
Bald Eagle	х	x		x				
Northern Harrier	х	x			х			
Red-tailed Hawk	х	x	х		х			
Swainson's Hawk		x		x				
American Kestrel	х	x	Х	х				
Merlin		x						
Ring-billed Gull	х	x	х	х	х			
California Gull	х	x	х					
Forster's Tern		x						
American Coot	х	x	х		х			
Sandhill Crane	х	x		x	х			
Killdeer	х	x	х	x	х			
American Avocet		x	Х					
Spotted Sandpiper	x	x	Х	x	х			
Solitaire Sandpiper		x						
Long-billed Curlew		x						
Wilson's Snipe		х	х	х	х			
Rock Pigeon		x		Х				
Eurasian-collared Dove				Х				
Mourning Dove	х	х	х	х	х			
Belted Kingfisher	х	x		Х				
Common Nighthawk					х			
Northern Flicker	х	х	х	х	х			
Western Wood-pewee			Х	Х				
Least Flycatcher			Х	х				
Willow Flycatcher		х	х		х			
Western Kingbird		x						
Eastern Kingbird	X	x	Х	X	x			
Tree Swallow	X	X	X	Х	X			
Northern Rough-winged Swallow				x	х			

a .	Monitoring Area							
Species	Phase 1	Phases 3&4	Phase 7	Phase 8	Phase 15			
Violet-green Swallow		x	X	x				
Cliff Swallow		x		x				
Barn Swallow	х	x	Х	x	х			
Black-billed Magpie	х	x	х	x	х			
American Crow				x				
Common Raven	х	x	Х	x	х			
Black-capped Chickadee		x		x	х			
House Wren	х			x				
Marsh Wren	х				х			
Mountain Bluebird			Х	x				
Swainson's Thrush			Х					
American Robin	х	x	Х	x	х			
Gray Catbird	х	x	Х					
European Starling	х	x	Х	x	х			
Cedar Waxwing	х			X				
Northern Waterthrush	Х							
Yellow Warbler		x	Х	x	х			
Yellow-rumped Warbler			Х	x				
Common Yellowthroat					х			
Clay-colored Sparrow	х	x	Х	x	х			
Vesper Sparrow	х	x	Х	x	х			
Savannah Sparrow	х	x		x	х			
Fox Sparrow		x						
Song Sparrow	х	x	Х	x	х			
Bobolink					х			
Red-winged Blackbird	х	x	Х	x	х			
Yellow-headed Blackbird	х	x						
Brewer's Blackbird	х	x	Х	x	х			
Common Grackle		x	Х	x	х			
Brown-headed Cowbird	х	x	Х	x	х			
Bullock's Oriole	х			x	х			
Western Meadowlark	х	x	Х	x	х			
Total: 89	47	58	53	54	54			



Figure 7-7. Cumulative bird species richness at all point count sites monitored (by date) in the Clark Fork River Operable Unit, 2016.90

<sup>&</sup>lt;sup>90</sup> The total number of point count sites differed in 2015 and 2016. In 2015 nine total point count sites were monitored among three separate phases (Phases 1, 7, and 15). In 2016, thirteen point count sites were monitored among six separate phases (Phases 1, 3, 4, 7, 8, and 15). All but one site monitored in 2015 was also monitored in 2016.

Species	Ye Obse	ars erved	Codes <sup>91</sup> Of		Remarks	
-	2015	2016		Concern <sup>92</sup>		
Snow goose		x	T, U		Typically seen spring but not fall.	
Ross's goose		x	R, T		Typically seen spring but not fall.	
Canada goose	x	x	B, C, Y		Non-songbird; resident breeder.	
1Gadwall	x	x	B, C		Non-songbird; migrant breeder.	
1American wigeon	x	x	B, C		Non-songbird; migrant breeder.	
Mallard	x	х	B, C, Y		Non-songbird; resident breeder.	
Blue-winged teal	x	x	B, U		Last waterfowl of the year to appear in late April; non-songbird migrant breeder.	
Cinnamon teal	x	x	B, C		Non-songbird; migrant breeder.	
Northern shoveler	x	x	B, C		Non-songbird; migrant breeder.	
Northern pintail	x	x	b, U		First waterfowl of the year to appear in early March.	
Green-winged teal	х	x	B, C		Non-songbird; migrant breeder.	
Ring-necked duck	х	x	b, C		Non-songbird; migrant breeder.	
Lesser scaup	x	x	B, C		Non-songbird; migrant breeder.	
Bufflehead	х	x	B, C		Non-songbird; migrant breeder.	
Common goldeneye	x	x	В, С, Ү		Non-songbird; resident breeder.	
Barrow's goldeneye	x	x	B, U		Non-songbird; resident breeder; most continue further north to breed.	
Hooded merganser	x	x	T, U		Typically seen spring and fall.	
Common merganser	x	x	T, U		Typically seen spring and fall.	
Red-breasted merganser	x		R, T		Only found in Racetrack Pond. 14% of Montana is breeding range for this species, and Montana contains 1% of the global breeding range.	
Rudy duck	x	x	B, C		Non-songbird; migrant breeder.	
Common loon	x	x	T, U	G5 S3	14% of Montana is breeding range for species; Montana contains 1% of global breeding range	
Horned grebe	x		T, U		Early spring, late fall. Only found in Racetrack Pond.	
Red-necked grebe		x	B, C		Does not breed in the Clark Fork riparian zone.	
Western grebe	x		B, C		Does not breed in the Clark Fork riparian zone.	
Double-crested cormorant	x	x	B, C		Does not breed in the Clark Fork riparian zone.	

Table 7-3. Bird species observed in the Clark Fork River Operable Unit, 2015-2016.

<sup>92</sup> See: <u>http://fieldguide.mt.gov/statusCodes.aspx#msrc:rank</u>.

<sup>&</sup>lt;sup>91</sup> Codes [MNHP, 2017]: B = direct evidence of breeding established; b = indirect evidence of breeding, probably does not breed in area yearly; T = transient/migrant spring, fall or both; Y = year-round; W = winter only; w = occasionally overwinters; C = common in the area; U = uncommon in the area; R = rare in the area; S = non-breeding summer resident; SOC - Species of Concern by Montana Natural Heritage Program, M = migrant song bird.

Species	Ye: Obse	ars erved	Codes <sup>91</sup>	Species of	Remarks
-	2015	2016		Concern <sup>92</sup>	
American white pelican	X	X	C, S	G4 S3B	6% of Montana is breeding range for this species, and Montana contains 1% of the global breeding range. Only juveniles found along the Clark Fork River. Only three breeding colonies in the state.
Great blue heron	x	x	B, C, w	G5 S3	Small breeding population size. Recent declines caused by declining regeneration of riparian cottonwood forest. 6% of Montana is breeding range for this species, and Montana contains 1% of the global breeding range. Currently no breeding rookeries along the Clark Fork River, but have been in the past.
Turkey vulture	х	x	T, U		Roost in the area occasionally.
Osprey	x	x	В, С		Non-songbird, migrant breeder, active nest site at Racetrack Pond (Phase 7).
Bald eagle	x	x	В, С, Ү		Non-songbird, resident breeder, no active nest in current phases. Four active nests occur along the river between Warm Springs and Garrison.
Northern harrier	x	x	В, С, Ү		Non-songbird, resident breeder, breeds on ground along the riparian zone.
Sharp-shinned hawk	x		b, U		Non-songbird, resident breeder, only observed once.
Swainson's hawk	х	X	B, C		Non-songbird, migrant breeder.
Red-tailed hawk	х	х	В, С, Ү		Non-songbird, resident breeder, nest in Phase 15.
American kestrel	x	x	В, С		Non-songbird, migrant breeder, nest in Phases 7 and 15.
American coot	x	x	В, С		Non-songbird, migrant breeder, nest in Phases 7 and 15.
Sandhill crane	x	x	В, С		Non-songbird, migrant breeder, nest in Phase 15.
Killdeer	х	х	B, C		
American avocet	х	x	B, C		Non-songbird; migrant breeder.
Spotted sandpiper	х	х	В, С		Non-songbird, migrant breeder, most common shorebird along the Clark Fork River.
Solitaire sandpiper		х	T, U		A few are seen each spring and fall
Long-billed curlew		x	B, U		A few pair breed each year in the grasslands of the valley; little use of the riparian areas, except to fly over.
Wilson's snipe	x	x	B, C, w		Non-songbird, migrant breeder; uncommon in the winter.
Wilson's phalarope	x	x	B, C		Non-songbird; migrant breeder.
Bonaparte's gull	x		b, T, U		Juveniles have been observed at the Warm Springs Wildlife Management Area.

Species	Ye	ars rved	Codec91	Species	Pomorka
species	2015	2016	Coues	Concern <sup>92</sup>	iveniar KS
Franklin's gull	x		T, U	G4 S3	48% of Montana is breeding range for this species, and Montana contains 7% of the global breeding range. Found mostly at the Warm Springs Wildlife Management Area and spill over to Phase 1.
Ring-bill gull	x	х	В, С		Breeding colony at the Warm Springs Wildlife Management Area.
California gull	x	x	В, С		Non-songbird, migrant breeder. Breeding colony at the Warm Springs Wildlife Management Area and spills over to Phase 1 and 7.
Herring gull	x		T, U		Rare.
Forester's Tern		х	R, T		Rare visitor to valley.
Eurasian-collared Dove		х	В, С, Ү		This non-native species is found in the valley near dwelling and rarely uses riparian area
Mourning dove	x	х	B, C		Non-songbird; migrant breeder all along the Clark Fork River.
Belted kingfisher	x	х	В, С, Ү		Non-songbird, resident breeder all along the Clark Fork River
Red-naped sapsucker	x		B, C		Non-songbird, migrant breeder in cottonwood trees.
Downy woodpecker	x		В, С, Ү		Non-songbird, migrant breeder in cottonwood trees.
Northern flicker	x	х	В, С, Ү		Non-songbird, migrant breeder in cottonwood trees.
Western wood-pewee	x	х	B, C, M		Migrant breeding songbird in cottonwood trees.
Least flycatcher		х	B, C, M		Migrant breeding songbird in riparian willows.
Willow flycatcher	x	х	В, С, М		Migrant breeding songbird in riparian willows.
Western kingbird		х	B, U, M		Migrant breeding songbird in riparian willows.
Eastern kingbird	x	х	В, С, М		Migrant breeding songbird in riparian willows; very common.
Black-billed magpie	x	х	B, C, Y		Resident breeding songbird; very common.
American crow	x	X	B, C, w		Elevational-migrant breeding songbird, occasional overwinters, or stays late into the fall.
Common raven	x	х	B, C, Y		Resident breeding songbird, very common.
Tree swallow	x	x	B, C, M		Migrant breeding songbird along the riparian zone.
Northern rough-winged swallow	x	х	B, C, M		Migrant breeding songbird along the riparian zone.
Bank swallow	x		B, C, M		Migrant breeding songbird along the riparian zone.
Violet-green swallow		х	B, C, M		Migrant breeding songbird in riparian willows.
Cliff swallow	x	x	B, C, M		Migrant breeding songbird along the riparian zone.

Species	Years Observed		Codea91	Species	Duranta	
Species	2015	2016	Codes	Concern <sup>92</sup>	Kemarks	
Barn swallow	x	X	В, С, М		Migrant breeding songbird along the riparian zone. Last to appear in the spring, last to leave and is the least common of the swallows.	
Black-capped chickadee	х	х	B, C, Y		Resident breeding songbird, very common.	
House Wren		х	B, C, M		Migrant breeding songbird.	
Marsh Wren		х	B, C, M		Migrant breeding songbird.	
Ruby-crowned kinglet	х		B, C, M		Migrant breeding songbird.	
Mountain bluebird	x	х	В, С, М		Migrant breeding songbird.	
Swainson's Thrush		х	T, U, M		Transient migrant songbird.	
American robin	x	X	B, C, M, w		Migrant breeding songbird along the riparian zone; occasionally individuals may overwinter.	
Gray catbird	x	х	В, С, М		Migrant breeding songbird along the riparian zone.	
European starling	x	х	В, С, Y, М		Non-native, resident breeding songbird.	
Cedar Waxwing		х	B, C, M		Migrant breeding songbird.	
Northern Waterthrush		х	В, С, М		Migrant breeding songbird along the riparian zone.	
Orange-crowned Warbler	x		B, U, M		Migrant breeding songbird along the riparian zone.	
Common Yellowthroat	x	х	В, С, М		Migrant breeding songbird along the riparian zone.	
Yellow-rumped Warbler		х	В, С, М		Migrant breeding songbird; breeds in the mountains.	
Yellow Warbler	х	х	В, С, М		Migrant breeding songbird along the riparian zone.	
American tree sparrow	х		C, W, M		Seen early in April and not again.	
Clay-colored sparrow	x	х	В, С, М		Migrant breeding songbird along the riparian zone.	
Vesper sparrow	x	х	В, С, М		Migrant breeding songbird along the riparian zone.	
Lark sparrow	x		T, U, M		Transient/migrant breeding songbird along the riparian zone, only seen once.	
Savannah sparrow	x	х	В, С, М		Migrant breeding songbird along the riparian zone.	
Fox sparrow		х	R, T, M		Migrant breeding warbler, but not in the upper Clark Fork valley.	
Song sparrow	x	х	B, C, W		Resident breeding songbird along the riparian zone.	
White-crowned sparrow	x		В, С, М		Migrant breeding songbird, but breeds in the coniferous forest above the valley. A spring and fall bird in the valley.	
Bobolink	x	X	В, С, М	G5 S3	Migrant breeding songbird at Phase 15. Species has undergone recent large population declines in Montana. 100% of Montana is breeding range for this species, and Montana contains 9% of the global breeding range.	

Species	Years Observed		Codes <sup>91</sup>	Species of	Remarks
_	2015	2016		Concern <sup>92</sup>	
Red-winged blackbird	х	x	В, С, Y, М		Resident breeding songbird along the riparian zone.
Western meadowlark	х	х	В, С, М		Migrant breeding songbird along the riparian zone.
Yellow-headed blackbird	x	x	В, С, М		Migrant breeding songbird along the riparian zone.
Brewer's blackbird	x	x	В, С, М		Migrant breeding songbird along the riparian zone.
Common Grackle		x	В, С, М		Migrant breeding songbird along the riparian zone.
Brown-headed cowbird	x	x	В, С, М		Migrant breeding songbird along the riparian zone.
Bullock's oriole	x	x	B, U, M		Migrant breeding songbird along the riparian zone.
American goldfinch	x		В, С, Ү		Resident breeding songbird along the riparian zone.

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# **APPENDIX A**

QUALITY ASSURANCE AND QUALITY CONTROL REVIEW AND SUMMARY: SURFACE WATER AND INSTREAM SEDIMENT

# APPENDIX A QUALITY ASSURANCE AND QUALITY CONTROL REVIEW AND SUMMARY: SURFACE WATER AND INSTREAM SEDIMENT

# A.1 INTRODUCTION

Specific quality assurance and quality control (QA/QC) requirements for field measurements, sample collection, laboratory analysis, and the reporting of resulting data were established by protocols contained in the quality assurance project plan (QAPP), a component of the approved sampling and analysis plan (SAP) for the Clark Fork River Operable Unit (CFROU). The following quality control checklist is a component of the Montana Department of Environmental Quality QA/QC protocols, and is an initial step in the review and validation of water chemistry and related data generated under the CFROU environmental monitoring program. This checklist provides an outline for reviewing and assessing numerous factors potentially affecting data quality, and assists in identifying data that may be invalid or require additional documentation.

# A.2 QUALITY CONTROL CHECKLIST

- + Condition of samples upon receipt
- \_\_\_\_ Sample temperature
  - Second quarter methylmercury samples were delivered to the laboratory at 7.9 C which exceeded the recommended sample preservation temperature range (2-6 C).
  - Sediment samples in the third quarter were received at the lab with temperatures >4 C.
- + Proper collection containers
- \_\_\_\_ Sample containers intact
  - One dissolved metal field blank sample from WSC-SBC had a loose lid and some contents of the container were spilled. This sample was analyzed as normal.
- \_\_\_\_ Sample pH of acidified samples <2
  - The surface water field sample from SS-25 collected on June 1, 2016 was not preserved. Analytes potentially affected included metals and nutrients. Samples were preserved upon receipt at the laboratory and analyzed as normal.
- + All field documentation complete; if incomplete areas cannot be completed, document the issue
- + Holding times met
- Field duplicates collected at the proper frequency (specified in the project SAP)
  - Field duplicates for surface water were collected at a frequency of 12-13% (two field duplicate samples per 16 or 17 samples during each quarterly event).

- Field duplicates for instream sediment were collected at a frequency of 10% (two field duplicate samples per quarterly event).
- Field blanks collected at the proper frequency (specified in the project SAP)
  - Field blanks for surface water were collected at a frequency of 12-13% (two field duplicate samples per 16 or 17 samples during each quarterly event).
- + All sample IDs matched those provided in the SAP. Field duplicates were clearly marked on samples and noted as such in the laboratory results.
  - All sample ID discrepancies identified by the laboratory at the time of sample delivery to the lab were brought to the attention of the responsible RESPEC field personnel and discrepancies were fully resolved; all instances were documented in the laboratory analytical reports.
- + Analyses were carried out as described within the SAP (e.g. analytical methods, photo documentation, field protocols)
- + Reporting limit complied with the SAP requested reporting limit
  - The reporting limit (RL) for a specific sample analyte occasionally had to be increased by the laboratory due to chemical interference of the sample matrix. These instances are "D-flagged" in the analytical summary reports provided by Energy Laboratories (Appendix B), and will be similarly flagged in the data submitted to the EQUIS database.
- All analyte field blank concentrations were less than the SAP-specified reporting limits (RLs) with the following exceptions:
  - In Q1, dissolved zinc concentrations were 0.009 mg/L (RL = 0.008 mg/L) in the field blank collected at WSC-SBC.
  - During the Q2-Rising sample event, dissolved zinc concentrations were 0.008 mg/L in the field blank collected at FC-CFR and 0.009 mg/L in the field blank collected at CFR-11F.
  - During the Q2-Peak sample event, dissolved zinc concentrations were 0.010 mg/L in the field blank collected at FC-CFR and 0.012 mg/L in the field blank collected at MCWC-MWB.
  - During the Q2-Falling sample event, dissolved zinc concentrations were 0.012 mg/L in the field blank collected at FC-CFR and 0.012 mg/L in the field blank collected at WSC-SBC.
  - In Q3, total phosphorus concentration was 0.004 mg/L (RL = 0.003 mg/L) in the field blank collected at FC-CFR.
  - In Q4, dissolved zinc concentrations were 0.008 mg/L in the field blank collected at FC-CFR and 0.011 mg/L in the field blank collected at MCWC-MWB. In addition, total phosphorus concentration was 0.008 mg/L (RL = 0.005 mg/L) in the field blank collected at MCWC-MWB.
- + If any field blanks exceeded the SAP requested reporting limit, associated data may be qualified, or "B-flagged", in the project database. The MDEQ project manager will set the criteria for determining what data is associated and will be contacted to discuss field blank results prior to flagging data. The project precedent to date has been to flag any

results less than ten times the blank value from a day in which the blank had a concentration above the RL. Following this precedent, samples would be B-flagged:

- All dissolved zinc samples from Q1 (on March 15, 2016), all Q2 samples, and Q4, with concentrations <0.08 mg/L.
- All total phosphorus samples from September 12, 2016 with concentrations <0.03 mg/L and all total phosphorus samples from December 13, 2016 with concentrations <0.05 mg/L.
- + Laboratory blanks, duplicates, matrix spikes, and control samples were analyzed at a 10% frequency.
- + Laboratory blanks, duplicates, matrix spikes, and control samples were all within the required control limits defined within the SAP.
- + Project DQOs and DQIs were met (as described in SAP).
- + Summary of QC analysis results, issues encountered and corrective actions was completed.

## A.3 SUMMARY OF QUALITY CONTROL AND ANALYSIS RESULTS

Summarized in this appendix are quality control measures performed on field and laboratory data generated from surface water and instream sediment samples collected from the CFROU during four quarterly monitoring events in 2016. Assessed under the MDEQ standard quality assurance and quality control protocols are data quality objectives (DQOs), including categories for: "representativeness", "comparability", and "completeness". Also assessed under the MDEQ standard quality astandard quality assurance and quality control protocols are data quality indicators (DQIs) including categories for: "sensitivity", "lab precision", "overall precision", and "bias and accuracy".

Overall, DQOs and DQIs were met at all monitoring sites in the CFROU during 2016. Surface water samples were collected and analyzed for total suspended sediment, nutrients, metals (dissolved and total recoverable), and common ions during six sample periods. Instream sediment samples were collected and analyzed for metals (total) during two sample periods of 2016.

#### A.3.1 Representativeness

All surface water and instream sediment sites in the CFROU sampled in 2016 met stated objectives for "spatial representativeness". That is, all monitoring sites were sampled at the established locations specified in the project SAP.

Surface water samples were collected quarterly and during two additional sample periods in Q2. Instream sediment was sampled in Q1 and Q3, prior to and after the spring runoff.

#### A.3.2 Comparability

Comparability is the applicability of project data to the remedial performance goals specified in the SAP for the various environmental media monitored under the project. All data acquired by the 2016 monitoring are directly applicable to assessing attainment of project performance goals.

#### A.3.3 Completeness

Data completeness for surface water and instream sediment samples was near 100%, with all chemical and physical parameters collected and analyzed during each monitoring events in 2016.

#### A.3.4 Sensitivity

The method detection limit (MDL) established by Energy Laboratories through laboratory blank analyses is an expression of sensitivity. The MDL documented in QA/QC summary reports that accompany each set of laboratory analytical reports was less than the projectrequired reporting limit (RL), and was often below detection, for all analytical methods pertaining to CFROU monitoring (Appendix B).

Sensitivity of field methods for surface water samples was determined through deionized water field blank analyses. Results for all metals, common ions and suspended sediment parameters in field blanks [Table A1 through Table A6] were below detection (ND) at the respective reporting limits with some exceptions as described in Section A.1. Some of those data will be qualified as also described in Section A.1.

### A.3.5 Precision

### A.3.5.1 Laboratory

Laboratory precision was assessed by the relative percent difference (RPD) metric comparing laboratory samples with duplicates. RPD comparisons were made for all analytes measured in this program. Established criteria allow a maximum of 20% RPD for water sample results which are at least five times greater than the RL, and 35% RPD for sediment samples which are at least five times greater than the RL. No RPD values for internal duplicate analyses exceeded the criteria and required qualification of associated data, and no corrective actions were required (Appendix B).

#### A.3.5.2 Overall

The overall precision of surface water and instream sediment sample analyses in 2016 from the CFROU was assessed with RPD comparisons between samples and paired field duplicates. Established criteria allow a maximum of 25% RPD for water sample results >5 times the RL, and 40% RPD for sediment samples >5 times the RL. All associated data which exceeds these criteria will be J-flagged in the project database.

Two surface water sample and duplicate pairs were collected in each sampling event and these were analyzed for dissolved and total recoverable metals, nutrients, and common ions [Table A7 through Table A18]. Pairs with RPD >25% which had concentrations at least five times greater than the RL included the following:

- total mercury for the pairing of samples H16030296-003 and H16030296-004 collected on March 14, 2016;
- total recoverable lead for the pairing of samples H16040518-009 and H16040518-010 collected on April 28, 2016;
- total nitrogen for the pairing of samples H16060056-003 and H16060056-004 collected on May 31, 2016; and
- total phosphorus for the pairing of samples H16090340-008 and H16090340-011 collected on September 13, 2016.

Two instream sediment sample and duplicate pairs were collected during each sampling event [Table A19 through Table A22]. No pairs had RPD >40% which had concentrations at least five times greater than the RL.

## A.3.5.3 Bias and Accuracy

Bias is defined as directional error from the true value of individual measurements. For field measurements (water temperature, pH, specific conductance, dissolved oxygen [DO] concentration, DO percent saturation, and turbidity), potential bias was addressed through frequent calibration of field instruments documented in calibration logs, and consistent field procedures. For water chemistry and sediment results, potential bias was minimized by adherence to approved field procedures for sample collection and handling, and decontamination of sampling equipment.

Accuracy is the combination of high precision and low bias. Accuracy of laboratory results was assessed by reviewing the analytical method controls (i.e., lab control sample, continuing calibration verification, lab fortified blank, standard reference material) and analytical batch controls (i.e., matrix spike and matrix spike duplicate). Limits established by the laboratory through control charting of each method's performance served as assessment criteria. Any analytical method controls or analytical batch controls that had values outside of the acceptable recovery range were re-analyzed, as detailed in the analytical QC summary provided by Energy Laboratories and included with each analytical summary report (Appendix B).

Table A1. Analyte concentrations in the first quarter (March 14-15, 2016) surface water field blanks from the Clark Fork River Operable Unit.

	Reporting limit	Field blank (concentration; mg/L)		
Analyte	(mg/L)	H16030296-002	H16030296-011	
Solids, Total Suspended TSS @ 105 C	1	ND	ND	
Alkalinity, Total as CaCO3	4	ND	ND	
Bicarbonate Alkalinity as HCO3	4	ND	ND	
Sulfate	1	ND	ND	
Chloride	1	ND	ND	
Hardness as CaCO3	1	ND	ND	
Organic Carbon, Dissolved (DOC)	0.5	ND	ND	
Nitrogen, Ammonia	0.05	ND	ND	
NO3+NO2 as N	0.05	ND	ND	
N-Total	0.05	ND	ND	
Phosphorus, Total as P	0.005	ND	ND	
Arsenic, Dissolved	0.001	ND	ND	
Cadmium, Dissolved	0.00003	ND	ND	
Copper, Dissolved	0.001	ND	ND	
Lead, Dissolved	0.0003	ND	ND	
Zinc, Dissolved	0.008	ND	0.009	
Arsenic, Total Recoverable	0.001	ND	ND	
Cadmium, Total Recoverable	0.00003	ND	ND	
Calcium, Total Recoverable	1	ND	ND	
Copper, Total Recoverable	0.001	ND	ND	
Lead, Total Recoverable	0.0003	ND	ND	
Magnesium, Total Recoverable	1	ND	ND	
Potassium, Total Recoverable	1	ND	ND	
Sodium, Total Recoverable	1	ND	ND	
Zinc, Total Recoverable	0.008	ND	ND	
Mercury, Total	0.000005	ND	607.4	
Mercury, Methyl	0.0000005	ND		
	Not sampled			

Not sampled.

Not detected at analytical reporting limit.

Table A2. Analyte concentrations in the second quarter, rising limb (April 27-28, 2016) surface water field blanks from the Clark Fork River Operable Unit.

	Reporting limit	Field blank (concentration; mg/L)		
Analyte	(mg/L)	H16040518-002	H16040518-008	
Solids, Total Suspended TSS @ 105 C	1	ND	ND	
Alkalinity, Total as CaCO3	4	ND	ND	
Bicarbonate Alkalinity as HCO3	4	ND	ND	
Sulfate	1	ND	ND	
Chloride	1	ND	ND	
Hardness as CaCO3	1	ND	ND	
Organic Carbon, Dissolved (DOC)	0.5	ND	ND	
Nitrogen, Ammonia	0.05	ND	ND	
NO3+NO2 as N	0.05	ND	ND	
N-Total	0.05	ND	ND	
Phosphorus, Total as P	0.005	ND	ND	
Arsenic, Dissolved	0.001	ND	ND	
Cadmium, Dissolved	0.00003	ND	ND	
Copper, Dissolved	0.001	ND	ND	
Lead, Dissolved	0.0003	ND	ND	
Zinc, Dissolved	0.008	0.008	0.009	
Arsenic, Total Recoverable	0.001	ND	ND	
Cadmium, Total Recoverable	0.00003	ND	ND	
Calcium, Total Recoverable	1	ND	ND	
Copper, Total Recoverable	0.001	ND	ND	
Lead, Total Recoverable	0.0003	ND	ND	
Magnesium, Total Recoverable	1	ND	ND	
Potassium, Total Recoverable	1	ND	ND	
Sodium, Total Recoverable	1	ND	ND	
Zinc, Total Recoverable	0.008	ND	ND	
Mercury, Total	0.000005	ND	2023	
Mercury, Methyl	0.0000005	ND		
Sec. 1	Not sampled			

Not sampled.

Not detected at analytical reporting limit.

Table A3. Analyte concentrations in the second quarter, peak (May 31-June 1, 2016) surface water field blanks from the Clark Fork River Operable Unit.

	Reporting limit	Field blank (concentration; mg/L)		
Analyte	(mg/L)	H16060056-002	H16060056-017	
Solids, Total Suspended TSS @ 105 C	1	ND	ND	
Alkalinity, Total as CaCO3	4	ND	ND	
Bicarbonate Alkalinity as HCO3	4	ND	ND	
Sulfate	1	ND	ND	
Chloride	1	ND	ND	
Hardness as CaCO3	1	ND	ND	
Organic Carbon, Dissolved (DOC)	0.5	ND	ND	
Nitrogen, Ammonia	0.05	ND	ND	
NO3+NO2 as N	0.05	ND	ND	
N-Total	0.05	ND	ND	
Phosphorus, Total as P	0.005	ND	ND	
Arsenic, Dissolved	0.001	ND	ND	
Cadmium, Dissolved	0.00003	ND	ND	
Copper, Dissolved	0.001	ND	ND	
Lead, Dissolved	0.0003	ND	ND	
Zinc, Dissolved	0.008	0.010	0.012	
Arsenic, Total Recoverable	0.001	ND	ND	
Cadmium, Total Recoverable	0.00003	ND	ND	
Calcium, Total Recoverable	1	ND	ND	
Copper, Total Recoverable	0.001	ND	ND	
Lead, Total Recoverable	0.0003	ND	ND	
Magnesium, Total Recoverable	1	ND	ND	
Potassium, Total Recoverable	1	ND	ND	
Sodium, Total Recoverable	1	ND	ND	
Zinc, Total Recoverable	0.008	ND	ND	
Mercury, Total	0.000005	ND	2024	
Mercury, Methyl	0.0000005	ND	ene à	
Sec. 2	Not sampled			

Not sampled.

Not detected at analytical reporting limit.

Table A4. Analyte concentrations in the second quarter, falling limb (June 20-21, 2016) surface water field blanks from the Clark Fork River Operable Unit.

1.50	Reporting limit	Field blank (concentration; mg/L)		
Analyte	(mg/L)	H16060430-002	H16060430-012	
Solids, Total Suspended TSS @ 105 C	1	ND	ND	
Alkalinity, Total as CaCO3	4	ND	ND	
Bicarbonate Alkalinity as HCO3	4	ND	ND	
Sulfate	1	ND	ND	
Chloride	1	ND	ND	
Hardness as CaCO3	1	ND	ND	
Organic Carbon, Dissolved (DOC)	0.5	ND	ND	
Nitrogen, Ammonia	0.05	ND	ND	
NO3+NO2 as N	0.05	ND	ND	
N-Total	0.05	ND	ND	
Phosphorus, Total as P	0.005	ND	ND	
Arsenic, Dissolved	0.001	ND	ND	
Cadmium, Dissolved	0.00003	ND	ND	
Copper, Dissolved	0.001	ND	ND	
Lead, Dissolved	0.0003	ND	ND	
Zinc, Dissolved	0.008	0.012	0.012	
Arsenic, Total Recoverable	0.001	ND	ND	
Cadmium, Total Recoverable	0.00003	ND	ND	
Calcium, Total Recoverable	1	ND	ND	
Copper, Total Recoverable	0.001	ND	ND	
Lead, Total Recoverable	0.0003	ND	ND	
Magnesium, Total Recoverable	1	ND	ND	
Potassium, Total Recoverable	1	ND	ND	
Sodium, Total Recoverable	1	ND	ND	
Zinc, Total Recoverable	0.008	ND	ND	
Mercury, Total	0.000005	ND	202)	
Mercury, Methyl	0.0000005	ND	ene à	
tion of	Not sampled			

ND

Not sampled.

Not detected at analytical reporting limit.

Table A5. Analyte concentrations in the third quarter (September 12-13, 2016) surface water field blanks from the Clark Fork River Operable Unit.

Analyte	Reporting limit	Field blank (concentration; mg/L)		
	(mg/L)	H16090340-002	H16090340-012	
Solids, Total Suspended TSS @ 105 C	1	ND	ND	
Alkalinity, Total as CaCO3	4	ND	ND	
Bicarbonate Alkalinity as HCO3	4	ND	ND	
Sulfate	1	ND	ND	
Chloride	1	ND	ND	
Hardness as CaCO3	1	ND	ND	
Organic Carbon, Dissolved (DOC)	0.5	ND	ND	
Nitrogen, Ammonia	0.05	ND	ND	
NO3+NO2 as N	0.05	ND	ND	
N-Total	0.05	ND	ND	
Phosphorus, Total as P	0.003	0.004	ND	
Arsenic, Dissolved	0.001	ND	ND	
Cadmium, Dissolved	0.00003	ND	ND	
Copper, Dissolved	0.001	ND	ND	
Lead, Dissolved	0.0003	ND	ND	
Zinc, Dissolved	0.008	ND ND		
Arsenic, Total Recoverable	0.001	ND ND		
Cadmium, Total Recoverable	0.00003	ND ND		
Calcium, Total Recoverable	1	ND	ND	
Copper, Total Recoverable	0.001	ND ND		
Lead, Total Recoverable	0.0003	ND ND		
Magnesium, Total Recoverable	1	ND	ND	
Potassium, Total Recoverable	1	ND	ND	
Sodium, Total Recoverable	1	ND	ND	
Zinc, Total Recoverable	0.008	ND	ND	
Mercury, Total	0.000005	ND	2023	
Mercury, Methyl	0.00000005	ND		
Electric 1	Not sampled			

Not sampled.

Not detected at analytical reporting limit.

Table A6. Analyte concentrations in the first quarter (December 12-13, 2016) surface water field blanks from the Clark Fork River Operable Unit.

Analyte	Reporting limit (mg/L)	Field blank (concentration; mg/L)			
		H16120270-002	H16120270-017		
Solids, Total Suspended TSS @ 105 C	1	ND	ND		
Alkalinity, Total as CaCO3	4	ND	ND		
Bicarbonate Alkalinity as HCO3	4	ND	ND		
Sulfate	1	ND	ND		
Chloride	1	ND	ND		
Hardness as CaCO3	1	ND	ND		
Organic Carbon, Dissolved (DOC)	0.5	ND	ND		
Nitrogen, Ammonia	0.05	ND	ND		
NO3+NO2 as N	0.05	ND	ND		
N-Total	0.05	ND	ND		
Phosphorus, Total as P	0.005	ND	0.008		
Arsenic, Dissolved	0.001	ND	ND		
Cadmium, Dissolved	0.00003	ND	ND		
Copper, Dissolved	0.001	ND	ND		
Lead, Dissolved	0.0003	ND	ND		
Zinc, Dissolved	0.008	0.009	0.011		
Arsenic, Total Recoverable	0.001	ND	ND		
Cadmium, Total Recoverable	0.00003	ND	ND		
Calcium, Total Recoverable	1	ND	ND		
Copper, Total Recoverable	0.001	ND	ND		
Lead, Total Recoverable	0.0003	ND ND			
Magnesium, Total Recoverable	1	ND ND			
Potassium, Total Recoverable	1	ND	ND		
Sodium, Total Recoverable	1	ND	ND		
Zinc, Total Recoverable	0.008	ND	ND		
Mercury, Total	0.000005	ND	2024		
Mercury, Methyl	0.0000005	ND	707 <i>)</i>		
Not sampled.					

Not sampled.

Not detected at analytical reporting limit.

Table A7. Analyte concentrations in the first quarter (March 14, 2016) surface water field sample and field duplicate in the Clark Fork River Operable Unit.

Analyte	Reporting limit (mg/L)	Concentration (mg/L)		Relative percent
		H16030296-003	H16030296-004	difference (%)
Solids, Total Suspended TSS @ 105 C	1	15	14	6.9
Alkalinity, Total as CaCO3	4	140	140	0.0
Bicarbonate Alkalinity as HCO3	4	170	170	0.0
Sulfate	1	18	18	0.0
Chloride	1	3	3	0.0
Hardness as CaCO3	1	147	146	0.7
Organic Carbon, Dissolved (DOC)	0.5	1.9	1.9	0.0
Nitrogen, Ammonia	0.05	ND	ND	0.0
NO3+NO2 as N	0.02	ND	ND	0.0
N-Total	0.05	0.29	0.25	14.8
Phosphorus, Total as P	0.003	0.027	0.021	25.0
Arsenic, Dissolved	0.001	0.007	0.007	0.0
Cadmium, Dissolved	0.00003	ND	ND	0.0
Copper, Dissolved	0.001	ND	ND	0.0
Lead, Dissolved	0.0003	ND	ND	0.0
Zinc, Dissolved	0.008	ND	ND	0.0
Arsenic, Total Recoverable	0.001	0.008	0.009	11.8
Cadmium, Total Recoverable	0.00003	0.00003	0.00003	0.0
Calcium, Total Recoverable	1	39	39	0.0
Copper, Total Recoverable	0.001	0.002	0.002	0.0
Lead, Total Recoverable	0.0003	0.0037	0.0038	2.7
Magnesium, Total Recoverable	1	12	12	0.0
Potassium, Total Recoverable	1	3	3	0.0
Sodium, Total Recoverable	1	8	8	0.0
Zinc, Total Recoverable	0.008	0.012	0.015	22.2
Mercury, Total	0.000005	1.4E-04	2.0E-04	35.3
Mercury, Methyl	0.00000005	1.17E-06	1.14E-06	2.6

Not detected at analytical reporting limit.

Relative percent difference unknown because one or both of the concentrations was unknown (i.e., ND).

Relative percent difference of sample and duplicate pair exceeds project goal (25%). We recommend "J-flagging" all analyte concentrations (which are >5 times the reporting limit) from this date in the project database.

Relative percent difference of sample and duplicate pair exceeds project goal (25%). However, because both of the concentrations were <5 times the reporting limit we do not recommend "J-flagging" any analytes in the project database.

Table A8. Analyte concentrations in the first quarter (March 15, 2016) surface water field sample and field duplicate in the Clark Fork River Operable Unit.

Analyte	Reporting limit (mg/L)	Concentration (mg/L)		Relative percent
		H16030296-016	H16030296-017	difference (%)
Solids, Total Suspended TSS @ 105 C	1	5	5	0.0
Alkalinity, Total as CaCO3	4	99	100	1.0
Bicarbonate Alkalinity as HCO3	4	120	120	0.0
Sulfate	1	32	31	3.2
Chloride	1	2	2	0.0
Hardness as CaCO3	1	107	109	1.9
Organic Carbon, Dissolved (DOC)	0.5	2	2.3	14.0
Nitrogen, Ammonia	0.05	ND	ND	0.0
NO3+NO2 as N	0.02	ND	ND	0.0
N-Total	0.05	0.2	0.17	16.2
Phosphorus, Total as P	0.003	0.027	0.03	10.5
Arsenic, Dissolved	0.001	0.02	0.02	0.0
Cadmium, Dissolved	0.00003	ND	ND	0.0
Copper, Dissolved	0.001	0.003	0.003	0.0
Lead, Dissolved	0.0003	ND	ND	0.0
Zinc, Dissolved	0.008	ND	ND	0.0
Arsenic, Total Recoverable	0.001	0.021	0.023	9.1
Cadmium, Total Recoverable	0.00003	0.00006	0.00007	15.4
Calcium, Total Recoverable	1	30	31	3.3
Copper, Total Recoverable	0.001	0.006	0.006	0.0
Lead, Total Recoverable	0.0003	0.0014	0.0016	13.3
Magnesium, Total Recoverable	1	8	8	0.0
Potassium, Total Recoverable	1	1	1	0.0
Sodium, Total Recoverable	1	10	10	0.0
Zinc, Total Recoverable	0.008	0.011	0.01	9.5

Not detected at analytical reporting limit.

Relative percent difference unknown because one or both of the concentrations was unknown (i.e., ND).

Relative percent difference of sample and duplicate pair exceeds project goal (25%). We recommend "J-flagging" all analyte concentrations (which are >5 times the reporting limit) from this date in the project database.

Relative percent difference of sample and duplicate pair exceeds project goal (25%). However, because both of the concentrations were <5 times the reporting limit we do not recommend "J-flagging" any analytes in the project database.
Table A9. Analyte concentrations in the second quarter, rising limb (April 27, 2016) surface water field sample and field duplicate in the Clark Fork River Operable Unit.

Analyte	Reporting	Concentra	tion (mg/L)	Relative percent
Analyte	limit (mg/L)	H16040518-003	H16040518-004	difference (%)
Solids, Total Suspended TSS @ 105 C	1	58	60	3.4
Alkalinity, Total as CaCO3	4	93	92	1.1
Bicarbonate Alkalinity as HCO3	4	110	110	0.0
Sulfate	1	10	10	0.0
Chloride	1	2	2	0.0
Hardness as CaCO3	1	100	99	1.0
Organic Carbon, Dissolved (DOC)	0.5	4.3	4.3	0.0
Nitrogen, Ammonia	0.05	ND	ND	0.0
NO3+NO2 as N	0.02	0.07	0.07	0.0
N-Total	0.05	0.31	0.32	3.2
Phosphorus, Total as P	0.003	0.054	0.058	7.1
Arsenic, Dissolved	0.001	0.006	0.006	0.0
Cadmium, Dissolved	0.00003	ND	ND	0.0
Copper, Dissolved	0.001	ND	ND	0.0
Lead, Dissolved	0.0003	0.0005	0.0005	0.0
Zinc, Dissolved	0.008	ND	ND	0.0
Arsenic, Total Recoverable	0.001	0.02	0.019	5.1
Cadmium, Total Recoverable	0.00003	0.00017	0.00017	0.0
Calcium, Total Recoverable	1	27	27	0.0
Copper, Total Recoverable	0.001	0.007	0.006	15.4
Lead, Total Recoverable	0.0003	0.0177	0.017	4.0
Magnesium, Total Recoverable	1	8	8	0.0
Potassium, Total Recoverable	1	2	2	0.0
Sodium, Total Recoverable	1	5	5	0.0
Zinc, Total Recoverable	0.008	0.053	0.052	1.9
Mercury, Total	0.000005	8.3E-04	7.9E-04	4.9
Mercury, Methyl	0.00000005	4.05E-06	4.01E-06	1.0

ND

Not detected at analytical reporting limit.

Relative percent difference unknown because one or both of the concentrations was unknown (i.e., ND).

Relative percent difference of sample and duplicate pair exceeds project goal (25%). We recommend "J-flagging" all analyte concentrations (which are >5 times the reporting limit) from this date in the project database.

Table A10. Analyte concentrations in the second quarter, rising limb (April 28, 2016) surface water field sample and field duplicate in the Clark Fork River Operable Unit.

Anslute	Reporting	Concentra	tion (mg/L)	Relative percent
Analyte	limit (mg/L)	H16040518-009	H16040518-010	difference (%)
Solids, Total Suspended TSS @ 105 C	1	23	22	4.4
Alkalinity, Total as CaCO3	4	110	110	0.0
Bicarbonate Alkalinity as HCO3	4	140	140	0.0
Sulfate	1	78	79	1.3
Chloride	1	10	10	0.0
Hardness as CaCO3	1	184	181	1.6
Organic Carbon, Dissolved (DOC)	0.5	3.3	3.2	3.1
Nitrogen, Ammonia	0.05	ND	ND	0.0
NO3+NO2 as N	0.02	0.09	0.09	0.0
N-Total	0.05	0.4	0.35	13.3
Phosphorus, Total as P	0.003	0.043	0.039	9.8
Arsenic, Dissolved	0.001	0.013	0.013	0.0
Cadmium, Dissolved	0.00003	0.00004	ND	200.0
Copper, Dissolved	0.001	0.005	0.005	0.0
Lead, Dissolved	0.0003	ND	ND	0.0
Zinc, Dissolved	0.008	0.009	0.01	10.5
Arsenic, Total Recoverable	0.001	0.018	0.017	5.7
Cadmium, Total Recoverable	0.00003	0.00019	0.0002	5. <b>1</b>
Calcium, Total Recoverable	1	54	53	1.9
Copper, Total Recoverable	0.001	0.036	0.039	8.0
Lead, Total Recoverable	0.0003	0.0047	0.0087	59.7
Magnesium, Total Recoverable	1	12	12	0.0
Potassium, Total Recoverable	1	3	3	0.0
Sodium, Total Recoverable	1	13	13	0.0
Zinc, Total Recoverable	0.008	0.036	0.035	2.8

Not detected at analytical reporting limit.

Relative percent difference unknown because one or both of the concentrations was unknown (i.e., ND).

Relative percent difference of sample and duplicate pair exceeds project goal (25%). We recommend "J-flagging" all analyte concentrations (which are >5 times the reporting limit) from this date in the project database.

Table A11. Analyte concentrations in the second quarter, peak (May 31, 2016) surface water field sample and field duplicate in the Clark Fork River Operable Unit.

Analyte	Reporting	Concentra	tion (mg/L)	Relative percent
Analyte	limit (mg/L)	H16060056-003	H16060056-004	difference (%)
Solids, Total Suspended TSS @ 105 C	1	19	17	11.1
Alkalinity, Total as CaCO3	4	120	120	0.0
Bicarbonate Alkalinity as HCO3	4	150	150	0.0
Sulfate	1	12	12	0.0
Chloride	1	2	2	0.0
Hardness as CaCO3	1	125	127	1.6
Organic Carbon, Dissolved (DOC)	0.5	3.6	4.2	15.4
Nitrogen, Ammonia	0.05	ND	ND	0.0
NO3+NO2 as N	0.02	ND	ND	0.0
N-Total	0.05	0.21	0.29	32.0
Phosphorus, Total as P	0.003	0.044	0.041	7.1
Arsenic, Dissolved	0.001	0.006	0.006	0.0
Cadmium, Dissolved	0.00003	ND	ND	0.0
Copper, Dissolved	0.001	ND	0.001	200.0
Lead, Dissolved	0.0003	ND	ND	0.0
Zinc, Dissolved	0.008	ND	ND	0.0
Arsenic, Total Recoverable	0.001	0.01	0.01	0.0
Cadmium, Total Recoverable	0.00003	0.00005	0.00007	33.3
Calcium, Total Recoverable	1	34	35	2.9
Copper, Total Recoverable	0.001	0.003	0.003	0.0
Lead, Total Recoverable	0.0003	0.0053	0.0052	1.9
Magnesium, Total Recoverable	1	10	10	0.0
Potassium, Total Recoverable	1	2	3	40.0
Sodium, Total Recoverable	1	6	6	0.0
Zinc, Total Recoverable	0.008	0.016	0.017	6.1
Mercury, Total	0.000005	2.2E-05	2.0E-05	9.5
Mercury, Methyl	0.00000005	1.46E-06	1.41E-06	14.5

Not detected at analytical reporting limit.

Relative percent difference unknown because one or both of the concentrations was unknown (i.e., ND).

Relative percent difference of sample and duplicate pair exceeds project goal (25%). We recommend "J-flagging" all analyte concentrations (which are >5 times the reporting limit) from this date in the project database.

Table A12. Analyte concentrations in the second quarter, peak (June 1, 2016) surface water field sample and field duplicate in the Clark Fork River Operable Unit.

Analyte	Reporting	Concentra	tion (mg/L)	Relative percent
Analyte	limit (mg/L)	H16060056-012	H16060056-013	difference (%)
Solids, Total Suspended TSS @ 105 C	1	6	6	0.0
Alkalinity, Total as CaCO3	4	84	84	0.0
Bicarbonate Alkalinity as HCO3	4	80	81	1.2
Sulfate	1	53	53	0.0
Chloride	1	9	9	0.0
Hardness as CaCO3	1	122	127	4.0
Organic Carbon, Dissolved (DOC)	0.5	5	5.1	2.0
Nitrogen, Ammonia	0.05	ND	ND	0.0
NO3+NO2 as N	0.02	ND	ND	0.0
N-Total	0.05	0.32	0.3	6.5
Phosphorus, Total as P	0.003	0.054	0.058	7.1
Arsenic, Dissolved	0.001	0.025	0.025	0.0
Cadmium, Dissolved	0.00003	0.00006	0.00006	0.0
Copper, Dissolved	0.001	0.007	0.007	0.0
Lead, Dissolved	0.0003	ND	ND	0.0
Zinc, Dissolved	0.008	ND	ND	0.0
Arsenic, Total Recoverable	0.001	0.028	0.026	7.4
Cadmium, Total Recoverable	0.00003	0.00013	0.00012	8.0
Calcium, Total Recoverable	1	35	37	5.6
Copper, Total Recoverable	0.001	0.012	0.011	8.7
Lead, Total Recoverable	0.0003	0.0013	0.0012	8.0
Magnesium, Total Recoverable	1	8	8	0.0
Potassium, Total Recoverable	1	3	3	0.0
Sodium, Total Recoverable	1	13	13	0.0
Zinc, Total Recoverable	0.008	0.018	0.016	11.8

Not detected at analytical reporting limit.

Relative percent difference unknown because one or both of the concentrations was unknown (i.e., ND).

Relative percent difference of sample and duplicate pair exceeds project goal (25%). We recommend "J-flagging" all analyte concentrations (which are >5 times the reporting limit) from this date in the project database.

Table A13. Analyte concentrations in the second quarter, falling limb (June 20, 2016) surface water field sample and field duplicate in the Clark Fork River Operable Unit.

Analyte	Reporting	Concentra	tion (mg/L)	Relative percent
Analyte	limit (mg/L)	H16060430-003	H16060430-004	difference (%)
Solids, Total Suspended TSS @ 105 C	1	6	6	0.0
Alkalinity, Total as CaCO3	4	200	200	0.0
Bicarbonate Alkalinity as HCO3	4	240	240	0.0
Sulfate	1	18	18	0.0
Chloride	1	3	3	0.0
Hardness as CaCO3	1	209	212	1.4
Organic Carbon, Dissolved (DOC)	0.5	4.3	4.3	0.0
Nitrogen, Ammonia	0.05	ND	ND	0.0
NO3+NO2 as N	0.02	ND	ND	0.0
N-Total	0.05	0.31	0.32	3.2
Phosphorus, Total as P	0.003	0.051	0.054	5.7
Arsenic, Dissolved	0.001	0.009	0.009	0.0
Cadmium, Dissolved	0.00003	ND	ND	0.0
Copper, Dissolved	0.001	0.001	ND	200.0
Lead, Dissolved	0.0003	ND	ND	0.0
Zinc, Dissolved	0.008	ND	ND	0.0
Arsenic, Total Recoverable	0.001	0.01	0.009	10.5
Cadmium, Total Recoverable	0.00003	ND	0.00003	200.0
Calcium, Total Recoverable	1	58	58	0.0
Copper, Total Recoverable	0.001	0.002	0.002	0.0
Lead, Total Recoverable	0.0003	0.0013	0.0014	7.4
Magnesium, Total Recoverable	1	16	16	0.0
Potassium, Total Recoverable	1	4	4	0.0
Sodium, Total Recoverable	1	10	10	0.0
Zinc, Total Recoverable	0.008	ND	ND	0.0
Mercury, Total	0.000005	5.7E-05	5.7E-05	0.0
Mercury, Methyl	0.00000005	9.97E-07	8.82E-07	12.2

Not detected at analytical reporting limit.

Relative percent difference unknown because one or both of the concentrations was unknown (i.e., ND).

Relative percent difference of sample and duplicate pair exceeds project goal (25%). We recommend "J-flagging" all analyte concentrations (which are >5 times the reporting limit) from this date in the project database.

Table A14. Analyte concentrations in the second quarter, falling limb (June 21, 2016) surface water field sample and field duplicate in the Clark Fork River Operable Unit.

Analyte	Reporting	Concentra	tion (mg/L)	Relative percent
Analyte	limit (mg/L)	H16060430-009	H16060430-010	difference (%)
Solids, Total Suspended TSS @ 105 C	1	5	5	0.0
Alkalinity, Total as CaCO3	4	88	87	1.1
Bicarbonate Alkalinity as HCO3	4	110	110	0.0
Sulfate	1	41	41	0.0
Chloride	1	3	3	0.0
Hardness as CaCO3	1	126	126	0.0
Organic Carbon, Dissolved (DOC)	0.5	2.6	2.6	0.0
Nitrogen, Ammonia	0.05	ND	ND	0.0
NO3+NO2 as N	0.02	ND	ND	0.0
N-Total	0.05	0.23	0.23	0.0
Phosphorus, Total as P	0.003	0.028	0.028	0.0
Arsenic, Dissolved	0.001	0.018	0.017	5.7
Cadmium, Dissolved	0.00003	0.00003	ND	200.0
Copper, Dissolved	0.001	0.005	0.005	0.0
Lead, Dissolved	0.0003	ND	ND	0.0
Zinc, Dissolved	0.008	0.014	ND	200.0
Arsenic, Total Recoverable	0.001	0.019	0.019	0.0
Cadmium, Total Recoverable	0.00003	0.00006	0.00007	15.4
Calcium, Total Recoverable	1	37	37	0.0
Copper, Total Recoverable	0.001	0.012	0.013	8.0
Lead, Total Recoverable	0.0003	0.0011	0.0013	16.7
Magnesium, Total Recoverable	1	8	8	0.0
Potassium, Total Recoverable	1	2	2	0.0
Sodium, Total Recoverable	1	7	7	0.0
Zinc, Total Recoverable	0.008	0.010	0.010	0.0

Not detected at analytical reporting limit.

Relative percent difference unknown because one or both of the concentrations was unknown (i.e., ND).

Relative percent difference of sample and duplicate pair exceeds project goal (25%). We recommend "J-flagging" all analyte concentrations (which are >5 times the reporting limit) from this date in the project database.

Table A15. Analyte concentrations in the third quarter (September 12, 2016) surface water field sample and field duplicate in the Clark Fork River Operable Unit.

Analyte	Reporting	Concentra	tion (mg/L)	Relative percent
Analyte	limit (mg/L)	H16090340-003	H16090340-004	difference (%)
Solids, Total Suspended TSS @ 105 C	1	3	2	40.0
Alkalinity, Total as CaCO3	4	230	230	0.0
Bicarbonate Alkalinity as HCO3	4	270	270	0.0
Sulfate	1	33	33	0.0
Chloride	1	5	5	0.0
Hardness as CaCO3	1	229	231	0.9
Organic Carbon, Dissolved (DOC)	0.5	3.3	2.9	12.9
Nitrogen, Ammonia	0.05	ND	ND	0.0
NO3+NO2 as N	0.02	ND	ND	0.0
N-Total	0.05	0.21	0.22	4.7
Phosphorus, Total as P	0.003	0.056	0.056	0.0
Arsenic, Dissolved	0.001	0.008	0.009	11.8
Cadmium, Dissolved	0.00003	ND	ND	0.0
Copper, Dissolved	0.001	ND	ND	0.0
Lead, Dissolved	0.0003	ND	ND	0.0
Zinc, Dissolved	0.008	ND	ND	0.0
Arsenic, Total Recoverable	0.001	0.008	0.008	0.0
Cadmium, Total Recoverable	0.00003	ND	ND	0.0
Calcium, Total Recoverable	1	62	63	1.6
Copper, Total Recoverable	0.001	ND	0.001	200.0
Lead, Total Recoverable	0.0003	0.0004	0.0004	0.0
Magnesium, Total Recoverable	1	18	18	0.0
Potassium, Total Recoverable	1	5	6	18.2
Sodium, Total Recoverable	1	15	15	0.0
Zinc, Total Recoverable	0.008	ND	ND	0.0
Mercury, Total	0.000005	1.2E-05	1.4E-05	15.4
Mercury, Methyl	0.00000005	4.14E-07	4.8E-07	14.8

Not detected at analytical reporting limit.

Relative percent difference unknown because one or both of the concentrations was unknown (i.e., ND).

Relative percent difference of sample and duplicate pair exceeds project goal (25%). We recommend "J-flagging" all analyte concentrations (which are >5 times the reporting limit) from this date in the project database.

Table A16. Analyte concentrations in the third quarter (September 13, 2016) surface water field sample and field duplicate in the Clark Fork River Operable Unit.

Analyte	Reporting	Concentra	tion (mg/L)	Relative percent
Analyte	limit (mg/L)	H16090340-008	H16090340-011	difference (%)
Solids, Total Suspended TSS @ 105 C	1	1	1	0.0
Alkalinity, Total as CaCO3	4	160	160	0.0
Bicarbonate Alkalinity as HCO3	4	200	200	0.0
Sulfate	1	116	116	0.0
Chloride	1	8	7	13.3
Hardness as CaCO3	1	253	243	4.0
Organic Carbon, Dissolved (DOC)	0.5	2.7	2.6	3.8
Nitrogen, Ammonia	0.05	ND	ND	0.0
NO3+NO2 as N	0.02	ND	ND	0.0
N-Total	0.05	0.19	0.18	5.4
Phosphorus, Total as P	0.003	0.018	0.033	58.8
Arsenic, Dissolved	0.001	0.017	0.017	0.0
Cadmium, Dissolved	0.00003	ND	ND	0.0
Copper, Dissolved	0.001	0.005	0.005	0.0
Lead, Dissolved	0.0003	ND	ND	0.0
Zinc, Dissolved	0.008	ND	ND	0.0
Arsenic, Total Recoverable	0.001	0.016	0.015	6.5
Cadmium, Total Recoverable	0.00003	ND	ND	0.0
Calcium, Total Recoverable	1	72	69	4.3
Copper, Total Recoverable	0.001	0.007	0.007	0.0
Lead, Total Recoverable	0.0003	ND	ND	0.0
Magnesium, Total Recoverable	1	18	17	5.7
Potassium, Total Recoverable	1	3	3	0.0
Sodium, Total Recoverable	1	15	15	0.0
Zinc, Total Recoverable	0.008	ND	ND	0.0

Not detected at analytical reporting limit.

Relative percent difference unknown because one or both of the concentrations was unknown (i.e., ND).

Relative percent difference of sample and duplicate pair exceeds project goal (25%). We recommend "J-flagging" all analyte concentrations (which are >5 times the reporting limit) from this date in the project database.

Table A17. Analyte concentrations in the fourth quarter (December 12, 2016) surface water field sample and field duplicate in the Clark Fork River Operable Unit.

Analyte	Reporting	Concentra	tion (mg/L)	Relative percent
Analyte	limit (mg/L)	H16120270-003	H16120270-004	difference (%)
Solids, Total Suspended TSS @ 105 C	1	3	3	0.0
Alkalinity, Total as CaCO3	4	160	160	0.0
Bicarbonate Alkalinity as HCO3	4	190	200	5.1
Sulfate	1	18	18	0.0
Chloride	1	4	3.9	2.5
Hardness as CaCO3	1	165	163	1.2
Organic Carbon, Dissolved (DOC)	0.5	1.3	1.4	7.4
Nitrogen, Ammonia	0.05	ND	ND	0.0
NO3+NO2 as N	0.02	0.25	0.25	0.0
N-Total	0.05	0.29	0.29	0.0
Phosphorus, Total as P	0.003	0.035	0.035	0.0
Arsenic, Dissolved	0.001	0.007	0.007	0.0
Cadmium, Dissolved	0.00003	ND	ND	0.0
Copper, Dissolved	0.001	ND	ND	0.0
Lead, Dissolved	0.0003	ND	ND	0.0
Zinc, Dissolved	0.008	ND	ND	0.0
Arsenic, Total Recoverable	0.001	0.007	0.007	0.0
Cadmium, Total Recoverable	0.00003	ND	ND	0.0
Calcium, Total Recoverable	1	44	44	0.0
Copper, Total Recoverable	0.001	ND	ND	0.0
Lead, Total Recoverable	0.0003	0.0009	0.0009	0.0
Magnesium, Total Recoverable	1	13	13	0.0
Potassium, Total Recoverable	1	3	3	0.0
Sodium, Total Recoverable	1	10	10	0.0
Zinc, Total Recoverable	0.008	ND	ND	0.0
Mercury, Total	0.000005	1.8E-05	1.5E-05	18.2
Mercury, Methyl	0.00000005	4.13E-07	4.21E-07	1.9

Not detected at analytical reporting limit.

Relative percent difference unknown because one or both of the concentrations was unknown (i.e., ND).

Relative percent difference of sample and duplicate pair exceeds project goal (25%). We recommend "J-flagging" all analyte concentrations (which are >5 times the reporting limit) from this date in the project database.

Table A18. Analyte concentrations in the fourth quarter (December 13, 2016) surface water field sample and field duplicate in the Clark Fork River Operable Unit.

Analyte	Reporting	Concentra	tion (mg/L)	Relative percent
Analyte	limit (mg/L)	H16120270-014	H16120270-015	difference (%)
Solids, Total Suspended TSS @ 105 C	1	3	3	0.0
Alkalinity, Total as CaCO3	4	120	120	0.0
Bicarbonate Alkalinity as HCO3	4	150	150	0.0
Sulfate	1	140	140	0.0
Chloride	1	6.9	7.1	2.9
Hardness as CaCO3	1	248	249	0.4
Organic Carbon, Dissolved (DOC)	0.5	1.3	1.3	0.0
Nitrogen, Ammonia	0.05	ND	ND	0.0
NO3+NO2 as N	0.02	0.13	0.13	0.0
N-Total	0.05	0.22	0.22	0.0
Phosphorus, Total as P	0.003	0.016	0.019	17.1
Arsenic, Dissolved	0.001	0.01	0.01	0.0
Cadmium, Dissolved	0.00003	ND	ND	0.0
Copper, Dissolved	0.001	ND	ND	0.0
Lead, Dissolved	0.0003	ND	ND	0.0
Zinc, Dissolved	0.008	ND	ND	0.0
Arsenic, Total Recoverable	0.001	0.012	0.011	8.7
Cadmium, Total Recoverable	0.00003	0.00004	0.00003	28.6
Calcium, Total Recoverable	1	72	72	0.0
Copper, Total Recoverable	0.001	0.002	0.002	0.0
Lead, Total Recoverable	0.0003	0.0006	0.0006	0.0
Magnesium, Total Recoverable	1	17	17	0.0
Potassium, Total Recoverable	1	2	2	0.0
Sodium, Total Recoverable	1	13	13	0.0
Zinc, Total Recoverable	0.008	ND	ND	0.0

Not detected at analytical reporting limit.

Relative percent difference unknown because one or both of the concentrations was unknown (i.e., ND).

Relative percent difference of sample and duplicate pair exceeds project goal (25%). We recommend "J-flagging" all analyte concentrations (which are >5 times the reporting limit) from this date in the project database.

# Table A19. Analyte concentrations (<0.063 mm; dry weight) in the first quarter (March 14, 2016) sediment field sample and field duplicate in the Clark Fork River Operable Unit.

Analyte	Reporting		tion (mg/L)	Relative percent
	limit (mg/L)	H16030296-023	H16030296-031	difference (%)
Arsenic, Total	1	157	156	0.6
Cadmium, Total	0.4	7.1	6.8	4.3
Copper, Total	5	1470	1370	7.0
Lead, Total	5	238	280	16.2
Zinc, Total	5	1310	1320	0.8

ND

-

Not detected at analytical reporting limit.

Relative percent difference unknown because one or both of the concentrations was unknown (i.e., ND).

Relative percent difference of sample and duplicate pair exceeds project goal (40%). We recommend "J-flagging" all analyte concentrations (which are >5 times the reporting limit) from this date in the project database.

# Table A20. Analyte concentrations (<0.063 mm; dry weight) in the first quarter (March 15, 2016) sediment field sample and field duplicate in the Clark Fork River Operable Unit.

Analyte	Reporting		tion (mg/L)	Relative percent
	limit (mg/L)	H16030296-024	H16030296-032	difference (%)
Arsenic, Total	1	136	145	6.4
Cadmium, Total	0.4	5.9	5.9	0.0
Copper, Total	5	1150	1150	0.0
Lead, Total	5	206	223	7.9
Zinc, Total	5	1150	1200	4.3

ND

-

Not detected at analytical reporting limit.

Relative percent difference unknown because one or both of the concentrations was unknown (i.e., ND).

Relative percent difference of sample and duplicate pair exceeds project goal (40%). We recommend "J-flagging" all analyte concentrations (which are >5 times the reporting limit) from this date in the project database.

# Table A21. Analyte concentrations (<0.063 mm; dry weight) in the third quarter (September 12, 2016) sediment field sample and field duplicate in the Clark Fork River Operable Unit.

<b>A B C</b>	Reporting	Concentra	tion (mg/L)	Relative percent
Analyte	limit (mg/L)	H16090340-023	H16090340-031	difference (%)
Arsenic, Total	1	169	165	2.4
Cadmium, Total	0.4	5.9	8.2	32.6
Copper, Total	5	1270	1390	9.0
Lead, Total	5	345	397	14.0
Zinc, Total	5	1260	1570	21.9

ND

-

Not detected at analytical reporting limit.

Relative percent difference unknown because one or both of the concentrations was unknown (i.e., ND).

Relative percent difference of sample and duplicate pair exceeds project goal (40%). We recommend "J-flagging" all analyte concentrations (which are >5 times the reporting limit) from this date in the project database.

# Table A22. Analyte concentrations (<0.063 mm; dry weight) in the third quarter (September 13, 2016) sediment field sample and field duplicate in the Clark Fork River Operable Unit.

	Reporting	Concentrat	tion (mg/L)	Relative percent
Analyte	limit (mg/L)	H16090340-028	H16090340-032	difference (%)
Arsenic, Total	1	153	108	34.5
Cadmium, Total	0.4	10.6	8.5	22.0
Copper, Total	5	892	642	32.6
Lead, Total	5	376	354	6.0
Zinc, Total	5	2020	1620	22.0

ND

-

Not detected at analytical reporting limit.

Relative percent difference unknown because one or both of the concentrations was unknown (i.e., ND).

Relative percent difference of sample and duplicate pair exceeds project goal (40%). We recommend "J-flagging" all analyte concentrations (which are >5 times the reporting limit) from this date in the project database.

**APPENDIX B** 

ANALYTICAL LABORATORY RESULTS

# APPENDIX B1 ANALYTICAL LABORATORY RESULTS 1<sup>ST</sup> QUARTER MONITORING



# ANALYTICAL SUMMARY REPORT

April 26, 2016

MT DEQ-Federal Superfund PO Box 200901 Helena, MT 59620-0901

Work Order: H16030296 Quote ID: H1085

Project Name: CFR Monitoring-474374

Energy Laboratories Inc Helena MT received the following 34 samples for MT DEQ-Federal Superfund on 3/16/2016 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H16030296-001	CFR-116A	03/14/16 8:4	5 03/16/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Hardness as CaCO3 Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Total P Water Nitrogen, Total Persulfate Phosphorus, Total Solids, Total Suspended
H16030296-002	Field Blank #1 FC-CFR	03/14/16 11:	00 03/16/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Mercury, Total Recoverable Hardness as CaCO3 Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Mercury by CVAA Digestion, Total P Water Nitrogen, Total Persulfate Phosphorus, Total Solids, Total Suspended Subcontracted, Analytics
H16030296-003	FC-CFR	03/14/16 11:	30 03/16/16	Surface Water	Same As Above
H16030296-004	FC-CFR Duplicate	03/14/16 11:	30 03/16/16	Surface Water	Same As Above



# ANALYTICAL SUMMARY REPORT

H16030296-005	LBR-CFR-02	03/14/16 13:15 (	03/16/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Hardness as CaCO3 Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Total P Water Nitrogen, Total Persulfate Phosphorus, Total Solids, Total Suspended
H16030296-006	CFR-34	03/14/16 14:30 (	03/16/16	Surface Water	Same As Above
H16030296-007	CFR-27H	03/14/16 16:00 (	03/16/16	Surface Water	Same As Above
H16030296-008	CFR-11F	03/15/16 8:45 (	03/16/16	Surface Water	Same As Above
H16030296-009	CFR-07D	03/15/16 10:15 (	03/16/16	Surface Water	Same As Above
H16030296-010	CFR-03A	03/15/16 11:15 (	03/16/16	Surface Water	Same As Above
H16030296-011	Field Blank #2 WSC-SBC	03/15/16 12:15 (	03/16/16	Surface Water	Same As Above
H16030296-012	WSC-SBC	03/15/16 12:30 (	03/16/16	Surface Water	Same As Above
H16030296-013	SS-25	03/15/16 13:30 (	03/16/16	Surface Water	Same As Above
H16030296-014	MWB-SBC	03/15/16 14:30 (	03/16/16	Surface Water	Same As Above
H16030296-015	SBC-P2	03/15/16 14:45 (	03/16/16	Surface Water	Same As Above
H16030296-016	MCWC-MWB	03/15/16 16:00 (	03/16/16	Surface Water	Same As Above
H16030296-017	MCWC-MWB Duplicate	03/15/16 16:00 (	03/16/16	Surface Water	Same As Above
H16030296-018	CFR-84F	03/14/16 10:00 (	03/16/16	Surface Water	Mercury, Total Recoverable Digestion, Mercury by CVAA Subcontracted, Analytics
H16030296-019	Methyl Mercury TB	03/14/16 8:45 (	03/16/16	Trip Blank	Subcontracted, Analytics
H16030296-020	CFR-116A Sediment Sieve <0.065mm	03/14/16 8:45 (	03/16/16	Sediment	Metals by ICP/ICPMS, Total Percent Moisture Digestion, Total Metals Sieve Analysis, Wet Soil Preparation
H16030296-021	LBR-CFR-02 Sediment Sieve <0.065mm	03/14/16 13:15 (	03/16/16	Sediment	Metals by ICP/ICPMS, Total Percent Moisture Digestion, Total Metals Sieve Analysis, Wet
H16030296-022	CFR-34 Sediment Sieve <0.065mm	03/14/16 14:30 (	03/16/16	Sediment	Same As Above
H16030296-023	CFR-27H Sediment Sieve <0.065mm	03/14/16 16:00 (	03/16/16	Sediment	Same As Above
H16030296-024	CFR-11F Sediment Sieve <0.065mm	03/15/16 8:45	03/16/16	Sediment	Same As Above
H16030296-025	CFR-07D Sediment Sieve <0.065mm	03/15/16 10:15 (	03/16/16	Sediment	Same As Above

# ANALYTICAL SUMMARY REPORT

H16030296-026	CFR-03A Sediment Sieve <0.065mm	03/15/16 11:15 0	3/16/16	Sediment	Same As Above
H16030296-027	WSC-SBC Sediment Sieve <0.065mm	03/15/16 12:30 0	3/16/16	Sediment	Same As Above
H16030296-028	SS-25 Sediment Sieve <0.065mm	03/15/16 13:30 0	3/16/16	Sediment	Same As Above
H16030296-029	MWB-SBC Sediment Sieve <0.065mm	03/15/16 14:30 0	3/16/16	Sediment	Same As Above
H16030296-030	MCWC-MWB Sediment Sieve <0.065mm	03/15/16 16:00 0	3/16/16	Sediment	Same As Above
H16030296-031	CFR-27H Duplicate Sediment Sieve <0.065mm	03/14/16 16:00 0 1	3/16/16	Sediment	Same As Above
H16030296-032	CFR-11F Duplicate Sediment Sieve <0.065mm	03/15/16 8:45 0 1	3/16/16	Sediment	Same As Above
H16030296-033	LC-7.5 Sediment Sieve <0.065mm	03/15/16 17:30 0	3/16/16	Sediment	Same As Above
H16030296-034	RTC-1.5 Sediment Sieve <0.065mm	03/15/16 18:00 0	3/16/16	Sediment	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. 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:



Revised Date: 04/26/16

CLIENT:MT DEQ-Federal SuperfundProject:CFR Monitoring-474374Work Order:H16030296

Report Date: 04/21/16

# **CASE NARRATIVE**

Tests associated with analyst identified as ELI-CA were subcontracted to Energy Laboratories, 2393 Salt Creek Hwy., Casper, WY, EPA Number WY00002 and WY00937.

Methylmercury samples were subcontracted to Brooks Applied Labs. The report is attached. abc 4/20/16

Revised report due to Hardness was not printing for sample 011. wj 4/26/16



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-116ALab ID:H16030296-001Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/14/16 08:45 Report Date: 04/21/16 DateReceived: 03/16/16 Revised Date: 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	21	mg/L		1		A2540 D	03/16/16 15:21 / edp		I24 (14410200)_160316B	: 10	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	03/17/16 16:58 / SR		PHSC_101-H_160317A :	179	R113714
Bicarbonate as HCO3	140	mg/L		4		A2320 B	03/17/16 16:58 / SR		PHSC_101-H_160317A :	179	R113714
Chloride	4	mg/L		1		E300.0	03/17/16 15:09 / SR		IC102-H_160317A	: 18	R113754
Sulfate	51	mg/L		1		E300.0	03/17/16 15:09 / SR		IC102-H_160317A	: 18	R113754
Hardness as CaCO3	154	mg/L		1		A2340 B	03/18/16 13:22 / abc		CALC_160321A	: 51	R113829
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.8	mg/L		0.5		A5310 C	03/21/16 16:29 / eli-c		SUB-C21012	0:4	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:31 / cm		FIA203-HE_160321A	: 19	R113786
Nitrogen, Nitrate+Nitrite as N	0.02	mg/L		0.02		E353.2	03/18/16 09:42 / cm		FIA203-HE_160318A	: 14	R113757
Nitrogen, Total	0.33	mg/L		0.05		A4500 N-C	03/18/16 10:51 / cm	03/18/16 08:49	FIA203-HE_160318B	: 13	32307
Phosphorus, Total as P	0.025	mg/L		0.003		E365.1	03/17/16 13:35 / cm	03/17/16 12:58	FIA202-HE_160317B	: 21	32295
METALS, DISSOLVED											
Arsenic	0.006	mg/L		0.001		E200.8	03/18/16 20:26 / dck		ICPMS204-B_160318A :	114	R113783
Cadmium	ND	mg/L		0.00003		E200.8	03/18/16 20:26 / dck		ICPMS204-B_160318A :	114	R113783
Copper	0.003	mg/L		0.001		E200.8	03/18/16 20:26 / dck		ICPMS204-B_160318A :	114	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 20:26 / dck		ICPMS204-B_160318A :	114	R113783
Zinc	ND	mg/L		0.008		E200.8	03/21/16 22:27 / dck		ICPMS204-B_160321A :	180	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	0.007	mg/L		0.001		E200.8	03/18/16 20:39 / dck	03/17/16 16:41	ICPMS204-B_160318A :	118	32303
Cadmium	0.00009	mg/L		0.00003		E200.8	03/18/16 20:39 / dck	03/17/16 16:41	ICPMS204-B_160318A :	118	32303
Calcium	44	mg/L		1		E200.7	03/18/16 13:22 / sld	03/17/16 16:41	ICP2-HE_160318B	: 49	32303
Copper	0.014	mg/L		0.001		E200.8	03/18/16 20:39 / dck	03/17/16 16:41	ICPMS204-B_160318A :	118	32303
Lead	0.0023	mg/L		0.0003		E200.8	03/18/16 20:39 / dck	03/17/16 16:41	ICPMS204-B_160318A :	118	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Projec	t: CFR Monitoring-	474374		
Client Sample ID:	CFR-116A	Collection Dat	<b>e:</b> 03/14/16 08:45	DateReceived: 0	)3/16/16	
Lab ID:	H16030296-001	Report Dat	<b>e:</b> 04/21/16	Revised Date: 0	)4/26/16	
Matrix:	Surface Water					
					Run	

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVERABLE												-
Magnesium	11	mg/L		1		E200.7	03/18/16 13:22 / sld (	03/17/16 16:41	ICP2-HE_160318B	: 49	32303	
Potassium	2	mg/L		1		E200.7	03/18/16 13:22 / sld (	03/17/16 16:41	ICP2-HE_160318B	: 49	32303	
Sodium	9	mg/L		1		E200.7	03/18/16 13:22 / sld (	03/17/16 16:41	ICP2-HE_160318B	: 49	32303	
Zinc	0.022	mg/L		800.0		E200.8	03/18/16 20:39 / dck (	03/17/16 16:41	ICPMS204-B_160318A :	118	32303	



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:Field Blank #1 FC-CFRLab ID:H16030296-002Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/14/16 11:00

Report Date: 04/21/16

DateReceived: 03/16/16 Revised Date: 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	ND	mg/L		1		A2540 D	03/16/16 15:21 / edp		124 (14410200)_1603	16B : 11	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	03/17/16 17:03 / SR		PHSC_101-H_16031	7A : 181	R113714
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	03/17/16 17:03 / SR		PHSC_101-H_16031	7A : 181	R113714
Chloride	ND	mg/L		1		E300.0	03/17/16 15:20 / SR		IC102-H_1603	17A : 19	R113754
Sulfate	ND	mg/L		1		E300.0	03/17/16 15:20 / SR		IC102-H_1603	17A : 19	R113754
Hardness as CaCO3	ND	mg/L		1		A2340 B	03/21/16 15:43 / sld		WATERCALC_160	321B : 2	R113836
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	ND	mg/L		0.5		A5310 C	03/21/16 17:22 / eli-c		SUB-C21	0120 : 7	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:32 / cm		FIA203-HE_1603	21A : 20	R113786
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	03/18/16 09:44 / cm		FIA203-HE_1603	18A : 15	R113757
Nitrogen, Total	ND	mg/L		0.05		A4500 N-C	03/18/16 10:54 / cm	03/18/16 08:49	FIA203-HE_1603	18B : 16	32307
Phosphorus, Total as P	ND	mg/L		0.003		E365.1	03/17/16 13:38 / cm	03/17/16 12:58	FIA202-HE_1603	17B : 24	32295
METALS, DISSOLVED											
Arsenic	ND	mg/L		0.001		E200.8	03/18/16 20:55 / dck		ICPMS204-B_16031	8A : 123	R113783
Cadmium	ND	mg/L		0.00003		E200.8	03/18/16 20:55 / dck		ICPMS204-B_16031	8A : 123	R113783
Copper	ND	mg/L		0.001		E200.8	03/18/16 20:55 / dck		ICPMS204-B_16031	8A : 123	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 20:55 / dck		ICPMS204-B_16031	8A : 123	R113783
Zinc	ND	mg/L		0.008		E200.8	03/21/16 22:31 / dck		ICPMS204-B_16032	1A : 181	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.001		E200.8	03/18/16 20:59 / dck	03/17/16 16:41	ICPMS204-B_16031	8A : 124	32303
Cadmium	ND	mg/L		0.00003		E200.8	03/18/16 20:59 / dck	03/17/16 16:41	ICPMS204-B_16031	8A : 124	32303
Calcium	ND	mg/L		1		E200.7	03/18/16 13:26 / sld	03/17/16 16:41	ICP2-HE_1603	18B : 50	32303
Copper	ND	mg/L		0.001		E200.8	03/18/16 20:59 / dck	03/17/16 16:41	ICPMS204-B_16031	8A : 124	32303
Lead	ND	mg/L		0.0003		E200.8	03/18/16 20:59 / dck	03/17/16 16:41	ICPMS204-B_16031	8A : 124	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Projec	t: CFR Monitoring-4743	374		
Client Sample ID:	Field Blank #1 FC-CFR	Collection Dat	e: 03/14/16 11:00	DateReceived:	03/16/16	
Lab ID:	H16030296-002	Report Dat	<b>e:</b> 04/21/16	Revised Date:	04/26/16	
Matrix:	Surface Water					
Client Sample ID: Lab ID: Matrix:	Field Blank #1 FC-CFR H16030296-002 Surface Water	Collection Dat Report Dat	e: 03/14/16 11:00 e: 04/21/16	DateReceived: Revised Date:	03/16/16 04/26/16	

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID	
METALS, TOTAL RECOVERABLE												
Magnesium	ND	mg/L		1		E200.7	03/18/16 13:26 / sld (	03/17/16 16:41	ICP2-HE_160318	3B : 50	32303	
Mercury	ND	mg/L		5E-06		E245.1	03/21/16 11:36 / rgk (	03/17/16 15:36	HGCV202-H_16032	IA:18	32298	
Potassium	ND	mg/L		1		E200.7	03/18/16 13:26 / sld (	03/17/16 16:41	ICP2-HE_160318	3B : 50	32303	
Sodium	ND	mg/L		1		E200.7	03/18/16 13:26 / sld (	03/17/16 16:41	ICP2-HE_160318	3B : 50	32303	
Zinc	ND	mg/L		0.008		E200.8	03/18/16 20:59 / dck (	03/17/16 16:41	ICPMS204-B_160318/	A:124	32303	



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:FC-CFRLab ID:H16030296-003Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/14/16 11:30 Report Date: 04/21/16 DateReceived: 03/16/16 Revised Date: 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	15	mg/L		1		A2540 D	03/16/16 15:21 / edp		124 (14410200)_160316	6B : 12	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	140	mg/L		4		A2320 B	03/17/16 17:09 / SR		PHSC_101-H_1603174	A : 183	R113714
Bicarbonate as HCO3	170	mg/L		4		A2320 B	03/17/16 17:09 / SR		PHSC_101-H_160317/	A : 183	R113714
Chloride	3	mg/L		1		E300.0	03/17/16 15:31 / SR		IC102-H_160317	7A : 20	R113754
Sulfate	18	mg/L		1		E300.0	03/17/16 15:31 / SR		IC102-H_160317	7A : 20	R113754
Hardness as CaCO3	147	mg/L		1		A2340 B	03/18/16 14:07 / abc		CALC_160321	1A : 73	R113829
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.9	mg/L		0.5		A5310 C	03/21/16 17:42 / eli-c		SUB-C210	120 : 8	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:33 / cm		FIA203-HE_160321	1A : 21	R113786
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	03/18/16 09:47 / cm		FIA203-HE_160318	3A : 18	R113757
Nitrogen, Total	0.29	mg/L		0.05		A4500 N-C	03/18/16 10:55 / cm	03/18/16 08:49	FIA203-HE_160318	3B : 17	32307
Phosphorus, Total as P	0.027	mg/L		0.003		E365.1	03/17/16 13:39 / cm	03/17/16 12:58	FIA202-HE_160317	7B : 25	32295
METALS, DISSOLVED											
Arsenic	0.007	mg/L		0.001		E200.8	03/18/16 21:02 / dck		ICPMS204-B_160318/	A : 125	R113783
Cadmium	ND	mg/L		0.00003		E200.8	03/18/16 21:02 / dck		ICPMS204-B_160318/	A : 125	R113783
Copper	ND	mg/L		0.001		E200.8	03/18/16 21:02 / dck		ICPMS204-B_160318/	A : 125	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 21:02 / dck		ICPMS204-B_160318/	A : 125	R113783
Zinc	ND	mg/L		0.008		E200.8	03/21/16 22:44 / dck		ICPMS204-B_160321/	A : 185	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	0.008	mg/L		0.001		E200.8	03/18/16 21:05 / dck	03/17/16 16:41	ICPMS204-B_1603184	A:126	32303
Cadmium	0.00003	mg/L		0.00003		E200.8	03/18/16 21:05 / dck	03/17/16 16:41	ICPMS204-B_1603184	A:126	32303
Calcium	39	mg/L		1		E200.7	03/18/16 14:07 / sld	03/17/16 16:41	ICP2-HE_160318	3B : 61	32303
Copper	0.002	mg/L		0.001		E200.8	03/18/16 21:05 / dck	03/17/16 16:41	ICPMS204-B_1603184	A:126	32303
Lead	0.0037	mg/L		0.0003		E200.8	03/18/16 21:05 / dck	03/17/16 16:41	ICPMS204-B_1603184	A : 126	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



### LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project: CFR Monitor	ing-474374
Client Sample ID:	FC-CFR	Collection Date: 03/14/16 11	.30 DateReceived: 03/16/16
Lab ID:	H16030296-003	Report Date: 04/21/16	Revised Date: 04/26/16
Matrix:	Surface Water		

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	12	mg/L		1		E200.7	03/18/16 14:07 / sld	03/17/16 16:41	ICP2-HE_160318	3B : 61	32303
Mercury	0.00014	mg/L		5E-06		E245.1	03/21/16 11:39 / rgk	03/17/16 15:36	HGCV202-H_16032	IA:19	32298
Potassium	3	mg/L		1		E200.7	03/18/16 14:07 / sld	03/17/16 16:41	ICP2-HE_160318	3B : 61	32303
Sodium	8	mg/L		1		E200.7	03/18/16 14:07 / sld	03/17/16 16:41	ICP2-HE_160318	3B : 61	32303
Zinc	0.012	mg/L		0.008		E200.8	03/18/16 21:05 / dck	03/17/16 16:41	ICPMS204-B_160318/	A:126	32303



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:FC-CFR DuplicateLab ID:H16030296-004Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/14/16 11:30 Report Date: 04/21/16 DateReceived: 03/16/16 Revised Date: 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	14	mg/L		1		A2540 D	03/16/16 15:22 / edp		124 (14410200)_160316	B : 15	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	140	mg/L		4		A2320 B	03/17/16 17:14 / SR		PHSC_101-H_160317A	: 185	R113714
Bicarbonate as HCO3	170	mg/L		4		A2320 B	03/17/16 17:14 / SR		PHSC_101-H_160317A	: 185	R113714
Chloride	3	mg/L		1		E300.0	03/17/16 15:43 / SR		IC102-H_160317	A : 21	R113754
Sulfate	18	mg/L		1		E300.0	03/17/16 15:43 / SR		IC102-H_160317	A : 21	R113754
Hardness as CaCO3	146	mg/L		1		A2340 B	03/18/16 14:11 / abc		CALC_160321	A : 84	R113829
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.9	mg/L		0.5		A5310 C	03/21/16 18:02 / eli-c		SUB-C2101	20:9	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:34 / cm		FIA203-HE_160321	A : 22	R113786
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	03/18/16 09:48 / cm		FIA203-HE_160318	A : 19	R113757
Nitrogen, Total	0.25	mg/L		0.05		A4500 N-C	03/18/16 10:56 / cm	03/18/16 08:49	FIA203-HE_160318	B : 18	32307
Phosphorus, Total as P	0.021	mg/L		0.003		E365.1	03/17/16 13:42 / cm	03/17/16 12:58	FIA202-HE_160317	B : 28	32295
METALS, DISSOLVED											
Arsenic	0.007	mg/L		0.001		E200.8	03/18/16 21:08 / dck		ICPMS204-B_160318A	: 127	R113783
Cadmium	ND	mg/L		0.00003		E200.8	03/18/16 21:08 / dck		ICPMS204-B_160318A	: 127	R113783
Copper	ND	mg/L		0.001		E200.8	03/18/16 21:08 / dck		ICPMS204-B_160318A	: 127	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 21:08 / dck		ICPMS204-B_160318A	: 127	R113783
Zinc	ND	mg/L		0.008		E200.8	03/21/16 22:47 / dck		ICPMS204-B_160321A	: 186	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	0.009	mg/L		0.001		E200.8	03/18/16 21:12 / dck	03/17/16 16:41	ICPMS204-B_160318A	: 128	32303
Cadmium	0.00003	mg/L		0.00003		E200.8	03/18/16 21:12 / dck	03/17/16 16:41	ICPMS204-B_160318A	: 128	32303
Calcium	39	mg/L		1		E200.7	03/18/16 14:11 / sld	03/17/16 16:41	ICP2-HE_160318	B : 62	32303
Copper	0.002	mg/L		0.001		E200.8	03/18/16 21:12 / dck	03/17/16 16:41	ICPMS204-B_160318A	: 128	32303
Lead	0.0038	mg/L		0.0003		E200.8	03/18/16 21:12 / dck	03/17/16 16:41	ICPMS204-B_160318A	: 128	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	374		
Client Sample ID:	FC-CFR Duplicate	Collection Date	: 03/14/16 11:30	DateReceived:	03/16/16	
Lab ID:	H16030296-004	Report Date	: 04/21/16	Revised Date:	04/26/16	
Matrix:	Surface Water					

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	12	mg/L		1		E200.7	03/18/16 14:11 / sld	03/17/16 16:41	ICP2-HE_160318	3B : 62	32303
Mercury	0.00020	mg/L	:	5E-06		E245.1	03/21/16 11:42 / rgk	03/17/16 15:36	HGCV202-H_16032	A : 20	32298
Potassium	3	mg/L		1		E200.7	03/18/16 14:11 / sld	03/17/16 16:41	ICP2-HE_160318	3B : 62	32303
Sodium	8	mg/L		1		E200.7	03/18/16 14:11 / sld	03/17/16 16:41	ICP2-HE_160318	3B : 62	32303
Zinc	0.015	mg/L		0.008		E200.8	03/18/16 21:12 / dck	03/17/16 16:41	ICPMS204-B_160318/	A:128	32303



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:LBR-CFR-02Lab ID:H16030296-005Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/14/16 13:15 Report Date: 04/21/16 DateReceived: 03/16/16 Revised Date: 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	5	mg/L		1		A2540 D	03/16/16 15:22 / edp		124 (14410200)_160316	B : 16	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	03/17/16 17:20 / SR		PHSC_101-H_160317A	. : 187	R113714
Bicarbonate as HCO3	130	mg/L		4		A2320 B	03/17/16 17:20 / SR		PHSC_101-H_160317A	. : 187	R113714
Chloride	2	mg/L		1		E300.0	03/17/16 15:54 / SR		IC102-H_160317	A : 22	R113754
Sulfate	18	mg/L		1		E300.0	03/17/16 15:54 / SR		IC102-H_160317	A : 22	R113754
Hardness as CaCO3	114	mg/L		1		A2340 B	03/18/16 14:14 / abc		CALC_160321	A : 95	R113829
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.2	mg/L		0.5		A5310 C	03/21/16 18:21 / eli-c		SUB-C21012	20 : 10	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:36 / cm		FIA203-HE_160321	A : 23	R113786
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	03/18/16 09:49 / cm		FIA203-HE_160318	A : 20	R113757
Nitrogen, Total	0.15	mg/L		0.05		A4500 N-C	03/18/16 10:58 / cm	03/18/16 08:49	FIA203-HE_160318	B:19	32307
Phosphorus, Total as P	0.021	mg/L		0.003		E365.1	03/17/16 13:45 / cm	03/17/16 12:58	FIA202-HE_160317	B : 31	32295
METALS, DISSOLVED											
Arsenic	0.004	mg/L		0.001		E200.8	03/18/16 21:15 / dck		ICPMS204-B_160318A	: 129	R113783
Cadmium	ND	mg/L		0.00003		E200.8	03/18/16 21:15 / dck		ICPMS204-B_160318A	: 129	R113783
Copper	ND	mg/L		0.001		E200.8	03/18/16 21:15 / dck		ICPMS204-B_160318A	: 129	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 21:15 / dck		ICPMS204-B_160318A	. : 129	R113783
Zinc	ND	mg/L		0.008		E200.8	03/21/16 22:50 / dck		ICPMS204-B_160321A	. : 187	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	0.004	mg/L		0.001		E200.8	03/18/16 21:28 / dck	03/17/16 16:41	ICPMS204-B_160318A	: 133	32303
Cadmium	ND	mg/L		0.00003		E200.8	03/18/16 21:28 / dck	03/17/16 16:41	ICPMS204-B_160318A	. : 133	32303
Calcium	33	mg/L		1		E200.7	03/18/16 14:14 / sld	03/17/16 16:41	ICP2-HE_160318	B : 63	32303
Copper	0.001	mg/L		0.001		E200.8	03/18/16 21:28 / dck	03/17/16 16:41	ICPMS204-B_160318A	. : 133	32303
Lead	ND	mg/L		0.0003		E200.8	03/18/16 21:28 / dck	03/17/16 16:41	ICPMS204-B_160318A	. : 133	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



### LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project: CFR Monitoring-474	374
Client Sample ID:	LBR-CFR-02	Collection Date: 03/14/16 13:15	DateReceived: 03/16/16
Lab ID:	H16030296-005	Report Date: 04/21/16	Revised Date: 04/26/16
Matrix:	Surface Water		
			Run

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	8	mg/L		1		E200.7	03/18/16 14:14 / sld (	03/17/16 16:41	ICP2-HE_160318B	: 63	32303
Potassium	2	mg/L		1		E200.7	03/18/16 14:14 / sld (	03/17/16 16:41	ICP2-HE_160318B	: 63	32303
Sodium	6	mg/L		1		E200.7	03/18/16 14:14 / sld (	03/17/16 16:41	ICP2-HE_160318B	: 63	32303
Zinc	ND	mg/L		800.0		E200.8	03/18/16 21:28 / dck (	03/17/16 16:41	ICPMS204-B_160318A :	133	32303



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-34Lab ID:H16030296-006Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/14/16 14:30 Report Date: 04/21/16 DateReceived: 03/16/16 Revised Date: 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	24	mg/L		1		A2540 D	03/16/16 15:23 / edp		124 (14410200)_160316	6B : 17	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	150	mg/L		4		A2320 B	03/17/16 17:25 / SR		PHSC_101-H_160317/	A:189	R113714
Bicarbonate as HCO3	180	mg/L		4		A2320 B	03/17/16 17:25 / SR		PHSC_101-H_1603174	A:189	R113714
Chloride	11	mg/L		1		E300.0	03/17/16 16:05 / SR		IC102-H_160317	'A : 23	R113754
Sulfate	96	mg/L		1		E300.0	03/17/16 16:05 / SR		IC102-H_160317	'A : 23	R113754
Hardness as CaCO3	218	mg/L		1		A2340 B	03/18/16 14:18 / abc		CALC_1603214	A:106	R113829
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.3	mg/L		0.5		A5310 C	03/21/16 18:42 / eli-c		SUB-C21012	20 : 11	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:39 / cm		FIA203-HE_160321	A : 26	R113786
Nitrogen, Nitrate+Nitrite as N	0.14	mg/L		0.02		E353.2	03/18/16 09:51 / cm		FIA203-HE_160318	BA : 21	R113757
Nitrogen, Total	0.50	mg/L		0.05		A4500 N-C	03/18/16 10:59 / cm	03/18/16 08:49	FIA203-HE_160318	3B : 20	32307
Phosphorus, Total as P	0.029	mg/L		0.003		E365.1	03/17/16 13:46 / cm	03/17/16 12:58	FIA202-HE_160317	'B : 32	32295
METALS, DISSOLVED											
Arsenic	0.011	mg/L		0.001		E200.8	03/18/16 21:31 / dck		ICPMS204-B_1603184	A:134	R113783
Cadmium	0.00004	mg/L		0.00003		E200.8	03/18/16 21:31 / dck		ICPMS204-B_160318A	A:134	R113783
Copper	0.007	mg/L		0.001		E200.8	03/18/16 21:31 / dck		ICPMS204-B_1603184	A:134	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 21:31 / dck		ICPMS204-B_160318/	A : 134	R113783
Zinc	ND	mg/L		0.008		E200.8	03/21/16 22:54 / dck		ICPMS204-B_160321/	\:188	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	0.014	mg/L		0.001		E200.8	03/18/16 21:34 / dck	03/17/16 16:41	ICPMS204-B_1603184	A : 135	32303
Cadmium	0.00018	mg/L		0.00003		E200.8	03/18/16 21:34 / dck	03/17/16 16:41	ICPMS204-B_1603184	A : 135	32303
Calcium	64	mg/L		1		E200.7	03/18/16 14:18 / sld	03/17/16 16:41	ICP2-HE_160318	3B : 64	32303
Copper	0.034	mg/L		0.001		E200.8	03/18/16 21:34 / dck	03/17/16 16:41	ICPMS204-B_1603184	A : 135	32303
Lead	0.0044	mg/L		0.0003		E200.8	03/18/16 21:34 / dck	03/17/16 16:41	ICPMS204-B_1603184	A : 135	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund Project: CFR Monitoring-474374						
Client Sample ID:	CFR-34	Collection Date	: 03/14/16 14:30	DateReceived:	03/16/16		
Lab ID:	H16030296-006	Report Date	: 04/21/16	Revised Date:	04/26/16		
Matrix:	Surface Water						
					Run		

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVERABLE												-
Magnesium	14	mg/L		1		E200.7	03/18/16 14:18 / sld (	03/17/16 16:41	ICP2-HE_160318B	: 64	32303	
Potassium	3	mg/L		1		E200.7	03/18/16 14:18 / sld (	03/17/16 16:41	ICP2-HE_160318B	: 64	32303	
Sodium	16	mg/L		1		E200.7	03/18/16 14:18 / sld (	03/17/16 16:41	ICP2-HE_160318B	: 64	32303	
Zinc	0.034	mg/L		800.0		E200.8	03/18/16 21:34 / dck (	03/17/16 16:41	ICPMS204-B_160318A :	135	32303	



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-27HLab ID:H16030296-007Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/14/16 16:00 Report Date: 04/21/16 DateReceived: 03/16/16 Revised Date: 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	22	mg/L		1		A2540 D	03/16/16 15:23 / edp		124 (14410200)_1603	16B : 18	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	150	mg/L		4		A2320 B	03/17/16 17:31 / SR		PHSC_101-H_16031	7A : 191	R113714
Bicarbonate as HCO3	180	mg/L		4		A2320 B	03/17/16 17:31 / SR		PHSC_101-H_16031	7A : 191	R113714
Chloride	11	mg/L		1		E300.0	03/17/16 16:16 / SR		IC102-H_1603	17A : 24	R113754
Sulfate	99	mg/L		1		E300.0	03/17/16 16:16 / SR		IC102-H_1603	17A : 24	R113754
Hardness as CaCO3	220	mg/L		1		A2340 B	03/18/16 14:22 / abc		CALC_16032	1A : 117	R113829
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.9	mg/L		0.5		A5310 C	03/21/16 19:02 / eli-c		SUB-C210	120 : 12	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:43 / cm		FIA203-HE_1603	21A : 29	R113786
Nitrogen, Nitrate+Nitrite as N	0.18	mg/L		0.02		E353.2	03/17/16 09:42 / cm		FIA203-HE_1603	17A : 40	R113736
Nitrogen, Total	0.44	mg/L		0.05		A4500 N-C	03/18/16 11:00 / cm	03/18/16 08:49	FIA203-HE_1603	18B : 21	32307
Phosphorus, Total as P	0.024	mg/L		0.003		E365.1	03/17/16 13:47 / cm	03/17/16 12:58	FIA202-HE_1603	17B : 33	32295
METALS, DISSOLVED											
Arsenic	0.010	mg/L		0.001		E200.8	03/18/16 21:38 / dck		ICPMS204-B_16031	8A : 136	R113783
Cadmium	0.00005	mg/L		0.00003		E200.8	03/18/16 21:38 / dck		ICPMS204-B_16031	8A : 136	R113783
Copper	0.007	mg/L		0.001		E200.8	03/18/16 21:38 / dck		ICPMS204-B_16031	8A : 136	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 21:38 / dck		ICPMS204-B_16031	8A : 136	R113783
Zinc	ND	mg/L		0.008		E200.8	03/21/16 23:07 / dck		ICPMS204-B_16032	1A : 192	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	0.014	mg/L		0.001		E200.8	03/18/16 21:41 / dck	03/17/16 16:41	ICPMS204-B_16031	8A : 137	32303
Cadmium	0.00017	mg/L		0.00003		E200.8	03/18/16 21:41 / dck	03/17/16 16:41	ICPMS204-B_16031	8A : 137	32303
Calcium	65	mg/L		1		E200.7	03/18/16 14:22 / sld	03/17/16 16:41	ICP2-HE_1603	18B : 65	32303
Copper	0.032	mg/L		0.001		E200.8	03/18/16 21:41 / dck	03/17/16 16:41	ICPMS204-B_16031	8A : 137	32303
Lead	0.0039	mg/L		0.0003		E200.8	03/18/16 21:41 / dck	03/17/16 16:41	ICPMS204-B_16031	8A : 137	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project	CFR Monitoring-47	74374	
Client Sample ID:	CFR-27H	Collection Date	: 03/14/16 16:00	DateReceived: 03/16/16	
Lab ID:	H16030296-007	Report Date	: 04/21/16	Revised Date: 04/26/16	
Matrix:	Surface Water				
				Run	

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVERABLE												-
Magnesium	14	mg/L		1		E200.7	03/18/16 14:22 / sld (	03/17/16 16:41	ICP2-HE_160318	B : 65	32303	
Potassium	3	mg/L		1		E200.7	03/18/16 14:22 / sld (	03/17/16 16:41	ICP2-HE_160318	B : 65	32303	
Sodium	16	mg/L		1		E200.7	03/18/16 14:22 / sld (	03/17/16 16:41	ICP2-HE_160318	B : 65	32303	
Zinc	0.033	mg/L		0.008		E200.8	03/18/16 21:41 / dck(	03/17/16 16:41	ICPMS204-B 160318A	: 137	32303	



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-11FLab ID:H16030296-008Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/15/16 08:45 Report Date: 04/21/16 DateReceived: 03/16/16 Revised Date: 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	18	mg/L		1		A2540 D	03/16/16 15:23 / edp		124 (14410200)_16031	6B : 19	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	140	mg/L		4		A2320 B	03/17/16 17:36 / SR		PHSC_101-H_160317	A : 193	R113714
Bicarbonate as HCO3	180	mg/L		4		A2320 B	03/17/16 17:36 / SR		PHSC_101-H_160317	A : 193	R113714
Chloride	14	mg/L		1		E300.0	03/17/16 16:27 / SR		IC102-H_16031	7A : 25	R113754
Sulfate	120	mg/L		1		E300.0	03/17/16 16:27 / SR		IC102-H_16031	7A : 25	R113754
Hardness as CaCO3	244	mg/L		1		A2340 B	03/18/16 14:26 / abc		CALC_160321	A : 128	R113829
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.1	mg/L		0.5		A5310 C	03/21/16 19:22 / eli-c		SUB-C2101	20 : 13	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:44 / cm		FIA203-HE_16032	1A : 30	R113786
Nitrogen, Nitrate+Nitrite as N	0.14	mg/L		0.02		E353.2	03/17/16 09:45 / cm		FIA203-HE_16031	7A : 43	R113736
Nitrogen, Total	0.50	mg/L		0.05		A4500 N-C	03/18/16 11:01 / cm	03/18/16 08:49	FIA203-HE_16031	8B : 22	32307
Phosphorus, Total as P	0.027	mg/L		0.003		E365.1	03/17/16 13:48 / cm	03/17/16 12:58	FIA202-HE_16031	7B : 34	32295
METALS, DISSOLVED											
Arsenic	0.012	mg/L		0.001		E200.8	03/18/16 21:44 / dck		ICPMS204-B_160318	A : 138	R113783
Cadmium	0.00004	mg/L	(	0.00003		E200.8	03/18/16 21:44 / dck		ICPMS204-B_160318	A : 138	R113783
Copper	0.005	mg/L		0.001		E200.8	03/18/16 21:44 / dck		ICPMS204-B_160318	A : 138	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 21:44 / dck		ICPMS204-B_160318	A : 138	R113783
Zinc	0.008	mg/L		0.008		E200.8	03/21/16 23:10 / dck		ICPMS204-B_160321	A : 193	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	0.015	mg/L		0.001		E200.8	03/18/16 21:47 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 139	32303
Cadmium	0.00015	mg/L	(	0.00003		E200.8	03/18/16 21:47 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 139	32303
Calcium	70	mg/L		1		E200.7	03/18/16 14:26 / sld	03/17/16 16:41	ICP2-HE_16031	8B : 66	32303
Copper	0.023	mg/L		0.001		E200.8	03/18/16 21:47 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 139	32303
Lead	0.0032	mg/L		0.0003		E200.8	03/18/16 21:47 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 139	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Client:	ent: MT DEQ-Federal Superfund					Project:	CFR Monitoring				
Client Sample ID:	CFR-11F				Collec	tion Date:	03/15/16 08:45		DateReceived:	03/16/16	
Lab ID:	H16030296-008				Re	port Date:	04/21/16		<b>Revised Date:</b>	04/26/16	
Matrix:	Surface Water										
	_			 				_		Run	

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	16	mg/L		1		E200.7	03/18/16 14:26 / sld 0	03/17/16 16:41	ICP2-HE_160318	B:66	32303
Potassium	3	mg/L		1		E200.7	03/18/16 14:26 / sld 0	03/17/16 16:41	ICP2-HE_160318	B : 66	32303
Sodium	17	mg/L		1		E200.7	03/18/16 14:26 / sld 0	03/17/16 16:41	ICP2-HE_160318	B:66	32303
Zinc	0.027	ma/L		0.008		E200.8	03/18/16 21:47 / dck 0	03/17/16 16:41	ICPMS204-B 160318A	: 139	32303


# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-07DLab ID:H16030296-009Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/15/16 10:15 Report Date: 04/21/16 DateReceived: 03/16/16 Revised Date: 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	14	mg/L		1		A2540 D	03/16/16 15:23 / edp		124 (14410200)_160316	6B : 20	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	140	mg/L		4		A2320 B	03/17/16 17:42 / SR		PHSC_101-H_160317A	A:195	R113714
Bicarbonate as HCO3	170	mg/L		4		A2320 B	03/17/16 17:42 / SR		PHSC_101-H_160317A	A:195	R113714
Chloride	14	mg/L		1		E300.0	03/17/16 16:38 / SR		IC102-H_160317	'A : 26	R113754
Sulfate	121	mg/L		1		E300.0	03/17/16 16:38 / SR		IC102-H_160317	'A : 26	R113754
Hardness as CaCO3	239	mg/L		1		A2340 B	03/18/16 14:29 / abc		CALC_160321A	A : 139	R113829
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.1	mg/L		0.5		A5310 C	03/21/16 19:37 / eli-c		SUB-C21012	20 : 14	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:45 / cm		FIA203-HE_160321	A : 31	R113786
Nitrogen, Nitrate+Nitrite as N	0.13	mg/L		0.02		E353.2	03/17/16 09:47 / cm		FIA203-HE_160317	'A : 44	R113736
Nitrogen, Total	0.40	mg/L		0.05		A4500 N-C	03/18/16 11:02 / cm	03/18/16 08:49	FIA203-HE_160318	3B : 23	32307
Phosphorus, Total as P	0.023	mg/L		0.003		E365.1	03/17/16 13:49 / cm	03/17/16 12:58	FIA202-HE_160317	'B : 35	32295
METALS, DISSOLVED											
Arsenic	0.012	mg/L		0.001		E200.8	03/18/16 21:50 / dck		ICPMS204-B_160318A	A:140	R113783
Cadmium	0.00005	mg/L		0.00003		E200.8	03/18/16 21:50 / dck		ICPMS204-B_160318A	A:140	R113783
Copper	0.004	mg/L		0.001		E200.8	03/18/16 21:50 / dck		ICPMS204-B_160318A	A:140	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 21:50 / dck		ICPMS204-B_160318A	A:140	R113783
Zinc	ND	mg/L		0.008		E200.8	03/21/16 23:13 / dck		ICPMS204-B_160321A	\:194	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	0.015	mg/L		0.001		E200.8	03/18/16 22:10 / dck	03/17/16 16:41	ICPMS204-B_160318A	A:146	32303
Cadmium	0.00013	mg/L		0.00003		E200.8	03/18/16 22:10 / dck	03/17/16 16:41	ICPMS204-B_160318A	A:146	32303
Calcium	69	mg/L		1		E200.7	03/18/16 14:29 / sld	03/17/16 16:41	ICP2-HE_160318	3B : 67	32303
Copper	0.018	mg/L		0.001		E200.8	03/18/16 22:10 / dck	03/17/16 16:41	ICPMS204-B_160318A	A:146	32303
Lead	0.0026	mg/L		0.0003		E200.8	03/18/16 22:10 / dck	03/17/16 16:41	ICPMS204-B_160318A	A : 146	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Client:	t: MT DEQ-Federal Superfund		MT DEQ-Federal Superfund Project				CFR Monitoring-47		
Client Sample ID:	CFR-07D			Collection Date:	03/15/16 10:15	DateReceived:	03/16/16		
Lab ID:	H16030296-009			Report Date:	04/21/16	Revised Date:	04/26/16		
Matrix:	Surface Water								
							Run		

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVERABLE												
Magnesium	16	mg/L		1		E200.7	03/18/16 14:29 / sld 0	03/17/16 16:41	ICP2-HE_160318	B : 67	32303	
Potassium	3	mg/L		1		E200.7	03/18/16 14:29 / sld 0	03/17/16 16:41	ICP2-HE_160318	B : 67	32303	
Sodium	16	mg/L		1		E200.7	03/18/16 14:29 / sld 0	03/17/16 16:41	ICP2-HE_160318	B : 67	32303	
Zinc	0.022	ma/L		0.008		E200.8	03/18/16 22:10 / dck 0	03/17/16 16:41	ICPMS204-B 160318A	: 146	32303	



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-03ALab ID:H16030296-010Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/15/16 11:15 Report Date: 04/21/16 DateReceived: 03/16/16 Revised Date: 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	16	mg/L		1		A2540 D	03/16/16 15:24 / edp		124 (14410200)_1603	16B : 21	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	03/17/16 17:47 / SR		PHSC_101-H_16031	7A : 197	R113714
Bicarbonate as HCO3	150	mg/L		4		A2320 B	03/17/16 17:47 / SR		PHSC_101-H_16031	7A : 197	R113714
Chloride	18	mg/L		1		E300.0	03/17/16 16:49 / SR		IC102-H_1603	17A : 27	R113754
Sulfate	107	mg/L		1		E300.0	03/17/16 16:49 / SR		IC102-H_1603	17A : 27	R113754
Hardness as CaCO3	207	mg/L		1		A2340 B	03/18/16 14:33 / abc		CALC_16032	1A : 150	R113829
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.3	mg/L		0.5		A5310 C	03/21/16 20:32 / eli-c		SUB-C210	120 : 16	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:46 / cm		FIA203-HE_1603	21A : 32	R113786
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	03/17/16 09:48 / cm		FIA203-HE_1603	17A : 45	R113736
Nitrogen, Total	0.40	mg/L		0.05		A4500 N-C	03/18/16 11:04 / cm	03/18/16 08:49	FIA203-HE_1603	18B : 24	32307
Phosphorus, Total as P	0.029	mg/L		0.003		E365.1	03/17/16 13:50 / cm	03/17/16 12:58	FIA202-HE_1603	17B : 36	32295
METALS, DISSOLVED											
Arsenic	0.010	mg/L		0.001		E200.8	03/18/16 22:13 / dck		ICPMS204-B_160318	BA : 147	R113783
Cadmium	0.00004	mg/L		0.00003		E200.8	03/18/16 22:13 / dck		ICPMS204-B_160318	BA : 147	R113783
Copper	0.004	mg/L		0.001		E200.8	03/18/16 22:13 / dck		ICPMS204-B_160318	BA : 147	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 22:13 / dck		ICPMS204-B_160318	BA : 147	R113783
Zinc	ND	mg/L		0.008		E200.8	03/21/16 23:17 / dck		ICPMS204-B_16032	1A : 195	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	0.012	mg/L		0.001		E200.8	03/18/16 22:16 / dck	03/17/16 16:41	ICPMS204-B_160318	BA : 148	32303
Cadmium	0.00016	mg/L		0.00003		E200.8	03/18/16 22:16 / dck	03/17/16 16:41	ICPMS204-B_160318	BA : 148	32303
Calcium	60	mg/L		1		E200.7	03/18/16 14:33 / sld	03/17/16 16:41	ICP2-HE_1603	18B : 68	32303
Copper	0.015	mg/L		0.001		E200.8	03/18/16 22:16 / dck	03/17/16 16:41	ICPMS204-B_160318	BA : 148	32303
Lead	0.0022	mg/L		0.0003		E200.8	03/18/16 22:16 / dck	03/17/16 16:41	ICPMS204-B_160318	BA : 148	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:		4374	
Client Sample ID:	CFR-03A	Collection Date	: 03/15/16 11:15	DateReceived: 03/16/16	
Lab ID:	H16030296-010	Report Date	: 04/21/16	Revised Date: 04/26/16	
Matrix:	Surface Water				
				Run	

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVERABLE												
Magnesium	14	mg/L		1		E200.7	03/18/16 14:33 / sld (	03/17/16 16:41	ICP2-HE_160318E	8:68	32303	
Potassium	4	mg/L		1		E200.7	03/18/16 14:33 / sld 0	03/17/16 16:41	ICP2-HE_160318E	8:68	32303	
Sodium	17	mg/L		1		E200.7	03/18/16 14:33 / sld (	03/17/16 16:41	ICP2-HE_160318E	8:68	32303	
Zinc	0.022	mg/L		0.008		E200.8	03/18/16 22:16 / dck (	03/17/16 16:41	ICPMS204-B 160318A	: 148	32303	



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:Field Blank #2 WSC-SBCLab ID:H16030296-011Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/15/16 12:15 Report Date: 04/21/16 DateReceived: 03/16/16 Revised Date: 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	ND	mg/L		1		A2540 D	03/16/16 15:24 / edp		124 (14410200)_16031	6B : 22	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	03/17/16 17:52 / SR		PHSC_101-H_160317	A : 199	R113714
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	03/17/16 17:52 / SR		PHSC_101-H_160317	A:199	R113714
Chloride	ND	mg/L		1		E300.0	03/17/16 17:56 / SR		IC102-H_16031	7A : 33	R113754
Sulfate	ND	mg/L		1		E300.0	03/17/16 17:56 / SR		IC102-H_16031	7A : 33	R113754
Hardness as CaCO3	ND	mg/L		1		A2340 B	03/21/16 15:43 / sld		WATERCALC_16032	1B : 11	R113836
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	ND	mg/L		0.5		A5310 C	03/21/16 21:45 / eli-c		SUB-C2101	20 : 20	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:48 / cm		FIA203-HE_16032	1A : 33	R113786
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	03/17/16 09:49 / cm		FIA203-HE_16031	7A : 46	R113736
Nitrogen, Total	ND	mg/L		0.05		A4500 N-C	03/18/16 11:07 / cm	03/18/16 08:49	FIA203-HE_16031	8B : 27	32307
Phosphorus, Total as P	ND	mg/L		0.003		E365.1	03/17/16 13:51 / cm	03/17/16 12:58	FIA202-HE_16031	7B : 37	32295
METALS, DISSOLVED											
Arsenic	ND	mg/L		0.001		E200.8	03/18/16 22:33 / dck		ICPMS204-B_160318	A : 153	R113783
Cadmium	ND	mg/L		0.00003		E200.8	03/18/16 22:33 / dck		ICPMS204-B_160318	A : 153	R113783
Copper	ND	mg/L		0.001		E200.8	03/18/16 22:33 / dck		ICPMS204-B_160318	A : 153	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 22:33 / dck		ICPMS204-B_160318	A : 153	R113783
Zinc	0.009	mg/L		0.008		E200.8	03/21/16 23:20 / dck		ICPMS204-B_160321	A : 196	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.001		E200.8	03/18/16 22:36 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 154	32303
Cadmium	ND	mg/L		0.00003		E200.8	03/18/16 22:36 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 154	32303
Calcium	ND	mg/L		1		E200.7	03/18/16 14:55 / sld	03/17/16 16:41	ICP2-HE_16031	8B : 74	32303
Copper	ND	mg/L		0.001		E200.8	03/18/16 22:36 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 154	32303
Lead	ND	mg/L		0.0003		E200.8	03/18/16 22:36 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 154	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project: CF	FR Monitoring-4743			
Client Sample ID:	Field Blank #2 WSC-SBC	Collection Date: 03	3/15/16 12:15	DateReceived:	03/16/16	
Lab ID:	H16030296-011	Report Date: 0/	4/21/16	<b>Revised Date:</b>	04/26/16	
Matrix:	Surface Water					
					Bun	

Analyses	Result	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	ND	mg/L		1		E200.7	03/18/16 14:55 / sld	03/17/16 16:41	ICP2-HE_160318	3:74	32303
Potassium	ND	mg/L		1		E200.7	03/18/16 14:55 / sld	03/17/16 16:41	ICP2-HE_160318	3:74	32303
Sodium	ND	mg/L		1		E200.7	03/18/16 14:55 / sld	03/17/16 16:41	ICP2-HE_160318	3:74	32303
Zinc	ND	mg/L		0.008		E200.8	03/18/16 22:36 / dck	03/17/16 16:41	ICPMS204-B_160318A	: 154	32303



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:WSC-SBCLab ID:H16030296-012Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/15/16 12:30 Report Date: 04/21/16

6 Revised

**DateReceived:** 03/16/16 **Revised Date:** 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	2	mg/L		1		A2540 D	03/16/16 15:24 / edp		124 (14410200)_16031	6B : 23	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	140	mg/L		4		A2320 B	03/17/16 17:57 / SR		PHSC_101-H_160317.	A : 201	R113714
Bicarbonate as HCO3	170	mg/L		4		A2320 B	03/17/16 17:57 / SR		PHSC_101-H_160317.	A : 201	R113714
Chloride	2	mg/L		1		E300.0	03/17/16 18:07 / SR		IC102-H_16031	7A : 34	R113754
Sulfate	52	mg/L		1		E300.0	03/17/16 18:07 / SR		IC102-H_16031	7A : 34	R113754
Hardness as CaCO3	185	mg/L		1		A2340 B	03/18/16 15:32 / abc		CALC_160321	A : 172	R113829
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	0.8	mg/L		0.5		A5310 C	03/21/16 22:03 / eli-c		SUB-C2101	20 : 21	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:49 / cm		FIA203-HE_16032	1A : 34	R113786
Nitrogen, Nitrate+Nitrite as N	0.07	mg/L		0.02		E353.2	03/17/16 09:50 / cm		FIA203-HE_16031	7A : 47	R113736
Nitrogen, Total	0.17	mg/L		0.05		A4500 N-C	03/18/16 11:11 / cm	03/18/16 08:49	FIA203-HE_16031	8B : 30	32307
Phosphorus, Total as P	0.008	mg/L		0.003		E365.1	03/17/16 13:52 / cm	03/17/16 12:58	FIA202-HE_16031	7B : 38	32295
METALS, DISSOLVED											
Arsenic	0.005	mg/L		0.001		E200.8	03/18/16 22:39 / dck		ICPMS204-B_160318	A : 155	R113783
Cadmium	ND	mg/L		0.00003		E200.8	03/18/16 22:39 / dck		ICPMS204-B_160318	A : 155	R113783
Copper	0.002	mg/L		0.001		E200.8	03/18/16 22:39 / dck		ICPMS204-B_160318	A : 155	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 22:39 / dck		ICPMS204-B_160318	A : 155	R113783
Zinc	ND	mg/L		0.008		E200.8	03/21/16 23:23 / dck		ICPMS204-B_160321	A : 197	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	0.005	mg/L		0.001		E200.8	03/18/16 22:42 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 156	32303
Cadmium	0.00004	mg/L		0.00003		E200.8	03/18/16 22:42 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 156	32303
Calcium	56	mg/L		1		E200.7	03/18/16 15:32 / sld	03/17/16 16:41	ICP2-HE_16031	8B : 84	32303
Copper	0.005	mg/L		0.001		E200.8	03/18/16 22:42 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 156	32303
Lead	0.0003	mg/L		0.0003		E200.8	03/18/16 22:42 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 156	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project: CFR Monitoring-47437	<b>'</b> 4
Client Sample ID:	WSC-SBC	Collection Date: 03/15/16 12:30	DateReceived: 03/16/16
Lab ID:	H16030296-012	Report Date: 04/21/16	Revised Date: 04/26/16
Matrix:	Surface Water		
			Bun

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVERABLE												
Magnesium	11	mg/L		1		E200.7	03/18/16 15:32 / sld (	03/17/16 16:41	ICP2-HE_160318I	B : 84	32303	
Potassium	2	mg/L		1		E200.7	03/18/16 15:32 / sld (	03/17/16 16:41	ICP2-HE_160318I	B:84	32303	
Sodium	4	mg/L		1		E200.7	03/18/16 15:32 / sld (	03/17/16 16:41	ICP2-HE_160318I	B : 84	32303	
Zinc	ND	mg/L		0.008		E200.8	03/18/16 22:42 / dck (	03/17/16 16:41	ICPMS204-B_160318A	: 156	32303	



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:SS-25Lab ID:H16030296-013Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/15/16 13:30 Report Date: 04/21/16 DateReceived: 03/16/16 Revised Date: 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	11	mg/L		1		A2540 D	03/16/16 15:25 / edp		124 (14410200)_16031	6B : 28	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	03/17/16 18:02 / SR		PHSC_101-H_160317	A : 203	R113714
Bicarbonate as HCO3	120	mg/L		4		A2320 B	03/17/16 18:02 / SR		PHSC_101-H_160317	A : 203	R113714
Chloride	26	mg/L		1		E300.0	03/17/16 18:18 / SR		IC102-H_16031	7A : 35	R113754
Sulfate	116	mg/L		1		E300.0	03/17/16 18:18 / SR		IC102-H_16031	7A : 35	R113754
Hardness as CaCO3	201	mg/L		1		A2340 B	03/18/16 15:36 / abc		CALC_160321	A : 183	R113829
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.8	mg/L		0.5		A5310 C	03/21/16 22:23 / eli-c		SUB-C2101	20 : 22	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:50 / cm		FIA203-HE_16032	1A : 35	R113786
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	03/17/16 09:51 / cm		FIA203-HE_16031	7A : 48	R113736
Nitrogen, Total	0.51	mg/L		0.05		A4500 N-C	03/18/16 11:12 / cm	03/18/16 08:49	FIA203-HE_16031	8B : 31	32307
Phosphorus, Total as P	0.032	mg/L		0.003		E365.1	03/17/16 13:53 / cm	03/17/16 12:58	FIA202-HE_16031	7B : 39	32295
METALS, DISSOLVED											
Arsenic	0.009	mg/L		0.001		E200.8	03/18/16 22:46 / dck		ICPMS204-B_160318	A : 157	R113783
Cadmium	0.00003	mg/L		0.00003		E200.8	03/18/16 22:46 / dck		ICPMS204-B_160318	A : 157	R113783
Copper	0.003	mg/L		0.001		E200.8	03/18/16 22:46 / dck		ICPMS204-B_160318	A : 157	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 22:46 / dck		ICPMS204-B_160318	A : 157	R113783
Zinc	ND	mg/L		0.008		E200.8	03/21/16 23:36 / dck		ICPMS204-B_160321	A : 201	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	0.012	mg/L		0.001		E200.8	03/18/16 22:59 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 161	32303
Cadmium	0.00012	mg/L		0.00003		E200.8	03/18/16 22:59 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 161	32303
Calcium	58	mg/L		1		E200.7	03/18/16 15:36 / sld	03/17/16 16:41	ICP2-HE_16031	8B : 85	32303
Copper	0.008	mg/L		0.001		E200.8	03/18/16 22:59 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 161	32303
Lead	0.0016	mg/L		0.0003		E200.8	03/18/16 22:59 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 161	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project	CFR Monitoring-47	4374		
Client Sample ID:	SS-25	Collection Date	: 03/15/16 13:30	DateReceived:	03/16/16	
Lab ID:	H16030296-013	Report Date	: 04/21/16	Revised Date:	04/26/16	
Matrix:	Surface Water					
					Run	

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVERABLE												-
Magnesium	14	mg/L		1		E200.7	03/18/16 15:36 / sld (	03/17/16 16:41	ICP2-HE_160318	B : 85	32303	
Potassium	4	mg/L		1		E200.7	03/18/16 15:36 / sld (	03/17/16 16:41	ICP2-HE_160318	B : 85	32303	
Sodium	22	mg/L		1		E200.7	03/18/16 15:36 / sld (	03/17/16 16:41	ICP2-HE_160318	B : 85	32303	
Zinc	0.017	mg/L		0.008		E200.8	03/18/16 22:59 / dck (	03/17/16 16:41	ICPMS204-B 160318A	: 161	32303	



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:MWB-SBCLab ID:H16030296-014Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/15/16 14:30 Report Date: 04/21/16 DateReceived: 03/16/16 Revised Date: 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	4	mg/L		1		A2540 D	03/16/16 15:26 / edp		124 (14410200)_160316	6B : 29	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	03/17/16 18:30 / SR		PHSC_101-H_160317A	A:210	R113714
Bicarbonate as HCO3	140	mg/L		4		A2320 B	03/17/16 18:30 / SR		PHSC_101-H_160317A	A:210	R113714
Chloride	6	mg/L		1		E300.0	03/17/16 18:29 / SR		IC102-H_160317	'A : 36	R113754
Sulfate	145	mg/L		1		E300.0	03/17/16 18:29 / SR		IC102-H_160317	'A : 36	R113754
Hardness as CaCO3	232	mg/L		1		A2340 B	03/18/16 15:39 / abc		CALC_160321A	A : 194	R113829
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.5	mg/L		0.5		A5310 C	03/21/16 22:43 / eli-c		SUB-C21012	20 : 23	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:51 / cm		FIA203-HE_160321	A : 36	R113786
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	03/17/16 09:53 / cm		FIA203-HE_160317	'A : 49	R113736
Nitrogen, Total	0.22	mg/L		0.05		A4500 N-C	03/18/16 11:13 / cm	03/18/16 08:49	FIA203-HE_160318	3B : 32	32307
Phosphorus, Total as P	0.022	mg/L		0.003		E365.1	03/22/16 13:21 / cm	03/21/16 13:05	FIA202-HE_160322	2A : 15	32324
METALS, DISSOLVED											
Arsenic	0.020	mg/L		0.001		E200.8	03/18/16 23:02 / dck		ICPMS204-B_160318A	A:162	R113783
Cadmium	ND	mg/L		0.00003		E200.8	03/18/16 23:02 / dck		ICPMS204-B_160318A	A:162	R113783
Copper	0.002	mg/L		0.001		E200.8	03/18/16 23:02 / dck		ICPMS204-B_160318A	A:162	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 23:02 / dck		ICPMS204-B_160318A	A:162	R113783
Zinc	ND	mg/L		0.008		E200.8	03/21/16 23:40 / dck		ICPMS204-B_160321A	A : 202	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	0.022	mg/L		0.001		E200.8	03/18/16 23:05 / dck	03/17/16 16:41	ICPMS204-B_160318A	A:163	32303
Cadmium	ND	mg/L		0.00003		E200.8	03/18/16 23:05 / dck	03/17/16 16:41	ICPMS204-B_160318A	A:163	32303
Calcium	68	mg/L		1		E200.7	03/18/16 15:39 / sld	03/17/16 16:41	ICP2-HE_160318	3B : 86	32303
Copper	0.005	mg/L		0.001		E200.8	03/18/16 23:05 / dck	03/17/16 16:41	ICPMS204-B_160318A	A : 163	32303
Lead	0.0008	mg/L		0.0003		E200.8	03/18/16 23:05 / dck	03/17/16 16:41	ICPMS204-B_160318A	A : 163	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project: CFR Monitoring-474374	
Client Sample ID:	MWB-SBC	Collection Date: 03/15/16 14:30 DateReceived: 03/16/16	
Lab ID:	H16030296-014	Report Date: 04/21/16 Revised Date: 04/26/16	
Matrix:	Surface Water		
		Bun	

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVERABLE												
Magnesium	15	mg/L		1		E200.7	03/18/16 15:39 / sld	03/17/16 16:41	ICP2-HE_160318B	: 86	32303	
Potassium	2	mg/L		1		E200.7	03/18/16 15:39 / sld	03/17/16 16:41	ICP2-HE_160318B	: 86	32303	
Sodium	13	mg/L		1		E200.7	03/18/16 15:39 / sld	03/17/16 16:41	ICP2-HE_160318B	: 86	32303	
Zinc	ND	mg/L		0.008		E200.8	03/18/16 23:05 / dck	03/17/16 16:41	ICPMS204-B_160318A :	163	32303	



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:SBC-P2Lab ID:H16030296-015Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/15/16 14:45 Report Date: 04/21/16 DateReceived: 03/16/16 Revised Date: 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	12	mg/L		1		A2540 D	03/16/16 15:26 / edp		124 (14410200)_1603	16B : 30	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	99	mg/L		4		A2320 B	03/17/16 18:40 / SR		PHSC_101-H_16031	7A : 214	R113714
Bicarbonate as HCO3	110	mg/L		4		A2320 B	03/17/16 18:40 / SR		PHSC_101-H_16031	7A : 214	R113714
Chloride	34	mg/L		1		E300.0	03/17/16 18:41 / SR		IC102-H_1603	17A : 37	R113754
Sulfate	109	mg/L		1		E300.0	03/17/16 18:41 / SR		IC102-H_1603	17A : 37	R113754
Hardness as CaCO3	191	mg/L		1		A2340 B	03/18/16 15:43 / abc		CALC_16032	1A : 205	R113829
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.9	mg/L		0.5		A5310 C	03/21/16 22:58 / eli-c		SUB-C210	120 : 24	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:52 / cm		FIA203-HE_1603	21A : 37	R113786
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	03/17/16 09:54 / cm		FIA203-HE_1603	17A : 50	R113736
Nitrogen, Total	0.63	mg/L		0.05		A4500 N-C	03/18/16 11:14 / cm	03/18/16 08:49	FIA203-HE_1603	18B : 33	32307
Phosphorus, Total as P	0.056	mg/L		0.003		E365.1	03/22/16 13:24 / cm	03/21/16 13:05	FIA202-HE_1603	22A : 18	32324
METALS, DISSOLVED											
Arsenic	0.006	mg/L		0.001		E200.8	03/18/16 23:08 / dck		ICPMS204-B_16031	8A : 164	R113783
Cadmium	0.00005	mg/L		0.00003		E200.8	03/18/16 23:08 / dck		ICPMS204-B_16031	8A : 164	R113783
Copper	0.003	mg/L		0.001		E200.8	03/18/16 23:08 / dck		ICPMS204-B_16031	8A : 164	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 23:08 / dck		ICPMS204-B_16031	8A : 164	R113783
Zinc	ND	mg/L		0.008		E200.8	03/21/16 23:53 / dck		ICPMS204-B_16032	1A : 206	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	0.007	mg/L		0.001		E200.8	03/18/16 23:12 / dck	03/17/16 16:41	ICPMS204-B_16031	8A : 165	32303
Cadmium	0.00011	mg/L		0.00003		E200.8	03/18/16 23:12 / dck	03/17/16 16:41	ICPMS204-B_16031	8A : 165	32303
Calcium	55	mg/L		1		E200.7	03/18/16 15:43 / sld	03/17/16 16:41	ICP2-HE_1603	18B : 87	32303
Copper	0.008	mg/L		0.001		E200.8	03/18/16 23:12 / dck	03/17/16 16:41	ICPMS204-B_16031	8A : 165	32303
Lead	0.0019	mg/L		0.0003		E200.8	03/18/16 23:12 / dck	03/17/16 16:41	ICPMS204-B_16031	8A : 165	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-47			
Client Sample ID:	SBC-P2	Collection Date	: 03/15/16 14:45	DateReceived:	03/16/16	
Lab ID:	H16030296-015	Report Date	: 04/21/16	Revised Date:	04/26/16	
Matrix:	Surface Water					
					Run	

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVERABLE												•
Magnesium	13	mg/L		1		E200.7	03/18/16 15:43 / sld 0	03/17/16 16:41	ICP2-HE_160318	8:87	32303	
Potassium	5	mg/L		1		E200.7	03/18/16 15:43 / sld 0	03/17/16 16:41	ICP2-HE_160318	8:87	32303	
Sodium	25	mg/L		1		E200.7	03/18/16 15:43 / sld 0	03/17/16 16:41	ICP2-HE_160318	8:87	32303	
Zinc	0.021	mg/L		0.008		E200.8	03/18/16 23:12 / dck (	03/17/16 16:41	ICPMS204-B 160318A	: 165	32303	



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:MCWC-MWBLab ID:H16030296-016Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/15/16 16:00 Report Date: 04/21/16 DateReceived: 03/16/16 Revised Date: 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	5	mg/L		1		A2540 D	03/16/16 15:26 / edp		124 (14410200)_16031	6B : 31	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	99	mg/L		4		A2320 B	03/17/16 18:46 / SR		PHSC_101-H_160317	A : 216	R113714
Bicarbonate as HCO3	120	mg/L		4		A2320 B	03/17/16 18:46 / SR		PHSC_101-H_160317	A : 216	R113714
Chloride	2	mg/L		1		E300.0	03/17/16 18:52 / SR		IC102-H_16031	7A : 38	R113754
Sulfate	32	mg/L		1		E300.0	03/17/16 18:52 / SR		IC102-H_16031	7A : 38	R113754
Hardness as CaCO3	107	mg/L		1		A2340 B	03/18/16 15:47 / abc		CALC_160321	A : 216	R113829
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.0	mg/L		0.5		A5310 C	03/21/16 23:17 / eli-c		SUB-C2101	20 : 25	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:56 / cm		FIA203-HE_16032	1A : 40	R113786
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	03/17/16 09:55 / cm		FIA203-HE_16031	7A : 51	R113736
Nitrogen, Total	0.20	mg/L		0.05		A4500 N-C	03/18/16 11:16 / cm	03/18/16 08:49	FIA203-HE_16031	8B : 34	32307
Phosphorus, Total as P	0.027	mg/L		0.003		E365.1	03/22/16 13:25 / cm	03/21/16 13:05	FIA202-HE_16032	2A : 19	32324
METALS, DISSOLVED											
Arsenic	0.020	mg/L		0.001		E200.8	03/18/16 23:15 / dck		ICPMS204-B_160318	A : 166	R113783
Cadmium	ND	mg/L		0.00003		E200.8	03/18/16 23:15 / dck		ICPMS204-B_160318	A:166	R113783
Copper	0.003	mg/L		0.001		E200.8	03/18/16 23:15 / dck		ICPMS204-B_160318	A : 166	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 23:15 / dck		ICPMS204-B_160318	A : 166	R113783
Zinc	ND	mg/L		0.008		E200.8	03/21/16 23:56 / dck		ICPMS204-B_160321	A : 207	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	0.021	mg/L		0.001		E200.8	03/18/16 23:18 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 167	32303
Cadmium	0.00006	mg/L		0.00003		E200.8	03/18/16 23:18 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 167	32303
Calcium	30	mg/L		1		E200.7	03/18/16 15:47 / sld	03/17/16 16:41	ICP2-HE_16031	8B : 88	32303
Copper	0.006	mg/L		0.001		E200.8	03/18/16 23:18 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 167	32303
Lead	0.0014	mg/L		0.0003		E200.8	03/18/16 23:18 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 167	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Projec	: CFR Monitoring-4	474374		
Client Sample ID:	MCWC-MWB	Collection Date	e: 03/15/16 16:00	DateReceived: 03/	/16/16	
Lab ID:	H16030296-016	Report Dat	<b>e:</b> 04/21/16	Revised Date: 04/	/26/16	
Matrix:	Surface Water					
					Run	

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVERABLE												_
Magnesium	8	mg/L		1		E200.7	03/18/16 15:47 / sld (	03/17/16 16:41	ICP2-HE_160318	3:88	32303	
Potassium	1	mg/L		1		E200.7	03/18/16 15:47 / sld (	03/17/16 16:41	ICP2-HE_160318	3:88	32303	
Sodium	10	mg/L		1		E200.7	03/18/16 15:47 / sld 0	03/17/16 16:41	ICP2-HE_160318	3:88	32303	
Zinc	0.011	mg/L		800.0		E200.8	03/18/16 23:18 / dck (	03/17/16 16:41	ICPMS204-B 160318A	: 167	32303	



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:MCWC-MWB DuplicateLab ID:H16030296-017Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 03/15/16 16:00 Report Date: 04/21/16 **DateReceived:** 03/16/16 **Revised Date:** 04/26/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	5	mg/L		1		A2540 D	03/16/16 15:26 / edp		124 (14410200)_16031	6B : 32	TSS160316A
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	03/17/16 18:51 / SR		PHSC_101-H_160317	A : 218	R113714
Bicarbonate as HCO3	120	mg/L		4		A2320 B	03/17/16 18:51 / SR		PHSC_101-H_160317	A : 218	R113714
Chloride	2	mg/L		1		E300.0	03/17/16 19:03 / SR		IC102-H_16031	7A : 39	R113754
Sulfate	31	mg/L		1		E300.0	03/17/16 19:03 / SR		IC102-H_16031	7A : 39	R113754
Hardness as CaCO3	109	mg/L		1		A2340 B	03/18/16 15:51 / abc		CALC_160321	A : 227	R113829
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.3	mg/L		0.5		A5310 C	03/21/16 23:37 / eli-c		SUB-C2101	20 : 26	C_R210120
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	03/21/16 09:59 / cm		FIA203-HE_16032	1A : 43	R113786
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	03/17/16 09:59 / cm		FIA203-HE_16031	7A : 54	R113736
Nitrogen, Total	0.17	mg/L		0.05		A4500 N-C	03/18/16 11:17 / cm	03/18/16 08:49	FIA203-HE_16031	8B : 35	32307
Phosphorus, Total as P	0.030	mg/L		0.003		E365.1	03/22/16 13:26 / cm	03/21/16 13:05	FIA202-HE_16032	2A : 20	32324
METALS, DISSOLVED											
Arsenic	0.020	mg/L		0.001		E200.8	03/18/16 23:21 / dck		ICPMS204-B_160318	A : 168	R113783
Cadmium	ND	mg/L		0.00003		E200.8	03/18/16 23:21 / dck		ICPMS204-B_160318	A : 168	R113783
Copper	0.003	mg/L		0.001		E200.8	03/18/16 23:21 / dck		ICPMS204-B_160318	A : 168	R113783
Lead	ND	mg/L		0.0003		E200.8	03/18/16 23:21 / dck		ICPMS204-B_160318	A : 168	R113783
Zinc	ND	mg/L		0.008		E200.8	03/21/16 23:59 / dck		ICPMS204-B_160321	A : 208	R113863
METALS, TOTAL RECOVERABLE											
Arsenic	0.023	mg/L		0.001		E200.8	03/18/16 23:25 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 169	32303
Cadmium	0.00007	mg/L		0.00003		E200.8	03/18/16 23:25 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 169	32303
Calcium	31	mg/L		1		E200.7	03/18/16 15:51 / sld	03/17/16 16:41	ICP2-HE_16031	8B : 89	32303
Copper	0.006	mg/L		0.001		E200.8	03/18/16 23:25 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 169	32303
Lead	0.0016	mg/L		0.0003		E200.8	03/18/16 23:25 / dck	03/17/16 16:41	ICPMS204-B_160318	A : 169	32303

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Proje	t: CFR Monitoring-47	CFR Monitoring-474374			
Client Sample ID:	MCWC-MWB Duplicate	Collection Da	te: 03/15/16 16:00	DateReceived:	03/16/16		
Lab ID:	H16030296-017	Report Da	<b>te:</b> 04/21/16	Revised Date:	04/26/16		
Matrix:	Surface Water						
					Pup		

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	8	mg/L		1		E200.7	03/18/16 15:51 / sld (	03/17/16 16:41	ICP2-HE_160318	B : 89	32303
Potassium	1	mg/L		1		E200.7	03/18/16 15:51 / sld (	03/17/16 16:41	ICP2-HE_160318	B : 89	32303
Sodium	10	mg/L		1		E200.7	03/18/16 15:51 / sld (	03/17/16 16:41	ICP2-HE_160318	B : 89	32303
Zinc	0.010	mg/L		0.008		E200.8	03/18/16 23:25 / dck (	03/17/16 16:41	ICPMS204-B_160318A	A:169	32303



## LABORATORY ANALYTICAL REPORT

Client: MT DEQ-Federal Superfund Project: (								CFR Monitoring-474374					
<b>Client Sample II</b>	<b>D:</b> CFR-84F						Colle	ction Date:	03/14/16	5 10:00 D	ateReceived:	03/16/16	
Lab ID:	H16030296-018						R	eport Date:	04/21/16	; F	Revised Date:	04/26/16	
Matrix:	Surface Water												
Analyses		Result	Units	Qualifiers	RL	MDL	Method	Analysis	Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTA	L RECOVERABLE	0.000005			FF 00		50454	00/04/40 44	4.45.4 mm	00/47/40 45 00			00000
Mercury		0.000035 m	ng/L		5E-06		E245.1	03/21/16 11	1:45 / rgk	03/17/16 15:36	HGCV202-H_1	160321A : 21	





# LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	CFR-116A Sediment Sieve <0.065mm	Collection Date:	03/14/16 08:45	DateReceived:	03/16/16
Lab ID:	H16030296-020	Report Date:	04/21/16	<b>Revised Date:</b>	04/26/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	79.2	wt%		0.2		D2974	03/30/16 08:04 / AH		RYING OVEN 2_16	60329A : 1	R114087
SIEVE ANALYSIS No. 230 (63 um), Passed	54.3	wt%-wet		0.1		SSSA 15-2	03/23/16 10:59 / edp		MISC SOILS_16	60323A : 1	R114094
3050 EXTRACTABLE METALS											
Arsenic	110	mg/kg-dry		1		SW6020	03/31/16 18:05 / dck 0	3/29/16 09:49	ICPMS204-B_160	)331A : 56	32414
Cadmium	6.8	mg/kg-dry		0.8		SW6020	03/31/16 18:05 / dck 03	3/29/16 09:49	ICPMS204-B_160	)331A : 56	32414
Copper	1010	mg/kg-dry		5		SW6020	03/31/16 18:05 / dck 0	3/29/16 09:49	ICPMS204-B_160	)331A : 56	32414
Lead	211	mg/kg-dry		5		SW6020	04/08/16 13:39 / dck 04	4/05/16 11:44	ICPMS204-B_160	0408A : 31	32481
Zinc	1510	mg/kg-dry	D	50		SW6020	03/31/16 18:05 / dck 03	3/29/16 09:49	ICPMS204-B_160	)331A : 56	32414



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	LBR-CFR-02 Sediment Sieve <0.065mm	Collection Date:	03/14/16 13:15	DateReceived:	03/16/16
Lab ID:	H16030296-021	Report Date:	04/21/16	<b>Revised Date:</b>	04/26/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	61.8	wt%		0.2		D2974	03/30/16 08:04 / AH		RYING OVEN 2_1603	329A : 3	R114087
SIEVE ANALYSIS No. 230 (63 um), Passed	5.1	wt%-wet		0.1		SSSA 15-2	03/23/16 10:59 / edp		MISC SOILS_1603	323A : 2	R114094
3050 EXTRACTABLE METALS											
Arsenic	27	mg/kg-dry		1		SW6020	03/31/16 18:08 / dck 0	3/29/16 09:49	ICPMS204-B_16033	81A : 57	32414
Cadmium	1.7	mg/kg-dry		0.4		SW6020	03/31/16 18:08 / dck 0	3/29/16 09:49	ICPMS204-B_16033	81A : 57	32414
Copper	55	mg/kg-dry		5		SW6020	03/31/16 18:08 / dck 0	3/29/16 09:49	ICPMS204-B_16033	81A : 57	32414
Lead	69	mg/kg-dry		5		SW6020	04/08/16 14:19 / dck 0	4/05/16 11:44	ICPMS204-B_16040	)8A : 37	32481
Zinc	203	mg/kg-dry	D	30		SW6020	03/31/16 18:08 / dck 0	3/29/16 09:49	ICPMS204-B_16033	81A : 57	32414



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	374	
Client Sample ID:	CFR-34 Sediment Sieve <0.065mm	Collection Date:	03/14/16 14:30	DateReceived:	03/16/16
Lab ID:	H16030296-022	Report Date:	04/21/16	Revised Date:	04/26/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS											5
Moisture	58.1	wt%		0.2		D2974	03/30/16 08:04 / AH		PRYING OVEN 2_1603	29A : 4	R114087
SIEVE ANALYSIS											
No. 230 (63 um), Passed	8.0	wt%-wet		0.1		SSSA 15-2	03/23/16 10:59 / edp		MISC SOILS_1603	23A : 3	R114094
3050 EXTRACTABLE METALS											
Arsenic	178	mg/kg-dry		1		SW6020	03/31/16 18:12 / dck 0	3/29/16 09:49	ICPMS204-B_16033	1A : 58	32414
Cadmium	10.5	mg/kg-dry		0.4		SW6020	03/31/16 18:12 / dck 0	3/29/16 09:49	ICPMS204-B_16033	1A : 58	32414
Copper	1770	mg/kg-dry		5		SW6010B	04/01/16 12:06 / sld 0	3/29/16 09:49	ICP2-HE_16040	1B : 35	32414
Lead	278	mg/kg-dry		5		SW6020	04/08/16 14:22 / dck 0	4/05/16 11:44	ICPMS204-B_16040	8A : 38	32481
Zinc	1710	mg/kg-dry		5		SW6010B	04/01/16 12:06 / sld 0	3/29/16 09:49	ICP2-HE_16040	1B : 35	32414



# LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	CFR-27H Sediment Sieve <0.065mm	Collection Date:	03/14/16 16:00	DateReceived:	03/16/16
Lab ID:	H16030296-023	Report Date:	04/21/16	<b>Revised Date:</b>	04/26/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	57.1	wt%		0.2		D2974	03/30/16 08:04 / AH		RYING OVEN 2_1	60329A : 5	R114087
SIEVE ANALYSIS No. 230 (63 um), Passed	20.7	wt%-wet		0.1		SSSA 15-2	03/23/16 10:59 / edp		MISC SOILS_1	60323A : 4	R114094
3050 EXTRACTABLE METALS											
Arsenic	157	mg/kg-dry		1		SW6020	03/31/16 18:15 / dck 0	3/29/16 09:49	ICPMS204-B_16	0331A : 59	32414
Cadmium	7.1	mg/kg-dry		0.4		SW6020	03/31/16 18:15 / dck 0	3/29/16 09:49	ICPMS204-B_16	0331A : 59	32414
Copper	1470	mg/kg-dry		5		SW6010B	04/01/16 12:10 / sld 0	3/29/16 09:49	ICP2-HE_16	0401B : 36	32414
Lead	238	mg/kg-dry		5		SW6020	04/08/16 14:25 / dck 0	4/05/16 11:44	ICPMS204-B_16	0408A : 39	32481
Zinc	1310	mg/kg-dry		5		SW6010B	04/01/16 12:10 / sld 0	3/29/16 09:49	ICP2-HE_16	0401B : 36	32414



# LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	CFR-11F Sediment Sieve <0.065mm	Collection Date:	03/15/16 08:45	DateReceived:	03/16/16
Lab ID:	H16030296-024	Report Date:	04/21/16	<b>Revised Date:</b>	04/26/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	60.4	wt%		0.2		D2974	03/30/16 08:04 / AH		RYING OVEN 2_16	0329A : 6	R114087
SIEVE ANALYSIS No. 230 (63 um), Passed	20.4	wt%-wet		0.1		SSSA 15-2	03/23/16 10:59 / edp		MISC SOILS_16	0323A : 5	R114094
3050 EXTRACTABLE METALS											
Arsenic	136	mg/kg-dry		1		SW6020	03/31/16 18:18 / dck 0	3/29/16 09:49	ICPMS204-B_160	331A : 60	32414
Cadmium	5.9	mg/kg-dry		0.4		SW6020	03/31/16 18:18 / dck 0	3/29/16 09:49	ICPMS204-B_160	331A : 60	32414
Copper	1150	mg/kg-dry		5		SW6020	03/31/16 18:18 / dck 0	3/29/16 09:49	ICPMS204-B_160	331A : 60	32414
Lead	206	mg/kg-dry		5		SW6020	04/08/16 14:29 / dck 04	4/05/16 11:44	ICPMS204-B_160	408A : 40	32481
Zinc	1150	mg/kg-dry	D	30		SW6020	03/31/16 18:18 / dck 03	3/29/16 09:49	ICPMS204-B_160	331A : 60	32414



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	CFR-07D Sediment Sieve <0.065mm	Collection Date:	03/15/16 10:15	DateReceived:	03/16/16
Lab ID:	H16030296-025	Report Date:	04/21/16	Revised Date:	04/26/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS		10/				D0074					D / / /007
Moisture	64.0	wt%		0.2		D2974	03/30/16 08:04 / AH		DRYING OVEN 2_1603	29A : 7	R114087
SIEVE ANALYSIS											
No. 230 (63 um), Passed	18.0	wt%-wet		0.1		SSSA 15-2	03/23/16 10:59 / edp		MISC SOILS_1603	23A : 6	R114094
3050 EXTRACTABLE METALS											
Arsenic	206	mg/kg-dry		1		SW6020	03/31/16 18:21 / dck 0	3/29/16 09:49	ICPMS204-B_16033	1A : 61	32414
Cadmium	9.4	mg/kg-dry		0.5		SW6020	03/31/16 18:21 / dck 0	3/29/16 09:49	ICPMS204-B_16033	1A : 61	32414
Copper	1790	mg/kg-dry		5		SW6010B	04/01/16 12:24 / sld 0	3/29/16 09:49	ICP2-HE_16040	1B : 40	32414
Lead	270	mg/kg-dry		5		SW6020	04/08/16 14:32 / dck 0	4/05/16 11:44	ICPMS204-B_16040	8A : 41	32481
Zinc	1570	mg/kg-dry		5		SW6010B	04/01/16 12:24 / sld 0	3/29/16 09:49	ICP2-HE_16040	1B : 40	32414



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	CFR-03A Sediment Sieve <0.065mm	Collection Date:	03/15/16 11:15	DateReceived:	03/16/16
Lab ID:	H16030296-026	Report Date:	04/21/16	<b>Revised Date:</b>	04/26/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS						<b>B</b>					5
Moisture	64.6	wt%		0.2		D2974	03/30/16 08:04 / AH		PRYING OVEN 2_1603	29A : 8	R114087
SIEVE ANALYSIS											
No. 230 (63 um), Passed	13.5	wt%-wet		0.1		SSSA 15-2	03/23/16 10:59 / edp		MISC SOILS_1603	23A : 7	R114094
3050 EXTRACTABLE METALS											
Arsenic	192	mg/kg-dry		1		SW6020	03/31/16 18:24 / dck 0	3/29/16 09:49	ICPMS204-B_16033	1A : 62	32414
Cadmium	10.1	mg/kg-dry		0.5		SW6020	03/31/16 18:24 / dck 0	3/29/16 09:49	ICPMS204-B_16033	1A : 62	32414
Copper	1550	mg/kg-dry		5		SW6010B	04/01/16 12:28 / sld 0	3/29/16 09:49	ICP2-HE_16040	1B : 41	32414
Lead	274	mg/kg-dry		5		SW6020	04/08/16 14:35 / dck 0	4/05/16 11:44	ICPMS204-B_16040	8A : 42	32481
Zinc	1570	mg/kg-dry		5		SW6010B	04/01/16 12:28 / sld 0	3/29/16 09:49	ICP2-HE_16040	1B : 41	32414



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	WSC-SBC Sediment Sieve <0.065mm	Collection Date:	03/15/16 12:30	DateReceived:	03/16/16
Lab ID:	H16030296-027	Report Date:	04/21/16	<b>Revised Date:</b>	04/26/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS	70.0	wt%		0.2		D2974	03/30/16 08:04 / 4H			204 · 9	R114087
Molstere	10.0	WVC/0		0.2		02314	00/00/10 00.04 / АП			254.5	1114007
SIEVE ANALYSIS											
No. 230 (63 um), Passed	15.5	wt%-wet		0.1		SSSA 15-2	03/23/16 10:59 / edp		MISC SOILS_1603	23A : 8	R114094
3050 EXTRACTABLE METALS											
Arsenic	129	mg/kg-dry		1		SW6020	03/31/16 18:37 / dck 0	3/29/16 09:49	ICPMS204-B_16033	81A : 66	32414
Cadmium	5.5	mg/kg-dry		0.5		SW6020	03/31/16 18:37 / dck 0	3/29/16 09:49	ICPMS204-B_16033	81A : 66	32414
Copper	1160	mg/kg-dry		5		SW6020	03/31/16 18:37 / dck 0	3/29/16 09:49	ICPMS204-B_16033	81A : 66	32414
Lead	154	mg/kg-dry		5		SW6020	04/08/16 14:38 / dck 0	4/05/16 11:44	ICPMS204-B_16040	08A : 43	32481
Zinc	535	mg/kg-dry	D	40		SW6020	03/31/16 18:37 / dck 0	3/29/16 09:49	ICPMS204-B_16033	31A : 66	32414



# LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4	474374		
Client Sample ID:	SS-25 Sediment Sieve <0.065mm	Collection Date:	03/15/16 13:30	DateReceived: 0	)3/16/16	
Lab ID:	H16030296-028	Report Date:	04/21/16	Revised Date: 0	14/26/16	
Matrix:	Sediment					

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	72.8	wt%		0.2		D2974	03/30/16 08:04 / AH		RYING OVEN 2_1	60329A : 10	R114087
SIEVE ANALYSIS No. 230 (63 um), Passed	2.0	wt%-wet		0.1		SSSA 15-2	03/23/16 10:59 / edp		MISC SOILS_	160323A : 9	R114094
3050 EXTRACTABLE METALS											
Arsenic	191	mg/kg-dry		1		SW6020	03/31/16 18:41 / dck 03	8/29/16 09:49	ICPMS204-B_1	60331A : 67	32414
Cadmium	10.6	mg/kg-dry		0.6		SW6020	03/31/16 18:41 / dck 03	8/29/16 09:49	ICPMS204-B_1	60331A : 67	32414
Copper	485	mg/kg-dry		5		SW6020	03/31/16 18:41 / dck 03	8/29/16 09:49	ICPMS204-B_1	60331A : 67	32414
Lead	471	mg/kg-dry		5		SW6020	04/08/16 14:41 / dck 04	4/05/16 11:44	ICPMS204-B_1	60408A : 44	32481
Zinc	1610	mg/kg-dry	D	40		SW6020	03/31/16 18:41 / dck 03	3/29/16 09:49	ICPMS204-B_1	60331A : 67	32414



# LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	MWB-SBC Sediment Sieve <0.065mm	Collection Date:	03/15/16 14:30	DateReceived:	03/16/16
Lab ID:	H16030296-029	Report Date:	04/21/16	<b>Revised Date:</b>	04/26/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	72.1	wt%		0.2		D2974	03/30/16 08:04 / AH		₹YING OVEN 2_1603	29A : 11	R114087
SIEVE ANALYSIS No. 230 (63 um), Passed	3.0	wt%-wet		0.1		SSSA 15-2	03/23/16 10:59 / edp		MISC SOILS_1603	23A : 10	R114094
3050 EXTRACTABLE METALS											
Arsenic	314	mg/kg-dry		1		SW6020	03/31/16 18:44 / dck 03	3/29/16 09:49	ICPMS204-B_1603	31A : 68	32414
Cadmium	8.8	mg/kg-dry		0.6		SW6020	03/31/16 18:44 / dck 03	3/29/16 09:49	ICPMS204-B_1603	31A : 68	32414
Copper	374	mg/kg-dry		5		SW6020	03/31/16 18:44 / dck 03	3/29/16 09:49	ICPMS204-B_1603	31A : 68	32414
Lead	214	mg/kg-dry		5		SW6020	04/08/16 14:55 / dck 04	4/05/16 11:44	ICPMS204-B_1604	08A : 48	32481
Zinc	1360	mg/kg-dry	D	40		SW6020	03/31/16 18:44 / dck 03	3/29/16 09:49	ICPMS204-B_1603	31A : 68	32414



# LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74
Client Sample ID:	MCWC-MWB Sediment Sieve <0.065mm	Collection Date:	03/15/16 16:00	DateReceived: 03/16/16
Lab ID:	H16030296-030	Report Date:	04/21/16	Revised Date: 04/26/16
Matrix:	Sediment			

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	69.2	wt%		0.2		D2974	03/30/16 08:04 / AH		₹YING OVEN 2_1603	29A : 12	R114087
SIEVE ANALYSIS No. 230 (63 um), Passed	40.7	wt%-wet		0.1		SSSA 15-2	03/23/16 10:59 / edp		MISC SOILS_1603	23A : 11	R114094
3050 EXTRACTABLE METALS											
Arsenic	130	mg/kg-dry		1		SW6020	03/31/16 18:47 / dck 0	3/29/16 09:49	ICPMS204-B_1603	31A : 69	32414
Cadmium	7.1	mg/kg-dry		0.5		SW6020	03/31/16 18:47 / dck 0	3/29/16 09:49	ICPMS204-B_1603	31A : 69	32414
Copper	541	mg/kg-dry		5		SW6020	03/31/16 18:47 / dck 0	3/29/16 09:49	ICPMS204-B_1603	31A : 69	32414
Lead	184	mg/kg-dry		5		SW6020	04/08/16 14:58 / dck 0	4/05/16 11:44	ICPMS204-B_1604	08A : 49	32481
Zinc	746	mg/kg-dry	D	40		SW6020	03/31/16 18:47 / dck 0	3/29/16 09:49	ICPMS204-B_1603	31A : 69	32414



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	CFR-27H Duplicate Sediment Sieve <0.065mm	<b>Collection Date:</b>	03/14/16 16:00	DateReceived:	03/16/16
Lab ID:	H16030296-031	Report Date:	04/21/16	<b>Revised Date:</b>	04/26/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	60.1	wt%		0.2		D2974	03/30/16 08:04 / AH		₹YING OVEN 2_16032	9A : 14	R114087
SIEVE ANALYSIS No. 230 (63 um), Passed	23.8	wt%-wet		0.1		SSSA 15-2	03/23/16 10:59 / edp		MISC SOILS_16032	3A : 12	R114094
3050 EXTRACTABLE METALS											
Arsenic	156	mg/kg-dry		1		SW6020	03/31/16 18:50 / dck 0	3/29/16 09:49	ICPMS204-B_16033	1A : 70	32414
Cadmium	6.8	mg/kg-dry		0.4		SW6020	03/31/16 18:50 / dck 0	3/29/16 09:49	ICPMS204-B_16033	1A : 70	32414
Copper	1370	mg/kg-dry		5		SW6010B	04/01/16 12:46 / sld 0	3/29/16 09:49	ICP2-HE_16040	1B : 46	32414
Lead	280	mg/kg-dry		5		SW6020	04/08/16 15:01 / dck 0	4/05/16 11:44	ICPMS204-B_16040	BA : 50	32481
Zinc	1320	mg/kg-dry		5		SW6010B	04/01/16 12:46 / sld 0	3/29/16 09:49	ICP2-HE_16040	1B : 46	32414



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4	474374	
Client Sample ID:	CFR-11F Duplicate Sediment Sieve < 0.065mm	Collection Date:	03/15/16 08:45	DateReceived: 03/16/16	
Lab ID:	H16030296-032	Report Date:	04/21/16	Revised Date: 04/26/16	
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	61.8	wt%		0.2		D2974	03/30/16 08:04 / AH		₹YING OVEN 2_1603	29A : 15	R114087
SIEVE ANALYSIS No. 230 (63 um), Passed	27.4	wt%-wet		0.1		SSSA 15-2	03/23/16 10:59 / edp		MISC SOILS_1603	23A : 13	R114094
3050 EXTRACTABLE METALS											
Arsenic	145	mg/kg-dry		1		SW6020	03/31/16 18:53 / dck 03	3/29/16 09:49	ICPMS204-B_1603	31A : 71	32414
Cadmium	5.9	mg/kg-dry		0.4		SW6020	03/31/16 18:53 / dck 03	3/29/16 09:49	ICPMS204-B_1603	31A : 71	32414
Copper	1150	mg/kg-dry		5		SW6020	03/31/16 18:53 / dck 03	3/29/16 09:49	ICPMS204-B_1603	31A : 71	32414
Lead	223	mg/kg-dry		5		SW6020	04/08/16 15:04 / dck 04	4/05/16 11:44	ICPMS204-B_1604	08A : 51	32481
Zinc	1200	mg/kg-dry	D	30		SW6020	03/31/16 18:53 / dck 03	3/29/16 09:49	ICPMS204-B_1603	31A : 71	32414



# LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	374	
Client Sample ID:	LC-7.5 Sediment Sieve <0.065mm	Collection Date:	03/15/16 17:30	DateReceived:	03/16/16
Lab ID:	H16030296-033	Report Date:	04/21/16	Revised Date:	04/26/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	60.7	wt%		0.2		D2974	03/30/16 08:04 / AH	5	YING OVEN 2_1	60329A : 16	R114087
SIEVE ANALYSIS No. 230 (63 um), Passed	23.2	wt%-wet		0.1		SSSA 15-2	03/23/16 10:59 / edp		MISC SOILS_1	60323A : 14	R114094
3050 EXTRACTABLE METALS											
Arsenic	76	mg/kg-dry		1		SW6020	03/31/16 18:57 / dck 03	/29/16 09:49	ICPMS204-B_1	60331A : 72	32414
Cadmium	2.9	mg/kg-dry		0.4		SW6020	03/31/16 18:57 / dck 03	/29/16 09:49	ICPMS204-B_1	60331A : 72	32414
Copper	390	mg/kg-dry		5		SW6020	03/31/16 18:57 / dck 03	/29/16 09:49	ICPMS204-B_1	60331A : 72	32414
Lead	74	mg/kg-dry		5		SW6020	04/08/16 15:07 / dck 04	/05/16 11:44	ICPMS204-B_1	60408A : 52	32481
Zinc	292	mg/kg-dry	D	30		SW6020	03/31/16 18:57 / dck 03	/29/16 09:49	ICPMS204-B_1	60331A : 72	32414



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	374	
Client Sample ID:	RTC-1.5 Sediment Sieve <0.065mm	Collection Date:	03/15/16 18:00	DateReceived:	03/16/16
Lab ID:	H16030296-034	Report Date:	04/21/16	Revised Date:	04/26/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	68.6	wt%		0.2		D2974	03/30/16 08:04 / AH		₹YING OVEN 2_160329	A : 17	R114087
SIEVE ANALYSIS No. 230 (63 um), Passed	2.6	wt%-wet		0.1		SSSA 15-2	03/23/16 10:59 / edp		MISC SOILS_160323	A : 15	R114094
3050 EXTRACTABLE METALS											
Arsenic	39	mg/kg-dry		1		SW6020	03/31/16 19:10 / dck 0	3/29/16 09:49	ICPMS204-B_160331	A : 76	32414
Cadmium	2.5	mg/kg-dry		0.5		SW6020	03/31/16 19:10 / dck 0	3/29/16 09:49	ICPMS204-B_160331	A : 76	32414
Copper	122	mg/kg-dry		5		SW6020	03/31/16 19:10 / dck 0	3/29/16 09:49	ICPMS204-B_160331	A : 76	32414
Lead	251	mg/kg-dry		5		SW6020	04/08/16 15:27 / dck 0	4/05/16 11:44	ICPMS204-B_160408	A : 58	32481
Zinc	198	mg/kg-dry	D	40		SW6020	03/31/16 19:10 / dck 0	3/29/16 09:49	ICPMS204-B_160331	A : 76	32414



# **QA/QC Summary Report**

Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund

Revised Date: 04/26/16 Report Date: 04/21/16 Work Order: H16030296

Project: CFR Monitoring-474	4374						Work	Order	: H16030296	
Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B									Batch	R113714
Lab ID: MB	Me	ethod Blank				Run: PHSC	_101-H_160317	4	03/17	/16 15:34
Alkalinity, Total as CaCO3		2	mg/L	0.2						
Lab ID: LCS	La	boratory Co	ntrol Sample			Run: PHSC	_101-H_160317/	4	03/17	/16 15:40
Alkalinity, Total as CaCO3		590	mg/L	4.0	98	90	110			
Lab ID: H16030165-005ADU	JP 2 Sa	ample Duplic	ate			Run: PHSC	_101-H_160317/	Ą	03/17	/16 15:59
Alkalinity, Total as CaCO3		90	mg/L	4.0				2.7	10	
Bicarbonate as HCO3		110	mg/L	4.0				2.7	10	
Lab ID: H16030296-013ADU	JP 2 Sa	ample Duplic	ate			Run: PHSC	_101-H_160317/	Ą	03/17	/16 18:08
Alkalinity, Total as CaCO3		100	mg/L	4.0				0.9	10	
Bicarbonate as HCO3		120	mg/L	4.0				0.9	10	
Lab ID: MB	Me	ethod Blank				Run: PHSC	_101-H_160317/	A	03/17	/16 18:13
Alkalinity, Total as CaCO3		2	mg/L	0.2						
Lab ID: LCS	La	boratory Co	ntrol Sample			Run: PHSC	_101-H_160317/	Ą	03/17	/16 18:18
Alkalinity, Total as CaCO3		590	mg/L	4.0	99	90	110			
Lab ID: H16030296-014ADU	JP 2 Sa	ample Duplic	ate			Run: PHSC	_101-H_160317/	Ą	03/17	/16 18:35
Alkalinity, Total as CaCO3		120	mg/L	4.0				1.2	10	
Bicarbonate as HCO3		140	mg/L	4.0				1.2	10	
Lab ID: H16030301-018ADU	JP 2 Sa	ample Duplic	ate			Run: PHSC	_101-H_160317/	4	03/17	/16 20:55
Alkalinity, Total as CaCO3		170	mg/L	4.0				0.8	10	
Bicarbonate as HCO3		200	mg/L	4.0				0.8	10	


Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund

Revised Date: 04/26/16 Report Date: 04/21/16 Work Order: H16030296

Project: CFR Moni	itoring-474374						Work	Work Order: H16030296			
Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual	
Method: A2540 D	1								Batch: TSS	S160316A	
Lab ID: MB-1_16	<b>0316A</b> Me	ethod Blank				Run: ACCL	J-124 (14410200	)_16031	03/16/	/16 14:36	
Solids, Total Suspend	ded TSS @ 105 C	ND	mg/L	0.1							
Lab ID: LCS-2_10	60316A La	boratory Co	ntrol Sample			Run: ACCL	J-124 (14410200	)_16031	03/16/	16 14:37	
Solids, Total Suspend	ded TSS @ 105 C	90.0	mg/L	10	90	80	120				
Lab ID: H160302	67-001BDUP Sa	ample Duplic	ate			Run: ACCL	J-124 (14410200	)_16031	03/16/	/16 14:37	
Solids, Total Suspend	ded TSS @ 105 C	6.00	mg/L	10					5		
Lab ID: H160302	76-001BDUP Sa	ample Duplic	ate			Run: ACCL	J-124 (14410200	)_16031	03/16/	/16 15:22	
Solids, Total Suspend	ded TSS @ 105 C	26.0	mg/L	10				18	5	R	
- Since the difference be	etween he analytical resu	ult for the sam	ple and its duplica	te is less than	the report	ing limit, the R	RPD variance is not	considere	ed significant.		
Lab ID: MB-25_1	60316A Me	ethod Blank				Run: ACCL	J-124 (14410200	)_16031	03/16/	16 15:24	
Solids, Total Suspend	ded TSS @ 105 C	ND	mg/L	0.1							
Lab ID: LCS-26_	1 <b>60316A</b> La	boratory Co	ntrol Sample			Run: ACCL	J-124 (14410200	)_16031	03/16/	16 15:25	
Solids, Total Suspend	ded TSS @ 105 C	95.0	mg/L	10	95	80	120				
Lab ID: H160302	81-002BDUP Sa	ample Duplic	ate			Run: ACCL	J-124 (14410200	)_16031	03/16/	16 15:25	
Solids, Total Suspend	ded TSS @ 105 C	5.00	mg/L	10					5		

- Since the difference between he analytical result for the sample and its duplicate is less than the reporting limit, the RPD variance is not considered significant.

R - RPD exceeds advisory limit.



Prepared by Helena, MT Branch

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Project:	CFR Monitoring-474	374						Work	Order	: H160302	96
Analyte		Count Re	sult	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	A4500 N-C							Analyt	ical Run	: FIA203-HE	_160318B
Lab ID:	CCV	Continui	ng Ca	libration Verification	on Standa	rd				03/18	/16 10:46
Nitrogen,	Total	0	.494	mg/L	0.10	99	90	110			
Lab ID:	ICB	Initial Ca	alibrati	on Blank, Instrum	ent Blank					03/18	/16 10:47
Nitrogen,	Total	0.0	)224	mg/L	0.10		0	0			
Lab ID:	CCV	Continui	ng Ca	libration Verification	on Standa	rd				03/18	/16 11:06
Nitrogen,	Total	0	.492	mg/L	0.10	98	90	110			
Method:	A4500 N-C									Bat	ch: 32307
Lab ID:	LCS-32307	Laborato	ory Co	ntrol Sample			Run: FIA20	3-HE_160318B		03/18	/16 10:48
Nitrogen,	Total		6.22	mg/L	0.15	98	90	110			
Lab ID:	MB-32307	Method	Blank				Run: FIA20	3-HE_160318B		03/18	/16 10:49
Nitrogen,	Total		ND	mg/L	0.007						
Lab ID:	H16030296-001Ams	Sample	Matrix	Sp ke			Run: FIA20	3-HE_160318B		03/18	/16 10:52
Nitrogen,	Total		1.30	mg/L	0.10	97	90	110			
Lab ID:	H16030296-001Ams	d Sample	Matrix	Sp ke Duplicate			Run: FIA20	3-HE_160318B		03/18	/16 10:53
Nitrogen,	Total		1.39	mg/L	0.10	106	90	110	6.6	20	
Lab ID:	H16030296-011Ams	Sample	Matrix	Sp ke			Run: FIA20	3-HE_160318B		03/18	/16 11:08
Nitrogen,	Total	0	.994	mg/L	0.10	99	90	110			
Lab ID:	H16030296-011Ams	d Sample	Matrix	Sp ke Duplicate			Run: FIA20	3-HE_160318B		03/18	/16 11:10
Nitrogen,	Total	0	.973	mg/L	0.10	97	90	110	2.1	20	



Prepared by Helena, MT Branch

Revised Date: 04/26/16 **Client:** MT DEQ-Federal Superfund Report Date: 04/21/16 Project: CFR Monitoring-474374 Work Order: H16030296 RL %REC Low Limit High Limit Result Units **RPD RPDLimit** Analyte Count Qual Method: A5310 C Analytical Run: SUB-C210120 Lab ID: CCV Continuing Calibration Verification Standard 03/21/16 15:59 Organic Carbon, Dissolved (DOC) 4.90 mg/L 0.50 98 90 110 Lab ID: CCV-7923 Continuing Calibration Verification Standard 03/21/16 19:58 0.50 Organic Carbon, Dissolved (DOC) 4.85 mg/L 97 90 110 Batch: C R210120 Method: A5310 C Lab ID: MBLK Method Blank Run: SUB-C210120 03/21/16 15:40 Organic Carbon, Dissolved (DOC) 0.2 mg/L 0.04 Lab ID: H16030296-001E Sample Matrix Sp ke Run: SUB-C210120 03/21/16 16:49 Organic Carbon, Dissolved (DOC) 20.8 mg/L 0.50 95 85 115 Lab ID: H16030296-001E Run: SUB-C210120 Sample Matrix Sp ke Duplicate 03/21/16 17:04 Organic Carbon, Dissolved (DOC) 21.4 mg/L 0.50 98 85 115 2.8 10 Lab ID: H16030296-010E Run: SUB-C210120 03/21/16 21:11 Sample Matrix Sp ke Organic Carbon, Dissolved (DOC) 22.2 mg/L 0.50 99 85 115 Lab ID: H16030296-010E Sample Matrix Sp ke Duplicate Run: SUB-C210120 03/21/16 21:26 4.2 Organic Carbon, Dissolved (DOC) 21.3 mg/L 0.50 94 85 115 10 Lab ID: LCS-8116 Laboratory Control Sample 03/21/16 23:56 Run: SUB-C210120 Organic Carbon, Dissolved (DOC) 4.72 mg/L 0.50 90 90 110



Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund

Project: CFR Monitoring-474374

-	•								
Analyte	C	Count Result	Units	RL	%REC Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	D2974							Batch:	R114087
Lab ID:	H16030296-020ADUP	Sample Duplica	ate		Run: SOIL I	DRYING OVE	N 2_16032	03/30/	/16 08:04
Moisture		77.5	wt%	0.20			2.2	20	
Lab ID:	H16030296-030ADUP	Sample Duplica	ate		Run: SOIL I	DRYING OVE	N 2_16032	03/30/	/16 08:04
Moisture		66.0	wt%	0.20			4.7	20	



Prepared by Helena, MT Branch

### Client: MT DEQ-Federal Superfund

**Project:** CFR Monitoring-474374

Revised Date: 04/26/16 Report Date: 04/21/16 Work Order: H16030296

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD RPDLimi	Qual
Method:	E200.7							An	alytical Run: ICP2-H	E_160318B
Lab ID:	ICV	4 Init	tial Calibratio	on Verification	Standard				03/1	8/16 09:41
Calcium			40.9	mg/L	1.0	102	95	105		
Magnesium			40.7	mg/L	1.0	102	95	105		
Potassium			39.7	mg/L	1.0	99	95	105		
Sodium			39.7	mg/L	1.0	99	95	105		
Lab ID:	CCV-1	4 Co	ntinuing Cal	ibration Verific	ation Standa	rd			03/1	8/16 09:45
Calcium			25.0	mg/L	1.0	100	95	105		
Magnesium			24.7	mg/L	1.0	99	95	105		
Potassium			24.4	mg/L	1.0	98	95	105		
Sodium			24.5	mg/L	1.0	98	95	105		
Lab ID:	ICSA	4 Inte	erference Cl	neck Sample A	A				03/1	8/16 10:19
Calcium			473	mg/L	1.0	95	80	120		
Magnesium			494	mg/L	1.0	99	80	120		
Potassium			-0.0107	mg/L	1.0		0	0		
Sodium			0.0226	mg/L	1.0		0	0		
Lab ID:	ICSAB	4 Inte	erference Cl	neck Sample A	AB				03/1	8/16 10:23
Calcium			471	mg/L	1.0	94	80	120		
Magnesium			494	mg/L	1.0	99	80	120		
Potassium			18.9	mg/L	1.0	94	80	120		
Sodium			19.0	mg/L	1.0	95	80	120		
Lab ID:	ccv	4 Co	ntinuing Cal	ibration Verific	ation Standa	rd			03/1	8/16 12:45
Calcium			24.9	mg/L	1.0	100	90	110		
Magnesium			24.5	mg/L	1.0	98	90	110		
Potassium			24.4	mg/L	1.0	98	90	110		
Sodium			24.5	mg/L	1.0	98	90	110		
Lab ID:	CCV	4 Co	ntinuing Cal	ibration Verific	ation Standa	rd			03/1	8/16 13:56
Calcium			25.0	mg/L	1.0	100	90	110		
Magnesium			24.6	mg/L	1.0	98	90	110		
Potassium			24.9	mg/L	1.0	100	90	110		
Sodium			24.8	mg/L	1.0	99	90	110		
Lab ID:	CCV	4 Co	ntinuing Cal	ibration Verific	ation Standa	rd			03/1	8/16 14:41
Calcium			24.8	mg/L	1.0	99	90	110		
Magnesium			24.5	mg/L	1.0	98	90	110		
Potassium			24.4	mg/L	1.0	98	90	110		
Sodium			24.3	mg/L	1.0	97	90	110		
Lab ID:	CCV	4 Co	ntinuing Cal	ibration Verific	ation Standa	rd			03/1	8/16 15:25
Calcium			24.8	mg/L	1.0	99	90	110		
Magnesium			24.5	mg/L	1.0	98	90	110		
Potassium			24.1	mg/L	1.0	96	90	110		
Sodium			24.1	mg/L	1.0	96	90	110		

**Qualifiers:** 

RL - Analyte reporting limit.



Prepared by Helena, MT Branch

### Client: MT DEQ-Federal Superfund

**Project:** CFR Monitoring-474374

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	E200.7									Bat	ch: 32303
Lab ID:	MB-32303	4 Met	hod Blank				Run: ICP2-	HE_160318B		03/18/	/16 13:00
Calcium			ND	mg/L	0.04						
Magnesium	ı		ND	mg/L	0.01						
Potassium			ND	mg/L	0.04						
Sodium			ND	mg/L	0.02						
Lab ID:	LCS-32303	4 Lab	oratory Cor	ntrol Sample			Run: ICP2-	HE_160318B		03/18/	/16 13:04
Calcium			25.3	mg/L	1.0	101	85	115			
Magnesium	ı		25.1	mg/L	1.0	100	85	115			
Potassium			25.2	mg/L	1.0	101	85	115			
Sodium			25.3	mg/L	1.0	101	85	115			
Lab ID:	H16030296-001CMS	<b>3</b> 4 Sar	nple Matrix	Sp ke			Run: ICP2-	HE_160318B		03/18/	/16 13:15
Calcium			68.9	mg/L	1.0	101	70	130			
Magnesium	ı		36.0	mg/L	1.0	100	70	130			
Potassium			28.1	mg/L	1.0	103	70	130			
Sodium			34.8	mg/L	1.0	104	70	130			
Lab ID:	H16030296-001CMS	D 4 Sar	nple Matrix	Sp ke Duplicate			Run: ICP2-	HE_160318B		03/18/	/16 13:19
Calcium			68.8	mg/L	1.0	100	70	130	0.1	20	
Magnesium	ı		36.2	mg/L	1.0	101	70	130	0.6	20	
Potassium			28.7	mg/L	1.0	105	70	130	2.0	20	
Sodium			35.4	mg/L	1.0	106	70	130	1.6	20	
Lab ID:	H16030296-010CDIL	4 Ser	ial Dilution				Run: ICP2-	HE_160318B		03/18/	/16 14:37
Calcium			60.9	mg/L	1.0		0	0	0.8	10	
Magnesium	1		13.9	mg/L	1.0		0	0	1.2	10	
Potassium			3.80	mg/L	1.0		0	0	0.8	10	
Sodium			17.5	mg/L	1.0		0	0	0.1	10	
Lab ID:	H16030296-010CMS	<b>3</b> 4 Sar	nple Matrix	Sp ke			Run: ICP2-	HE_160318B		03/18/	/16 14:48
Calcium			85.3	mg/L	1.0	100	70	130			
Magnesium	1		38.4	mg/L	1.0	99	70	130			
Potassium			29.4	mg/L	1.0	102	70	130			
Sodium			43.3	mg/L	1.0	103	70	130			
Lab ID:	H16030296-010CMS	D 4 Sar	nple Matrix	Sp ke Duplicate			Run: ICP2-	HE_160318B		03/18/	/16 14:52
Calcium			87.6	mg/L	1.0	109	70	130	2.6	20	
Magnesium	ı		39.4	mg/L	1.0	103	70	130	2.6	20	
Potassium			29.8	mg/L	1.0	104	70	130	1.4	20	
Sodium			43.9	mg/L	1.0	106	70	130	1.5	20	



Prepared by Helena, MT Branch

### Client: MT DEQ-Federal Superfund

**Project:** CFR Monitoring-474374

Revised Date: 04/26/16 Report Date: 04/21/16 Work Order: H16030296

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	E200.8							Analytic	al Run: I	CPMS204-B	_160318A
Lab ID:	ICV STD	5 Ini	tial Calibratio	on Verificatio	n Standard					03/18/	/16 10:37
Arsenic			0.0590	mg/L	0.0050	98	90	110			
Cadmium			0.0299	mg/L	0.0010	100	90	110			
Copper			0.0599	mg/L	0.010	100	90	110			
Lead			0.0585	mg/L	0.010	98	90	110			
Zinc			0.0610	mg/L	0.010	102	90	110			
Lab ID:	ICSA	5 Int	erference Cł	neck Sample	A					03/18/	/16 10:40
Arsenic			0.000195	mg/L	0.0050						
Cadmium			0.000620	mg/L	0.0010						
Copper			0.000459	mg/L	0.010						
Lead			0.000221	mg/L	0.010						
Zinc			0.000662	mg/L	0.010						
Lab ID:	ICSAB	5 Int	erference Cł	neck Sample	AB					03/18/	/16 10:44
Arsenic			0.0104	mg/L	0.0050	104	70	130			
Cadmium			0.0106	mg/L	0.0010	106	70	130			
Copper			0.0203	mg/L	0.010	102	70	130			
Lead			0.000216	mg/L	0.010		0	0			
Zinc			0.0100	mg/L	0.010	100	70	130			
Lab ID:	ICV STD	5 Ini	tial Calibratio	on Verificatio	n Standard					03/18/	/16 19:18
Arsenic			0.0641	mg/L	0.0050	107	90	110			
Cadmium			0.0319	mg/L	0.0010	106	90	110			
Copper			0.0653	mg/L	0.010	109	90	110			
Lead			0.0630	mg/L	0.010	105	90	110			
Zinc			0.0647	mg/L	0.010	108	90	110			
Lab ID:	ICSA	5 Int	erference Cł	neck Sample	A					03/18/	/16 19:21
Arsenic			0.000129	mg/L	0.0050						
Cadmium			0.000562	mg/L	0.0010						
Copper			0.000514	mg/L	0.010						
Lead			0.000245	mg/L	0.010						
Zinc			0.000543	mg/L	0.010						
Lab ID:	ICSAB	5 Int	erference Cl	neck Sample	AB					03/18/	/16 19:24
Arsenic			0.0106	mg/L	0.0050	106	70	130			
Cadmium			0.0103	mg/L	0.0010	103	70	130			
Copper			0.0205	mg/L	0.010	103	70	130			
Lead			0.000232	mg/L	0.010		0	0			
Zinc			0.0105	mg/L	0.010	105	70	130			
Method:	E200.8									Bat	ch: 32303
Lab ID:	MB-32303	9 Me	thod Blank				Run: ICPM	S204-B_160318	BA	03/18/	/16 20:10
Arsenic			0.0002	mg/L	7E-05			_			
Cadmium			ND	mg/L	1E-05						
Calcium			0.01	mg/L	0.009						

### **Qualifiers:**

RL - Analyte reporting limit.



Prepared by Helena, MT Branch

### Client: MT DEQ-Federal Superfund

**Project:** CFR Monitoring-474374

Revised Date: 04/26/16 Report Date: 04/21/16 Work Order: H16030296

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	E200.8									Bat	ch: 32303
Lab ID:	MB-32303	9 Me	thod Blank				Run: ICPM	S204-B_160318A		03/18/	/16 20:10
Copper			0.0003	mg/L	5E-05						
Lead			4E-05	mg/L	2E-05						
Magnesiun	n		0.002	mg/L	0.002						
Potassium			0.03	mg/L	0.01						
Sodium			0.3	mg/L	0.005						
Zinc			0.002	mg/L	0.0003						
Lab ID:	LCS-32303	9 Lal	boratory Cor	ntrol Sample			Run: ICPM	S204-B_160318A		03/18/	/16 20:13
Arsenic			0.526	mg/L	0.0010	105	85	115			
Cadmium			0.255	mg/L	0.0010	102	85	115			
Calcium			26.2	mg/L	1.0	105	85	115			
Copper			0.509	mg/L	0.0050	102	85	115			
Lead			0.509	mg/L	0.0010	102	85	115			
Magnesiun	n		25.6	mg/L	1.0	102	85	115			
Potassium			25.8	mg/L	1.0	103	85	115			
Sodium			25.5	mg/L	1.0	101	85	115			
Zinc			0.506	mg/L	0.010	101	85	115			
Lab ID:	H16030296-001CMS	<b>3</b> 9 Sa	mple Matrix	Sp ke			Run: ICPM	S204-B_160318A		03/18/	/16 20:42
Arsenic			0.540	mg/L	0.0010	107	70	130			
Cadmium			0.256	mg/L	0.0010	102	70	130			
Calcium			72.5	mg/L	1.0	113	70	130			
Copper			0.524	mg/L	0.0050	102	70	130			
Lead			0.531	mg/L	0.0010	106	70	130			
Magnesiun	n		37.7	mg/L	1.0	105	70	130			
Potassium			28.6	mg/L	1.0	105	70	130			
Sodium			35.5	mg/L	1.0	106	70	130			
Zinc			0.517	mg/L	0.010	99	70	130			
Lab ID:	H16030296-001CMSI	D 9 Sa	mple Matrix	Sp ke Duplicate			Run: ICPM	S204-B_160318A		03/18/	/16 20:46
Arsenic			0.530	mg/L	0.0010	105	70	130	1.7	20	
Cadmium			0.255	mg/L	0.0010	102	70	130	0.4	20	
Calcium			70.1	mg/L	1.0	103	70	130	3.4	20	
Copper			0.515	mg/L	0.0050	100	70	130	1.8	20	
Lead			0.518	mg/L	0.0010	103	70	130	2.4	20	
Magnesiun	n		36.5	mg/L	1.0	100	70	130	3.3	20	
Potassium			28.1	mg/L	1.0	103	70	130	1.9	20	
Sodium			34.3	mg/L	1.0	101	70	130	3.4	20	
Zinc			0.511	mg/L	0.010	98	70	130	1.2	20	
Lab ID:	H16030296-010CMS	<b>3</b> 9 Sa	mple Matrix	Sp ke			Run: ICPM	S204-B_160318A		03/18/	/16 22:20
Arsenic			0.549	mg/L	0.0010	108	70	130			
Cadmium			0.262	mg/L	0.0010	105	70	130			
Calcium			89.4	mg/L	1.0	125	70	130			
Copper			0.525	mg/L	0.0050	102	70	130			

**Qualifiers:** 

RL - Analyte reporting limit.



Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund

Revised Date: 04/26/16 Report Date: 04/21/16 Work Order: H16030296

Project: (	CFR Monitoring-4743	374				Work Order: H1603					96
Analyte		Cour	nt Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	E200.8									Bat	ch: 32303
Lab ID:	H16030296-010CMS3	<b>3</b> 9	Sample Matrix	c Sp ke			Run: ICPM	S204-B_160318A		03/18/	/16 22:20
Lead			0.532	mg/L	0.0010	106	70	130			
Magnesium	ı		41.0	mg/L	1.0	108	70	130			
Potassium			29.4	mg/L	1.0	103	70	130			
Sodium			45.0	mg/L	1.0	111	70	130			
Zinc			0.533	mg/L	0.010	102	70	130			
Lab ID:	H16030296-010CMSI	<b>)</b> 9	Sample Matrix	Sp ke Dup	olicate		Run: ICPM	S204-B_160318A		03/18/	16 22:23
Arsenic			0.504	mg/L	0.0010	99	70	130	8.5	20	
Cadmium			0.241	mg/L	0.0010	96	70	130	8.3	20	
Calcium			82.0	mg/L	1.0	96	70	130	8.5	20	
Copper			0.485	mg/L	0.0050	94	70	130	7.9	20	
Lead			0.491	mg/L	0.0010	98	70	130	8.1	20	
Magnesium	ı		38.2	mg/L	1.0	97	70	130	7.1	20	
Potassium			26.9	mg/L	1.0	93	70	130	8.9	20	
Sodium			41.8	mg/L	1.0	98	70	130	7.3	20	
Zinc			0.487	mg/L	0.010	93	70	130	9.2	20	
Method:	E200.8									Batch:	R113783
Lab ID:	ICB	4	Method Blank				Run: ICPM	S204-B_160318A		03/18/	/16 19:41
Arsenic			ND	mg/L	6E-05						
Cadmium			ND	mg/L	1E-05						
Copper			ND	mg/L	6E-05						
Lead			ND	mg/L	5E-06						
Lab ID:	LFB	4	Laboratory Fo	rtified Blank	k		Run: ICPM	S204-B 160318A		03/18/	/16 19:44
Arsenic			0.0542	mg/L	0.0050	108	85	115			
Cadmium			0.0530	mg/L	0.0010	106	85	115			
Copper			0.0534	mg/L	0.010	107	85	115			
Lead			0.0515	mg/L	0.010	103	85	115			
Lab ID:	H16030270-004BMS	4	Sample Matrix	Soke			Run: ICPM	S204-B 160318A		03/18/	/16 19:54
Arsenic			0.0603	ma/L	0.0010	119	70	130			
Cadmium			0.0522	ma/L	0.0010	104	70	130			
Copper			0.0526	mg/L	0.0050	103	70	130			
Lead			0.0530	mg/L	0.0010	106	70	130			
Lab ID:	H16030270-004BMSI	<b>5</b> 4	Sample Matrix	r Sn ke Dun	licate		Run: ICPM	S204-B 1603184		03/18/	16 19.57
Arsenic			0.0567	ma/l	0.0010	112	70	130	6.1	20	10 10.07
Cadmium			0.0492	ma/l	0.0010	98	70	130	5.8	20	
Copper			0.0500	ma/l	0.0050	98	70	130	5.0	20	
Lead			0.0500	mg/L	0.0010	100	70	130	5.9	20	
		А	Comple Matri	Colice	-	-		2004 D 4000404		00/40	46 04-54
	LI00205280-008RN2	4	Sample Matrix	сорке	0.0040	407	Kun: ICPM	5∠04-В_160318A		03/18/	10 21:54
Arsenic			0.0650	mg/L	0.0010	107	70	130			
Caamium			0.0506	mg/L	0.0010	101	70	130			
Copper			0.0531	mg/L	0.0050	98	70	130			

**Qualifiers:** 

RL - Analyte reporting limit.



Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund

**Project:** CFR Monitoring-474374

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	E200.8									Batch:	R113783
Lab ID:	H16030296-009BMS	4 S	ample Matrix	Sp ke			Run: ICPM	S204-B_160318A		03/18/	/16 21:54
Lead			0.0497	mg/L	0.0010	99	70	130			
Lab ID:	H16030296-009BMSI	<b>)</b> 4 S	ample Matrix	Sp ke Duplicate			Run: ICPM	S204-B_160318A		03/18/	/16 21:57
Arsenic			0.0643	mg/L	0.0010	105	70	130	1.1	20	
Cadmium			0.0494	mg/L	0.0010	99	70	130	2.4	20	
Copper			0.0524	mg/L	0.0050	97	70	130	1.5	20	
Lead			0.0486	mg/L	0.0010	97	70	130	2.2	20	
Lab ID:	H16030301-020AMS	4 S	ample Matrix	Sp ke			Run: ICPM	S204-B_160318A		03/19/	/16 00:24
Arsenic			0.0503	mg/L	0.0010	101	70	130			
Cadmium			0.0509	mg/L	0.0010	102	70	130			
Copper			0.0558	mg/L	0.0050	101	70	130			
Lead			0.0496	mg/L	0.0010	98	70	130			
Lab ID:	H16030301-020AMS	<b>)</b> 4 S	ample Matrix	Sp ke Duplicate			Run: ICPM	S204-B_160318A		03/19/	/16 00:27
Arsenic			0.0531	mg/L	0.0010	106	70	130	5.4	20	
Cadmium			0.0536	mg/L	0.0010	107	70	130	5.2	20	
Copper			0.0585	mg/L	0.0050	106	70	130	4.8	20	
Lead			0.0510	ma/L	0.0010	100	70	130	2.9	20	



Prepared by Helena, MT Branch

				Prepared by F	lelena, N	I Branc	h	Revise	d Date:	04/26/16	
Client:	MT DEQ-Federal Su	perfund						Repo	ort Date:	04/21/16	
Project:	CFR Monitoring-4743	374						Worl	k Order:	H160302	96
Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	E200.8							Analytic	al Run: I	CPMS204-B	_160321A
Lab ID:	ICV STD	Ini	tial Calibratio	on Verification Sta	andard					03/21	/16 11:47
Zinc			0.0605	mg/L	0.010	101	90	110			
Lab ID:	ICSA	Int	erference C	heck Sample A						03/21	/16 11:50
Zinc			0.000660	mg/L	0.010						
Lab ID:	ICSAB	Int	erference C	heck Sample AB						03/21	/16 11:53
Zinc			0.0103	mg/L	0.010	103	70	130			
Method:	E200.8									Bat	tch: 32303
Lab ID:	MB-32303	9 Me	ethod Blank				Run: ICPM	S204-B_160321	IA	03/22	/16 00:09
Arsenic			0.0001	mg/L	7E-05						
Cadmium			ND	mg/L	1E-05						
Calcium			0.03	mg/L	0.009						
Copper			0.0001	mg/L	5E-05						
Lead			2E-05	mg/L	2E-05						
Magnesiu	m		ND	mg/L	0.002						
Potassium	n		0.02	mg/L	0.01						
Sodium			0.03	mg/L	0.005						
Zinc			0.002	mg/L	0.0003						
Method:	E200.8									Batch	: R113863
Lab ID:	ICB	Me	ethod Blank				Run: ICPM	S204-B_160321	A	03/21	/16 12:21
Zinc			0.0003	mg/L	0.0002						
Lab ID:	LFB	La	boratory For	tified Blank			Run: ICPM	S204-B_160321	A	03/21	/16 12:24
Zinc			0.0535	mg/L	0.010	106	85	115			
Lab ID:	H16030296-002BMS	Sa	mple Matrix	Sp ke			Run: ICPM	S204-B_160321	IA	03/21	/16 22:34
Zinc			0.0624	mg/L	0.010	110	70	130			
Lab ID:	H16030296-002BMSI	D Sa	mple Matrix	Sp ke Duplicate			Run: ICPM	S204-B_160321	IA	03/21	/16 22:37
Zinc			0.0623	mg/L	0.010	110	70	130	0.1	20	
Lab ID:	H16030296-012BMS	Sa	mple Matrix	Sp ke			Run: ICPM	S204-B_160321	A	03/21	/16 23:26
Zinc			0.0509	mg/L	0.010	95	70	130			
Lab ID:	H16030296-012BMSI	D Sa	mple Matrix	Sp ke Duplicate			Run: ICPM	S204-B_160321	IA	03/21	/16 23:30
Zinc			0.0535	mg/L	0.010	100	70	130	5.0	20	



Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund

Project: CFR Monitoring-474374

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	E245.1							Analytica	al Run: I	HGCV202-H	_160321A
Lab ID:	ICV	Ini	tial Calibrati	on Verifica	tion Standard					03/21	/16 10:54
Mercury			0.000202	mg/L	0.00010	101	90	110			
Lab ID:	CCV1	Co	ontinuing Ca	libration Ve	erification Standar	d				03/21	/16 10:56
Mercury			0.000203	mg/L	0.00010	101	90	110			
Method:	E245.1									Bat	ch: 32298
Lab ID:	MB-32298	Me	ethod Blank				Run: HGC\	/202-H_160321A		03/21	/16 11:17
Mercury			ND	mg/L	1E-06						
Lab ID:	LCS-32298	La	boratory Co	ntrol Samp	ble		Run: HGC\	/202-H_160321A		03/21	/16 11:20
Mercury			0.000152	mg/L	0.00010	102	90	110			
Lab ID:	H16030280-001BMS	Sa	mple Matrix	Sp ke			Run: HGC\	/202-H_160321A		03/21	/16 11:31
Mercury			0.000156	mg/L	0.00010	104	70	130			
Lab ID:	H16030280-001BMS	D Sa	mple Matrix	Sp ke Dup	olicate		Run: HGC\	/202-H_160321A		03/21	/16 11:34
Mercury			0.000153	mg/L	0.00010	102	70	130	2.2	20	
Lab ID:	H16030296-018AMS	Sa	mple Matrix	Sp ke			Run: HGC\	/202-H_160321A		03/21	/16 11:51
Mercury			0.00017	mg/L	0.00010	93	70	130			
Lab ID:	H16030296-018AMSI	D Sa	mple Matrix	Sp ke Dup	olicate		Run: HGC\	/202-H_160321A		03/21	/16 11:54
Mercurv			0.00018	ma/L	0.00010	96	70	130	2.1	20	



Prepared by Helena, MT Branch

				Flepaleur	by neiena, ivi		Revised Date: 04/26/16				
Client:	MT DEQ-Federal Su	perfur	nd					Repo	ort Date:	04/21/16	
Project:	CFR Monitoring-4743	374						Wor	k Order:	H160302	96
Analyte		Cour	nt Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	E300.0							Ar	alytical R	un: IC102-H	_160317A
Lab ID:	ICV	2	Initial Calibrati	on Verificatio	n Standard					03/17	/16 14:14
Chloride			102	mg/L	1.0	102	90	110			
Sulfate			401	mg/L	1.0	100	90	110			
Lab ID:	CCV031716-1	2	Continuing Ca	libration Verif	ication Standa	rd				03/17	/16 14:36
Chloride			102	mg/L	1.0	102	90	110			
Sulfate			399	mg/L	1.0	100	90	110			
Lab ID:	CCV031716-2	2	Continuing Ca	libration Verif	ication Standa	rd				03/17	/16 17:23
Chloride			102	mg/L	1.0	102	90	110			
Sulfate			400	mg/L	1.0	100	90	110			
Method:	E300.0									Batch:	R113754
Lab ID:	ICB	2	Method Blank				Run: IC102	-H_160317A		03/17/	/16 14:03
Chloride			0.04	mg/L	0.006						
Sulfate			0.08	mg/L	0.05						
Lab ID:	LFB	2	Laboratory Fo	rtified Blank			Run: IC102	-H_160317A		03/17	/16 14:25
Chloride			49.1	mg/L	1.0	98	90	110			
Sulfate			215	mg/L	1.0	107	90	110			
Lab ID:	H16030296-010AMS	2	Sample Matrix	Sp ke			Run: IC102	-H_160317A		03/17	/16 17:00
Chloride			69.8	mg/L	1.0	104	90	110			
Sulfate			312	mg/L	1.0	102	90	110			
Lab ID:	H16030296-010AMSI	<b>D</b> 2	Sample Matrix	Sp ke Duplic	ate		Run: IC102	-H_160317A		03/17	/16 17:12
Chloride			69.6	mg/L	1.0	103	90	110	0.4	20	
Sulfate			311	mg/L	1.0	102	90	110	0.1	20	
Lab ID:	H16030301-003AMS	2	Sample Matrix	Sp ke			Run: IC102	-H_160317A		03/17	/16 19:47
Chloride			56.2	mg/L	1.0	99	90	110			
Sulfate			239	mg/L	1.0	104	90	110			
Lab ID:	H16030301-003AMSI	<b>D</b> 2	Sample Matrix	Sp ke Duplic	ate		Run: IC102	-H_160317A		03/17	/16 19:58
Chloride			56.9	mg/L	1.0	100	90	110	1.2	20	
Sulfate			238	mg/L	1.0	104	90	110	0.2	20	



Prepared by Helena, MT Branch

### Client: MT DEQ-Federal Superfund

Project: CFR Monitoring-474374

Revised Date: 04/26/16 Report Date: 04/21/16 Work Order: H16030296

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E350.1							Analyti	cal Run	: FIA203-HE	_160321A
Lab ID: ICV	Initia	l Calibrati	on Verificatio	n Standard					03/21	/16 09:17
Nitrogen, Ammonia as N		9.62	mg/L	0.25	104	90	110			
Lab ID: CCV	Cont	inuing Ca	libration Verif	fication Standar	d				03/21	/16 09:19
Nitrogen, Ammonia as N		0.492	mg/L	0.050	98	90	110			
Lab ID: ICB	Initia	l Calibrati	ion Blank, Ins	trument Blank					03/21	/16 09:20
Nitrogen, Ammonia as N		0.0498	mg/L	0.050		0	0			
Lab ID: CCV	Cont	inuing Ca	libration Verif	fication Standar	d				03/21	/16 09:37
Nitrogen, Ammonia as N		0.497	mg/L	0.050	99	90	110			
Lab ID: CCV	Cont	inuing Ca	libration Verif	fication Standar	d				03/21	/16 09:53
Nitrogen, Ammonia as N		0.495	mg/L	0.050	99	90	110			
Method: E350.1									Batch:	R113786
Lab ID: LFB	Labo	oratory Fo	rtified Blank			Run: FIA20	3-HE_160321A		03/21	/16 09:18
Nitrogen, Ammonia as N		1.06	mg/L	0.055	106	90	110			
Lab ID: LFB	Labo	oratory Fo	rtified Blank			Run: FIA20	3-HE_160321A		03/21	/16 09:21
Nitrogen, Ammonia as N		0.965	mg/L	0.050	97	90	110			
Lab ID: H16030276-002AMS	Sam	ple Matrix	sp ke			Run: FIA20	3-HE_160321A		03/21	/16 09:26
Nitrogen, Ammonia as N		1.03	mg/L	0.055	103	80	120			
Lab ID: H16030276-002AMS	SD Sam	ple Matrix	Sp ke Duplic	ate		Run: FIA20	3-HE_160321A		03/21	/16 09:27
Nitrogen, Ammonia as N		1.04	mg/L	0.055	104	80	120	1.6	10	
Lab ID: H16030296-006DMS	Sam	ple Matrix	Sp ke			Run: FIA20	3-HE_160321A		03/21	/16 09:40
Nitrogen, Ammonia as N		1.04	mg/L	0.055	104	80	120			
Lab ID: H16030296-006DMS	SD Sam	ple Matrix	Sp ke Duplic	ate		Run: FIA20	3-HE_160321A		03/21	/16 09:42
Nitrogen, Ammonia as N		1.06	mg/L	0.055	106	80	120	2.0	10	
Lab ID: H16030296-016DMS	S Sam	ple Matrix	sp ke			Run: FIA20	3-HE_160321A		03/21	/16 09:57
Nitrogen, Ammonia as N		1.04	mg/L	0.055	104	80	120			
Lab ID: H16030296-016DMS	SD Sam	ple Matrix	Sp ke Duplic	cate		Run: FIA20	3-HE_160321A		03/21	/16 09:58
Nitrogen, Ammonia as N		1.05	mg/L	0.055	105	80	120	0.8	10	



Prepared by Helena, MT Branch

### Client: MT DEQ-Federal Superfund

Project: CFR Monitoring-474374

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	E353.2							Analyti	cal Run	: FIA203-HE	_160317A
Lab ID:	ICV	Initia	al Calibrati	on Verifica	ation Standard					03/17	/16 09:05
Nitrogen,	Nitrate+Nitrite as N		1.09	mg/L	0.010	109	90	110			
Lab ID:	ICB	Initia	al Calibrati	on Blank,	Instrument Blank					03/17	/16 09:06
Nitrogen,	Nitrate+Nitrite as N		-0.00658	mg/L	0.010		0	0			
Lab ID:	CCV	Con	tinuing Ca	libration V	erification Standa	rd				03/17	/16 09:24
Nitrogen,	Nitrate+Nitrite as N		0.501	mg/L	0.010	100	90	110			
Lab ID:	CCV	Con	tinuing Ca	libration V	erification Standa	rd				03/17	/16 09:41
Nitrogen,	Nitrate+Nitrite as N		0.506	mg/L	0.010	101	90	110			
Lab ID:	CCV	Con	tinuing Ca	libration V	erification Standa	rd				03/17	/16 09:57
Nitrogen,	Nitrate+Nitrite as N		0.503	mg/L	0.010	101	90	110			
Lab ID:	ICV	Initia	al Calibrati	on Verifica	ation Standard					03/17	/16 13:21
Nitrogen,	Nitrate+Nitrite as N		0.975	mg/L	0.010	98	90	110			
Lab ID:	ICB	Initia	al Calibrati	on Blank,	Instrument Blank					03/17	/16 13:23
Nitrogen,	Nitrate+Nitrite as N		-0.0115	mg/L	0.010		0	0			
Method:	E353.2									Batch:	R113736
Lab ID:	LFB	Lab	oratory Fo	rtified Blar	nk		Run: FIA20	3-HE_160317A		03/17	/16 09:07
Nitrogen,	Nitrate+Nitrite as N		0.983	mg/L	0.011	98	90	110			
Lab ID:	H16030296-007DMS	San	nple Matrix	Sp ke			Run: FIA20	3-HE_160317A		03/17	/16 09:43
Nitrogen,	Nitrate+Nitrite as N		1.17	mg/L	0.011	100	90	110			
Lab ID:	H16030296-007DMS	D San	nple Matrix	Sp ke Du	plicate		Run: FIA20	3-HE_160317A		03/17	/16 09:44
Nitrogen,	Nitrate+Nitrite as N		1.16	mg/L	0.011	99	90	110	1.0	20	
Lab ID:	H16030296-017DMS	San	nple Matrix	s Sp ke			Run: FIA20	3-HE_160317A		03/17	/16 10:00
Nitrogen,	Nitrate+Nitrite as N		1.02	mg/L	0.011	100	90	110			
Lab ID:	H16030296-017DMS	D San	nple Matrix	s Sp ke Du	plicate		Run: FIA20	3-HE_160317A		03/17	/16 10:01
Nitrogen,	Nitrate+Nitrite as N		1.01	mg/L	0.011	99	90	110	0.7	20	



Prepared by Helena, MT Branch

Revised Date: 04/26/16 **Client:** MT DEQ-Federal Superfund Report Date: 04/21/16 Project: CFR Monitoring-474374 Work Order: H16030296 Result Units RL %REC Low Limit High Limit **RPD RPDLimit** Qual Analyte Count Method: E353.2 Analytical Run: FIA203-HE\_160318A Lab ID: ICV Initial Calibration Verification Standard 03/18/16 09:36 Nitrogen, Nitrate+Nitrite as N 0.922 mg/L 0.010 92 90 110 Lab ID: ICB Initial Calibration Blank, Instrument Blank 03/18/16 09:38 Nitrogen, Nitrate+Nitrite as N -0.00786 0.010 0 0 mg/L Batch: R113757 E353.2 Method: Lab ID: LFB 03/18/16 09:39 Laboratory Fortified Blank Run: FIA203-HE\_160318A Nitrogen, Nitrate+Nitrite as N 0.994 mg/L 0.011 99 90 110 H16030296-002DMS Lab ID: Sample Matrix Sp ke Run: FIA203-HE\_160318A 03/18/16 09:45 Nitrogen, Nitrate+Nitrite as N 0.985 mg/L 0.011 99 90 110 Lab ID: H16030296-002DMSD Run: FIA203-HE 160318A 03/18/16 09:46 Sample Matrix Sp ke Duplicate Nitrogen, Nitrate+Nitrite as N 1.04 mg/L 0.011 104 90 110 5.1 20



Prepared by Helena, MT Branch

### Client: MT DEQ-Federal Superfund

Project: CFR Monitoring-474374

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	E365.1							Analytic	cal Run	FIA202-HE	_160317B
Lab ID:	ICV	Init	ial Calibratio	on Verificatior	n Standard					03/17	/16 13:22
Phosphoru	is, Total as P		0.243	mg/L	0.010	97	90	110			
Lab ID:	CCV	Co	ntinuing Cal	libration Verifi	ication Standar	ď				03/17	/16 13:23
Phosphoru	is, Total as P		0.0934	mg/L	0.010	93	90	110			
Lab ID:	ICB	Init	ial Calibratio	on Blank, Inst	trument Blank					03/17	/16 13:24
Phosphoru	is, Total as P		-0.00478	mg/L	0.010		0	0			
Lab ID:	CCV	Co	ntinuing Cal	libration Verifi	ication Standar	ď				03/17	/16 13:41
Phosphoru	is, Total as P		0.0916	mg/L	0.010	92	90	110			
Method:	E365.1									Bat	ch: 32295
Lab ID:	LCS-32295	Lab	oratory Co	ntrol Sample			Run: FIA20	2-HE_160317B		03/17	/16 13:25
Phosphoru	is, Total as P		0.402	mg/L	0.010	101	90	110			
Lab ID:	MB-32295	Me	thod Blank				Run: FIA20	2-HE_160317B		03/17	/16 13:26
Phosphoru	is, Total as P		ND	mg/L	0.001						
Lab ID:	H16030296-001Dms	Sai	mple Matrix	Sp ke			Run: FIA20	2-HE_160317B		03/17	/16 13:36
Phosphoru	is, Total as P		0.223	mg/L	0.010	99	90	110			
Lab ID:	H16030296-001Dms	d Sai	mple Matrix	Sp ke Duplic	ate		Run: FIA20	2-HE_160317B		03/17	/16 13:37
Phosphoru	is, Total as P		0.233	mg/L	0.010	104	90	110	4.2	20	
Lab ID:	H16030296-004Dms	Sai	mple Matrix	Sp ke			Run: FIA20	2-HE_160317B		03/17	/16 13:43
Phosphoru	is, Total as P		0.226	mg/L	0.010	102	90	110			
Lab ID:	H16030296-004Dms	d Sai	mple Matrix	Sp ke Duplic	ate		Run: FIA20	2-HE_160317B		03/17	/16 13:44
Phosphoru	is, Total as P		0.219	mg/L	0.010	99	90	110	3.1	20	



Prepared by Helena, MT Branch

Revised Date: 04/26/16 Report Date: 04/21/16 Work Order: H16030296

Project: CFR Monitoring-474374 Work Order									H160302	96	
Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	E365.1							Analyt	tical Run	FIA202-HE	_160322A
Lab ID:	ICV	Initia	al Calibrati	on Verificatio	on Standard					03/22	/16 13:15
Phosphoru	us, Total as P		0.268	mg/L	0.010	107	90	110			
Lab ID:	CCV	Con	tinuing Ca	libration Veri	fication Standa	rd				03/22	/16 13:16
Phosphoru	us, Total as P		0.102	mg/L	0.010	102	90	110			
Lab ID:	ICB	Initia	al Calibrati	on Blank, Ins	strument Blank					03/22	/16 13:17
Phosphoru	us, Total as P	(	0.000300	mg/L	0.010		0	0			
Method:	E365.1									Bat	ch: 32324
Lab ID:	LCS-32324	Lab	oratory Co	ntrol Sample			Run: FIA20	2-HE_160322A		03/22	/16 13:18
Phosphoru	us, Total as P		0.442	mg/L	0.010	110	90	110			
Lab ID:	MB-32324	Met	hod Blank				Run: FIA20	2-HE_160322A		03/22	/16 13:19
Phosphoru	us, Total as P		ND	mg/L	0.001						
Lab ID:	H16030296-014DMS	San	nple Matrix	Sp ke			Run: FIA20	2-HE_160322A		03/22	/16 13:22
Phosphoru	us, Total as P		0.241	mg/L	0.010	110	90	110			
Lab ID:	H16030296-014DMS	D San	nple Matrix	Sp ke Duplic	cate		Run: FIA20	2-HE_160322A		03/22	/16 13:23
Phosphoru	us, Total as P		0.246	mg/L	0.010	112	90	110	2.0	20	S

**Qualifiers:** 

RL - Analyte reporting limit.

S - Spike recovery outside of advisory limits.



Prepared by Helena, MT Branch

	Client:	MT D	DEQ-Federal	Superfund
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Project: CFR Monitoring-474374

Analyte		Coun	t Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	SW6010B							An	alytical R	un: ICP2-HE	_160401B
Lab ID:	ICV	2	Initial Calibra	tion Verification S	standard					04/01	/16 09:11
Copper			0.806	mg/L	0.010	101	90	110			
Zinc			0.801	mg/L	0.010	100	90	110			
Lab ID:	ICSA	2	Interference (	Check Sample A						04/01	/16 09:49
Copper			-0.00351	mg/L	0.010		0	0			
Zinc			0.00247	mg/L	0.010		0	0			
Lab ID:	ICSAB	2	Interference (	Check Sample AE	3					04/01	/16 09:53
Copper			0.486	mg/L	0.010	97	80	120			
Zinc			0.936	mg/L	0.010	94	80	120			
Method:	SW6010B									Bat	ch: 32414
Lab ID:	MB-32414	2	Method Blank	K			Run: ICP2-	HE_160401B		04/01	/16 11:48
Copper			ND	mg/kg	0.2						
Zinc			ND	mg/kg	0.3						
Lab ID:	LFB-32414	2	Laboratory Fo	ortified Blank			Run: ICP2-	HE_160401B		04/01	/16 11:52
Copper			48.6	mg/kg	1.0	99	80	120			
Zinc			47.9	mg/kg	1.0	97	80	120			
Lab ID:	LCS-32414	2	Laboratory C	ontrol Sample			Run: ICP2-	HE_160401B		04/01	/16 11:55
Copper			121	mg/kg	1.0	88	76.6	108.8			
Zinc			241	mg/kg	1.7	104	75.3	111.7			
Lab ID:	H16030296-034APDS	<b>3</b> 2	Post Digestio	n/Distillation Spik	e		Run: ICP2-	HE_160401B		04/01	/16 13:42
Copper			862	mg/kg-dry	2.9	92	75	125			
Zinc			905	mg/kg-dry	5.5	89	75	125			
Lab ID:	H16030296-034AMS	2	Sample Matri	x Sp ke			Run: ICP2-	HE_160401B		04/01	/16 13:45
Copper			278	mg/kg-dry	2.8	100	75	125			
Zinc			335	mg/kg-dry	5.4	94	75	125			
Lab ID:	H16030296-034AMSI	<b>D</b> 2	Sample Matri	x Sp ke Duplicate	;		Run: ICP2-	HE_160401B		04/01	/16 13:49
Copper			280	mg/kg-dry	2.8	102	75	125	0.7	20	
Zinc			339	mg/kg-dry	5.4	96	75	125	1.2	20	



Prepared by Helena, MT Branch

### Client: MT DEQ-Federal Superfund

Project: CFR Monitoring-474374

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	SW6020							Analytica	I Run: I	CPMS204-B	_160331A
Lab ID:	ICV STD	4 Init	al Calibrat	tion Verification S	standard					03/31	/16 13:24
Arsenic			0.0604	mg/L	0.0010	101	90	110			
Cadmium			0.0304	mg/L	0.0010	101	90	110			
Copper			0.0613	mg/L	0.0010	102	90	110			
Zinc			0.0614	mg/L	0.0010	102	90	110			
Method:	SW6020									Bat	ch: 32414
Lab ID:	MB-32414	4 Me	thod Blank	ζ			Run: ICPM	S204-B 160331A	4	03/31	/16 17:52
Arsenic			0.06	mg/kg	0.05						
Cadmium			ND	mg/kg	0.2						
Copper			0.2	mg/kg	0.1						
Zinc			ND	mg/kg	10						
Lab ID:	LCS-32414	4 Lat	oratory Co	ontrol Sample			Run: ICPM	S204-B 160331A	4	03/31	/16 17:56
Arsenic			168	ma/ka	1.0	86	71.4	105.1			
Cadmium			97.9	ma/ka	1.0	99	73.9	106.1			
Copper			128	ma/ka	1.0	93	76.6	108.8			
Zinc			252	mg/kg	11	109	75.3	111.7			
Lab ID:	LFB-32414	4 Lat	oratory Fo	ortified Blank			Run: ICPM	S204-B 160331A	4	03/31	/16 17:59
Arsenic			48.8	mg/kg	1.0	99	80	120			
Cadmium			26.0	mg/kg	1.0	105	80	120			
Copper			51.3	mg/kg	1.0	104	80	120			
Zinc			51.0	mg/kg	11	103	80	120			
Lab ID:	H16030296-034APD	<b>5</b> 4 Pos	st Digestio	n/Distillation Spik	e		Run: ICPM	S204-B_160331A	A	03/31	/16 19:16
Arsenic			1520	mg/kg-dry	1.0	94	75	125			
Cadmium			780	mg/kg-dry	1.0	99	75	125			
Copper			1600	mg/kg-dry	1.0	94	75	125			
Zinc			1620	mg/kg-dry	36	90	75	125			
Lab ID:	H16030296-034AMS	4 Sai	nple Matri	x Sp ke			Run: ICPM	S204-B_160331A	4	03/31	/16 19:19
Arsenic			200	mg/kg-dry	1.0	101	75	125			
Cadmium			88.1	mg/kg-dry	1.0	108	75	125			
Copper			286	mg/kg-dry	1.0	103	75	125			
Zinc			363	mg/kg-dry	36	104	75	125			
Lab ID:	H16030296-034AMS	D 4 Sar	nple Matri	x Sp ke Duplicate	•		Run: ICPM	S204-B_160331A	4	03/31	/16 19:22
Arsenic			196	mg/kg-dry	1.0	99	75	125	1.7	20	
Cadmium			86.3	mg/kg-dry	1.0	106	75	125	2.1	20	
Copper			279	mg/kg-dry	1.0	99	75	125	2.5	20	
Zinc			356	mg/kg-dry	36	100	75	125	1.9	20	



Prepared by Helena, MT Branch

Client: MT DEQ-Federal Superfund

Project: CFR Monitoring-474374

Analyte		Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	SW6020							Analytical	Run: I	CPMS204-B	_160408A
Lab ID:	ICV STD	Initi	al Calibrat	ion Verification S	Standard					04/08	/16 12:27
Lead			0.0615	mg/L	0.0010	103	90	110			
Method:	SW6020									Bat	ch: 32481
Lab ID:	MB-32481	Met	hod Blank				Run: ICPM	S204-B_160408A		04/08	/16 13:26
Lead			ND	mg/kg	0.09						
Lab ID:	LCS-32481	Lab	oratory Co	ontrol Sample			Run: ICPM	S204-B_160408A		04/08	/16 13:29
Lead			114	mg/kg	1.0	108	74.4	108.6			
Lab ID:	LFB-32481	Lab	oratory Fo	ortified Blank			Run: ICPM	S204-B_160408A		04/08	/16 13:36
Lead			51.4	mg/kg	1.0	107	80	120			
Lab ID:	H16030296-033APD	S Pos	t Digestion	n/Distillation Spil	ke		Run: ICPM	S204-B_160408A		04/08	/16 15:14
Lead			1360	mg/kg-dry	1.0	103	75	125			
Lab ID:	H16030296-033AMS	Sar	nple Matrix	k Sp ke			Run: ICPM	S204-B_160408A		04/08	/16 15:17
Lead			215	mg/kg-dry	1.0	115	75	125			
Lab ID:	H16030296-033AMS	D Sar	nple Matrix	x Sp ke Duplicate	е		Run: ICPM	S204-B_160408A		04/08	/16 15:20
Lead			225	mg/kg-dry	1.0	119	75	125	4.1	20	



# Work Order Receipt Checklist

## MT DEQ-Federal Superfund

## H16030296

Login completed by:	Tracy L. Lorash	Date Received: 3/16/2016						
Reviewed by:	BL2000\rwilliams	Received by: bjs						
Reviewed Date:	3/24/2016	Carrier name: Hand Del						
Shipping container/cooler in	a good condition?	Yes 🖌	No 🗌	Not Present				
Custody seals intact on all s	shipping container(s)/cooler(s)?	Yes	No 🗌	Not Present				
Custody seals intact on all s	sample bottles?	Yes	No 🗌	Not Present				
Chain of custody present?		Yes 🗹	No 🗌					
Chain of custody signed wh	en relinquished and received?	Yes 🗹	No 🗌					
Chain of custody agrees wit	th sample labels?	Yes 🗹	No 🗌					
Samples in proper containe	r/bottle?	Yes 🗹	No 🗌					
Sample containers intact?		Yes 🗹	No 🗌					
Sufficient sample volume for	or indicated test?	Yes 🗹	No 🗌					
All samples received within (Exclude analyses that are of such as pH, DO, Res Cl, S	holding time? considered field parameters ulfite, Ferrous Iron, etc.)	Yes 🗸	No 🗌					
Temp Blank received in all s	shipping container(s)/cooler(s)?	Yes 🗹	No 🗌	Not Applicable				
Container/Temp Blank temp	perature:	°C See comments	3					
Water - VOA vials have zero	o headspace?	Yes	No 🗌	Not Applicable				
Water - pH acceptable upor	n receipt?	Yes 🗹	No 🗌	Not Applicable				

### Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

### **Contact and Corrective Action Comments:**

Both metals bottles for sample CFR-34 are marked as Filtered, but one has an F on the lid. Per Erich, the bottle with the F on the lid is the filtered sample.

No collection time on one vial for sample SBC-P2. Logged in with time from COC.

Aqueous samples were received in Cooler 1 at 3.2°C, Cooler 2 at 2.0°C, Cooler 3 at 2.0°C, Cooler 4 at 2.0°C. Samples were received on wet ice. Sediment samples were received in Box 1 at 4.2°C, Box 2 at 3.7°C. Samples were not received on ice. tl 3/16/16

## APPENDIX B2 ANALYTICAL LABORATORY RESULTS 2<sup>ND</sup> QUARTER MONITORING



### ANALYTICAL SUMMARY REPORT

June 01, 2016

MT DEQ-Federal Superfund PO Box 200901 Helena, MT 59620-0901

Work Order: H16040518 Quote ID: H1085

Project Name: CFR Monitoring-474374

Energy Laboratories Inc Helena MT received the following 20 samples for MT DEQ-Federal Superfund on 4/29/2016 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H16040518-001	CFR-116A	04/27/16 9:00	0 04/29/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Hardness as CaCO3 Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Total P Water Nitrogen, Total P Water Nitrogen, Total Persulfate Phosphorus, Total Solids, Total Suspended
H16040518-002	Field Blank #1 (FC-CFR)	04/27/16 11:4	45 04/29/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Mercury, Total Recoverable Hardness as CaCO3 Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Mercury by CVAA Digestion, Total Persulfate Phosphorus, Total Solids, Total Suspended Subcontracted, Analytics
H16040518-003	FC-CFR	04/27/16 12:	15 04/29/16	Surface Water	Same As Above
H16040518-004	FC-CFR duplicate	04/27/16 12:	15 04/29/16	Surface Water	Same As Above



### ANALYTICAL SUMMARY REPORT

H16040518-005	LBR-CFR-02	04/27/16 14:00 04/29/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Hardness as CaCO3 Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Total P Water Nitrogen, Total Persulfate Phosphorus, Total Solids, Total Suspended
H16040518-006	CFR-34	04/27/16 15:00 04/29/16	Surface Water	Same As Above
H16040518-007	CFR-27H	04/27/16 16:15 04/29/16	Surface Water	Same As Above
H16040518-008	Field Blank #2 (CFR-11F)	04/28/16 8:30 04/29/16	Surface Water	Same As Above
H16040518-009	CFR-11F	04/28/16 9:00 04/29/16	Surface Water	Same As Above
H16040518-010	CFR-11F duplicate	04/28/16 9:00 04/29/16	Surface Water	Same As Above
H16040518-011	CFR-07D	04/28/16 10:15 04/29/16	Surface Water	Same As Above
H16040518-012	CFR-03A	04/28/16 11:15 04/29/16	Surface Water	Same As Above
H16040518-013	WSC-SBC	04/28/16 12:00 04/29/16	Surface Water	Same As Above
H16040518-014	SS-25	04/28/16 13:15 04/29/16	Surface Water	Same As Above
H16040518-015	MWB-SBC	04/28/16 14:00 04/29/16	Surface Water	Same As Above
H16040518-016	SBC-P2	04/28/16 14:15 04/29/16	Surface Water	Same As Above
H16040518-017	MCWC-MWB	04/28/16 15:00 04/29/16	Surface Water	Same As Above
H16040518-018	SS-19	04/28/16 16:00 04/29/16	Surface Water	Same As Above
H16040518-019	CFR-84F	04/27/16 10:30 04/29/16	Aqueous	Mercury, Total Recoverable Digestion, Mercury by CVAA Subcontracted, Analytics
H16040518-020	Trip Blank	04/27/16 10:30 04/29/16	Trip Blank	Subcontracted, Analytics

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. 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:



Project:CFR Monitoring-474374Work Order:H16040518

# CASE NARRATIVE

Tests associated with analyst identified as ELI-CA were subcontracted to Energy Laboratories, 2393 Salt Creek Hwy., Casper, WY, EPA Number WY00002 and WY00937.



### LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-116ALab ID:H16040518-001Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 04/27/16 09:00 **DateReceived:** 04/29/16

Report Date: 06/01/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	46	mg/L	D	2		A2540 D	05/02/16 14:36 / SR		-124 (14410200)_160	0502A : 6	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	71	mg/L		4		A2320 B	05/02/16 12:27 / SR		PHSC_101-H_160	502A : 60	R114931
Bicarbonate as HCO3	86	mg/L		4		A2320 B	05/02/16 12:27 / SR		PHSC_101-H_160	502A : 60	R114931
Chloride	2	mg/L		1		E300.0	05/02/16 16:21 / SR		IC102-H_160	502A : 32	R114969
Sulfate	23	mg/L		1		E300.0	05/02/16 16:21 / SR		IC102-H_160	502A : 32	R114969
Hardness as CaCO3	90	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_160	0509A : 2	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.7	mg/L		0.5		A5310 C	05/05/16 22:25 / eli-c		SUB-C2	11444 : 2	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:04 / cm		FIA203-HE_1605	504C : 25	R115035
Nitrogen, Nitrate+Nitrite as N	0.06	mg/L		0.02		E353.2	05/03/16 13:06 / cm		FIA203-HE_16050	03B : 110	R114997
Nitrogen, Total	0.24	mg/L		0.05		A4500 N-C	05/03/16 09:34 / cm	05/03/16 07:54	FIA203-HE_160	503A : 17	32838
Phosphorus, Total as P	0.051	mg/L		0.003		E365.1	05/05/16 11:42 / cm	05/04/16 12:07	FIA202-HE_160	505B : 21	32868
METALS, DISSOLVED											
Arsenic	0.004	mg/L		0.001		E200.8	05/05/16 19:28 / dck		ICPMS204-B_16050	04B : 167	R115055
Cadmium	ND	mg/L		0.00003		E200.8	05/05/16 19:28 / dck		ICPMS204-B_16050	04B:167	R115055
Copper	0.003	mg/L		0.001		E200.8	05/05/16 19:28 / dck		ICPMS204-B_16050	04B : 167	R115055
Lead	ND	mg/L		0.0003		E200.8	05/05/16 19:28 / dck		ICPMS204-B_16050	04B : 167	R115055
Zinc	ND	mg/L		0.008		E200.8	05/05/16 19:28 / dck		ICPMS204-B_16050	04B : 167	R115055
METALS, TOTAL RECOVERABLE											
Arsenic	0.009	mg/L		0.001		E200.8	05/05/16 19:47 / dck	05/04/16 09:30	ICPMS204-B_16050	04B : 173	32860
Cadmium	0.00022	mg/L		0.00003		E200.8	05/05/16 19:47 / dck	05/04/16 09:30	ICPMS204-B_16050	04B : 173	32860
Calcium	26	mg/L		1		E200.7	05/05/16 20:19 / sld	05/04/16 09:30	ICP2-HE_160	505A : 76	32860
Copper	0.035	mg/L		0.001		E200.8	05/05/16 19:47 / dck	05/04/16 09:30	ICPMS204-B_16050	04B : 173	32860
Lead	0.0063	mg/L		0.0003		E200.8	05/05/16 19:47 / dck	05/04/16 09:30	ICPMS204-B_16050	04B : 173	32860

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



### LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-116A
 Collection Date:
 04/27/16 09:00
 DateReceived:
 04/29/16

 Lab ID:
 H16040518-001
 Report Date:
 06/01/16
 Project:
 CFR Monitoring-474374

 Matrix:
 Surface Water
 Project:
 CFR Monitoring-474374
 DateReceived:
 04/29/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	6	mg/L		1		E200.7	05/05/16 20:19 / sld	05/04/16 09:30	ICP2-HE_160505	A : 76	32860
Potassium	2	mg/L		1		E200.7	05/05/16 20:19 / sld	05/04/16 09:30	ICP2-HE_160505	6A : 76	32860
Sodium	5	mg/L		1		E200.7	05/05/16 20:19 / sld	05/04/16 09:30	ICP2-HE_160505	A : 76	32860
Zinc	0.045	mg/L		0.008		E200.8	05/05/16 19:47 / dck	05/04/16 09:30	ICPMS204-B_160504E	3 : 173	32860



### LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:Field Blank #1 (FC-CFR)Lab ID:H16040518-002Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 04/27/16 11:45 **DateReceived:** 04/29/16

Report Date: 06/01/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	ND	mg/L		1		A2540 D	05/02/16 14:36 / SR		-124 (14410200)_160	502A : 7	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	05/02/16 12:37 / SR		PHSC_101-H_1605	02A : 64	R114931
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	05/02/16 12:37 / SR		PHSC_101-H_1605	02A : 64	R114931
Chloride	ND	mg/L		1		E300.0	05/02/16 16:32 / SR		IC102-H_1605	02A : 33	R114969
Sulfate	ND	mg/L		1		E300.0	05/02/16 16:32 / SR		IC102-H_1605	02A : 33	R114969
Hardness as CaCO3	ND	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_160	509A : 3	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	ND	mg/L		0.5		A5310 C	05/05/16 23:29 / eli-c		SUB-C21	1444 : 6	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:08 / cm		FIA203-HE_1605	04C : 28	R115035
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	05/03/16 13:07 / cm		FIA203-HE_16050	3B : 111	R114997
Nitrogen, Total	ND	mg/L		0.05		A4500 N-C	05/03/16 09:35 / cm	05/03/16 07:54	FIA203-HE_1605	03A : 18	32838
Phosphorus, Total as P	ND	mg/L		0.003		E365.1	05/05/16 11:43 / cm	05/04/16 12:07	FIA202-HE_1605	05B : 22	32868
METALS, DISSOLVED											
Arsenic	ND	mg/L		0.001		E200.8	05/05/16 20:10 / dck		ICPMS204-B_16050	4B : 180	R115055
Cadmium	ND	mg/L		0.00003		E200.8	05/05/16 20:10 / dck		ICPMS204-B_16050	4B : 180	R115055
Copper	ND	mg/L		0.001		E200.8	05/05/16 20:10 / dck		ICPMS204-B_16050	4B : 180	R115055
Lead	ND	mg/L		0.0003		E200.8	05/05/16 20:10 / dck		ICPMS204-B_16050	4B : 180	R115055
Zinc	0.008	mg/L		0.008		E200.8	05/06/16 18:20 / dck		ICPMS204-B_1605	06C : 19	R115139
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.001		E200.8	05/05/16 20:13 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 181	32860
Cadmium	ND	mg/L		0.00003		E200.8	05/05/16 20:13 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 181	32860
Calcium	ND	mg/L		1		E200.7	05/05/16 20:41 / sld	05/04/16 09:30	ICP2-HE_1605	05A : 82	32860
Copper	ND	mg/L		0.001		E200.8	05/05/16 20:13 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 181	32860
Lead	ND	mg/L		0.0003		E200.8	05/05/16 20:13 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 181	32860

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



### LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundProject:CFR Monitoring-474374Client Sample ID:Field Blank #1 (FC-CFR)Collection Date:04/27/16 11:45DateReceived:04/29/16Lab ID:H16040518-002Report Date:06/01/1606/01/16Collection Date:06/01/16Matrix:Surface WaterSurface Water06/01/16Collection Date:06/01/16Collection Date:06/01/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	ND	mg/L		1		E200.7	05/05/16 20:41 / sld	05/04/16 09:30	ICP2-HE_160505	A : 82	32860
Mercury	ND	mg/L		5E-06		E245.1	05/06/16 11:31 / rgk	05/05/16 11:30	HGCV202-H_160506	A : 18	32875
Potassium	ND	mg/L		1		E200.7	05/05/16 20:41 / sld	05/04/16 09:30	ICP2-HE_160505	A : 82	32860
Sodium	ND	mg/L		1		E200.7	05/05/16 20:41 / sld	05/04/16 09:30	ICP2-HE_160505	A : 82	32860
Zinc	ND	mg/L		0.008		E200.8	05/05/16 20:13 / dck	05/04/16 09:30	ICPMS204-B_160504E	: 181	32860



### LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:FC-CFRLab ID:H16040518-003Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 04/27/16 12:15 **DateReceived:** 04/29/16

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Report Date: 06/01/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	58	mg/L	D	2		A2540 D	05/02/16 14:37 / SR		-124 (14410200)_1605	02A : 8	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	93	mg/L		4		A2320 B	05/02/16 12:43 / SR		PHSC_101-H_16050	2A : 66	R114931
Bicarbonate as HCO3	110	mg/L		4		A2320 B	05/02/16 12:43 / SR		PHSC_101-H_16050	2A : 66	R114931
Chloride	2	mg/L		1		E300.0	05/02/16 17:39 / SR		IC102-H_16050	2A : 39	R114969
Sulfate	10	mg/L		1		E300.0	05/02/16 17:39 / SR		IC102-H_16050	2A : 39	R114969
Hardness as CaCO3	100	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_1605	09A : 4	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	4.3	mg/L		0.5		A5310 C	05/05/16 23:44 / eli-c		SUB-C211	444 : 7	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:09 / cm		FIA203-HE_16050	4C : 29	R115035
Nitrogen, Nitrate+Nitrite as N	0.07	mg/L		0.02		E353.2	05/03/16 13:08 / cm		FIA203-HE_160503	B : 112	R114997
Nitrogen, Total	0.31	mg/L		0.05		A4500 N-C	05/03/16 09:38 / cm	05/03/16 07:54	FIA203-HE_16050	3A : 21	32838
Phosphorus, Total as P	0.054	mg/L		0.003		E365.1	05/05/16 11:44 / cm	05/04/16 12:07	FIA202-HE_16050	5B : 23	32868
METALS, DISSOLVED											
Arsenic	0.006	mg/L		0.001		E200.8	05/05/16 20:16 / dck		ICPMS204-B_160504	B : 182	R115055
Cadmium	ND	mg/L		0.00003		E200.8	05/05/16 20:16 / dck		ICPMS204-B_160504	B : 182	R115055
Copper	ND	mg/L		0.001		E200.8	05/06/16 18:33 / dck		ICPMS204-B_16050	6C : 23	R115139
Lead	0.0005	mg/L		0.0003		E200.8	05/05/16 20:16 / dck		ICPMS204-B_160504	B : 182	R115055
Zinc	ND	mg/L		0.008		E200.8	05/05/16 20:16 / dck		ICPMS204-B_160504	B : 182	R115055
METALS, TOTAL RECOVERABLE											
Arsenic	0.020	mg/L		0.001		E200.8	05/05/16 20:19 / dck	05/04/16 09:30	ICPMS204-B_160504	B : 183	32860
Cadmium	0.00017	mg/L		0.00003		E200.8	05/05/16 20:19 / dck	05/04/16 09:30	ICPMS204-B_160504	B : 183	32860
Calcium	27	mg/L		1		E200.7	05/05/16 20:45 / sld	05/04/16 09:30	ICP2-HE_16050	5A : 83	32860
Copper	0.007	mg/L		0.001		E200.8	05/05/16 20:19 / dck	05/04/16 09:30	ICPMS204-B_160504	B : 183	32860
Lead	0.0177	mg/L		0.0003		E200.8	05/05/16 20:19 / dck	05/04/16 09:30	ICPMS204-B_160504	B : 183	32860

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



### LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundProject:CFR Monitoring-474374Client Sample ID:FC-CFRCollection Date:04/27/16 12:15DateReceived:04/29/16Lab ID:H16040518-003Report Date:06/01/16OddOddOddOddOddMatrix:Surface WaterSurface WaterOdd<th

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	8	mg/L		1		E200.7	05/05/16 20:45 / sld	05/04/16 09:30	ICP2-HE_160505	A : 83	32860
Mercury	0.00083	mg/L	D	0.00002		E245.1	05/06/16 12:38 / rgk	05/05/16 11:30	HGCV202-H_160506	6A : 39	32875
Potassium	2	mg/L		1		E200.7	05/05/16 20:45 / sld	05/04/16 09:30	ICP2-HE_160505	A : 83	32860
Sodium	5	mg/L		1		E200.7	05/05/16 20:45 / sld	05/04/16 09:30	ICP2-HE_160505	5A : 83	32860
Zinc	0.053	mg/L		0.008		E200.8	05/05/16 20:19 / dck	05/04/16 09:30	ICPMS204-B_160504E	3 : 183	32860



### LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:FC-CFR duplicateLab ID:H16040518-004Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 04/27/16 12:15 **DateReceived:** 04/29/16

Report Date: 06/01/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	60	mg/L	D	4		A2540 D	05/02/16 14:37 / SR		-124 (14410200)_16050	)2A : 9	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	92	mg/L		4		A2320 B	05/02/16 12:49 / SR		PHSC_101-H_160502	2A : 68	R114931
Bicarbonate as HCO3	110	mg/L		4		A2320 B	05/02/16 12:49 / SR		PHSC_101-H_160502	2A : 68	R114931
Chloride	2	mg/L		1		E300.0	05/02/16 17:50 / SR		IC102-H_160502	2A:40	R114969
Sulfate	10	mg/L		1		E300.0	05/02/16 17:50 / SR		IC102-H_160502	2A:40	R114969
Hardness as CaCO3	99	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_16050	)9A : 5	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	4.3	mg/L		0.5		A5310 C	05/06/16 00:04 / eli-c	;	SUB-C2114	444 : 8	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:10 / cm		FIA203-HE_160504	IC : 30	R115035
Nitrogen, Nitrate+Nitrite as N	0.07	mg/L		0.02		E353.2	05/03/16 13:09 / cm		FIA203-HE_160503E	3 : 113	R114997
Nitrogen, Total	0.32	mg/L		0.05		A4500 N-C	05/03/16 09:40 / cm	05/03/16 07:54	FIA203-HE_160503	3A : 22	32838
Phosphorus, Total as P	0.058	mg/L		0.003		E365.1	05/05/16 11:45 / cm	05/04/16 12:07	FIA202-HE_160505	5B : 24	32868
METALS, DISSOLVED											
Arsenic	0.006	mg/L		0.001		E200.8	05/05/16 20:22 / dck		ICPMS204-B_160504E	3 : 184	R115055
Cadmium	ND	mg/L		0.00003		E200.8	05/05/16 20:22 / dck		ICPMS204-B_160504E	3:184	R115055
Copper	ND	mg/L		0.001		E200.8	05/06/16 18:36 / dck		ICPMS204-B_160506	6C : 24	R115139
Lead	0.0005	mg/L		0.0003		E200.8	05/05/16 20:22 / dck		ICPMS204-B_160504E	3 : 184	R115055
Zinc	ND	mg/L		0.008		E200.8	05/05/16 20:22 / dck		ICPMS204-B_160504E	3 : 184	R115055
METALS, TOTAL RECOVERABLE											
Arsenic	0.019	mg/L		0.001		E200.8	05/05/16 20:26 / dck	05/04/16 09:30	ICPMS204-B_160504E	3 : 185	32860
Cadmium	0.00017	mg/L		0.00003		E200.8	05/05/16 20:26 / dck	05/04/16 09:30	ICPMS204-B_160504E	3 : 185	32860
Calcium	27	mg/L		1		E200.7	05/05/16 20:49 / sld	05/04/16 09:30	ICP2-HE_160505	5A : 84	32860
Copper	0.006	mg/L		0.001		E200.8	05/05/16 20:26 / dck	05/04/16 09:30	ICPMS204-B_160504E	3 : 185	32860
Lead	0.0170	mg/L		0.0003		E200.8	05/05/16 20:26 / dck	05/04/16 09:30	ICPMS204-B_160504E	3 : 185	32860

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.


# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundProject:CFR Monitoring-474374Client Sample ID:FC-CFR duplicateCollection Date:04/27/16 12:15DateReceived:04/29/16Lab ID:H16040518-004Report Date:06/01/16Collection Date:06/01/16Matrix:Surface WaterSurface WaterCollection Date:06/01/16Collection Date:06/01/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	8	mg/L		1		E200.7	05/05/16 20:49 / sld	05/04/16 09:30	ICP2-HE_160505	A : 84	32860
Mercury	0.00079	mg/L	D	0.00002		E245.1	05/06/16 12:41 / rgk	05/05/16 11:30	HGCV202-H_160506	6A:40	32875
Potassium	2	mg/L		1		E200.7	05/05/16 20:49 / sld	05/04/16 09:30	ICP2-HE_160505	A : 84	32860
Sodium	5	mg/L		1		E200.7	05/05/16 20:49 / sld	05/04/16 09:30	ICP2-HE_160505	6A : 84	32860
Zinc	0.052	mg/L		0.008		E200.8	05/05/16 20:26 / dck	05/04/16 09:30	ICPMS204-B_160504E	3:185	32860



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:LBR-CFR-02Lab ID:H16040518-005Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 04/27/16 14:00 **DateReceived:** 04/29/16

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Report Date: 06/01/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	17	mg/L	D	2		A2540 D	05/02/16 14:37 / SR		124 (14410200)_16050	)2A : 10	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	64	mg/L		4		A2320 B	05/02/16 12:54 / SR		PHSC_101-H_16050	)2A : 70	R114931
Bicarbonate as HCO3	77	mg/L		4		A2320 B	05/02/16 12:54 / SR		PHSC_101-H_16050	)2A : 70	R114931
Chloride	1	mg/L		1		E300.0	05/02/16 18:01 / SR		IC102-H_16050	)2A : 41	R114969
Sulfate	10	mg/L		1		E300.0	05/02/16 18:01 / SR		IC102-H_16050	)2A : 41	R114969
Hardness as CaCO3	67	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_1605	509A : 6	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	4.5	mg/L		0.5		A5310 C	05/06/16 00:23 / eli-c		SUB-C21	1444 : 9	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:12 / cm		FIA203-HE_16050	4C : 31	R115035
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	05/03/16 13:10 / cm		FIA203-HE_160503	B : 114	R114997
Nitrogen, Total	0.24	mg/L		0.05		A4500 N-C	05/03/16 09:41 / cm (	05/03/16 07:54	FIA203-HE_16050	)3A : 23	32838
Phosphorus, Total as P	0.038	mg/L		0.003		E365.1	05/05/16 11:46 / cm 0	05/04/16 12:07	FIA202-HE_16050	)5B : 25	32868
METALS, DISSOLVED											
Arsenic	0.004	mg/L		0.001		E200.8	05/05/16 20:29 / dck		ICPMS204-B_160504	B : 186	R115055
Cadmium	ND	mg/L		0.00003		E200.8	05/05/16 20:29 / dck		ICPMS204-B_160504	B : 186	R115055
Copper	0.001	mg/L		0.001		E200.8	05/05/16 20:29 / dck		ICPMS204-B_160504	B : 186	R115055
Lead	ND	mg/L		0.0003		E200.8	05/05/16 20:29 / dck		ICPMS204-B_160504	B : 186	R115055
Zinc	ND	mg/L		0.008		E200.8	05/05/16 20:29 / dck		ICPMS204-B_160504	IB : 186	R115055
METALS, TOTAL RECOVERABLE											
Arsenic	0.005	mg/L		0.001		E200.8	05/05/16 20:32 / dck (	05/04/16 09:30	ICPMS204-B_160504	B : 187	32860
Cadmium	0.00003	mg/L		0.00003		E200.8	05/05/16 20:32 / dck (	05/04/16 09:30	ICPMS204-B_160504	IB : 187	32860
Calcium	19	mg/L		1		E200.7	05/05/16 20:53 / sld 0	05/04/16 09:30	ICP2-HE_16050	)5A : 85	32860
Copper	0.003	mg/L		0.001		E200.8	05/05/16 20:32 / dck 0	05/04/16 09:30	ICPMS204-B_160504	IB : 187	32860
Lead	0.0013	mg/L		0.0003		E200.8	05/05/16 20:32 / dck 0	05/04/16 09:30	ICPMS204-B_160504	IB : 187	32860

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 LBR-CFR-02
 Collection Date:
 04/27/16 14:00
 DateReceived:
 04/29/16

 Lab ID:
 H16040518-005
 Report Date:
 06/01/16
 Project:
 CFR Monitoring-474374

 Matrix:
 Surface Water
 Project:
 CFR Monitoring-474374
 DateReceived:
 04/29/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	5	mg/L		1		E200.7	05/05/16 20:53 / sld	05/04/16 09:30	ICP2-HE_160505	A : 85	32860
Potassium	1	mg/L		1		E200.7	05/05/16 20:53 / sld	05/04/16 09:30	ICP2-HE_160505	A : 85	32860
Sodium	4	mg/L		1		E200.7	05/05/16 20:53 / sld	05/04/16 09:30	ICP2-HE_160505	A : 85	32860
Zinc	0.008	mg/L		0.008		E200.8	05/05/16 20:32 / dck	05/04/16 09:30	ICPMS204-B_160504E	: 187	32860



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-34Lab ID:H16040518-006Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 04/27/16 15:00 **DateReceived:** 04/29/16

Report Date: 06/01/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	52	mg/L	D	4		A2540 D	05/02/16 14:37 / SR		124 (14410200)_1605	02A : 11	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	05/02/16 12:59 / SR		PHSC_101-H_1605	02A : 72	R114931
Bicarbonate as HCO3	150	mg/L		4		A2320 B	05/02/16 12:59 / SR		PHSC_101-H_1605	02A : 72	R114931
Chloride	9	mg/L		1		E300.0	05/02/16 18:12 / SR		IC102-H_1605	02A : 42	R114969
Sulfate	67	mg/L		1		E300.0	05/02/16 18:12 / SR		IC102-H_1605	02A : 42	R114969
Hardness as CaCO3	175	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_160	509A : 7	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.4	mg/L		0.5		A5310 C	05/06/16 00:39 / eli-c	:	SUB-C211	444 : 10	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:13 / cm		FIA203-HE_1605	04C : 32	R115035
Nitrogen, Nitrate+Nitrite as N	0.16	mg/L		0.02		E353.2	05/03/16 13:14 / cm		FIA203-HE_16050	3B : 117	R114997
Nitrogen, Total	0.57	mg/L		0.05		A4500 N-C	05/03/16 09:42 / cm	05/03/16 07:54	FIA203-HE_1605	03A : 24	32838
Phosphorus, Total as P	0.073	mg/L		0.003		E365.1	05/05/16 11:50 / cm	05/04/16 12:07	FIA202-HE_1605	05B : 28	32868
METALS, DISSOLVED											
Arsenic	0.013	mg/L		0.001		E200.8	05/05/16 20:35 / dck		ICPMS204-B_16050	4B : 188	R115055
Cadmium	0.00005	mg/L		0.00003		E200.8	05/05/16 20:35 / dck		ICPMS204-B_16050	4B : 188	R115055
Copper	0.008	mg/L		0.001		E200.8	05/05/16 20:35 / dck		ICPMS204-B_16050	4B : 188	R115055
Lead	ND	mg/L		0.0003		E200.8	05/05/16 20:35 / dck		ICPMS204-B_16050	4B : 188	R115055
Zinc	0.010	mg/L		0.008		E200.8	05/05/16 20:35 / dck		ICPMS204-B_16050	4B : 188	R115055
METALS, TOTAL RECOVERABLE											
Arsenic	0.022	mg/L		0.001		E200.8	05/05/16 20:38 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 189	32860
Cadmium	0.00040	mg/L		0.00003		E200.8	05/05/16 20:38 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 189	32860
Calcium	52	mg/L		1		E200.7	05/05/16 20:56 / sld	05/04/16 09:30	ICP2-HE_1605	05A : 86	32860
Copper	0.093	mg/L		0.001		E200.8	05/05/16 20:38 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 189	32860
Lead	0.0120	mg/L		0.0003		E200.8	05/05/16 20:38 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 189	32860

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-34
 Collection Date:
 04/27/16 15:00
 DateReceived:
 04/29/16

 Lab ID:
 H16040518-006
 Report Date:
 06/01/16
 Project:
 CFR Monitoring-474374

 Matrix:
 Surface Water
 Project:
 CFR Monitoring-474374
 DateReceived:
 04/29/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	11	mg/L		1		E200.7	05/05/16 20:56 / sld	05/04/16 09:30	ICP2-HE_160505	A : 86	32860
Potassium	3	mg/L		1		E200.7	05/05/16 20:56 / sld	05/04/16 09:30	ICP2-HE_160505	A : 86	32860
Sodium	14	mg/L		1		E200.7	05/05/16 20:56 / sld	05/04/16 09:30	ICP2-HE_160505	A : 86	32860
Zinc	0.080	mg/L		0.008		E200.8	05/05/16 20:38 / dck	05/04/16 09:30	ICPMS204-B_160504E	: 189	32860



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-27HLab ID:H16040518-007Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 04/27/16 16:15 **DateReceived:** 04/29/16

Report Date: 06/01/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	46	mg/L	D	2		A2540 D	05/02/16 14:38 / SR		124 (14410200)_1605	02A : 12	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	05/02/16 13:04 / SR		PHSC_101-H_1605	02A : 74	R114931
Bicarbonate as HCO3	140	mg/L		4		A2320 B	05/02/16 13:04 / SR		PHSC_101-H_1605	02A : 74	R114931
Chloride	9	mg/L		1		E300.0	05/02/16 18:23 / SR		IC102-H_1605	02A : 43	R114969
Sulfate	69	mg/L		1		E300.0	05/02/16 18:23 / SR		IC102-H_1605	02A : 43	R114969
Hardness as CaCO3	174	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_160	509A : 8	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.4	mg/L		0.5		A5310 C	05/06/16 00:54 / eli-c		SUB-C211	444 : 11	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:14 / cm		FIA203-HE_1605	04C : 33	R115035
Nitrogen, Nitrate+Nitrite as N	0.14	mg/L		0.02		E353.2	05/03/16 13:17 / cm		FIA203-HE_16050	3B : 120	R114997
Nitrogen, Total	0.51	mg/L		0.05		A4500 N-C	05/03/16 09:46 / cm	05/03/16 07:54	FIA203-HE_1605	03A : 27	32838
Phosphorus, Total as P	0.059	mg/L		0.003		E365.1	05/05/16 11:51 / cm	05/04/16 12:07	FIA202-HE_1605	05B : 29	32868
METALS, DISSOLVED											
Arsenic	0.013	mg/L		0.001		E200.8	05/05/16 20:51 / dck		ICPMS204-B_16050	4B : 193	R115055
Cadmium	0.00005	mg/L		0.00003		E200.8	05/05/16 20:51 / dck		ICPMS204-B_16050	4B : 193	R115055
Copper	0.008	mg/L		0.001		E200.8	05/05/16 20:51 / dck		ICPMS204-B_16050	4B : 193	R115055
Lead	0.0003	mg/L		0.0003		E200.8	05/05/16 20:51 / dck		ICPMS204-B_16050	4B : 193	R115055
Zinc	0.009	mg/L		0.008		E200.8	05/05/16 20:51 / dck		ICPMS204-B_16050	4B : 193	R115055
METALS, TOTAL RECOVERABLE											
Arsenic	0.022	mg/L		0.001		E200.8	05/05/16 21:04 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 197	32860
Cadmium	0.00038	mg/L		0.00003		E200.8	05/05/16 21:04 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 197	32860
Calcium	51	mg/L		1		E200.7	05/05/16 21:00 / sld	05/04/16 09:30	ICP2-HE_1605	05A : 87	32860
Copper	0.088	mg/L		0.001		E200.8	05/05/16 21:04 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 197	32860
Lead	0.0139	mg/L		0.0003		E200.8	05/05/16 21:04 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 197	32860

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-27H
 Collection Date:
 04/27/16 16:15
 DateReceived:
 04/29/16

 Lab ID:
 H16040518-007
 Report Date:
 06/01/16
 Description
 Description
 Description

 Matrix:
 Surface Water
 Surface Water
 Description
 Description
 Description

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	11	mg/L		1		E200.7	05/05/16 21:00 / sld	05/04/16 09:30	ICP2-HE_16050	5A : 87	32860
Potassium	3	mg/L		1		E200.7	05/05/16 21:00 / sld	05/04/16 09:30	ICP2-HE_16050	5A : 87	32860
Sodium	13	mg/L		1		E200.7	05/05/16 21:00 / sld	05/04/16 09:30	ICP2-HE_16050	5A : 87	32860
Zinc	0.072	mg/L		0.008		E200.8	05/05/16 21:04 / dck	05/04/16 09:30	ICPMS204-B_160504	3 : 197	32860



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:Field Blank #2 (CFR-11F)Lab ID:H16040518-008Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 04/28/16 08:30 DateReceived: 04/29/16

Report Date: 06/01/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	ND	mg/L		1		A2540 D	05/02/16 14:38 / SR		124 (14410200)_1605	02A : 13	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	05/02/16 13:10 / SR		PHSC_101-H_1605	02A : 76	R114931
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	05/02/16 13:10 / SR		PHSC_101-H_1605	02A : 76	R114931
Chloride	ND	mg/L		1		E300.0	05/02/16 18:34 / SR		IC102-H_1605	02A : 44	R114969
Sulfate	ND	mg/L		1		E300.0	05/02/16 18:34 / SR		IC102-H_1605	02A : 44	R114969
Hardness as CaCO3	ND	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_160	509A : 9	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	ND	mg/L		0.5		A5310 C	05/06/16 01:13 / eli-c		SUB-C211	444 : 12	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:15 / cm		FIA203-HE_1605	04C : 34	R115035
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	05/03/16 13:19 / cm		FIA203-HE_16050	3B : 121	R114997
Nitrogen, Total	ND	mg/L		0.05		A4500 N-C	05/03/16 09:47 / cm	05/03/16 07:54	FIA203-HE_1605	03A : 28	32838
Phosphorus, Total as P	ND	mg/L		0.003		E365.1	05/05/16 11:52 / cm	05/04/16 12:07	FIA202-HE_1605	05B : 30	32868
METALS, DISSOLVED											
Arsenic	ND	mg/L		0.001		E200.8	05/05/16 21:07 / dck		ICPMS204-B_16050	4B : 198	R115055
Cadmium	ND	mg/L		0.00003		E200.8	05/05/16 21:07 / dck		ICPMS204-B_16050	4B : 198	R115055
Copper	ND	mg/L		0.001		E200.8	05/05/16 21:07 / dck		ICPMS204-B_16050	4B : 198	R115055
Lead	ND	mg/L		0.0003		E200.8	05/05/16 21:07 / dck		ICPMS204-B_16050	4B : 198	R115055
Zinc	0.009	mg/L		0.008		E200.8	05/06/16 18:39 / dck		ICPMS204-B_1605	06C : 25	R115139
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.001		E200.8	05/05/16 21:10 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 199	32860
Cadmium	ND	mg/L		0.00003		E200.8	05/05/16 21:10 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 199	32860
Calcium	ND	mg/L		1		E200.7	05/05/16 21:04 / sld	05/04/16 09:30	ICP2-HE_1605	05A : 88	32860
Copper	ND	mg/L		0.001		E200.8	05/05/16 21:10 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 199	32860
Lead	ND	mg/L		0.0003		E200.8	05/05/16 21:10 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 199	32860



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 Field Blank #2 (CFR-11F)
 Collection Date:
 04/28/16 08:30
 DateReceived:
 04/29/16

 Lab ID:
 H16040518-008
 Report Date:
 06/01/16
 Collection Date:
 06/01/16

 Matrix:
 Surface Water
 Surface Water
 Collection Date:
 06/01/16
 Collection Date:
 06/01/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	ND	mg/L		1		E200.7	05/05/16 21:04 / sld	05/04/16 09:30	ICP2-HE_16050	5A : 88	32860
Potassium	ND	mg/L		1		E200.7	05/05/16 21:04 / sld	05/04/16 09:30	ICP2-HE_16050	5A : 88	32860
Sodium	ND	mg/L		1		E200.7	05/05/16 21:04 / sld	05/04/16 09:30	ICP2-HE_16050	5A : 88	32860
Zinc	ND	mg/L		800.0		E200.8	05/05/16 21:10 / dck	05/04/16 09:30	ICPMS204-B_160504	3:199	32860



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

**Client:** MT DEQ-Federal Superfund Client Sample ID: CFR-11F Lab ID: H16040518-009 Surface Water Matrix:

Project: CFR Monitoring-474374 Collection Date: 04/28/16 09:00

DateReceived: 04/29/16

Report Date: 06/01/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	23	mg/L	D	2		A2540 D	05/02/16 14:38 / SR		124 (14410200)_1605	502A : 14	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	05/02/16 13:15 / SR		PHSC_101-H_1605	502A : 78	R114931
Bicarbonate as HCO3	140	mg/L		4		A2320 B	05/02/16 13:15 / SR		PHSC_101-H_1605	502A : 78	R114931
Chloride	10	mg/L		1		E300.0	05/02/16 18:45 / SR		IC102-H_1605	502A : 45	R114969
Sulfate	78	mg/L		1		E300.0	05/02/16 18:45 / SR		IC102-H_1605	502A : 45	R114969
Hardness as CaCO3	184	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_1605	509A : 10	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.3	mg/L		0.5		A5310 C	05/06/16 01:32 / eli-c		SUB-C211	1444 : 13	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:16 / cm		FIA203-HE_1605	604C : 35	R115035
Nitrogen, Nitrate+Nitrite as N	0.09	mg/L		0.02		E353.2	05/03/16 13:20 / cm		FIA203-HE_16050	)3B : 122	R114997
Nitrogen, Total	0.40	mg/L		0.05		A4500 N-C	05/03/16 09:50 / cm	05/03/16 07:54	FIA203-HE_1605	503A : 31	32838
Phosphorus, Total as P	0.043	mg/L		0.003		E365.1	05/05/16 11:55 / cm	05/04/16 12:07	FIA202-HE_1605	505B : 33	32868
METALS, DISSOLVED											
Arsenic	0.013	mg/L		0.001		E200.8	05/05/16 21:13 / dck		ICPMS204-B_16050	)4B : 200	R115055
Cadmium	0.00004	mg/L		0.00003		E200.8	05/05/16 21:13 / dck		ICPMS204-B_16050	)4B : 200	R115055
Copper	0.005	mg/L		0.001		E200.8	05/05/16 21:13 / dck		ICPMS204-B_16050	04B : 200	R115055
Lead	ND	mg/L		0.0003		E200.8	05/05/16 21:13 / dck		ICPMS204-B_16050	04B : 200	R115055
Zinc	0.009	mg/L		0.008		E200.8	05/05/16 21:13 / dck		ICPMS204-B_16050	)4B : 200	R115055
METALS, TOTAL RECOVERABLE											
Arsenic	0.018	mg/L		0.001		E200.8	05/05/16 21:16 / dck	05/04/16 09:30	ICPMS204-B_16050	)4B : 201	32860
Cadmium	0.00019	mg/L		0.00003		E200.8	05/05/16 21:16 / dck	05/04/16 09:30	ICPMS204-B_16050	)4B : 201	32860
Calcium	54	mg/L		1		E200.7	05/05/16 21:08 / sld	05/04/16 09:30	ICP2-HE_1605	505A : 89	32860
Copper	0.036	mg/L		0.001		E200.8	05/05/16 21:16 / dck	05/04/16 09:30	ICPMS204-B_16050	)4B : 201	32860
Lead	0.0047	mg/L		0.0003		E200.8	05/05/16 21:16 / dck	05/04/16 09:30	ICPMS204-B_16050	04B : 201	32860

Report RL - Analyte reporting limit. MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-11F
 Collection Date:
 04/28/16 09:00
 DateReceived:
 04/29/16

 Lab ID:
 H16040518-009
 Surface Water
 Object:
 06/01/16
 DateReceived:
 04/29/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	12	mg/L		1		E200.7	05/05/16 21:08 / sld	05/04/16 09:30	ICP2-HE_160505/	A:89	32860
Potassium	3	mg/L		1		E200.7	05/05/16 21:08 / sld	05/04/16 09:30	ICP2-HE_160505/	A : 89	32860
Sodium	13	mg/L		1		E200.7	05/05/16 21:08 / sld	05/04/16 09:30	ICP2-HE_160505/	A:89	32860
Zinc	0.036	mg/L		0.008		E200.8	05/05/16 21:16 / dck	05/04/16 09:30	ICPMS204-B_160504B	: 201	32860



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-11F duplicateLab ID:H16040518-010Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 04/28/16 09:00 **DateReceived:** 04/29/16

Report Date: 06/01/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	22	mg/L	D	2		A2540 D	05/02/16 14:39 / SR		24 (14410200)_16050	)2A : 16	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	05/02/16 13:20 / SR		PHSC_101-H_16050	)2A : 80	R114931
Bicarbonate as HCO3	140	mg/L		4		A2320 B	05/02/16 13:20 / SR		PHSC_101-H_16050	)2A : 80	R114931
Chloride	10	mg/L		1		E300.0	05/02/16 18:57 / SR		IC102-H_16050	)2A : 46	R114969
Sulfate	79	mg/L		1		E300.0	05/02/16 18:57 / SR		IC102-H_16050	)2A : 46	R114969
Hardness as CaCO3	181	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_16050	09A:11	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.2	mg/L		0.5		A5310 C	05/06/16 02:25 / eli-c		SUB-C2114	444:15	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:17 / cm		FIA203-HE_16050	)4C : 36	R115035
Nitrogen, Nitrate+Nitrite as N	0.09	mg/L		0.02		E353.2	05/03/16 13:21 / cm		FIA203-HE_160503	3B : 123	R114997
Nitrogen, Total	0.35	mg/L		0.05		A4500 N-C	05/03/16 09:52 / cm	05/03/16 07:54	FIA203-HE_16050	)3A : 32	32838
Phosphorus, Total as P	0.039	mg/L		0.003		E365.1	05/05/16 11:56 / cm	05/04/16 12:07	FIA202-HE_16050	)5B : 34	32868
METALS, DISSOLVED											
Arsenic	0.013	mg/L		0.001		E200.8	05/05/16 21:20 / dck		ICPMS204-B_160504	4B : 202	R115055
Cadmium	ND	mg/L		0.00003		E200.8	05/05/16 21:20 / dck		ICPMS204-B_160504	4B : 202	R115055
Copper	0.005	mg/L		0.001		E200.8	05/05/16 21:20 / dck		ICPMS204-B_160504	4B : 202	R115055
Lead	ND	mg/L		0.0003		E200.8	05/05/16 21:20 / dck		ICPMS204-B_160504	4B : 202	R115055
Zinc	0.010	mg/L		0.008		E200.8	05/05/16 21:20 / dck		ICPMS204-B_160504	4B : 202	R115055
METALS, TOTAL RECOVERABLE											
Arsenic	0.017	mg/L		0.001		E200.8	05/05/16 21:23 / dck	05/04/16 09:30	ICPMS204-B_160504	4B : 203	32860
Cadmium	0.00020	mg/L		0.00003		E200.8	05/05/16 21:23 / dck	05/04/16 09:30	ICPMS204-B_160504	4B : 203	32860
Calcium	53	mg/L		1		E200.7	05/05/16 21:12 / sld	05/04/16 09:30	ICP2-HE_16050	)5A : 90	32860
Copper	0.039	mg/L		0.001		E200.8	05/05/16 21:23 / dck	05/04/16 09:30	ICPMS204-B_160504	4B : 203	32860
Lead	0.0087	mg/L		0.0003		E200.8	05/05/16 21:23 / dck	05/04/16 09:30	ICPMS204-B_160504	4B : 203	32860

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-11F duplicate
 Collection Date:
 04/28/16 09:00
 DateReceived:
 04/29/16

 Lab ID:
 H16040518-010
 Report Date:
 06/01/16
 Dime

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	12	mg/L		1		E200.7	05/05/16 21:12 / sld	05/04/16 09:30	ICP2-HE_160505	6A : 90	32860
Potassium	3	mg/L		1		E200.7	05/05/16 21:12 / sld	05/04/16 09:30	ICP2-HE_160505	6A : 90	32860
Sodium	13	mg/L		1		E200.7	05/05/16 21:12 / sld	05/04/16 09:30	ICP2-HE_160505	6A : 90	32860
Zinc	0.035	mg/L		0.008		E200.8	05/05/16 21:23 / dck	05/04/16 09:30	ICPMS204-B_1605048	3 : 203	32860



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-07DLab ID:H16040518-011Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 04/28/16 10:15 **DateReceived:** 04/29/16

Report Date: 06/01/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	19	mg/L	D	2		A2540 D	05/02/16 14:39 / SR		124 (14410200)_16050	02A : 17	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	05/02/16 13:25 / SR		PHSC_101-H_1605	02A : 82	R114931
Bicarbonate as HCO3	140	mg/L		4		A2320 B	05/02/16 13:25 / SR		PHSC_101-H_1605	02A : 82	R114931
Chloride	10	mg/L		1		E300.0	05/02/16 19:08 / SR		IC102-H_1605	02A : 47	R114969
Sulfate	80	mg/L		1		E300.0	05/02/16 19:08 / SR		IC102-H_1605	02A : 47	R114969
Hardness as CaCO3	179	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_1605	09A : 12	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.0	mg/L		0.5		A5310 C	05/06/16 03:29 / eli-c		SUB-C211	444 : 19	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:21 / cm		FIA203-HE_16050	04C : 39	R115035
Nitrogen, Nitrate+Nitrite as N	0.09	mg/L		0.02		E353.2	05/03/16 13:22 / cm		FIA203-HE_160503	3B : 124	R114997
Nitrogen, Total	0.42	mg/L		0.05		A4500 N-C	05/03/16 09:53 / cm	05/03/16 07:54	FIA203-HE_1605	03A : 33	32838
Phosphorus, Total as P	0.037	mg/L		0.003		E365.1	05/05/16 11:57 / cm	05/04/16 12:07	FIA202-HE_1605	05B : 35	32868
METALS, DISSOLVED											
Arsenic	0.013	mg/L		0.001		E200.8	05/05/16 21:36 / dck		ICPMS204-B_160504	4B : 207	R115055
Cadmium	ND	mg/L		0.00003		E200.8	05/05/16 21:36 / dck		ICPMS204-B_160504	4B : 207	R115055
Copper	0.005	mg/L		0.001		E200.8	05/05/16 21:36 / dck		ICPMS204-B_160504	4B : 207	R115055
Lead	ND	mg/L		0.0003		E200.8	05/05/16 21:36 / dck		ICPMS204-B_160504	4B : 207	R115055
Zinc	0.009	mg/L		0.008		E200.8	05/05/16 21:36 / dck		ICPMS204-B_160504	4B : 207	R115055
METALS, TOTAL RECOVERABLE											
Arsenic	0.017	mg/L		0.001		E200.8	05/05/16 21:39 / dck	05/04/16 09:30	ICPMS204-B_160504	4B : 208	32860
Cadmium	0.00019	mg/L		0.00003		E200.8	05/05/16 21:39 / dck	05/04/16 09:30	ICPMS204-B_160504	4B : 208	32860
Calcium	52	mg/L		1		E200.7	05/05/16 21:15 / sld	05/04/16 09:30	ICP2-HE_1605	05A : 91	32860
Copper	0.031	mg/L		0.001		E200.8	05/05/16 21:39 / dck	05/04/16 09:30	ICPMS204-B_160504	4B : 208	32860
Lead	0.0042	mg/L		0.0003		E200.8	05/05/16 21:39 / dck	05/04/16 09:30	ICPMS204-B_160504	4B : 208	32860

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-07D
 Collection Date:
 04/28/16 10:15
 DateReceived:
 04/29/16

 Lab ID:
 H16040518-011
 Surface Water
 06/01/16
 Project:
 CFR Monitoring-474374

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	12	mg/L		1		E200.7	05/05/16 21:15 / sld	05/04/16 09:30	ICP2-HE_160505	A : 91	32860
Potassium	3	mg/L		1		E200.7	05/05/16 21:15 / sld	05/04/16 09:30	ICP2-HE_160505	A : 91	32860
Sodium	13	mg/L		1		E200.7	05/05/16 21:15 / sld	05/04/16 09:30	ICP2-HE_160505	A : 91	32860
Zinc	0.031	mg/L		0.008		E200.8	05/05/16 21:39 / dck	05/04/16 09:30	ICPMS204-B_160504B	: 208	32860



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-03ALab ID:H16040518-012Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 04/28/16 11:15 **DateReceived:** 04/29/16

Report Date: 06/01/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	12	mg/L	D	2		A2540 D	05/02/16 14:39 / SR		124 (14410200)_16050	2A : 18	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	96	mg/L		4		A2320 B	05/02/16 13:31 / SR		PHSC_101-H_160502	2A : 84	R114931
Bicarbonate as HCO3	120	mg/L		4		A2320 B	05/02/16 13:31 / SR		PHSC_101-H_160502	2A : 84	R114931
Chloride	11	mg/L		1		E300.0	05/02/16 19:19 / SR		IC102-H_16050	2A : 48	R114969
Sulfate	65	mg/L		1		E300.0	05/02/16 19:19 / SR		IC102-H_16050	2A : 48	R114969
Hardness as CaCO3	148	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_16050	9A : 13	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.4	mg/L		0.5		A5310 C	05/06/16 03:45 / eli-c		SUB-C2114	44 : 20	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:25 / cm		FIA203-HE_160504	4C : 42	R115035
Nitrogen, Nitrate+Nitrite as N	0.04	mg/L		0.02		E353.2	05/03/16 13:23 / cm		FIA203-HE_160503	B : 125	R114997
Nitrogen, Total	0.36	mg/L		0.05		A4500 N-C	05/03/16 09:54 / cm 05	5/03/16 07:54	FIA203-HE_16050	3A : 34	32838
Phosphorus, Total as P	0.040	mg/L		0.003		E365.1	05/05/16 11:58 / cm 05	5/04/16 12:07	FIA202-HE_16050	5B : 36	32868
METALS, DISSOLVED											
Arsenic	0.013	mg/L		0.001		E200.8	05/05/16 21:51 / dck		ICPMS204-B_160504	B : 212	R115055
Cadmium	0.00006	mg/L		0.00003		E200.8	05/05/16 21:51 / dck		ICPMS204-B_160504	B : 212	R115055
Copper	0.005	mg/L		0.001		E200.8	05/05/16 21:51 / dck		ICPMS204-B_160504	B : 212	R115055
Lead	ND	mg/L		0.0003		E200.8	05/05/16 21:51 / dck		ICPMS204-B_160504	B : 212	R115055
Zinc	0.009	mg/L		0.008		E200.8	05/05/16 21:51 / dck		ICPMS204-B_160504	B : 212	R115055
METALS, TOTAL RECOVERABLE											
Arsenic	0.015	mg/L		0.001		E200.8	05/05/16 21:54 / dck 05	5/04/16 09:30	ICPMS204-B_160504	B : 213	32860
Cadmium	0.00017	mg/L		0.00003		E200.8	05/05/16 21:54 / dck 05	5/04/16 09:30	ICPMS204-B_160504	B : 213	32860
Calcium	43	mg/L		1		E200.7	05/05/16 22:07 / sld 05	5/04/16 09:30	ICP2-HE_160505	A : 105	32860
Copper	0.026	mg/L		0.001		E200.8	05/05/16 21:54 / dck 05	5/04/16 09:30	ICPMS204-B_160504	B : 213	32860
Lead	0.0024	mg/L		0.0003		E200.8	05/05/16 21:54 / dck 05	5/04/16 09:30	ICPMS204-B_160504	B : 213	32860

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-03A
 Collection Date:
 04/28/16 11:15
 DateReceived:
 04/29/16

 Lab ID:
 H16040518-012
 Report Date:
 06/01/16
 Project:
 CFR Monitoring-474374

 Matrix:
 Surface Water
 Surface Water
 Project:
 CFR Monitoring-474374

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	10	mg/L		1		E200.7	05/05/16 22:07 / sld	05/04/16 09:30	ICP2-HE_160505	A : 105	32860
Potassium	3	mg/L		1		E200.7	05/05/16 22:07 / sld	05/04/16 09:30	ICP2-HE_160505	A : 105	32860
Sodium	13	mg/L		1		E200.7	05/05/16 22:07 / sld	05/04/16 09:30	ICP2-HE_160505	A : 105	32860
Zinc	0.025	mg/L		0.008		E200.8	05/05/16 21:54 / dck	05/04/16 09:30	ICPMS204-B_160504	3 : 213	32860



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:WSC-SBCLab ID:H16040518-013Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 04/28/16 12:00 DateReceived: 04/29/16

Report Date: 06/01/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	7	mg/L		1		A2540 D	05/02/16 14:39 / SR		124 (14410200)_16050	02A : 19	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	05/02/16 13:36 / SR		PHSC_101-H_1605	02A : 86	R114931
Bicarbonate as HCO3	140	mg/L		4		A2320 B	05/02/16 13:36 / SR		PHSC_101-H_1605	02A : 86	R114931
Chloride	ND	mg/L		1		E300.0	05/02/16 20:26 / SR		IC102-H_1605	02A : 54	R114969
Sulfate	29	mg/L		1		E300.0	05/02/16 20:26 / SR		IC102-H_1605	02A : 54	R114969
Hardness as CaCO3	135	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_1605	09A : 14	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.6	mg/L		0.5		A5310 C	05/06/16 03:59 / eli-c	;	SUB-C211	444 : 21	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:26 / cm		FIA203-HE_16050	04C : 43	R115035
Nitrogen, Nitrate+Nitrite as N	0.03	mg/L		0.02		E353.2	05/03/16 13:25 / cm		FIA203-HE_160503	3B : 126	R114997
Nitrogen, Total	0.11	mg/L		0.05		A4500 N-C	05/03/16 09:55 / cm	05/03/16 07:54	FIA203-HE_1605	03A : 35	32838
Phosphorus, Total as P	0.013	mg/L		0.003		E365.1	05/05/16 11:59 / cm	05/04/16 12:07	FIA202-HE_1605	05B : 37	32868
METALS, DISSOLVED											
Arsenic	0.004	mg/L		0.001		E200.8	05/05/16 21:58 / dck		ICPMS204-B_160504	4B : 214	R115055
Cadmium	ND	mg/L		0.00003		E200.8	05/05/16 21:58 / dck		ICPMS204-B_160504	4B : 214	R115055
Copper	0.003	mg/L		0.001		E200.8	05/05/16 21:58 / dck		ICPMS204-B_160504	4B : 214	R115055
Lead	ND	mg/L		0.0003		E200.8	05/05/16 21:58 / dck		ICPMS204-B_160504	4B : 214	R115055
Zinc	ND	mg/L		0.008		E200.8	05/05/16 21:58 / dck		ICPMS204-B_160504	4B : 214	R115055
METALS, TOTAL RECOVERABLE											
Arsenic	0.005	mg/L		0.001		E200.8	05/05/16 22:01 / dck	05/04/16 09:30	ICPMS204-B_160504	4B : 215	32860
Cadmium	0.00006	mg/L		0.00003		E200.8	05/05/16 22:01 / dck	05/04/16 09:30	ICPMS204-B_160504	4B : 215	32860
Calcium	41	mg/L		1		E200.7	05/05/16 22:11 / sld	05/04/16 09:30	ICP2-HE_16050	5A : 106	32860
Copper	0.011	mg/L		0.001		E200.8	05/05/16 22:01 / dck	05/04/16 09:30	ICPMS204-B_160504	4B : 215	32860
Lead	0.0010	mg/L		0.0003		E200.8	05/05/16 22:01 / dck	05/04/16 09:30	ICPMS204-B_160504	4B : 215	32860

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 WSC-SBC
 Collection Date:
 04/28/16
 12:00
 DateReceived:
 04/29/16

 Lab ID:
 H16040518-013
 Report Date:
 06/01/16
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 Matrix:
 Surface Water
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Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	8	mg/L		1		E200.7	05/05/16 22:11 / sld	05/04/16 09:30	ICP2-HE_160505	A : 106	32860
Potassium	1	mg/L		1		E200.7	05/05/16 22:11 / sld	05/04/16 09:30	ICP2-HE_160505	A : 106	32860
Sodium	3	mg/L		1		E200.7	05/05/16 22:11 / sld	05/04/16 09:30	ICP2-HE_160505	A : 106	32860
Zinc	ND	mg/L		0.008		E200.8	05/05/16 22:01 / dck	05/04/16 09:30	ICPMS204-B_160504	B : 215	32860



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:SS-25Lab ID:H16040518-014Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 04/28/16 13:15 DateReceived: 04/29/16

Report Date: 06/01/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	9	mg/L		1		A2540 D	05/02/16 14:40 / SR		124 (14410200)_1605	02A : 20	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	87	mg/L		4		A2320 B	05/02/16 13:41 / SR		PHSC_101-H_1605	02A : 88	R114931
Bicarbonate as HCO3	110	mg/L		4		A2320 B	05/02/16 13:41 / SR		PHSC_101-H_1605	02A : 88	R114931
Chloride	16	mg/L		1		E300.0	05/02/16 20:37 / SR		IC102-H_1605	02A : 55	R114969
Sulfate	72	mg/L		1		E300.0	05/02/16 20:37 / SR		IC102-H_1605	02A : 55	R114969
Hardness as CaCO3	145	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_1605	09A : 15	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	4.4	mg/L		0.5		A5310 C	05/06/16 04:19 / eli-c		SUB-C211	444 : 22	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:27 / cm		FIA203-HE_1605	04C : 44	R115035
Nitrogen, Nitrate+Nitrite as N	0.07	mg/L		0.02		E353.2	05/03/16 13:26 / cm		FIA203-HE_16050	3B : 127	R114997
Nitrogen, Total	0.43	mg/L		0.05		A4500 N-C	05/03/16 09:56 / cm	05/03/16 07:54	FIA203-HE_1605	03A : 36	32838
Phosphorus, Total as P	0.047	mg/L		0.003		E365.1	05/05/16 12:00 / cm	05/04/16 12:07	FIA202-HE_1605	05B : 38	32868
METALS, DISSOLVED											
Arsenic	0.016	mg/L		0.001		E200.8	05/05/16 22:04 / dck		ICPMS204-B_16050	4B : 216	R115055
Cadmium	0.00006	mg/L		0.00003		E200.8	05/05/16 22:04 / dck		ICPMS204-B_16050	4B : 216	R115055
Copper	0.006	mg/L		0.001		E200.8	05/05/16 22:04 / dck		ICPMS204-B_16050	4B : 216	R115055
Lead	ND	mg/L		0.0003		E200.8	05/05/16 22:04 / dck		ICPMS204-B_16050	4B : 216	R115055
Zinc	0.012	mg/L		0.008		E200.8	05/05/16 22:04 / dck		ICPMS204-B_16050	4B : 216	R115055
METALS, TOTAL RECOVERABLE											
Arsenic	0.017	mg/L		0.001		E200.8	05/05/16 22:07 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 217	32860
Cadmium	0.00020	mg/L		0.00003		E200.8	05/05/16 22:07 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 217	32860
Calcium	43	mg/L		1		E200.7	05/05/16 22:15 / sld	05/04/16 09:30	ICP2-HE_16050	5A : 107	32860
Copper	0.014	mg/L		0.001		E200.8	05/05/16 22:07 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 217	32860
Lead	0.0021	mg/L		0.0003		E200.8	05/05/16 22:07 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 217	32860

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 SS-25
 Collection Date:
 04/28/16 13:15
 DateReceived:
 04/29/16

 Lab ID:
 H16040518-014
 Report Date:
 06/01/16
 Matrix:
 DateReceived:
 04/29/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	9	mg/L		1		E200.7	05/05/16 22:15 / sld	05/04/16 09:30	ICP2-HE_1605054	A:107	32860
Potassium	3	mg/L		1		E200.7	05/05/16 22:15 / sld	05/04/16 09:30	ICP2-HE_1605054	A:107	32860
Sodium	16	mg/L		1		E200.7	05/05/16 22:15 / sld	05/04/16 09:30	ICP2-HE_160505/	A:107	32860
Zinc	0.031	mg/L		0.008		E200.8	05/05/16 22:07 / dck	05/04/16 09:30	ICPMS204-B_160504E	3 : 217	32860



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:MWB-SBCLab ID:H16040518-015Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 04/28/16 14:00 DateReceived: 04/29/16

Report Date: 06/01/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	14	mg/L	D	2		A2540 D	05/02/16 14:40 / SR		124 (14410200)_16050	02A : 21	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	65	mg/L		4		A2320 B	05/02/16 13:46 / SR		PHSC_101-H_1605	02A : 90	R114931
Bicarbonate as HCO3	79	mg/L		4		A2320 B	05/02/16 13:46 / SR		PHSC_101-H_1605	02A : 90	R114931
Chloride	2	mg/L		1		E300.0	05/02/16 20:48 / SR		IC102-H_1605	02A : 56	R114969
Sulfate	53	mg/L		1		E300.0	05/02/16 20:48 / SR		IC102-H_1605	02A : 56	R114969
Hardness as CaCO3	105	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_1605	09A:16	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	4.0	mg/L		0.5		A5310 C	05/06/16 04:38 / eli-c		SUB-C211	444 : 23	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:28 / cm		FIA203-HE_16050	04C : 45	R115035
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	05/03/16 13:27 / cm		FIA203-HE_160503	3B : 128	R114997
Nitrogen, Total	0.27	mg/L		0.05		A4500 N-C	05/03/16 09:58 / cm (	05/03/16 07:54	FIA203-HE_1605	03A : 37	32838
Phosphorus, Total as P	0.038	mg/L		0.003		E365.1	05/05/16 12:01 / cm (	05/04/16 12:07	FIA202-HE_1605	05B : 39	32868
METALS, DISSOLVED											
Arsenic	0.021	mg/L		0.001		E200.8	05/05/16 22:20 / dck		ICPMS204-B_160504	4B : 221	R115055
Cadmium	ND	mg/L		0.00003		E200.8	05/05/16 22:20 / dck		ICPMS204-B_160504	4B : 221	R115055
Copper	0.004	mg/L		0.001		E200.8	05/05/16 22:20 / dck		ICPMS204-B_160504	4B : 221	R115055
Lead	ND	mg/L		0.0003		E200.8	05/05/16 22:20 / dck		ICPMS204-B_160504	4B : 221	R115055
Zinc	ND	mg/L		0.008		E200.8	05/05/16 22:20 / dck		ICPMS204-B_160504	4B : 221	R115055
METALS, TOTAL RECOVERABLE											
Arsenic	0.024	mg/L		0.001		E200.8	05/05/16 22:23 / dck (	05/04/16 09:30	ICPMS204-B_160504	4B : 222	32860
Cadmium	0.00011	mg/L		0.00003		E200.8	05/05/16 22:23 / dck (	05/04/16 09:30	ICPMS204-B_160504	4B : 222	32860
Calcium	31	mg/L		1		E200.7	05/05/16 22:19 / sld (	05/04/16 09:30	ICP2-HE_16050	5A : 108	32860
Copper	0.010	mg/L		0.001		E200.8	05/05/16 22:23 / dck (	05/04/16 09:30	ICPMS204-B_160504	4B : 222	32860
Lead	0.0022	mg/L		0.0003		E200.8	05/05/16 22:23 / dck (	05/04/16 09:30	ICPMS204-B_160504	4B : 222	32860

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 MWB-SBC
 Collection Date:
 04/28/16 14:00
 DateReceived:
 04/29/16

 Lab ID:
 H16040518-015
 Report Date:
 06/01/16
 Project:
 CFR Monitoring-474374

 Matrix:
 Surface Water
 Project:
 CFR Monitoring-474374
 DateReceived:
 04/29/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	7	mg/L		1		E200.7	05/05/16 22:19 / sld	05/04/16 09:30	ICP2-HE_160505A	. : 108	32860
Potassium	1	mg/L		1		E200.7	05/05/16 22:19 / sld	05/04/16 09:30	ICP2-HE_1605054	108	32860
Sodium	8	mg/L		1		E200.7	05/05/16 22:19 / sld	05/04/16 09:30	ICP2-HE_1605054	108	32860
Zinc	0.012	mg/L		0.008		E200.8	05/05/16 22:23 / dck	05/04/16 09:30	ICPMS204-B_160504E	3 : 222	32860



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:SBC-P2Lab ID:H16040518-016Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 04/28/16 14:15 **DateReceived:** 04/29/16

Report Date: 06/01/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	5	mg/L		1		A2540 D	05/02/16 14:40 / SR		124 (14410200)_1605	02A : 22	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	05/02/16 13:51 / SR		PHSC_101-H_1605	02A : 92	R114931
Bicarbonate as HCO3	120	mg/L		4		A2320 B	05/02/16 13:51 / SR		PHSC_101-H_1605	02A : 92	R114931
Chloride	27	mg/L		1		E300.0	05/02/16 20:59 / SR		IC102-H_1605	02A : 57	R114969
Sulfate	86	mg/L		1		E300.0	05/02/16 20:59 / SR		IC102-H_1605	02A : 57	R114969
Hardness as CaCO3	173	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_1605	609A : 17	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	4.9	mg/L		0.5		A5310 C	05/06/16 04:58 / eli-c		SUB-C211	444 : 24	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:29 / cm		FIA203-HE_1605	04C : 46	R115035
Nitrogen, Nitrate+Nitrite as N	0.11	mg/L		0.02		E353.2	05/03/16 13:31 / cm		FIA203-HE_16050	3B : 131	R114997
Nitrogen, Total	0.57	mg/L		0.05		A4500 N-C	05/03/16 09:59 / cm	05/03/16 07:54	FIA203-HE_1605	03A : 38	32838
Phosphorus, Total as P	0.055	mg/L		0.003		E365.1	05/06/16 14:40 / cm	05/06/16 13:00	FIA202-HE_1605	06A : 16	32890
METALS, DISSOLVED											
Arsenic	0.012	mg/L		0.001		E200.8	05/05/16 22:26 / dck		ICPMS204-B_16050	4B : 223	R115055
Cadmium	0.00008	mg/L		0.00003		E200.8	05/05/16 22:26 / dck		ICPMS204-B_16050	4B : 223	R115055
Copper	0.007	mg/L		0.001		E200.8	05/05/16 22:26 / dck		ICPMS204-B_16050	4B : 223	R115055
Lead	0.0003	mg/L		0.0003		E200.8	05/05/16 22:26 / dck		ICPMS204-B_16050	4B : 223	R115055
Zinc	0.015	mg/L		0.008		E200.8	05/05/16 22:26 / dck		ICPMS204-B_16050	4B : 223	R115055
METALS, TOTAL RECOVERABLE											
Arsenic	0.014	mg/L		0.001		E200.8	05/05/16 22:30 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 224	32860
Cadmium	0.00025	mg/L		0.00003		E200.8	05/05/16 22:30 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 224	32860
Calcium	51	mg/L		1		E200.7	05/05/16 22:22 / sld	05/04/16 09:30	ICP2-HE_16050	5A : 109	32860
Copper	0.017	mg/L		0.001		E200.8	05/05/16 22:30 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 224	32860
Lead	0.0022	mg/L		0.0003		E200.8	05/05/16 22:30 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 224	32860

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 SBC-P2
 Collection Date:
 04/28/16 14:15
 DateReceived:
 04/29/16

 Lab ID:
 H16040518-016
 Report Date:
 06/01/16
 Project:
 CFR Monitoring-474374

 Matrix:
 Surface Water
 Project:
 05/01/16
 Project:
 06/01/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	11	mg/L		1		E200.7	05/05/16 22:22 / sld	05/04/16 09:30	ICP2-HE_160505A	: 109	32860
Potassium	5	mg/L		1		E200.7	05/05/16 22:22 / sld	05/04/16 09:30	ICP2-HE_160505A	: 109	32860
Sodium	23	mg/L		1		E200.7	05/05/16 22:22 / sld	05/04/16 09:30	ICP2-HE_160505A	: 109	32860
Zinc	0.044	mg/L		0.008		E200.8	05/05/16 22:30 / dck	05/04/16 09:30	ICPMS204-B_160504E	: 224	32860



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:MCWC-MWBLab ID:H16040518-017Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 04/28/16 15:00 DateReceived: 04/29/16

Report Date: 06/01/16

Datontooon

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	9	mg/L		1		A2540 D	05/02/16 14:40 / SR		124 (14410200)_1605	502A : 23	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	59	mg/L		4		A2320 B	05/02/16 13:57 / SR		PHSC_101-H_1605	602A : 94	R114931
Bicarbonate as HCO3	71	mg/L		4		A2320 B	05/02/16 13:57 / SR		PHSC_101-H_1605	502A : 94	R114931
Chloride	ND	mg/L		1		E300.0	05/02/16 21:10 / SR		IC102-H_1605	502A : 58	R114969
Sulfate	14	mg/L		1		E300.0	05/02/16 21:10 / SR		IC102-H_1605	502A : 58	R114969
Hardness as CaCO3	59	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_1605	509A : 18	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	4.0	mg/L		0.5		A5310 C	05/06/16 05:14 / eli-c		SUB-C211	444 : 25	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:31 / cm		FIA203-HE_1605	604C : 47	R115035
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	05/03/16 13:34 / cm		FIA203-HE_16050	)3B : 134	R114997
Nitrogen, Total	0.24	mg/L		0.05		A4500 N-C	05/03/16 10:05 / cm	05/03/16 07:55	FIA203-HE_1605	603A : 43	32839
Phosphorus, Total as P	0.034	mg/L		0.003		E365.1	05/06/16 14:43 / cm	05/06/16 13:00	FIA202-HE_1605	506A : 19	32890
METALS, DISSOLVED											
Arsenic	0.021	mg/L		0.001		E200.8	05/05/16 22:33 / dck		ICPMS204-B_16050	4B : 225	R115055
Cadmium	ND	mg/L		0.00003		E200.8	05/05/16 22:33 / dck		ICPMS204-B_16050	4B : 225	R115055
Copper	0.004	mg/L		0.001		E200.8	05/05/16 22:33 / dck		ICPMS204-B_16050	4B : 225	R115055
Lead	ND	mg/L		0.0003		E200.8	05/05/16 22:33 / dck		ICPMS204-B_16050	4B : 225	R115055
Zinc	ND	mg/L		0.008		E200.8	05/05/16 22:33 / dck		ICPMS204-B_16050	94B : 225	R115055
METALS, TOTAL RECOVERABLE											
Arsenic	0.023	mg/L		0.001		E200.8	05/05/16 22:46 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 229	32860
Cadmium	0.00008	mg/L		0.00003		E200.8	05/05/16 22:46 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 229	32860
Calcium	17	mg/L		1		E200.7	05/05/16 22:26 / sld	05/04/16 09:30	ICP2-HE_16050	)5A : 110	32860
Copper	0.008	mg/L		0.001		E200.8	05/05/16 22:46 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 229	32860
Lead	0.0017	mg/L		0.0003		E200.8	05/05/16 22:46 / dck	05/04/16 09:30	ICPMS204-B_16050	94B : 229	32860

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 MCWC-MWB
 Collection Date:
 04/28/16 15:00
 DateReceived:
 04/29/16

 Lab ID:
 H16040518-017
 Surface Water
 06/01/16
 Project:
 CFR Monitoring-474374

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	4	mg/L		1		E200.7	05/05/16 22:26 / sld	05/04/16 09:30	ICP2-HE_160505A	: 110	32860
Potassium	1	mg/L		1		E200.7	05/05/16 22:26 / sld	05/04/16 09:30	ICP2-HE_160505A	: 110	32860
Sodium	6	mg/L		1		E200.7	05/05/16 22:26 / sld	05/04/16 09:30	ICP2-HE_160505A	: 110	32860
Zinc	0.009	mg/L		0.008		E200.8	05/05/16 22:46 / dck	05/04/16 09:30	ICPMS204-B_160504E	: 229	32860



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:SS-19Lab ID:H16040518-018Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 04/28/16 16:00 DateReceived: 04/29/16

Report Date: 06/01/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	22	mg/L	D	2		A2540 D	05/02/16 14:41 / SR		124 (14410200)_1605	02A : 24	TSS160502A
INORGANICS											
Alkalinity, Total as CaCO3	84	mg/L		4		A2320 B	05/02/16 14:02 / SR		PHSC_101-H_1605	02A : 96	R114931
Bicarbonate as HCO3	100	mg/L		4		A2320 B	05/02/16 14:02 / SR		PHSC_101-H_1605	02A : 96	R114931
Chloride	15	mg/L		1		E300.0	05/02/16 21:21 / SR		IC102-H_1605	02A : 59	R114969
Sulfate	52	mg/L		1		E300.0	05/02/16 21:21 / SR		IC102-H_1605	02A : 59	R114969
Hardness as CaCO3	122	mg/L		1		A2340 B	05/09/16 08:06 / sld		WATERCALC_1605	09A : 19	R115118
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	6.3	mg/L		0.5		A5310 C	05/06/16 05:33 / eli-c		SUB-C211	444 : 26	C_R211444
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	05/04/16 13:32 / cm		FIA203-HE_1605	04C : 48	R115035
Nitrogen, Nitrate+Nitrite as N	0.20	mg/L		0.02		E353.2	05/03/16 13:35 / cm		FIA203-HE_16050	3B : 135	R114997
Nitrogen, Total	0.67	mg/L		0.05		A4500 N-C	05/03/16 10:08 / cm	05/03/16 07:55	FIA203-HE_1605	03A : 46	32839
Phosphorus, Total as P	0.182	mg/L		0.003		E365.1	05/06/16 14:44 / cm	05/06/16 13:00	FIA202-HE_1605	06A : 20	32890
METALS, DISSOLVED											
Arsenic	0.006	mg/L		0.001		E200.8	05/05/16 22:49 / dck		ICPMS204-B_16050	4B : 230	R115055
Cadmium	0.00008	mg/L		0.00003		E200.8	05/05/16 22:49 / dck		ICPMS204-B_16050	4B : 230	R115055
Copper	0.010	mg/L		0.001		E200.8	05/05/16 22:49 / dck		ICPMS204-B_16050	4B : 230	R115055
Lead	ND	mg/L		0.0003		E200.8	05/05/16 22:49 / dck		ICPMS204-B_16050	4B : 230	R115055
Zinc	0.027	mg/L		0.008		E200.8	05/05/16 22:49 / dck		ICPMS204-B_16050	4B : 230	R115055
METALS, TOTAL RECOVERABLE											
Arsenic	0.007	mg/L		0.001		E200.8	05/05/16 22:52 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 231	32860
Cadmium	0.00029	mg/L		0.00003		E200.8	05/05/16 22:52 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 231	32860
Calcium	37	mg/L		1		E200.7	05/05/16 22:37 / sld	05/04/16 09:30	ICP2-HE_16050	5A : 113	32860
Copper	0.023	mg/L		0.001		E200.8	05/05/16 22:52 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 231	32860
Lead	0.0031	mg/L		0.0003		E200.8	05/05/16 22:52 / dck	05/04/16 09:30	ICPMS204-B_16050	4B : 231	32860

**Report** RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 SS-19
 Collection Date:
 04/28/16 16:00
 DateReceived:
 04/29/16

 Lab ID:
 H16040518-018
 Report Date:
 06/01/16
 Project:
 CFR Monitoring-474374

 Matrix:
 Surface Water
 Project:
 CFR Monitoring-474374
 DateReceived:
 04/29/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	7	mg/L		1		E200.7	05/05/16 22:37 / sld	05/04/16 09:30	ICP2-HE_160505A	113	32860
Potassium	3	mg/L		1		E200.7	05/05/16 22:37 / sld	05/04/16 09:30	ICP2-HE_160505A	A : 113	32860
Sodium	16	mg/L		1		E200.7	05/05/16 22:37 / sld	05/04/16 09:30	ICP2-HE_160505A	A : 113	32860
Zinc	0.069	mg/L		0.008		E200.8	05/05/16 22:52 / dck	05/04/16 09:30	ICPMS204-B_160504E	3 : 231	32860



### LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:	MT DEQ-Federal Supe	erfund				Project: CFR Moni	toring-474374						
<b>Client Sample ID:</b>	CFR-84F						Colle	ction Date: 04/27/16	10:30 <b>D</b>	ateReceived: 04	/29/16		
Lab ID:	H16040518-019						R	eport Date: 06/01/16					
Matrix:	Aqueous												
Analyses		Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID	
METALS, TOTAL	RECOVERABLE	0 00019	ma/l		5E-06		F245 1	05/06/16 12:43 / rak	05/05/16 11:30	HGCV202-H 160	506A · 41	32875	

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				LAE	BORAT	ORY AN	ALYTICAL	L REPORT						
					Prepa	red by He	elena, MT B	ranch						
Client:	MT DEQ-Fede	eral Superfund		Project: CFR Monitoring-474374										
Client Sample ID:	Trip Blank						Colle	ction Date: 04/27/16 1	0:30	DateReceived:	04/29/16			
Lab ID:	H16040518-0	20					Re	eport Date: 06/01/16						
Matrix:	Trip Blank													
Analyses		Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID		

LABORATORIES	Trust our Pe	eople. Trust our Data. Iylab.com	Col	lege Station, TX <b>88</b>	Billir 88.690.2218 • Gille	0.0515 2.0711					
Client: Work Order:	MT DEQ-Federa H16040518	al Superfund		ANALYT	ICAL QC S Prepared by He	UMMARY	REPO	RT		Date: 01-Jun-	16
Project:	CFR Monitoring-	-474374		В	atchID: 16	60506wa-2	02				
Run ID :Run Order	: HGCV202-H_16050	06A: 8	SampType:	Initial Calibra	tion Verification	n Standard	Lab	ID: <b>ICV</b>		Method: E245.1	
Analysis Date: 05/0	06/16 11:00	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Mercury		0.000203	0.00010	0.0002	0	101	90	110			
Associated samples	s: H16040518-002C,	H16040518-003C	, H16040518	8-004C, H1604	0518-019B						
Run ID :Run Order	HGCV202-H_16050	06A: 9	SampType:	Continuing C	alibration Verifi	ication Standa	<b>r</b> Lab	ID: <b>CCV1</b>		Method: E245.1	
Run ID :Run Order Analysis Date: <b>05/</b>	:HGCV202-H_16050 06/16 11:03	06A: 9 Units:	SampType: <b>mg/L</b>	Continuing C	alibration Verifi	ication Standa Prep Info	<b>ır</b> Lab : Prep Da	ID: <b>CCV1</b> te:		Method: E245.1 Prep Method:	
Run ID :Run Order Analysis Date: <b>05/0</b> Analytes <u>1</u>	: HGCV202-H_16050 06/16 11:03	06A: 9 Units: Result	SampType: <b>mg/L</b> PQL	Continuing C SPK value	alibration Verifi SPK Ref Val	ication Standa Prep Info %REC	<b>ir</b> Lab : Prep Da LowLimit	ID: <b>CCV1</b> te: HighLimit	RPD Ref Val	Method: <b>E245.1</b> Prep Method: %RPD RPDLimit	Qual
Run ID :Run Order Analysis Date: 05/0 Analytes <u>1</u> Mercury	: HGCV202-H_16050 06/16 11:03	06A: 9 Units: Result 0.000201	SampType: <b>mg/L</b> PQL 0.00010	Continuing C SPK value 0.0002	alibration Verifi SPK Ref Val	ication Standa Prep Info %REC 100	r Lab : Prep Da LowLimit 90	ID: CCV1 te: HighLimit 110	RPD Ref Val	Method: <b>E245.1</b> Prep Method: %RPD RPDLimit	Qual
Run ID :Run Order Analysis Date: 05/0 Analytes <u>1</u> Mercury Associated samples	HGCV202-H_16050 06/16 11:03 8: H16040518-002C,	06A: 9 Units: Result 0.000201 H16040518-003C	SampType: mg/L PQL 0.00010 c, H16040518	Continuing C SPK value 0.0002 5-004C, H1604	SPK Ref Val	ication Standa Prep Info %REC 100	nr Lab : Prep Da LowLimit 90	ID: CCV1 te: HighLimit 110	RPD Ref Val	Method: <b>E245.1</b> Prep Method: %RPD RPDLimit	Qual
Run ID :Run Order Analysis Date: 05/0 Analytes <u>1</u> Mercury Associated samples Run ID :Run Order	HGCV202-H_16050 06/16 11:03 H16040518-002C, HGCV202-H_16050	06A: 9 Units: Result 0.000201 H16040518-003C	SampType: mg/L PQL 0.00010 c, H16040518 SampType:	Continuing C SPK value 0.0002 -004C, H1604 Continuing C	SPK Ref Val 0 0518-019B	ication Standa Prep Info %REC 100 ication Standa	rr Lab : Prep Da LowLimit 90 rr Lab	ID: CCV1 te: HighLimit 110 ID: CCV	RPD Ref Val	Method: E245.1 Prep Method: %RPD RPDLimit Method: E245.1	Qual
Run ID :Run Order Analysis Date: 05/ Analytes <u>1</u> Mercury Associated samples Run ID :Run Order Analysis Date: 05/	HGCV202-H_16050 06/16 11:03 H16040518-002C, HGCV202-H_16050 06/16 12:28	06A: 9 Units: Result 0.000201 H16040518-003C 06A: 37 Units:	SampType: mg/L PQL 0.00010 5, H16040518 SampType: mg/L	Continuing C SPK value 0.0002 -004C, H1604 Continuing C	SPK Ref Val 0 0518-019B	ication Standa Prep Info %REC 100 ication Standa Prep Info	nr Lab Prep Da LowLimit 90 nr Lab Prep Da	ID: CCV1 te: HighLimit 110 ID: CCV te:	RPD Ref Val	Method: E245.1 Prep Method: %RPD RPDLimit Method: E245.1 Prep Method:	Qual
Run ID :Run Order Analysis Date: 05/0 Analytes <u>1</u> Mercury Associated samples Run ID :Run Order Analysis Date: 05/0 Analytes <u>1</u>	HGCV202-H_16050 06/16 11:03 E H16040518-002C, HGCV202-H_16050 06/16 12:28	06A: 9 Units: Result 0.000201 H16040518-003C 06A: 37 Units: Result	SampType: mg/L PQL 0.00010 c, H16040518 SampType: mg/L PQL	Continuing C SPK value 0.0002 -004C, H1604 Continuing C SPK value	SPK Ref Val 0 0518-019B alibration Verifi	ication Standa Prep Info %REC 100 ication Standa Prep Info %REC	r Lab : Prep Da LowLimit 90 r Lab : Prep Da LowLimit	ID: CCV1 te: HighLimit 110 ID: CCV te: HighLimit	RPD Ref Val	Method: E245.1 Prep Method: %RPD RPDLimit Method: E245.1 Prep Method: %RPD RPDLimit	Qual
Run ID :Run Order Analysis Date: 05/0 Analytes <u>1</u> Mercury Associated samples Run ID :Run Order Analysis Date: 05/0 Analytes <u>1</u> Mercury	HGCV202-H_16050 06/16 11:03 H16040518-002C, HGCV202-H_16050 06/16 12:28	06A: 9 Units: Result 0.000201 H16040518-003C 06A: 37 Units: Result 0.000198	SampType: mg/L 0.00010 ;, H16040518 SampType: mg/L PQL 0.00010	Continuing C SPK value 0.0002 5-004C, H1604 Continuing C SPK value 0.0002	SPK Ref Val 0 0518-019B Calibration Verifi SPK Ref Val 0	ication Standa Prep Info %REC 100 ication Standa Prep Info %REC 99	ar Lab : Prep Da LowLimit 90 ar Lab : Prep Da LowLimit 90	ID: CCV1 te: HighLimit 110 ID: CCV te: HighLimit 110	RPD Ref Val	Method: E245.1 Prep Method: %RPD RPDLimit Method: E245.1 Prep Method: %RPD RPDLimit	Qual

- S Spike Recovery outside accepted recovery limit
- 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 four times the spike amount

<b>ENERGY</b> LABORATORIES	Trust our People. Trust our Pe	ust our Data.	Coll	ege Station, TX <b>8</b>	88.690.2218 •	Billings, MT <b>800.735.</b> Gillette, WY <b>866.686.</b>	<b>4489 •</b> Caspe <b>7175 •</b> Helen	er, WY <b>888.235</b> a, MT <b>877.472</b>	i.0515 2.0711			
Client: Work Order:	MT DEQ-Federal Sup H16040518	erfund		ANALYT	ICAL QO	<b>C SUMMARY</b> Helena, MT Bra	REPO	RT		Date	: 01-Jun-	16
Project:	CFR Monitoring-4743	74		В	atchID:	32838						
Run ID :Run Orde	r: FIA203-HE_160503A: 11	:	SampType:	Laboratory C	Control Sam	ple	Lab	ID: LCS-32	838	Method	: A4500 N-(	;
Analysis Date: 05/	/03/16 09:27	Units: <b>m</b>	ig/L			Prep Info	: Prep Da	ate: 5/3/2016	6	Prep Method	: A4500 N-(	2
Analytes 1		Result	PQL	SPK value	SPK Ref V	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		6.18	0.15	6.37	0.0224	45 <b>97</b>	90	110				
Associated sample	s: H16040518-001A, H1604 009A, H16040518-010A, I	0518-002A, H16040518-	H16040518- 011A, H160	-003A, H1604 40518-012A,	0518-004A, H16040518-	H16040518-005A, 013A, H16040518	H1604051 -014A, H16	8-006A, H1 040518-015	6040518-007A, 5A, H16040518	H16040518-00 -016A	BA, H16040	518-
Run ID :Run Orde	r: FIA203-HE_160503A: 12	:	SampType:	Method Blan	k		Lab	ID: <b>MB-328</b>	38	Method	: A4500 N-0	 C
Analysis Date: 05/	/03/16 09:28	Units: m	ig/L			Prep Info	: Prep Da	ate: 5/3/2016	6	Prep Method	: A4500 N-(	2
Analytes 1		Result	PQL	SPK value	SPK Ref V	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		0.02	0.007									
Associated sample	s: H16040518-001A, H1604 009A, H16040518-010A, I	0518-002A, H16040518-	H16040518 011A, H160	-003A, H1604 40518-012A,	0518-004A, H16040518-	H16040518-005A, 013A, H16040518	H1604051 -014A, H16	8-006A, H1 040518-015	6040518-007A, 5A, H16040518	H16040518-00 -016A	BA, H16040	518-
Run ID :Run Orde	r: FIA203-HE_160503A: 19	;	SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16040</b>	518-002Ams	Method	: A4500 N-(	;
Analysis Date: 05/	/03/16 09:36	Units: m	ig/L			Prep Info	: Prep Da	ate: 5/3/2016	6	Prep Method	: A4500 N-(	3
Analytes 1		Result	PQL	SPK value	SPK Ref V	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		1.00	0.10	1	0.0428	39 <b>96</b>	90	110				
Associated sample	s: H16040518-001A, H1604 009A, H16040518-010A, I	0518-002A, H16040518-	H16040518 011A, H160	-003A, H1604 40518-012A,	0518-004A, H16040518-	H16040518-005A, 013A, H16040518	H1604051 -014A, H16	8-006A, H1 040518-015	6040518-007A, 5A, H16040518	H16040518-00 -016A	8A, H16040	518-
Run ID :Run Orde	r: FIA203-HE_160503A: 20	:	SampType:	Sample Matr	ix Spike Du	plicate	Lab	ID: <b>H16040</b>	518-002Amsd	Method	: A4500 N-(	;
Analysis Date: 05/	/03/16 09:37	Units: <b>m</b>	ig/L			Prep Info	: Prep Da	ate: 5/3/2016	6	Prep Method	: A4500 N-(	:
Analytes 1		Result	PQL	SPK value	SPK Ref V	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		0.936	0.10	1	0.0428	39 <u>89</u>	90	110	1.003	<u>6.9</u>	20	S
Associated sample	s: H16040518-001A, H1604 009A, H16040518-010A, I	0518-002A, H16040518-	H16040518 011A, H160	-003A, H1604 40518-012A,	0518-004A, H16040518-	H16040518-005A, 013A, H16040518	H1604051 -014A, H16	8-006A, H1 040518-015	6040518-007A, 5A, H16040518	H16040518-00 -016A	BA, H16040	518-
Run ID :Run Orde	r: FIA203-HE_160503A: 29	:	SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16040</b>	518-008Ams	Method	: A4500 N-(	;
Analysis Date: 05/	/03/16 09:48	Units: <b>m</b>	ig/L			Prep Info	: Prep Da	ate: <b>5/3/2016</b>	6	Prep Method	: A4500 N-(	:
Analytes 1		Result	PQL	SPK value	SPK Ref V	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		0.951	0.10	1		0 <b>95</b>	90	110				
Qualifiers: ND J -	- Not Detected at the Reporti Analyte detected below quant	ng Limit itation limits	S F	S - Spike Reco R - RPD outsid	very outside le accepted r	accepted recovery ecovery limits	limit N A	- Analyte co - Analyte co	oncentration was	s not sufficiently ater than four tir	high to calc nes the spik P	ulate RPD e amount 'age 43 of §

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Client: Work Order:	MT DEQ-Federal Sup H16040518	erfund		ANALYT	ICAL QC S Prepared by H		Date:	01-Jun-1	16			
Project:	CFR Monitoring-4743	74		В								
Run ID :Run Order:	FIA203-HE_160503A: 29		SampType:	Sample Matri	x Spike		Lab I	D: <b>H16040</b>	518-008Ams	Method:	A4500 N-C	;
Analysis Date: 05/0	3/16 09:48	Units:	mg/L			Prep Info:	Prep Dat	te: 5/3/2016	;	Prep Method:	A4500 N-C	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD R	≀PDLimit	Qual
Associated samples	: H16040518-001A, H1604 009A, H16040518-010A,	0518-002A H1604051	, H16040518 8-011A, H160	-003A, H1604 40518-012A, I	0518-004A, H1 H16040518-013	6040518-005A, 3A, H16040518-	H16040518 014A, H160	8-006A, H16 040518-015	040518-007A,   A, H16040518-	H16040518-008A 016A	A, H16040	518-

Run ID :Run Order: FIA203-HE_160503A: 30	Sam	pType:	Sample Matri	x Spike Duplicate		Lab I	D: <b>H16040</b>	518-008Amsd	Method	: A4500 N-C	;
Analysis Date: 05/03/16 09:49	Units: <b>mg/L</b>				Prep Info:	Prep Dat	te: 5/3/2016	;	Prep Method	: A4500 N-C	;
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.944	0.10	1	0	94	90	110	0.9509	0.7	20	

Associated samples: H16040518-001A, H16040518-002A, H16040518-003A, H16040518-004A, H16040518-005A, H16040518-006A, H16040518-007A, H16040518-008A, H16040518-009A, H16040518-010A, H16040518-011A, H16040518-012A, H16040518-013A, H16040518-014A, H16040518-015A, H16040518-016A

- S Spike Recovery outside accepted recovery limit
- 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 four times the spike amount

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Client: Work Order:	MT DEQ-Federal Sup H16040518	erfund		ANALYT	CAL QC SU	MMARY ha, MT Brai	REPO	RT		Date: (	01-Jun-1	16
Project:	CFR Monitoring-4743	74		В	atchID: 328	39						
Run ID :Run Order:	FIA203-HE_160503A: 41		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-328	339	Method:	4500 N-C	;
Analysis Date: 05/0	3/16 10:02	Units:	mg/L			Prep Info:	Prep Da	te: 5/3/2016	i	Prep Method:	4500 N-C	;
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD R	PDLimit	Qual
Nitrogen, Total		6.20	0.15	6.37	0.0229	97	90	110				
Associated samples	: H16040518-017A, H1604	0518-018A	L .									
Run ID :Run Order:	FIA203-HE_160503A: 42		SampType:	Method Blani	<		Lab	ID: <b>MB-328</b>	39	Method:	\4500 N-C	;
Analysis Date: 05/0	3/16 10:04	Units:	mg/L			Prep Info:	Prep Da	te: 5/3/2016	i	Prep Method:	4500 N-C	;
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD R	PDLimit	Qual
Nitrogen, Total		0.02	0.007									
Associated samples	: H16040518-017A, H1604	0518-018A										
Run ID :Run Order:	FIA203-HE_160503A: 45		SampType:	Sample Matri	x Spike Duplicate		Lab	ID: <b>H16040</b>	518-017Amsd	Method:	\4500 N-C	;
Analysis Date: 05/0	3/16 10:07	Units:	mg/L			Prep Info:	Prep Da	te: 5/3/2016	;	Prep Method:	4500 N-C	;
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD R	PDLimit	Qual
Nitrogen, Total		1.13	0.10	1	0.2434	<u>89</u>	90	110	0.01438		20	S
Associated samples	: H16040518-017A, H1604	0518-018A										
Run ID :Run Order:	FIA203-HE_160503A: 55		SampType:	Sample Matri	x Spike		Lab	ID: <b>H16040</b>	518-017AMS	Method:	\4500 N-C	;
Analysis Date: 05/0	3/16 10:19	Units:	mg/L			Prep Info:	Prep Da	te: 5/3/2016	i	Prep Method: #	4500 N-C	;
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD R	PDLimit	Qual
Nitrogen, Total		1.14	0.10	1	0.2434	90	90	110				

Associated samples: H16040518-017A, H16040518-018A

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order: Project:	MT DEQ-Federal Sup H16040518	ANALYTICAL QC SUMMARY REPORT Prepared by Helena, MT Branch							Date: 01-Jun-16			
FIOJECI.	CFK Monitoning-4743	074		В	atchiD:	32860						
Run ID :Run Order: ICP2-HE_160505A: 74			SampType:	Method Blan		Lab ID: <b>MB-32860</b>				Method: <b>E200.7</b>		
Analysis Date: 05/05/16 20:12		Units:	mg/L			Prep Info:	Prep Da	ite: 5/4/2016	6	Prep Method	: E200.2	
Analytes <u>4</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		0.06	0.04									
Magnesium		ND	0.01									
Potassium		ND	0.04									
Sodium		ND	0.02									
	009C, H16040518-010C, H16040518-018C	H16040518	8-011C, H160	40518-012C,	H16040518-01	13C, H16040518	-014C, H16	6040518-01	5C, H16040518	-016C, H16040	9518-017C,	
Run ID :Run Order: ICP2-HE_160505A: 75		SampType: Laboratory Control Sample			9	Lab ID: <b>LCS-32860</b>				Method: <b>E200.7</b>		
Analysis Date: 05/05/16 20:15		Units: mg/L			Prep Info:	Prep Info: Prep Date: 5/4/2016			Prep Method: E200.2			
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		25.5	1.0	25	0.06076	102	85	115				
Magnesium		25.4	1.0	25	0	102	85	115				
Potassium		25.2	1.0	25	0	101	85	115				
Sodium		25.1	1.0	25	0	100	85	115				
Associated samples	8: H16040518-001C, H1604 009C, H16040518-010C, H16040518-018C	40518-002C H16040518	;, H16040518∙ 8-011C, H160	-003C, H1604 40518-012C,	0518-004C, H <sup>.</sup> H16040518-01	16040518-005C, 13C, H16040518	H1604051 -014C, H10	8-006C, H1 6040518-01	6040518-007C, 5C, H16040518	H16040518-00 -016C, H16040	08C, H1604 )518-017C,	0518-
Run ID :Run Order	: ICP2-HE_160505A: 77		SampType:	Serial Dilutio	n		Lab	ID: <b>H16040</b>	518-001CDIL	Method	: <b>E200.7</b>	
Analysis Date: 05/05/16 20:23		Units: <b>mg/L</b>			Prep Info:	Prep Info: Prep Date: 5/4/2016				Prep Method:		
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		26.6	1.0		0		0	0	25.59	<u>3.8</u>	10	
Magnesium		6.98	1.0		0		0	0	6.445	<u>8.0</u>	10	
Potassium		1.76	1.0		0		0	0	1.687		10	Ν

Associated samples: H16040518-001C, H16040518-002C, H16040518-003C, H16040518-004C, H16040518-005C, H16040518-006C, H16040518-007C, H16040518-008C, H16040518-009C, H16040518-010C, H16040518-011C, H16040518-012C, H16040518-013C, H16040518-014C, H16040518-015C, H16040518-016C, H16040518-017C, H16040518-018C

0

0

0

5.12

Sodium

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

0.4

J - Analyte detected below quantitation limits

5.14

1.0

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Su H16040518	perfund		ANALYT	<b>ICAL QC SU</b> Prepared by Hele	<b>JMMARY</b> ena, MT Brai	REPO	RT		Date	: 01-Jun-	16
Project:	CFR Monitoring-4743	374		В	atchID: 32	860						
Run ID :Run Order	ICP2-HE_160505A: 78		SampType:	Sample Matr	ix Spike		Lab	ID: H16040	518-001CMS3	Method	: E200.7	
Analysis Date: 05/0	05/16 20:27	Units:	mg/L			Prep Info:	Prep Da	te: 5/4/2016	5	Prep Method	: E200.2	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		51.9	1.0	25	25.59	105	70	130				
Magnesium		32.5	1.0	25	6.445	104	70	130				
Potassium		27.4	1.0	25	1.687	103	70	130				
Sodium		30.6	1.0	25	5.12	102	70	130				
Associated samples	E H16040518-001C, H160 009C, H16040518-010C H16040518-018C	40518-002C , H1604051	, Н16040518- 8-011С, Н1604	003C, H1604 40518-012C,	0518-004C, H160 H16040518-013C	40518-005C, , H16040518	H1604051 -014C, H16	8-006C, H1 040518-01	6040518-007C, 5C, H16040518-	H16040518-00 016C, H16040	08C, H1604 0518-017C,	0518-
Run ID :Run Order	ICP2-HE_160505A: 79		SampType:	Sample Matr	ix Spike Duplicat	e	Lab	ID: <b>H16040</b>	518-001CMSD3	Method	: <b>E200.7</b>	
Analysis Date: 05/0	05/16 20:30	Units:	mg/L			Prep Info:	Prep Da	te: 5/4/2016	5	Prep Method	: E200.2	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		51.9	1.0	25	25.59	105	70	130	51.88	0.0	20	

32.4 1.0 25 70 32.47 Magnesium 6.445 104 130 20 0.4 Potassium 27.0 1.0 25 1.687 101 70 130 27.42 1.6 20 30.1 25 70 130 30.61 20 Sodium 1.0 5.12 100 1.6 Associated samples: H16040518-001C, H16040518-002C, H16040518-003C, H16040518-004C, H16040518-005C, H16040518-006C, H16040518-007C, H16040518-008C, H16040518-003C, H16040518-004C, H16040518-003C, H16040518-003C, H16040518-004C, H16040518-003C, H16040518-003C

Associated samples: H16040518-001C, H16040518-002C, H16040518-003C, H16040518-004C, H16040518-005C, H16040518-006C, H16040518-007C, H16040518-008C, H16040518-009C, H16040518-010C, H16040518-011C, H16040518-012C, H16040518-013C, H16040518-014C, H16040518-015C, H16040518-016C, H16040518-017C, H16040518-018C

Run ID :Run Order: ICP2-HE_160505A: 102		SampType:	Serial Dilutio	n		Lab I	D: <b>H16040</b>	518-011CDIL	Method	: <b>E200.7</b>	
Analysis Date: 05/05/16 21:56	Units:	mg/L			Prep Info	: Prep Dat	te: 5/4/2016	5	Prep Method	l:	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	52.3	1.0		0		0	0	52.35	0.1	10	
Magnesium	12.0	1.0		0		0	0	11.7	<u>2.2</u>	10	
Potassium	2.90	1.0		0		0	0	2.886	0.5	10	
Sodium	13.1	1.0		0		0	0	13.01	0.6	10	

Associated samples: H16040518-001C, H16040518-002C, H16040518-003C, H16040518-004C, H16040518-005C, H16040518-006C, H16040518-007C, H16040518-008C, H16040518-009C, H16040518-010C, H16040518-011C, H16040518-012C, H16040518-013C, H16040518-014C, H16040518-015C, H16040518-016C, H16040518-017C, H16040518-018C

- S Spike Recovery outside accepted recovery limit
- 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 four times the spike amount

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Client: Work Order:	MT DE0 H16040	Q-Federal Superfund 518		ANALYT	CAL QC S	UMMARY ena, MT Brar	REPOI	RT		Date:	01-Jun-	16
Project:	CFR Mo	onitoring-474374		В	atchID: 32	860						
Run ID :Run Order	ICP2-HE	_160505A: 103	SampType:	Sample Matri	x Spike		Lab	ID: <b>H16040</b>	518-011CMS3	Method:	E200.7	
Analysis Date: 05/0	5/16 22:00	Units:	mg/L			Prep Info:	Prep Da	te: 5/4/2016	5	Prep Method:	E200.2	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		76.2	1.0	25	52.35	95	70	130				
Magnesium		36.3	1.0	25	11.7	98	70	130				
Potassium		28.1	1.0	25	2.886	101	70	130				
Sodium		38.3	1.0	25	13.01	101	70	130				
Associated samples	: H160405 009C, H <sup>2</sup> H160405	18-001C, H16040518-002C 16040518-010C, H16040518 18-018C	а, Н16040518- 8-011С, Н1604	003C, H1604 40518-012C,	0518-004C, H160 H16040518-0130	040518-005C, C, H16040518-	H1604051 014C, H16	8-006C, H1 040518-01	6040518-007C, 5C, H16040518-	H16040518-008 016C, H160405	8C, H16040 518-017C,	)518-

Run ID :Run Order: ICP2-HE_160505A: 104		SampType:	Sample Matri	x Spike Duplicate		Lab I	D: <b>H16040</b>	518-011CMSD3	Method	: E200.7	
Analysis Date: 05/05/16 22:04	Units:	mg/L			Prep Info	Prep Da	te: 5/4/2016	5	Prep Method	: E200.2	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	76.5	1.0	25	52.35	97	70	130	76.16	0.5	20	
Magnesium	36.7	1.0	25	11.7	100	70	130	36.3	1.1	20	
Potassium	28.7	1.0	25	2.886	103	70	130	28.08	2.1	20	
Sodium	39.0	1.0	25	13.01	104	70	130	38.34	1.6	20	

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits



Work Order:

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MT DEQ-Federal Superfund Client: H16040518

## College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711 ANALYTICAL QC SUMMARY REPORT

Billings, MT 800.735.4489 • Casper, WY 888.235.0515

Date: 01-Jun-16

## Prepared by Helena, MT Branch

**Project:** CFR Monitoring-474374

## BatchID: 32860

Run ID :Run Order: ICPMS204-B_16	60504B: 169	SampType:	Method Blan	k		Lab	ID: <b>MB-328</b>	60	Method	E200.8	
Analysis Date: 05/05/16 19:35	Units:	mg/L			Prep Info	: Prep Da	te: 5/4/2016	3	Prep Method	: <b>E200.2</b>	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	7E-05									
Cadmium	ND	1E-05									
Calcium	0.010	0.009									
Copper	ND	5E-05									
Lead	ND	2E-05									
Magnesium	0.007	0.002									
Potassium	ND	0.01									
Sodium	0.2	0.005									
Zinc	0.0008	0.0003									

009C, H16040518-010C, H16040518-011C, H16040518-012C, H16040518-013C, H16040518-014C, H16040518-015C, H16040518-016C, H16040518-017C, H16040518-018C

Run ID :Run Order: ICPMS204-B_160	)504B: 170	SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-328	360	Method: E200.8	
Analysis Date: 05/05/16 19:38	Units:	mg/L			Prep Info:	: Prep Da	te: 5/4/2016	i	Prep Method: E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Arsenic	0.518	0.0010	0.5	0	104	85	115			
Cadmium	0.260	0.0010	0.25	0	104	85	115			
Calcium	26.5	1.0	25	0.009502	106	85	115			
Copper	0.514	0.0050	0.5	0	103	85	115			
Lead	0.546	0.0010	0.5	0	109	85	115			
Magnesium	25.7	1.0	25	0.006658	103	85	115			
Potassium	25.8	1.0	25	0	103	85	115			
Sodium	25.8	1.0	25	0.1552	103	85	115			
Zinc	0.514	0.010	0.5	0.0008458	103	85	115			

Associated samples: H16040518-001C, H16040518-002C, H16040518-003C, H16040518-004C, H16040518-005C, H16040518-006C, H16040518-007C, H16040518-008C, H16040518-003C, H16040518-004C, H16040518-005C, H16040518-006C, H16040518-007C, H16040518-008C, H16040518-003C, H16040518-004C, H16040518-005C, H16040518-006C, H16040518-007C, H16040518-008C, H16040518-004C, H16040518-004C, H16040518-006C, H16040518-007C, H16040518-008C, H16040518-004C, H16040518-004C, H16040518-005C, H16040518-006C, H16040518-007C, H16040518-008C, H16040518-004C, H16040518-004C 009C, H16040518-010C, H16040518-011C, H16040518-012C, H16040518-013C, H16040518-014C, H16040518-015C, H16040518-016C, H16040518-017C, H16040518-018C

Order: ICPMS204-B_160504B: 174	SampType	: Sample Matri	ix Spike		Lab	ID: <b>H16040</b>	518-001CMS3	Method: E200.8	
e: <b>05/05/16 19:51</b> Ur	its: mg/L			Prep Info	: Prep Da	ite: 5/4/2016	5	Prep Method: E200.2	
Resu	t PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
0.52	4 0.0010	0.5	0.008705	103	70	130			
ND - Not Detected at the Reporting Lim	it	S - Spike Reco	very outside acce	epted recovery	limit N	- Analyte co	ncentration was	not sufficiently high to calcu	ulate RPD
J - Analyte detected below quantitation	limits	R - RPD outsid	e accepted recov	ery limits	А	- Analyte co	ncentration grea	ter than four times the spike	e amount
	Order: ICPMS204-B_160504B: 174 e: 05/05/16 19:51 Un Resul 0.524 ND - Not Detected at the Reporting Lim J - Analyte detected below quantitation	Order: ICPMS204-B_160504B: 174 SampType 2: 05/05/16 19:51 Units: mg/L Result PQL 0.524 0.0010 ND - Not Detected at the Reporting Limit J - Analyte detected below quantitation limits	Order:       ICPMS204-B_160504B: 174       SampType:       Sample Matr         e:       05/05/16 19:51       Units:       mg/L         Result       PQL       SPK value         0.524       0.0010       0.5         ND - Not Detected at the Reporting Limit       S - Spike Reco         J - Analyte detected below quantitation limits       R - RPD outsid	Order:       ICPMS204-B_160504B: 174       SampType:       SampI Matrix Spike         ::       05/05/16 19:51       Units:       mg/L         Result       PQL       SPK value       SPK Ref Val         0.524       0.0010       0.5       0.008705         ND - Not Detected at the Reporting Limit       S - Spike Recovery outside accepted recovery         J - Analyte detected below quantitation limits       R - RPD outside accepted recovery	Order:       ICPMS204-B_160504B: 174       SampType:       SampE Matrix Spike         e:       05/05/16 19:51       Units:       mg/L       Prep Info         Result       PQL       SPK value       SPK Ref Val       %REC         0.524       0.0010       0.5       0.008705       103         ND - Not Detected at the Reporting Limit       S - Spike Recovery outside accepted recovery         J - Analyte detected below quantitation limits       R - RPD outside accepted recovery limits	Order: ICPMS204-B_160504B: 174       SampType: Sample Matrix Spike       Lab         Order: ICPMS204-B_160504B: 174       SampType: Sample Matrix Spike       Lab         Order: ICPMS204-B_160504B: 174       SampType: Sample Matrix Spike       Lab         Order: ICPMS204-B_160504B: 174       Units: mg/L       Prep Info:       Prep Da         Colspan="6">Order: PQL       SPK value       SPK Ref Val       %REC       Lab         Order: Mg       Prep Info:       Prep Da         Order: PQL       SPK value       SPK Ref Val       %REC       LowLimit         0.524       0.0010       0.5       0.008705       103       70         ND - Not Detected at the Reporting Limit       S - Spike Recovery outside accepted recovery limit       N         J - Analyte detected below quantitation limits       R - RPD outside accepted recovery limits       A	Order:       ICPMS204-B_160504B: 174       SampType:       SampLe Matrix Spike       Lab ID:       H160409         e:       05/05/16 19:51       Units:       mg/L       Prep Info:       Prep Date:       5/4/2016         Result       PQL       SPK value       SPK Ref Val       %REC       LowLimit       HighLimit         0.524       0.0010       0.5       0.008705       103       70       130         ND - Not Detected at the Reporting Limit       S - Spike Recovery outside accepted recovery limits       N - Analyte code         J - Analyte detected below quantitation limits       R - RPD outside accepted recovery limits       A - Analyte code	Order:       ICPMS204-B_160504B: 174       SampType:       SampLe Matrix Spike       Lab ID:       H16040518-001CMS3         c:       05/05/16 19:51       Units:       mg/L       Prep Info:       Prep Date:       5/4/2016         Result       PQL       SPK value       SPK Ref Val       %REC       LowLimit       HighLimit       RPD Ref Val         0.524       0.0010       0.5       0.008705       103       70       130         ND - Not Detected at the Reporting Limit       S - Spike Recovery outside accepted recovery limits       N - Analyte concentration was         J - Analyte detected below quantitation limits       R - RPD outside accepted recovery limits       A - Analyte concentration greater	Order:       ICPMS204-B_160504B: 174       SampType:       SampE Matrix Spike       Lab ID:       H16040518-001CMS3       Method:       E200.8         e:       05/05/16 19:51       Units:       mg/L       Prep Info:       Prep Date:       5/4/2016       Prep Method:       E200.2         Result       PQL       SPK value       SPK Ref Val       %REC       LowLimit       HighLimit       RPD Ref Val       %RPD       RPDLimit         0.524       0.0010       0.5       0.008705       103       70       130       To substrain the second se

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Client: Work Order:	MT DE0 H16040	Q-Federal Superfund 518		ANALYT	ICAL QC Prepared by	SUMMARY Helena, MT Bra	<b>REPO</b>	RT		Date	: 01-Jun-	16
Project:	CFR Mo	onitoring-474374		В	atchID:	32860						
Run ID :Run Order	: ICPMS20	04-B_160504B: 174	SampType:	Sample Matri	x Spike		Lab	ID: <b>H16040</b>	518-001CMS3	Method	E200.8	
Analysis Date: 05/	05/16 19:51	Units:	mg/L			Prep Info	: Prep Da	te: 5/4/2016	5	Prep Method	E200.2	
Analytes 9		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium		0.256	0.0010	0.25	0.0002168	3 <b>102</b>	70	130				
Calcium		52.6	1.0	25	25.61	1 <b>108</b>	70	130				

0.03486

0.00633

6.473

1.535

5.229

70

70

70

70

70

102

110

102

105

102

130

130

130

130

130

0.5

0.5

25

25

25

Run ID :Run Order: ICPMS204-B_16050	4B: 175	SampType:	Sample Matri	x Spike Duplicate		Lab	D: <b>H16040</b>	518-001CMSD3	Method	: <b>E200.8</b>	
Analysis Date: 05/05/16 19:54	Units:	mg/L			Prep Info	: Prep Da	te: 5/4/2016	5	Prep Method	: E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.528	0.0010	0.5	0.008705	104	70	130	0.5237	0.8	20	
Cadmium	0.261	0.0010	0.25	0.0002168	104	70	130	0.2557	1.9	20	
Calcium	52.5	1.0	25	25.61	107	70	130	52.6	0.2	20	
Copper	0.550	0.0050	0.5	0.03486	103	70	130	0.5451	0.8	20	
Lead	0.560	0.0010	0.5	0.00633	111	70	130	0.5549	0.9	20	
Magnesium	32.4	1.0	25	6.473	104	70	130	32.02	1.1	20	
Potassium	27.8	1.0	25	1.535	105	70	130	27.82	0.2	20	
Sodium	31.0	1.0	25	5.229	103	70	130	30.83	0.7	20	
Zinc	0.550	0.010	0.5	0.04495	101	70	130	0.5441	1.1	20	

Associated samples: H16040518-001C, H16040518-002C, H16040518-003C, H16040518-004C, H16040518-005C, H16040518-006C, H16040518-007C, H16040518-008C, H16040518-009C, H16040518-010C, H16040518-012C, H16040518-013C, H16040518-014C, H16040518-015C, H16040518-016C, H16040518-017C, H16040518-018C

Run ID :Run Order: ICPMS204-B_160504	B: 209	SampType:	Sample Matri	x Spike		Lab I	D: <b>H160405</b>	518-011CMS3	Method	E200.8	
Analysis Date: 05/05/16 21:42	Units:	mg/L			Prep Info:	Prep Dat	te: 5/4/2016	i	Prep Method	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.520	0.0010	0.5	0.01668	101	70	130				
Cadmium	0.252	0.0010	0.25	0.0001946	101	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit

Copper

Magnesium

Potassium

Sodium

Lead

ng Limit S - Spike Recove

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

0.545

0.555

32.0

27.8

30.8

0.0050

0.0010

1.0

1.0

1.0

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEC H16040	Q-Federal Superfund 518		ANALYT	ICAL QC Prepared by	SUMMARY Helena, MT Bra	REPO	RT		Date	: 01-Jun-	16
Project:	CFR Mc	nitoring-474374		В	atchID:	32860						
Run ID :Run Order	ICPMS20	4-B_160504B: 209	SampType:	Sample Matr	ix Spike		Lab	ID: H16040518	-011CMS3	Method	E200.8	
Analysis Date: 05/0	05/16 21:42	Units	: mg/L			Prep Info	: Prep Da	te: 5/4/2016		Prep Method	: E200.2	
Analytes 9		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit R	PD Ref Val	%RPD	RPDLimit	Q

Calcium	78.5	1.0	25	50.88	110	70	130
Copper	0.533	0.0050	0.5	0.03102	100	70	130
Lead	0.538	0.0010	0.5	0.004207	107	70	130
Magnesium	37.0	1.0	25	12.1	100	70	130
Potassium	27.7	1.0	25	2.907	99	70	130
Sodium	38.4	1.0	25	13.4	100	70	130
Zinc	0.517	0.010	0.5	0.03137	97	70	130

Associated samples: H16040518-001C, H16040518-002C, H16040518-003C, H16040518-004C, H16040518-005C, H16040518-006C, H16040518-007C, H16040518-008C, H160408-008C, H160408-08C, H160408-08C, H160408-08C, H160408-08C, H160408-08C, H160408-08C, H1808-08C, H160408-08C, H160408-08C, H160408-08C, H160408-08C, H160408-08C, H160408-08C, H1608C, H1608C, H1808C, H1808 009C, H16040518-010C, H16040518-011C, H16040518-012C, H16040518-013C, H16040518-014C, H16040518-015C, H16040518-016C, H16040518-017C, H16040518-018C

Run ID :Run Order: ICPMS204-B_160	0504B: 210	SampType:	Sample Matri	x Spike Duplicate		Lab	D: <b>H16040</b>	518-011CMSD3	Method	: E200.8	
Analysis Date: 05/05/16 21:45	Units:	mg/L			Prep Info:	Prep Da	te: 5/4/2016	i	Prep Method	: E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.534	0.0010	0.5	0.01668	103	70	130	0.5204	2.5	20	
Cadmium	0.259	0.0010	0.25	0.0001946	104	70	130	0.2525	2.6	20	
Calcium	79.9	1.0	25	50.88	116	70	130	78.5	1.8	20	
Copper	0.545	0.0050	0.5	0.03102	103	70	130	0.533	2.3	20	
Lead	0.550	0.0010	0.5	0.004207	109	70	130	0.538	2.1	20	
Magnesium	37.9	1.0	25	12.1	103	70	130	37.05	2.3	20	
Potassium	28.2	1.0	25	2.907	101	70	130	27.66	1.8	20	
Sodium	39.4	1.0	25	13.4	104	70	130	38.42	2.5	20	
Zinc	0.532	0.010	0.5	0.03137	100	70	130	0.517	<u>3.0</u>	20	

009C, H16040518-010C, H16040518-011C, H16040518-012C, H16040518-013C, H16040518-014C, H16040518-015C, H16040518-016C, H16040518-017C, H16040518-018C

Analytes 9

- S Spike Recovery outside accepted recovery limit
- 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 four times the spike amount

Qual

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Client: Work Order:	MT DEQ-Federal Sup H16040518	erfund		ANALYT	ICAL QC S	UMMARY lena, MT Bra	REPO	RT		Date	: 01-Jun-	16
Project:	CFR Monitoring-4743	74		В	atchID: 32	868						
Run ID :Run Orde	: FIA202-HE_160505B: 12		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-32	868	Method	: E365.1	
Analysis Date: 05/	05/16 11:33	Units:	mg/L			Prep Info:	Prep Da	ate: 5/4/2016	6	Prep Method	1: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.398	0.010	0.4	0	100	90	110				
Associated sample	s: H16040518-001D, H1604 009D, H16040518-010D,	0518-002 H1604051	D, H16040518 18-011D, H160	3-003D, H1604 040518-012D,	0518-004D, H16 H16040518-013I	040518-005D, D, H16040518	H1604051 -014D, H1	18-006D, H1 6040518-01	6040518-007D, 5D	H16040518-0	)8D, H1604	0518-
Run ID :Run Orde	FIA202-HE_160505B: 13		SampType:	Method Blan	k		Lab	ID: MB-328	68	Method	1: E365.1	
Analysis Date: 05/	05/16 11:34	Units:	mg/L			Prep Info:	: Prep Da	ate: 5/4/2016	6	Prep Method	: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	ND	0.001									
Associated sample	s: H16040518-001D, H1604 009D, H16040518-010D,	0518-002 H1604051	D, H16040518 18-011D, H160	8-003D, H1604 040518-012D,	0518-004D, H16 H16040518-013I	040518-005D, D, H16040518	H1604051 -014D, H1	18-006D, H1 6040518-01	6040518-007D, 5D	H16040518-0	)8D, H1604	0518-
Run ID :Run Orde	FIA202-HE_160505B: 15		SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16040</b>	502-001Dms	Method	1: E365.1	
Analysis Date: 05/	05/16 11:36	Units:	mg/L			Prep Info:	: Prep Da	ate: 5/4/2016	6	Prep Method	: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.215	0.010	0.2	0.01814	98	90	110				
Associated sample	s: H16040518-001D, H1604 009D, H16040518-010D,	0518-002 H1604051	D, H16040518 18-011D, H160	3-003D, H1604 040518-012D,	0518-004D, H16 H16040518-013I	040518-005D, D, H16040518	H1604051 -014D, H1	18-006D, H1 6040518-01	6040518-007D, 5D	H16040518-0	)8D, H1604	0518-
Run ID :Run Orde	FIA202-HE_160505B: 16		SampType:	Sample Matr	ix Spike Duplica	te	Lab	ID: <b>H16040</b>	502-001Dmsd	Method	1: E365.1	
Analysis Date: 05/	05/16 11:37	Units:	mg/L			Prep Info:	: Prep Da	ate: 5/4/2016	5	Prep Method	: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.224	0.010	0.2	0.01814	103	90	110	0.2149	<u>3.9</u>	20	
Associated sample	s: H16040518-001D, H1604 009D, H16040518-010D,	0518-002 H1604051	D, H16040518 18-011D, H160	8-003D, H1604 040518-012D,	0518-004D, H16 H16040518-013I	040518-005D, D, H16040518	H1604051 -014D, H1	18-006D, H1 6040518-01	6040518-007D, 5D	H16040518-0	)8D, H1604	0518-
Run ID :Run Orde	FIA202-HE_160505B: 31		SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16040</b>	518-008Dms	Method	1: E365.1	
Analysis Date: 05/	05/16 11:53	Units:	mg/L			Prep Info:	Prep Da	ate: 5/4/2016	6	Prep Method	I: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Tota	as P	0.198	0.010	0.2	0	99	90	110				
<b>Qualifiers:</b> ND J	<ul> <li>Not Detected at the Reporti</li> <li>Analyte detected below quant</li> </ul>	ng Limit itation limi	its I	S - Spike Reco R - RPD outsid	very outside acce e accepted recov	pted recovery ery limits	limit N A	- Analyte co - Analyte co	oncentration was	not sufficiently ater than four tir	high to calc nes the spik F	ulate RPD e amount 'age 52 of 9

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Client: Work Order:	MT DEQ- H160405	Federal Superfund 18		ANALYTI P	CAL QC SU	<b>JMMARY</b> ena, MT Brar	REPOF	RT		Date	01-Jun-1	16
Project:	CFR Mon	itoring-474374		B	atchID: 32	868						
Run ID :Run Order:	FIA202-HE	_160505B: 31	SampType:	Sample Matri	x Spike		Lab II	D: H160405	18-008Dms	Method	E365.1	
Analysis Date: 05/0	5/16 11:53	Units:	mg/L			Prep Info:	Prep Date	e: <b>5/4/2016</b>		Prep Method	E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Associated samples	H16040518 009D, H16	8-001D, H16040518-002D 040518-010D, H16040518	, H16040518- -011D, H160	003D, H1604( 40518-012D, I	0518-004D, H160 H16040518-013D	040518-005D, 0, H16040518-	H16040518 014D, H160	8-006D, H10 040518-015	6040518-007D, 5D	H16040518-00	8D, H16040	1518-

Run ID :Run Order: FIA202-HE_160505B: 32		SampType:	Sample Matri	x Spike Duplicate		Lab I	D: <b>H16040</b>	518-008Dmsd	Method	E365.1	
Analysis Date: 05/05/16 11:54	Units: <b>n</b>	ng/L			Prep Info:	Prep Dat	te: 5/4/2016	5	Prep Method	E365.1	
Analytes <u>1</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.209	0.010	0.2	0	104	90	110	0.1979	<u>5.3</u>	20	

Associated samples: H16040518-001D, H16040518-002D, H16040518-003D, H16040518-004D, H16040518-005D, H16040518-006D, H16040518-007D, H16040518-008D, H16040518-008D, H16040518-009D, H16040518-010D, H16040518-012D, H16040518-013D, H16040518-014D, H16040518-015D

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Fede H16040518	ral Superfund		ANALYT	ICAL QC SU Prepared by Heler	MMARY na, MT Bra	REPO	RT		Date:	01-Jun-	16
Project:	CFR Monitoring	g-474374		В	atchID: 328	75						
Run ID :Run Order	: HGCV202-H_160	506A: 11	SampType:	Method Blan	k		Lab	ID: <b>MB-328</b> 7	75	Method:	E245.1	
Analysis Date: 05/	06/16 11:10	Units:	mg/L			Prep Info	: Prep Da	te: 5/5/2016		Prep Method:	E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		ND	1E-06									
Associated sample	s: H16040518-002C	, H16040518-003C	, H16040518	-004C, H1604	0518-019B							
Run ID :Run Order	: HGCV202-H_160	506A: 12	SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-328	375	Method:	E245.1	
Analysis Date: 05/	06/16 11:13	Units:	mg/L			Prep Info	: Prep Da	te: 5/5/2016		Prep Method:	E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury Associated sample	s: H16040518-002C	0.000144 , <b>H16040518-003C</b>	0.00010 , <b>H16040518</b>	0.00015 - <b>004C, H1604</b>	0 0518-019B	96	90	110				
Run ID :Run Order	: HGCV202-H_160	506A: 14	SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16040</b> 5	513-001CMS	Method:	E245.1	
Analysis Date: 05/	06/16 11:19	Units:	mg/L			Prep Info	: Prep Da	te: 5/5/2016		Prep Method:	E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.000147	0.00010	0.00015	0.00000133	97	70	130				
Associated sample	s: H16040518-002C	, H16040518-003C	, H16040518	-004C, H1604	0518-019B							
Run ID :Run Order	: HGCV202-H_160	506A: 15	SampType:	Sample Matri	ix Spike Duplicate		Lab	ID: <b>H160405</b>	513-001CMSD	Method:	E245.1	
Analysis Date: 05/	06/16 11:22	Units:	mg/L			Prep Info	: Prep Da	te: 5/5/2016		Prep Method:	E245.1	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.000148	0.00010	0.00015	0.00000133	98	70	130	0.000147	0.7	20	
Associated sample	s: H16040518-002C	, H16040518-003C	, H16040518	-004C, H1604	0518-019B							
Run ID :Run Order	: HGCV202-H_160	506A: 29	SampType:	Sample Matri	ix Spike		Lab	ID: <b>H160500</b>	066-003BMS	Method:	E245.1	
Analysis Date: 05/	06/16 12:04	Units:	mg/L			Prep Info	Prep Da	te: 5/5/2016		Prep Method:	E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00015	5.0E-06	0.00015	0.00000517	98	70	130				
Associated sample	s: H16040518-002C	, H16040518-003C	, H16040518	-004C, H1604	0518-019B							

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

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Client: Work Order:	MT DE H16040	Q-Federal Superfund )518		ANALYT	ICAL QC SU Prepared by Hele	<b>JMMARY</b> ena, MT Bra	REPO	RT		Date	: 01-Jun-	16
Project:	CFR M	CFR Monitoring-474374 BatchID: 32875										
Run ID :Run Order:	HGCV20	02-H_160506A: 30	SampType:	Sample Matri	x Spike Duplicat	9	Lab	ID: <b>H16050</b>	066-003BMSD	Method	1: E245.1	
Analysis Date: 05/0	6/16 12:0	7 Units:	mg/L			Prep Info	: Prep Da	te: 5/5/2016	5	Prep Method	: E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00015	5.0E-06	0.00015	0.00000517	97	70	130	0.0001522	0.5	20	
Associated samples	: H16040	518-002C, H16040518-003C	, H16040518	3-004C, H1604	0518-019B							

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPDA Analyte concentration greater than four times the spike amount
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16040518	erfund		ANALYT	ICAL QC SUI Prepared by Helen	MMARY na, MT Bra	REPO	RT		Date	: 01-Jun-	16
Project:	CFR Monitoring-4743	74		В	atchID: 328	90						
Run ID :Run Order:	FIA202-HE_160506A: 12		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-32	390	Method	E365.1	
Analysis Date: 05/0	6/16 14:36	Units:	mg/L			Prep Info:	Prep Da	ite: 5/6/2016	5	Prep Method	: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.416	0.010	0.4	0	104	90	110				
Associated samples	: H16040518-016D, H1604	0518-017D	), H16040518	3-018D								
Run ID :Run Order:	FIA202-HE_160506A: 13		SampType:	Method Blan	k		Lab	ID: <b>MB-328</b>	90	Method	E365.1	
Analysis Date: 05/0	6/16 14:37	Units:	mg/L			Prep Info:	Prep Da	ite: 5/6/2016	5	Prep Method	: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	ND	0.001									
Associated samples	: H16040518-016D, H1604	0518-017D	), H16040518	3-018D								
Run ID :Run Order:	FIA202-HE_160506A: 17		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16040</b>	518-016DMS	Method	E365.1	
Analysis Date: 05/0	6/16 14:41	Units:	mg/L			Prep Info:	: Prep Da	ite: 5/6/2016	5	Prep Method	E365.1	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.269	0.010	0.2	0.05459	107	90	110				
Associated samples	: H16040518-016D, H1604	0518-0170	D, H16040518	3-018D								
Run ID :Run Order:	FIA202-HE_160506A: 18		SampType:	Sample Matri	ix Spike Duplicate		Lab	ID: <b>H16040</b>	518-016DMSD	Method	E365.1	
Analysis Date: 05/0	6/16 14:42	Units:	mg/L			Prep Info:	: Prep Da	ite: 5/6/2016	5	Prep Method	E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.274	0.010	0.2	0.05459	110	90	110	0.2694	1.8	20	

Associated samples: H16040518-016D, H16040518-017D, H16040518-018D

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

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Client: Work Order:	MT DEQ-Feder H16040518	ral Superfund		ANALYT	ICAL QC	SUMMARY Helena, MT Bra	REPO	RT		Date	e: 01-Jun-	16
Project:	CFR Monitoring	g-474374		В	atchID:	C_R211444						
Run ID :Run Order:	SUB-C211444: 1		SampType:	Continuing C	Calibration Ve	rification Standa	i <b>r</b> Lab	ID: CCV		Method	d: A5310 C	
Analysis Date: 05/0	5/16 22:10	Units: I	mg/L			Prep Info	: Prep Da	ate:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Di	ssolved (DOC)	5.29	0.50	5	C	) 106	90	110	0			
Associated samples	: H16040518-001E 009E, H16040518 H16040518-018E	, H16040518-002E, 3-010E, H16040518	, H16040518 -011E, H160	-003E, H1604 )40518-012E,	0518-004E, H H16040518-0	16040518-005E, 13E, H16040518 <sup>,</sup>	H1604051 014E, H16	8-006E, H1 040518-01	6040518-007E, 5E, H16040518	H16040518-00 -016E, H16040	98E, H16040 518-017E,	)518-
Run ID :Run Order:	SUB-C211444: 4		SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16040</b>	518-001E	Method	d: A5310 C	
Analysis Date: 05/0	5/16 22:59	Units: I	mg/L			Prep Info	: Prep Da	ate:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Di	ssolved (DOC)	25.3	0.50	20	4.296	i 105	85	115	0			
Associated samples	∷ H16040518-001E 009E, H16040518 H16040518-018E	, H16040518-002E, 3-010E, H16040518	, H16040518 8-011E, H160	-003E, H1604 )40518-012E,	0518-004E, H H16040518-0	16040518-005E, 13E, H16040518 <sup>,</sup>	H1604051 •014E, H16	8-006E, H1 040518-01	6040518-007E, 5E, H16040518	H16040518-00 -016E, H16040	08E, H16040 518-017E,	)518-
Run ID :Run Order:	SUB-C211444: 5		SampType:	Sample Matr	ix Spike Dupl	icate	Lab	ID: <b>H16040</b>	518-001E	Method	d: A5310 C	
Analysis Date: 05/0	5/16 23:15	Units: I	mg/L			Prep Info	: Prep Da	ate:		Prep Method	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Di	ssolved (DOC)	25.4	0.50	20	4.296	<b>5 106</b>	85	115	25.29	0.4	10	
Associated samples	: H16040518-001E 009E, H16040518 H16040518-018E	, H16040518-002E, 3-010E, H16040518	, H16040518 8-011E, H160	-003E, H1604 )40518-012E,	0518-004E, H H16040518-0	16040518-005E, 13E, H16040518 <sup>,</sup>	H1604051 014E, H16	8-006E, H1 040518-01	6040518-007E, 5E, H16040518	H16040518-00 -016E, H16040	)8E, H1604( 518-017E,	)518-
Run ID :Run Order:	SUB-C211444: 14	L.	SampType:	Continuing C	Calibration Ve	rification Standa	n <b>r</b> Lab	ID: CCV-79	23	Method	d: A5310 C	
Analysis Date: 05/0	6/16 01:52	Units: I	mg/L			Prep Info	: Prep Da	ate:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Di	ssolved (DOC)	5.28	0.50	5	C	) 106	90	110	0			
Associated samples	H16040518-001E 009E, H16040518 H16040518-018E	, H16040518-002E, 3-010E, H16040518	, H16040518 -011E, H160	-003E, H1604 040518-012E,	0518-004E, H H16040518-0	16040518-005E, 13E, H16040518	H1604051 014E, H16	8-006E, H1 040518-01	6040518-007E, 5E, H16040518	H16040518-00 -016E, H16040	08E, H16040 518-017E,	)518-

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Federal H16040518	Superfund		ANALYT	ICAL QC SU Prepared by Hel	UMMARY ena. MT Bra	REPO	RT		Date	e: 01-Jun-	16
Project:	CFR Monitoring-4	74374		В	atchID: C_	_R211444						
Run ID :Run Order:	SUB-C211444: 17		SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16040</b>	518-010E	Method	: A5310 C	
Analysis Date: 05/0	06/16 02:59	Units:	mg/L			Prep Info:	: Prep Da	ite:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Di	ssolved (DOC)	24.0	0.50	20	0.9809	115	85	115	0			
Associated samples	:: H16040518-001E, H 009E, H16040518-0 H16040518-018E	16040518-002E, 10E, H16040518	, H16040518 -011E, H160	-003E, H1604 40518-012E,	0518-004E, H160 H16040518-013E	940518-005E, E, H16040518-	H1604051 014E, H16	8-006E, H10 040518-015	6040518-007E, 5E, H16040518	H16040518-00 -016E, H16040	98E, H16040 518-017E,	)518-
Run ID :Run Order:	SUB-C211444: 18		SampType:	Sample Matr	ix Spike Duplicat	te	Lab	ID: <b>H16040</b>	518-010E	Method	:: A5310 C	
Analysis Date: 05/0	06/16 03:14	Units: I	mg/L			Prep Info:	: Prep Da	ite:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Di	issolved (DOC)	24.1	0.50	20	0.9809	<u>116</u>	85	115	23.95	0.8	10	S
Associated samples	∷ H16040518-001E, H 009E, H16040518-0 H16040518-018E	16040518-002E, 10E, H16040518	, H16040518 -011E, H160	-003E, H1604 40518-012E,	0518-004E, H160 H16040518-013E	040518-005E, E, H16040518-	H1604051 014E, H16	8-006E, H10 040518-015	6040518-007E, 5E, H16040518	H16040518-00 -016E, H16040	98E, H16040 518-017E,	)518-
Run ID :Run Order:	SUB-C211444: 27		SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16050</b>	009-001C	Method	d: A5310 C	
Analysis Date: 05/0	06/16 07:17	Units:	mg/L			Prep Info:	: Prep Da	ite:		Prep Method	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Di	issolved (DOC)	27.2	0.50	20	7.374	99	85	115	0			
Associated samples	: H16040518-001E, H 009E, H16040518-0 H16040518-018E	16040518-002E, 10E, H16040518	, H16040518 -011E, H160	-003E, H1604 40518-012E,	0518-004E, H160 H16040518-013E	940518-005E, , H16040518-	H1604051 014E, H16	8-006E, H10 040518-015	6040518-007E, 5E, H16040518	H16040518-00 -016E, H16040	98E, H16040 518-017E,	)518-
Run ID :Run Order:	SUB-C211444: 28		SampType:	Sample Matr	ix Spike Duplicat	te	Lab	ID: <b>H16050</b>	009-001C	Method	: A5310 C	
Analysis Date: 05/0	06/16 07:36	Units:	mg/L			Prep Info:	: Prep Da	ite:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Di	issolved (DOC)	26.9	0.50	20	7.374	98	85	115	27.18	1.1	10	
Associated samples	:: H16040518-001E, H 009E, H16040518-0 H16040518-018E	16040518-002E, 10E, H16040518	, H16040518 -011E, H160	-003E, H1604 40518-012E,	0518-004E, H160 H16040518-013E	940518-005E, , H16040518-	H1604051 014E, H16	8-006E, H10 040518-015	6040518-007E, 5E, H16040518	H16040518-00 -016E, H16040	98E, H16040 518-017E,	)518-

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal S H16040518	Superfund		ANALYT	CAL QC SPrepared by H	SUMMARY lelena, MT Brai	REPO	RT		Date	: 01-Jun-	16
Project:	CFR Monitoring-47	74374		В	atchID: 0	C_R211444						
Run ID :Run Order:	SUB-C211444: 29		SampType:	Method Blanl	<b>K</b>		Lab	ID: <b>MB-989</b>	44	Method	: A5310 C	
Analysis Date: 05/0	6/16 09:24	Units: <b>n</b>	ng/L			Prep Info:	Prep Da	ite:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Di	ssolved (DOC)	0.2	0.04									
Associated samples	: H16040518-001E, H1 009E, H16040518-01 H16040518-018E	6040518-002E, 0E, H16040518-	H16040518 011E, H160	-003E, H1604( 40518-012E, I	0518-004E, H1 H16040518-013	6040518-005E, 3E, H16040518-	H1604051 014E, H16	8-006E, H10 040518-015	6040518-007E, 5E, H16040518-	H16040518-00 016E, H160409	8E, H16040 518-017E,	518-
Run ID :Run Order:	SUB-C211444: 30		SampType:	Laboratory C	ontrol Sample	1	Lab	ID: LCS-81	16	Method	: A5310 C	
Analysis Date: 05/0	6/16 09:43	Units: <b>n</b>	ng/L			Prep Info:	Prep Da	ite:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Di	ssolved (DOC)	5.51	0.50	5	0.2114	106	90	110	0			
Associated samples	: H16040518-001E, H1 009E, H16040518-01	6040518-002E, 0E, H16040518-	H16040518- 011E, H160	-003E, H1604( 40518-012E, I	0518-004E, H1 H16040518-01	6040518-005E, 3E, H16040518-	H1604051 014E, H16	8-006E, H1 040518-015	6040518-007E, 5E, H16040518-	H16040518-00 016E, H16040	8E, H16040 518-017E,	518-

H16040518-018E

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

 $\ensuremath{\mathsf{A}}$  - Analyte concentration greater than four times the spike amount

MT DEQ-Federal St H16040518	un ourfu via al		obo oracion, in or	6111e	tte, wr 600.060.	7175 • Helena	a, MT <b>877.472</b>	.0711			
	uperiuna		ANALYT	ICAL QC S Prepared by He	UMMARY lena, MT Bra	REPO	RT		Date	: 01-Jun-	16
CFR Monitoring-474	374		В	atchID: R	114931						
PHSC_101-H_160502A	53	SampType:	Method Blan	k		Lab	D: <b>MB</b>		Method	: A2320 B	
/16 11:57	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
aCO3	2	0.2									
H16040518-001A, H16 009A, H16040518-010/ H16040518-018A	040518-002/ A, H1604051	A, H16040518 8-011A, H160	-003A, H1604 40518-012A, ∣	0518-004A, H16 H16040518-013/	040518-005A, A, H16040518	H1604051 014A, H16	8-006A, H16 040518-015	6040518-007A, 6A, H16040518-	H16040518-00 016A, H16040	98A, H16040 518-017A,	518-
PHSC_101-H_160502A	55	SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS		Method	: A2320 B	
/16 12:03	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
009A, H16040518-010/ H16040518-018A	A, H1604051	8-011A, H160	40518-012A,	H16040518-013	A, H16040518	-014A, H16	040518-015	5A, H16040518-	016A, H16040	518-017A,	
PHSC_101-H_160502A	: 62	SampType:	Sample Dupl	icate		Lab	D: <b>H16040</b>	518-001ADUP	Method	: A2320 B	
/16 12:32	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	1:	
	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
aCO3	71	4.0		0				70.6	0.1	10	
H16040518-001A, H16 009A, H16040518-010/	05 040518-002/ A, H1604051	4.0 A, H16040518 8-011A, H160	-003A, H1604 40518-012A, I	0 0518-004A, H160 H16040518-013/	040518-005A, A, H16040518 <sup>,</sup>	H1604051 014A, H16	8-006A, H16 040518-015	6040518-007A, 6A, H16040518-	0.1 H16040518-00 016A, H16040	10 98A, H16040 518-017A,	518-
H16040518-018A											
H16040518-018A PHSC_101-H_160502A	: 98	SampType:	Sample Dupl	icate		Lab	D: <b>H16040</b>	518-018ADUP	Method	: A2320 B	
H16040518-018A PHSC_101-H_160502A //16 14:07	: <b>98</b> Units:	SampType: mg/L	Sample Dupl	icate	Prep Info	Lab Prep Da	D: <b>H16040</b>	518-018ADUP	Methoo Prep Methoo	d: <b>A2320 B</b>	
H16040518-018A PHSC_101-H_160502A //16 14:07	: <b>98</b> Units: Result	SampType: mg/L PQL	Sample Dupl	icate SPK Ref Val	Prep Info %REC	Lab Prep Da LowLimit	D: <b>H16040</b> te: HighLimit	518-018ADUP RPD Ref Val	Methoo Prep Methoo %RPD	d: <b>A2320 B</b> d: RPDLimit	Qual
H16040518-018A PHSC_101-H_160502A 1/16 14:07 aCO3	: <b>98</b> Units: Result 84	SampType: mg/L PQL 4.0	Sample Dupl	icate SPK Ref Val 0	Prep Info %REC	Lab : Prep Da LowLimit	D: <b>H16040!</b> te: HighLimit	518-018ADUP RPD Ref Val 83.85	Methoo Prep Methoo %RPD 0.1	d: <b>A2320 B</b> d: RPDLimit 10	Qual
	'16 11:57 aCO3 H16040518-001A, H160 009A, H16040518-010/ H16040518-018A PHSC_101-H_160502A /16 12:03 aCO3 H16040518-001A, H160 009A, H16040518-010/ H16040518-018A PHSC_101-H_160502A /16 12:32 aCO3 3 H16040518-001A, H160	'16 11:57       Units: Result         àCO3       2         H16040518-001A, H16040518-002/ 009A, H16040518-010A, H1604051 H16040518-018A       116040518-002/ 009A, H16040518-012A: 55         PHSC_101-H_160502A: 55       Units: Result         àCO3       610         H16040518-001A, H16040518-002/ 009A, H16040518-010A, H16040518-002/ 009A, H16040518-010A, H16040518-002/ 116040518-018A       Units: Result         PHSC_101-H_160502A: 62       Units: Result         aCO3       71         3       85         H16040518-001A, H16040518-002/	'16 11:57       Units: mg/L         Result       PQL         aCO3       2       0.2         H16040518-001A, H16040518-002A, H16040518       009A, H16040518-010A, H16040518-011A, H160         009A, H16040518-010A, H16040518-011A, H160         H16040518-018A         PHSC_101-H_160502A: 55       SampType:         /16 12:03       Units: mg/L         Result       PQL         aCO3       610       4.0         H16040518-001A, H16040518-002A, H16040518       009A, H16040518-010A, H16040518-011A, H160         009A, H16040518-010A, H16040518-002A, H16040518       90PL         aCO3       610       4.0         H16040518-01A, H16040518-002A, H16040518       90PL         aCO3       71       4.0         aCO3       71       4.0         3       85       4.0         H16040518-001A, H16040518-002A, H16040518       90L	Ife 11:57       Units: mg/L         Result       PQL       SPK value         aCO3       2       0.2         H16040518-001A, H16040518-002A, H16040518-003A, H16040       SPK value         009A, H16040518-010A, H16040518-011A, H16040518-012A, H16040518-012A, H16040518-018A       SampType: Laboratory C         PHSC_101-H_160502A:       55       SampType: Laboratory C         /16 12:03       Units: mg/L       Result       PQL       SPK value         aCO3       610       4.0       600         H16040518-001A, H16040518-002A, H16040518-003A, H16040       600         H16040518-001A, H16040518-002A, H16040518-003A, H16040       600         H16040518-01A, H16040518-002A, H16040518-003A, H16040       600         H16040518-01A, H16040518-002A, H16040518-01A, H16040518-012A, H       Fesult       PQL       SPK value         aCO3       610       4.0       600       600         H16040518-01A, H16040518-01A, H16040518-01A, H16040518-012A, H       Fesult       PQL       SPK value         aCO3       71       4.0       3       85       4.0         H16040518-001A, H16040518-002A, H16040518-003A, H16	'16 11:57         Units: mg/L           Result         PQL         SPK value         SPK Ref Val           aCO3         2         0.2           H16040518-001A, H16040518-002A, H16040518-003A, H16040518-004A, H160           009A, H16040518-010A, H16040518-011A, H16040518-012A, H16040518-013A           H16040518-018A           PHSC_101-H_160502A: 55         SampType:           Result         PQL           SPK value         SPK Ref Val           aCO3         610         4.0           aCO3         610         4.0         600         1.96           H16040518-001A, H16040518-002A, H16040518-003A, H16040518-004A, H160         H16040518-001A, H16040518-012A, H16040518-003A, H16040518-004A, H160           aCO3         610         4.0         600         1.96           H16040518-010A, H16040518-002A, H16040518-003A, H16040518-004A, H160         H16040518-012A, H16040518-013A           H16040518-010A, H16040518-011A, H16040518-012A, H16040518-013A         H16040518-012A, H16040518-013A           PHSC_101-H_160502A: 62         SampType:         Sample Duplicate           //16 12:32         Units: mg/L         Result         PQL         SPK value         SPK Ref Val           aCO3         71         4.0         0         0         3         0	'16 11:57         Units: mg/L         Prep Info           Result         PQL         SPK value         SPK Ref Val         %REC           aCO3         2         0.2	'16 11:57       Units: mg/L       Prep Info:       Prep Da         Result       PQL       SPK value       SPK Ref Val       %REC       LowLimit         aCO3       2       0.2	'16 11:57         Units: mg/L         Prep Info:         Prep Date:           Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit           aC03         2         0.2                H16040518-001A, H16040518-002A, H16040518-003A, H16040518-004A, H16040518-005A, H16040518-006A, H16040518-014A, H16040518-015A, H16040518-014A, H16040518-015A, H16040518-014A, H16040518-015A, H16040518-015A, H16040518-014A, H16040518-015A, H16040518-015A, H16040518-015A, H16040518-015A, H16040518-015A, H16040518-015A, H16040518-015A, H16040518-015A, H16040518-015A, H16040518-005A, H16040518-015A, H16040518-005A, H16040518-005A, H16040518-015A, H16040518-005A, H160405	'16 11:57       Units: mg/L       Prep Info:       Prep Date:         Result       PQL       SPK value       SPK Ref Val       %REC       LowLimit       HighLimit       RPD Ref Val         iCO3       2       0.2	'16 11:57         Units: mg/L         Prep Info:         Prep Date:         Prep Method           16 01:57         Result         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         RPD Ref Val         %RPD           16 02 03         2         0.2	'16 11:57         Units: mg/L         Prep Info:         Prep Date:         Prep Method:           Accual         PQL         SPK value         SPK Ref Val         %REC         LowLimit         HighLimit         RPD Ref Val         %RPD         RPDLimit           aCO3         2         0.2             %RPD         RPDLimit           ht6040518-001A, H16040518-002A, H16040518-003A, H16040518-004A, H16040518-005A, H16040518-006A, H16040518-007A, H16040518-007A, H16040518-017A, H16040518-017A, H16040518-016A, H16040518-017A, H16040518-017A, H16040518-017A, H16040518-017A, H16040518-017A, H16040518-017A, H16040518-017A, H16040518-002A, H16040518-007A, H16040518-007

H16040518-018A

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

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<b>ENERGY</b> LABORATORIES	Trust our People. www.energylab.co	Trust our Data	Col	lege Station, TX 8	Bill 88.690.2218 • Gil	ings, MT <b>800.735.</b> 4 lette, WY <b>866.686.</b> 7	1489 • Casper 7175 • Helena	r, WY <b>888.235</b> a, MT <b>877.47</b> 2	i.0515 2.0711			
Client: Work Order:	MT DEQ-Federal Su H16040518	iperfund		ANALYT	ICAL QC S Prepared by H	SUMMARY elena, MT Bra	REPOI	RT		Date:	01-Jun-	16
Project:	CFR Monitoring-474	374		В	atchID: F	R114969						
Run ID :Run Orde	er: IC102-H_160502A: 12		SampType:	Method Blan	k		Lab I	D: ICB		Method:	E300.0	
Analysis Date: 05	/02/16 12:38	Units:	mg/L			Prep Info:	: Prep Dat	te:		Prep Method:		
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride Sulfate		0.04 0.3	0.006 0.05									
Associated sample	es: H16040518-001A, H160 009A, H16040518-010A H16040518-018A	940518-002 , H1604051	A, H16040518 8-011A, H160	9-003A, H1604 040518-012A,	0518-004A, H10 H16040518-013	6040518-005A, 3A, H16040518-	H16040518 014A, H16	3-006A, H1 040518-01	6040518-007A, 5A, H16040518-	H16040518-008 016A, H160405 <sup>-</sup>	A, H16040 18-017A,	518-
Run ID :Run Orde	er: IC102-H_160502A: 13		SampType:	Initial Calibra	ation Verificatio	on Standard	Lab I	D: ICV		Method:	E300.0	
Analysis Date: 05	/02/16 12:49	Units:	mg/L			Prep Info:	: Prep Dat	te:		Prep Method:		
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		102	1.0	100	0	102	90	110				
Sulfate		404	1.0	400	0	101	90	110				
	009A, H16040518-010A H16040518-018A	, H1604051	8-011A, H160	)40518-012A,	H16040518-013	3A, H16040518-	014A, H160	040518-015	5A, H16040518-	016A, H160405 <sup>4</sup>	18-017A,	
Analysis Data: 05	U02/16 12:00	Unite	Samp Type:	Laboratory F	ortified Blank	Prop Info		D. LFB		Bron Mothod:	E300.0	
Analytes 2	102/10 13:00	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		47.3	1.0	50	0.04	94	90	110				
Sulfate		209	1.0	200	0.292	105	90	110				
Associated sample	es: H16040518-001A, H160 009A, H16040518-010A H16040518-018A	)40518-002 , H1604051	A, H16040518 8-011A, H160	-003A, H1604 )40518-012A,	0518-004A, H10 H16040518-013	6040518-005A, 3A, H16040518-	H16040518 014A, H16	3-006A, H1 040518-01	6040518-007A, 5A, H16040518-	H16040518-008 016A, H160405 <sup>-</sup>	A, H16040 18-017A,	518-
Run ID :Run Orde	er: IC102-H_160502A: 16		SampType:	Continuing C	Calibration Veri	fication Standa	r Labl	D: CCV050	216-1	Method:	E300.0	
Analysis Date: 05	/02/16 13:23	Units:	mg/L			Prep Info:	Prep Dat	te:		Prep Method:		
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		101	1.0	100	0	101	90	110				
Sulfate		401	1.0	400	0	100	90	110				
Associated sample	es: H16040518-001A, H160 009A, H16040518-010A H16040518-018A	940518-002 , H1604051	A, H16040518 8-011A, H160	9-003A, H1604 040518-012A,	0518-004A, H1 H16040518-013	6040518-005A, 3A, H16040518-	H16040518 014A, H16	3-006A, H1 040518-01	6040518-007A, 5A, H16040518-	H16040518-008 016A, H160405 <sup>-</sup>	A, H16040 18-017A,	518-
Qualifiers: ND	) - Not Detected at the Repo	rting Limit	5	S - Spike Reco	very outside acc	cepted recoverv	limit N	- Analyte co	oncentration was	not sufficiently h	high to calc	ulate RF
	A maketa alata at a diba law							Amatata		stan than farm f	a a 4h a "	

R - RPD outside accepted recovery limits

<b>ENERGY</b> LABORATORIES	Trust our People. www.energylab.co	<b>Trust our Data</b> m	n. C	ollege Station, TX <b>8</b>	B 88.690.2218 • 0	illings, MT <b>800.735.</b> Gillette, WY <b>866.686</b> .	<b>1489 •</b> Caspe <b>7175 •</b> Helen:	r, WY <b>888.235</b> a, MT <b>877.472</b>	i.0515 2.0711			
Client: Work Order:	MT DEQ-Federal Su H16040518	perfund		ANALYT	ICAL QC	SUMMARY Helena, MT Bra	REPO	RT		Date	e: 01-Jun-	16
Project:	CFR Monitoring-474	374		B	atchID:	R114969						
Run ID :Run Orde	r: IC102-H_160502A: 34		SampType	: Sample Matr	ix Spike		Lab	D: <b>H16040</b>	518-002AMS	Method	d: E300.0	
Analysis Date: 05	02/16 16:43	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
Analytes 2		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		48.1	1.0	50	C	) 96	90	110				
Sulfate		211	1.0	200	C	) 106	90	110				
	r: IC102-H 1605024: 35	, 1100405	SampType	• Sample Matr	ix Spike Dupl	icate	-014А, П10	D: <b>H16040</b>	518-002AMSD	Methor	516-017A,	
Analysis Date: 05	/02/16 16·54	l Inite	· ma/l			Pren Info	· Pren Da			Pren Methor	4.	
Analytes 2	02/10/10:04	Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
		48.6	1.0	50		97	90	110	48.06	11	20	
Sulfate		214	1.0	200	C	) 107	90	110	211.1	1.4	20	
Run ID :Run Orde	H16040518-018A r: IC102-H_160502A: 36		SampType	: Continuing (	Calibration Ve	rification Standa	r Lab	ID: CCV050	0216-2	Method	d: <b>E300.0</b>	
Analysis Date: 05	02/16 17:05	Units	: mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
Analytes 2		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		102	1.0	100	C	) 102	90	110				
Sulfate Associated sample	s: H16040518-001A, H160 009A, H16040518-010A H16040518-018A	403 40518-002 , H160405	1.0 A, H1604051 18-011A, H16	400 8-003A, H1604 6040518-012A,	0518-004A, H H16040518-0	) 101 16040518-005A, 13A, H16040518-	90 H1604051 014A, H16	110 8-006A, H1 040518-01	6040518-007A, 5A, H16040518	H16040518-00 -016A, H16040	08A, H16040 518-017A,	)518-
Run ID :Run Orde	r: IC102-H_160502A: 49		SampType	: Sample Matr	ix Spike		Lab	D: <b>H16040</b>	518-012AMS	Method	d: E300.0	
Analysis Date: 05	02/16 19:30	Units	: mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
Analytes 2		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		62.2	1.0	50	11.42	2 102	90	110				
Sulfate		273	1.0	200	64.65	i 104	90	110				
Associated sample	s: H16040518-001A, H160 009A, H16040518-010A H16040518-018A	40518-002 , H160405 <sup>,</sup>	A, H1604051 18-011A, H16	8-003A, H1604 6040518-012A,	0518-004A, H H16040518-0	16040518-005A, 13A, H16040518-	H1604051 014A, H16	8-006A, H1 040518-015	6040518-007A, 5A, H16040518 <sup>,</sup>	H16040518-00 -016A, H16040	)8A, H1604( 518-017A,	)518-
Qualifiers: ND	- Not Detected at the Repo	rting Limit		S - Spike Reco	overy outside a	ccepted recovery	limit N	- Analyte co	oncentration was	s not sufficiently	high to calc	ulate RF

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal St H16040518	Iperfund		ANALYT	ICAL QC SU	MMARY	REPOF	RT		Date	: 01-Jun-	16
Project:	CFR Monitoring-474	374		B	atchID: R1	14969						
Run ID :Run Orde	r: IC102-H_160502A: 50		SampType:	Sample Matr	ix Spike Duplicate	•	Lab II	D: H16040	518-012AMSD	Method	E300.0	
Analysis Date: 05/	02/16 19:41	Units:	mg/L			Prep Info:	Prep Date	e:		Prep Method	l:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		63.2	1.0	50	11.42	104	90	110	62.18	1.6	20	
Sulfate		275	1.0	200	64.65	105	90	110	273.2	0.8	20	
Pup ID : Pup Orda	009A, H16040518-010A H16040518-018A	A, H1604051	SomoTuno:	Continuing (	H16040518-013A,	H16040518-	014A, H160	040518-015	A, H16040518-	016A, H16040	518-017A,	
Analysia Data: 05	02/46 40.52	Linito	Samp Type.	Continuing C		Bron Info		. <b>CCV030</b>	210-3	Bron Mothod	. <b>E300.0</b>	
Analysis Date. 03/	02/10 19.52	Drins.	nng/∟ ¤∩i	SPK value	SPK Rof Val		LowLimit	<del>u</del> . Highl imit	RPD Ref Val			Qual
		Result	FQL	SFR Value	SFR Rei Val	%REC	LOWLINI		KFD Kei vai	/0RF D	KFDLIIIII	Quai
Chioride		102	1.0	100	0	102	90	110				
Run ID :Run Orde	H16040518-018A		SampType:	Sample Matr	ix Snike		l ab lí	) <sup>.</sup> H16050(	001-004FMS	Method	· F300.0	
Analysis Date: 05/	02/16 22:17	Units:	ma/L	euripie mai		Prep Info:	: Prep Date	e:		Prep Method	l:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		59.5	1.0	50	9.315	100	90	110				
Sulfate		249	1.0	200	36.16	106	90	110				
Associated sample	s: H16040518-001A, H160 009A, H16040518-010A H16040518-018A	040518-002 <i>4</i> A, H1604051	A, H16040518 8-011A, H160	8-003A, H1604 040518-012A,	0518-004A, H1604 H16040518-013A,	0518-005A, H16040518-	H16040518 014A, H160	-006A, H16 940518-015	6040518-007A, 5A, H16040518-	H16040518-00 016A, H16040	8A, H16040 518-017A,	518-
Run ID :Run Orde	r: IC102-H_160502A: 65		SampType:	Sample Matr	ix Spike Duplicate	•	Lab II	D: H160500	001-004EMSD	Method	: <b>E300.0</b>	
Analysis Date: 05	02/16 22:28	Units:	mg/L			Prep Info:	Prep Date	e:		Prep Method	l:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		59.8	1.0	50	9.315	101	90	110	59.48	0.6	20	
Sulfate		247	1.0	200	36.16	105	90	110	248.7	0.6	20	
Associated sample	s: H16040518-001A, H160 009A, H16040518-010A H16040518-018A	040518-002 <i>4</i> A, H1604051	A, H16040518 8-011A, H160	8-003A, H1604 040518-012A,	0518-004A, H1604 H16040518-013A,	0518-005A, H16040518-	H16040518 014A, H160	-006A, H16 940518-015	6040518-007A, 6A, H16040518-	H16040518-00 016A, H16040	8A, H16040 518-017A,	518-
Qualifiers: ND	- Not Detected at the Repo	rting Limit		S - Spike Reco	very outside accep	ted recovery	limit N -	Analyte co	ncentration was	not sufficiently	high to calc	ulate RP

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Su H16040518	perfund		ANALYT	<b>ICAL QC</b> Prepared by	<b>SUMMARY</b> Helena, MT Bra	REPO	RT		Date	: 01-Jun-	16
Project:	CFR Monitoring-474	374		E	BatchID:	R114979						
Run ID :Run Order:	FIA203-HE_160503A: 9		SampType:	Continuing (	Calibration V	erification Standa	n <b>r</b> Lab	ID: CCV		Method	: A4500 N-C	0
Analysis Date: 05/0	3/16 09:24	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		0.525	0.10	0.5		0 <b>105</b>	90	110				
Associated samples	: H16040518-001A, H160 009A, H16040518-010A H16040518-018A	40518-002/ , H1604051	A, H16040518 8-011A, H160	8-003A, H1604 040518-012A,	0518-004A,   H16040518-(	H16040518-005A, D13A, H16040518∙	H1604051 014A, H16	8-006A, H1 040518-01	6040518-007A, 5A, H16040518-	H16040518-00 016A, H16040	8A, H16040 518-017A,	518-
Run ID :Run Order:	FIA203-HE_160503A: 10	)	SampType:	Initial Calibra	ation Blank,	Instrument Blank	Lab	ID: ICB		Method	: A4500 N-0	2
Analysis Date: 05/0	3/16 09:25	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	1:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
	009A, H16040518-010A H16040518-018A	, H1604051	8-011A, H16	040518-012A,	H16040518-	013A, H16040518	-014A, H16	6040518-01	5A, H16040518-	016A, H16040	518-017A,	
Run ID :Run Order:	FIA203-HE_160503A: 26	i	SampType:	Continuing (	Calibration V	erification Standa	n <b>r</b> Lab	ID: CCV		Method	: A4500 N-0	2
Analysis Date: 05/0	03/16 09:45	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	í:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total Associated samples	: H16040518-001A, H160 009A, H16040518-010A H16040518-018A	0.526 40518-002/ , H1604051	0.10 A, H16040518  8-011A, H160	0.5 <b>3-003A, H1604</b> 040518-012A,	0518-004A,   H16040518-(	0 105 H16040518-005A, D13A, H16040518-	90 H1604051 014A, H16	110 8-006A, H1 6040518-01	6040518-007A, 5A, H16040518-	H16040518-00 016A, H16040	8A, H16040 518-017A,	518-
Run ID :Run Order:	FIA203-HE_160503A: 40	)	SampType:	Continuing (	Calibration V	erification Standa	ı <b>r</b> Lab	ID: CCV		Method	: A4500 N-C	2
Analysis Date: 05/0	3/16 10:01	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	l:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		0.521	0.10	0.5		0 104	90	110				
Associated samples	: H16040518-001A, H160 009A, H16040518-010A H16040518-018A	40518-002/ , H1604051	A, H16040518 8-011A, H160	8-003A, H1604 040518-012A,	0518-004A,   H16040518-(	H16040518-005A, D13A, H16040518-	H1604051 014A, H16	8-006A, H1 040518-01	6040518-007A, 5A, H16040518-	H16040518-00 016A, H16040	8A, H16040 518-017A,	518-

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal S H16040518	uperfund			ICAL QC	<b>SUMMARY</b> Helena, MT Bra	REPO	RT		Date	: 01-Jun-	16
Project:	CFR Monitoring-47	4374		В	atchID:	R114997						
Run ID :Run Order	: FIA203-HE_160503B:	85	SampType:	Initial Calibra	ation Verifica	tion Standard	Lab	ID: ICV		Method	E353.2	
Analysis Date: 05/	03/16 12:36	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	ł:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	1.00	0.010	1		0 <b>100</b>	90	110				
Associated samples	8: H16040518-001D, H16 009D, H16040518-010 H16040518-018D	6040518-002E D, H1604051	D, H16040518 8-011D, H160	-003D, H1604 )40518-012D,	0518-004D, H16040518-	H16040518-005D 013D, H16040518	, H1604051 -014D, H16	18-006D, H1 6040518-01	6040518-007D, 5D, H16040518	, H16040518-00 -016D, H16040	08D, H1604 )518-017D,	0518-
Run ID :Run Order	: FIA203-HE_160503B:	86	SampType:	Initial Calibra	ation Blank,	nstrument Blank	Lab	ID: ICB		Method	E353.2	
Analysis Date: 05/	03/16 12:37	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	ł:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	-0.00362	0.010			0	0	0				
	009D, H16040518-001D, H16 009D, H16040518-010 H16040518-018D	D, H1604051	8-011D, H160	-003D, H1604 )40518-012D,	H16040518-	013D, H16040518	-014D, H16	6040518-01	5D, H16040518	-016D, H16040	08D, H1604 0518-017D,	0518-
Run ID :Run Order	: FIA203-HE_160503B:	87	SampType:	Laboratory F	ortified Blan	k	Lab	ID: LFB		Method	E353.2	
Analysis Date: 05/0	03/16 12:38	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	0.967	0.011	1		0 <b>97</b>	90	110				
Associated samples	E H16040518-001D, H16 009D, H16040518-010 H16040518-018D	040518-002E D, H1604051	D, H16040518 8-011D, H160	-003D, H1604 )40518-012D,	0518-004D, H16040518-	H16040518-005D 013D, H16040518	, H1604051 -014D, H16	18-006D, H1 6040518-01	6040518-007D, 5D, H16040518	, H16040518-00 -016D, H16040	08D, H1604 )518-017D,	0518-
Run ID :Run Order	FIA203-HE_160503B:	102	SampType:	Continuing C	Calibration V	erification Standa	<b>r</b> Lab	ID: CCV		Method	E353.2	
Analysis Date: 05/0	03/16 12:56	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	0.514	0.010	0.5		0 <b>103</b>	90	110				
Associated samples	s: H16040518-001D, H16 009D, H16040518-010 H16040518-018D	6040518-0020 D, H1604051	D, H16040518 8-011D, H160	-003D, H1604 040518-012D,	0518-004D, H16040518-	H16040518-005D 013D, H16040518	, H1604051 -014D, H16	18-006D, H1 6040518-01	6040518-007D, 5D, H16040518	, H16040518-00 -016D, H16040	08D, H1604 0518-017D,	0518-

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

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Client: Work Order:	MT DEQ-Federal S H16040518	uperfund		ANALYT	ICAL QC	SUMMARY Helena, MT Bra	REPO	RT		Date	: 01-Jun-	16
Project:	CFR Monitoring-47	4374		В	atchID:	R114997						
Run ID :Run Order	: FIA203-HE_160503B:	104	SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16040</b>	511-004DMS	Method	: E353.2	
Analysis Date: 05/	03/16 12:58	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	0.960	0.011	1	(	0 <b>96</b>	90	110				
Associated samples	s: H16040518-001D, H16 009D, H16040518-010 H16040518-018D	040518-002  D, H1604051	D, H16040518 8-011D, H160	8-003D, H1604 040518-012D,	0518-004D, H H16040518-0	H16040518-005D, D13D, H16040518	H1604051 -014D, H10	8-006D, H1 6040518-01	6040518-007D 5D, H16040518	, H16040518-0 3-016D, H1604(	08D, H1604 )518-017D,	0518-
Run ID :Run Order	: FIA203-HE_160503B:	105	SampType:	Sample Matr	ix Spike Dup	licate	Lab	ID: <b>H16040</b>	511-004DMSD	Method	: E353.2	
Analysis Date: 05/	03/16 13:00	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	1:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	0.992	0.011	1	(	0 <b>99</b>	90	110	0.9602	<u>3.2</u>	20	
Pup ID -Pup Order	009D, H16040518-010 H16040518-018D	D, H1604051	8-011D, H16	040518-012D,	H16040518-(	prification Standa	-014D, H10	6040518-01	5D, H16040518	Mothor	)518-017D,	
Analusia Data: 05/	FIA203-HE_160503B:	110	Samp Type:	Continuing C		Princation Standa	r Lab				. E333.2	
Analysis Date: 05/	03/16 13:13	Units:	mg/L			Prep Info	: Prep Da	ITE:				0
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLIMIt	Quai
Nitrogen, Nitrate+N	litrite as N	0.514	0.010	0.5	(	0 103	90	110				
Associated samples	S: H16040518-001D, H16 009D, H16040518-010 H16040518-018D	5040518-0021 D, H1604051	D, H16040518 8-011D, H160	8-003D, H1604 040518-012D,	0518-004D, H H16040518-0	H16040518-005D, 013D, H16040518	H1604051 -014D, H10	8-006D, H1 6040518-01	6040518-007D 5D, H16040518	, H16040518-0 3-016D, H1604(	08D, H1604 )518-017D,	0518-
Run ID :Run Order	: FIA203-HE_160503B: /	118	SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16040</b>	518-006DMS	Method	: E353.2	
Analysis Date: 05/	03/16 13:15	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	1:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	1.12	0.011	1	0.155	5 <b>97</b>	90	110				
Associated samples	s: H16040518-001D, H16 009D, H16040518-010 H16040518-018D	040518-002  D, H1604051	D, H16040518 8-011D, H160	8-003D, H1604 040518-012D,	0518-004D, H H16040518-(	H16040518-005D, D13D, H16040518	H1604051 -014D, H10	8-006D, H1 6040518-01	6040518-007D 5D, H16040518	, H16040518-0 3-016D, H1604(	08D, H1604 )518-017D,	0518-

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Federal Su H16040518	perfund			ICAL QC	SUMMARY Helena, MT Brar	REPO	RT		Date	: 01-Jun-	16
Project:	CFR Monitoring-4743	374		В	atchID:	R114997						
Run ID :Run Order	: FIA203-HE_160503B: 11	9	SampType:	Sample Matri	ix Spike Dupli	cate	Lab	ID: <b>H16040</b>	518-006DMSD	Method	: <b>E353.2</b>	
Analysis Date: 05/	03/16 13:16	Units:	mg/L			Prep Info:	Prep Da	ite:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	1.13	0.011	1	0.1555	97	90	110	1.123	0.3	20	
Associated samples	8: H16040518-001D, H1604 009D, H16040518-010D, H16040518-018D	40518-0021 H1604051	D, H16040518 8-011D, H160	8-003D, H1604 040518-012D,	0518-004D, H H16040518-01	16040518-005D, 13D, H16040518-	H1604051 014D, H10	8-006D, H1 6040518-01	6040518-007D 5D, H16040518	, H16040518-0 8-016D, H16040	08D, H1604 0518-017D,	0518-
Run ID :Run Order	: FIA203-HE_160503B: 13	0	SampType:	Continuing C	Calibration Ver	rification Standa	r Lab	ID: CCV		Method	: <b>E353.2</b>	
Analysis Date: 05/	03/16 13:29	Units:	mg/L			Prep Info:	Prep Da	ite:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	0.514	0.010	0.5	0	103	90	110				
Run ID :Run Order	009D, H16040518-010D, H16040518-018D	H1604051	SampType:	Sample Matri	H16040518-01	13D, H16040518-	•014D, H10	6040518-01	518-016DMS	Method	)518-017D,	0010-
Analysis Date: 05/	17/16 13·32	- L Inite	ma/l	oumple muti		Pren Info:	Pren Da			Pren Methor	4.	
Analytes 1	55/10 15.52	Result	POI	SPK value	SPK Ref Val	%REC		Highl imit	RPD Ref Val	%RPD	RPDI imit	Qual
Nitrogen Nitrate+N	litrite as N	1.08	0.011	1	0 1073	97	90	110		,014 2		
Associated samples	<ul> <li>H16040518-001D, H1604</li> <li>009D, H16040518-010D, H16040518-018D</li> </ul>	40518-0021 H1604051	D, H16040518 8-011D, H160	-003D, H1604 040518-012D,	0518-004D, H H16040518-01	16040518-005D, 13D, H16040518-	H1604051 014D, H10	8-006D, H1 6040518-01	6040518-007D 5D, H16040518	, H16040518-0 3-016D, H1604(	08D, H1604 0518-017D,	0518-
Run ID :Run Order	: FIA203-HE_160503B: 13	3	SampType:	Sample Matri	ix Spike Dupli	cate	Lab	ID: <b>H16040</b>	518-016DMSD	Method	: <b>E353.2</b>	
Analysis Date: 05/	03/16 13:33	Units:	mg/L			Prep Info:	Prep Da	ite:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	1.09	0.011	1	0.1073	98	90	110	1.08	0.6	20	
Associated samples	8: H16040518-001D, H1604 009D, H16040518-010D, H16040518-018D	40518-0021 H1604051	D, H16040518 8-011D, H160	8-003D, H1604 040518-012D,	0518-004D, H H16040518-01	16040518-005D, 13D, H16040518-	H1604051 014D, H10	8-006D, H1 5040518-01	6040518-007D 5D, H16040518	, H16040518-0 3-016D, H1604(	08D, H1604 0518-017D,	0518-

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Su H16040518	iperfund			ICAL QC Prepared by	SUMMARY Helena, MT Bra	REPO	RT		Date	: 01-Jun-	16
Project:	CFR Monitoring-474	374		В	atchID:	R115035						
Run ID :Run Order	: FIA203-HE_160504C: 7		SampType:	Initial Calibra	ation Verifica	tion Standard	Lab	ID: ICV		Method	E350.1	
Analysis Date: 05/0	04/16 12:43	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	a as N	15.7	0.50	14.2		0 <b>110</b>	90	110				
Associated samples	s: H16040518-001D, H160 009D, H16040518-010E H16040518-018D	)40518-002I ), H1604051	D, H16040518 8-011D, H160	-003D, H1604 )40518-012D,	0518-004D,   H16040518-(	H16040518-005D, D13D, H16040518	, H1604051 -014D, H10	18-006D, H1 6040518-01	6040518-007D, 5D, H16040518	, H16040518-00 -016D, H16040	8D, H1604 518-017D,	0518-
Run ID :Run Order	FIA203-HE_160504C: 8		SampType:	Laboratory F	ortified Blan	k	Lab	ID: LFB		Method	E350.1	
Analysis Date: 05/	04/16 12:44	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	a as N	1.03	0.055	1		0 <b>103</b>	90	110				
	009D, H16040518-010E H16040518-018D	0, H1604051	SampType:	40518-012D,	H16040518-(	n16040518-005D	-014D, H10	6040518-01	5D, H16040518	-016D, H16040	518-017D,	0516-
Analysia Data: 05/	· FIA203-HE_100304C. I	J Linito:	Samp Type.		alion Diank, i	Dron Info	Lau . Drop Do			Drop Mothod	E350.1	
Analytes 1	04/16 12:47	Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	a as N	0.00871	0.050			0	0	0				
Associated samples	<ul> <li>S: H16040518-001D, H160</li> <li>009D, H16040518-010E</li> <li>H16040518-018D</li> </ul>	040518-002I 0, H1604051	D, H16040518 8-011D, H160	-003D, H1604 040518-012D,	0518-004D,   H16040518-(	H16040518-005D 013D, H16040518	, H1604051 -014D, H10	18-006D, H1 6040518-01	6040518-007D, 5D, H16040518	, H16040518-00 -016D, H16040	8D, H1604 518-017D,	0518-
Run ID :Run Order	: FIA203-HE_160504C: 23	3	SampType:	Continuing C	Calibration Ve	erification Standa	<b>ir</b> Lab	ID: CCV		Method	E350.1	
Analysis Date: 05/0	04/16 13:02	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	a as N	0.518	0.050	0.5		0 <b>104</b>	90	110				
Associated samples	s: H16040518-001D, H160 009D, H16040518-010E H16040518-018D	)40518-002I ), H1604051	D, H16040518 8-011D, H160	-003D, H1604 040518-012D,	0518-004D, I H16040518-(	H16040518-005D 013D, H16040518	, H1604051 -014D, H10	18-006D, H1 6040518-01	6040518-007D, 5D, H16040518	, H16040518-00 -016D, H16040	8D, H1604 518-017D,	0518-

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

<b>ENERGY</b> LABORATORIES	Trust our People. Trust owww.energylab.com	ust our Data.	Col	lege Station, TX 88	38.690.2218 •	Billings, MT <b>800.73</b> Gillette, WY <b>866.68</b>	5.4489 • Casp 6.7175 • Hele	oer, WY <b>888.23</b> na, MT <b>877.47</b> 2	5.0515 2.0711			
Client: Work Order:	MT DEQ-Federal Sup H16040518	erfund		ANALYT	ICAL QC Prepared by	SUMMAR Helena, MT B	Y REPC	RT		Date	e: 01-Jun-	16
Project:	CFR Monitoring-4743	74		В	atchID:	R115035						
Run ID :Run Order:	FIA203-HE_160504C: 26		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16040</b>	518-001DMS	Method	: <b>E350.1</b>	
Analysis Date: 05/0	4/16 13:06	Units:	mg/L			Prep In	io: Prep D	ate:		Prep Method	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	1.02	0.055	1		0 <b>102</b>	80	120				
Associated samples	H16040518-001D, H1604 009D, H16040518-010D, H16040518-018D	0518-0021 H1604051	D, H16040518 8-011D, H16	3-003D, H1604 040518-012D,	0518-004D, H16040518-	H16040518-005 013D, H160405	D, H160405 18-014D, H1	18-006D, H1 6040518-01	6040518-007D 5D, H16040518	, H16040518-0 3-016D, H16040	08D, H1604 )518-017D,	0518-
Run ID :Run Order:	FIA203-HE_160504C: 27		SampType:	Sample Matri	ix Spike Dup	licate	Lab	ID: <b>H16040</b>	518-001DMSD	Method	: E350.1	
Analysis Date: <b>05/0</b>	4/16 13:07	Units:	mg/L			Prep In	io: Prep D	ate:		Prep Method	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	1.03	0.055	1		0 <b>103</b>	80	120	1.02	0.9	10	
Run ID :Run Order:	FIA203-HE 160504C: 37	H 1004031	SampType:	Continuing C	calibration V	erification Stan	dar Lab	DID: CCV	5D, H16040516	Method	1: E350.1	
Analysis Date: <b>05/0</b>		Units:	ma/L	Ū		Prep In	o: Prep D	ate:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.530	0.050	0.5		0 106	90	110				
Associated samples	: H16040518-001D, H1604 009D, H16040518-010D, H16040518-018D	0518-0021 H1604051	D, H16040518 8-011D, H16	3-003D, H1604 040518-012D,	0518-004D, H16040518-	H16040518-005 013D, H160405	D, H160405 I8-014D, H1	18-006D, H1 6040518-01	6040518-007D 5D, H16040518	, H16040518-0 3-016D, H16040	08D, H1604 0518-017D,	0518-
Run ID :Run Order:	FIA203-HE_160504C: 40		SampType:	Sample Matri	ix Spike		Lab	D: <b>H16040</b>	518-011DMS	Method	: <b>E350.1</b>	
Analysis Date: <b>05/0</b>	4/16 13:22	Units:	mg/L			Prep In	io: Prep D	ate:		Prep Method	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	1.01	0.055	1	0.016	7 100	80	120				
Associated samples	: H16040518-001D, H1604 009D, H16040518-010D, H16040518-018D	0518-002  H1604051	D, H16040518 8-011D, H16	3-003D, H1604 040518-012D,	0518-004D, H16040518-	H16040518-005 013D, H160405	D, H160405 18-014D, H1	18-006D, H1 6040518-01	6040518-007D 5D, H16040518	, H16040518-0 3-016D, H16040	08D, H1604 0518-017D,	0518-

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16040518	perfund		ANALYT	ICAL QC SU Prepared by Hel	UMMARY ena, MT Bra	REPO	RT		Date	: 01-Jun-	16	
Project:	CFR Monitoring-4743	74		В	atchID: R1	15035							
Run ID :Run Order:	FIA203-HE_160504C: 41		SampType:	Sample Matri	ix Spike Duplicat	te	Lab	ID: <b>H16040</b>	518-011DMSD	Method	E350.1		
Analysis Date: 05/04	4/16 13:23	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrogen, Ammonia	as N	1.03	0.055	1	0.0167	101	80	120	1.012	1.8	10		
Associated samples:	H16040518-001D, H1604 009D, H16040518-010D, H16040518-018D	0518-002D H16040518	), H16040518 3-011D, H160	-003D, H1604 )40518-012D,	0518-004D, H16( H16040518-013[	040518-005D, D, H16040518	H1604051 -014D, H16	8-006D, H1 6040518-01	6040518-007D, 5D, H16040518	, H16040518-00 -016D, H16040	08D, H1604 0518-017D,	0518-	
Run ID :Run Order:	FIA203-HE_160504C: 54		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16050</b>	001-003CMS	Method	E350.1		
Analysis Date: 05/04	4/16 13:39	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	:		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrogen, Ammonia	as N	0.984	0.055	1	0	98	80	120					
Associated samples:	H16040518-001D, H1604 009D, H16040518-010D, H16040518-018D	0518-002D H16040518	), H16040518 3-011D, H160	-003D, H1604 )40518-012D,	0518-004D, H160 H16040518-013E	040518-005D, D, H16040518	H1604051 -014D, H16	8-006D, H1 6040518-01	6040518-007D, 5D, H16040518	, H16040518-00 -016D, H16040	08D, H1604 0518-017D,	0518-	
Run ID :Run Order:	FIA203-HE_160504C: 55		SampType:	Sample Matri	ix Spike Duplicat	te	Lab	ID: <b>H16050</b>	001-003CMSD	Method	E350.1		
Analysis Date: 05/04	4/16 13:40	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Nitrogen, Ammonia	as N	1.00	0.055	1	0	100	80	120	0.9845	1.8	10		
Associated samples:	H16040518-001D, H1604 009D, H16040518-010D,	0518-002D H16040518	, H16040518 3-011D, H160	-003D, H1604 040518-012D,	0518-004D, H160 H16040518-013D	040518-005D, D, H16040518	H1604051 -014D, H16	8-006D, H1 5040518-01	6040518-007D, 5D, H16040518	, H16040518-00 -016D, H16040	08D, H1604 0518-017D,	0518-	

H16040518-018D

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ H160405	-Federal Superfund		ANALYT	ICAL QC SU Prepared by Hel	<b>JMMARY</b> ena, MT Bra	REPO	RT		Date: 01-Jun	-16
Project:	CFR Mo	nitoring-474374		В	atchID: R1	15055					
Run ID :Run Order	IN ID :Run Order: ICPMS204-B_160504B: 8			Initial Calibra	tion Verification	Standard	Lab	D: ICV STD		Method: E200.8	
Analysis Date: 05/0	alysis Date: 05/04/16 17:19 Unit		mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Arsenic		0.0612	0.0050	0.06	0	102	90	110			
Cadmium		0.0298	0.0010	0.03	0	99	90	110			
Copper		0.0622	0.010	0.06	0	104	90	110			
Lead		0.0600	0.010	0.06	0	100	90	110			
Zinc		0.0627	0.010	0.06	0	104	90	110			
Associated samples	<ul> <li>H1604051</li> <li>005B, H10</li> <li>H1604051</li> <li>013C, H10</li> <li>H1604051</li> </ul>	8-001B, H16040518-001C 6040518-005C, H1604051 8-009C, H16040518-010E 6040518-014B, H1604051 8-018B, H16040518-018C	C, H16040518 8-006B, H160 8, H16040518 8-014C, H160 C	-002B, H1604 )40518-006C, -010C, H1604 )40518-015B,	0518-002C, H160 H16040518-007E 0518-011B, H160 H16040518-015C	940518-003B, 8, H16040518 940518-011C, 2, H16040518	H1604051 -007C, H16 H1604051 -016B, H16	8-003C, H10 040518-008 8-012B, H10 040518-016	6040518-004B, 8B, H16040518- 6040518-012C, 6C, H16040518-	H16040518-004C, H1604 -008C, H16040518-009B, H16040518-013B, H1604 -017B, H16040518-017C,	10518- 10518-

Run ID :Run Order: ICPMS204-B_16	0504B: 9	SampType:	Interference C	Check Sample A		Lab	ID: ICSA		Method	: <b>E200.8</b>	
Analysis Date: 05/04/16 17:23	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	l:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	-0.000143	0.0050		0							
Cadmium	0.000978	0.0010		0							
Copper	0.000453	0.010		0							
Lead	0.000254	0.010		0							
Zinc	0.000776	0.010		0							

Associated samples: H16040518-001B, H16040518-001C, H16040518-002B, H16040518-002C, H16040518-003B, H16040518-003C, H16040518-004B, H16040518-004C, H16040518-002B, H16040518-007B, H16040518-003C, H16040518-008B, H16040518-008C, H16040518-009B, H16040518-009C, H16040518-009C, H16040518-009C, H16040518-007B, H16040518-007C, H16040518-008B, H16040518-003C, H16040518-009B, H16040518-009C, H16040518-010B, H16040518-010C, H16040518-011B, H16040518-011C, H16040518-012B, H16040518-012C, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-015B, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-014C, H16040518-014C, H16040518-014C, H16040518-014C, H16040518-014C, H16040518-014C, H16040518-014C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-014C, H16040518-

Run ID :Run Order: ICPMS204-B_160504	B: 10	SampType:	Interference	Check Sample AB		Lab	ID: ICSAB		Method	E200.8	
Analysis Date: 05/04/16 17:26	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0100	0.0050	0.01	0	101	70	130				
Cadmium	0.0108	0.0010	0.01	0	108	70	130				
Copper	0.0200	0.010	0.02	0	100	70	130				
Lead	0.000227	0.010		0		0	0				
Zinc	0.0104	0.010	0.01	0	104	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

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Client: Work Order:	MT DEQ-Fed H16040518	eral Superfund		ANALYT	ICAL QC SU Prepared by Hele	<b>MMARY</b> na, MT Brai	REPO	RT		Date	: 01-Jun-	16	
Project:	CFR Monitori	ng-474374		В	atchID: R11	5055							
Run ID :Run Order:	ICPMS204-B_1	60504B: 10	SampType:	Interference (	Check Sample AB		Lab	D: ICSAB		Method	E200.8		
Analysis Date: 05/0	4/16 17:26	Units: I	ng/L			Prep Info:	Prep Da	te:		Prep Method	:		
Analytes 5		gylab.com       College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711         ral Superfund       ANALYTICAL QC SUMMARY REPORT       Date         Prepared by Helena, MT Branch       Prepared by Helena, MT Branch       Date         g-474374       BatchID: R115055       Result       SampType: Interference Check Sample AB       Lab ID: ICSAB       Method         Units: mg/L       Prep Info:       Prep Date:       Prep Method         Result       PQL       SPK value       SPK Ref Val       %REC       LowLimit       HighLimit       RPD Ref Val       %RPD	RPDLimit	Qual									
A	1140040540 004	B 11/00/05/0 00/0	1140040540										

Associated samples: H16040518-001B, H16040518-001C, H16040518-002B, H16040518-002C, H16040518-003B, H16040518-003C, H16040518-004B, H16040518-004C, H16040518-002B, H16040518-007C, H16040518-003C, H16040518-008B, H16040518-008C, H16040518-009B, H16040518-009C, H16040518-010B, H16040518-010C, H16040518-007B, H16040518-017C, H16040518-009C, H16040518-010B, H16040518-010C, H16040518-011B, H16040518-011C, H16040518-012B, H16040518-012C, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-018B, H16040518-013C, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-015B, H16040518-015B, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-015B, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-017B, H16040518-017B, H16040518-017B, H16040518-013B, H16040518-

Run ID :Run Order: ICPMS204-B_	160504B: 89	SampType:	Interference	Check Sample A		Lab	ID: ICSA		Method	: <b>E200.8</b>	
Analysis Date: 05/05/16 12:17 Uni		mg/L			Prep Info	: Prep Da	ite:		Prep Method	1:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	-0.000261	0.0050		0							
Cadmium	0.000846	0.0010		0							
Copper	0.000292	0.010		0							
Lead	0.000231	0.010		0							
Zinc	0.000698	0.010		0							

Associated samples: H16040518-001B, H16040518-001C, H16040518-002B, H16040518-002C, H16040518-003B, H16040518-003C, H16040518-004B, H16040518-004C, H16040518-002B, H16040518-007B, H16040518-003C, H16040518-008C, H16040518-009B, H16040518-005C, H16040518-006B, H16040518-006C, H16040518-007B, H16040518-007C, H16040518-008B, H16040518-008C, H16040518-009B, H16040518-009C, H16040518-010B, H16040518-010C, H16040518-011B, H16040518-001C, H16040518-012B, H16040518-012C, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-013C, H16040518-014B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013B, H16040518-017C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-017C, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-017C, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-015B, H16040518-015B, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013C, H16040518-

Run ID :Run Order: ICPMS204-B_160504B: 90		SampType:	Interference	Check Sample AB		Lab	ID: ICSAB		Method	: <b>E200.8</b>	
Analysis Date: 05/05/16 12:20 Uni		mg/L			Prep Info:	Prep Da	te:		Prep Method	1:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0100	0.0050	0.01	0	100	70	130				
Cadmium	0.0109	0.0010	0.01	0	109	70	130				
Copper	0.0201	0.010	0.02	0	101	70	130				
Lead	0.000227	0.010		0		0	0				
Zinc	0.0103	0.010	0.01	0	103	70	130				

Associated samples: H16040518-001B, H16040518-001C, H16040518-002B, H16040518-002C, H16040518-003B, H16040518-003C, H16040518-004B, H16040518-004C, H16040518-002B, H16040518-007C, H16040518-003B, H16040518-008C, H16040518-009B, H16040518-009C, H16040518-006B, H16040518-006C, H16040518-007B, H16040518-007C, H16040518-008B, H16040518-008C, H16040518-009B, H16040518-009C, H16040518-010B, H16040518-010C, H16040518-017B, H16040518-012B, H16040518-012C, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-011C, H16040518-012B, H16040518-012C, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-018B, H16040518-013B, H16040518-017C, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-017C, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-017C, H16040518-013B, H16040518-013B, H16040518-013C, H16040518-013B, H16040518-017C, H16040518-013B, H16040518-

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

LABORATORIES	WWW.	energylab.com	College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711								
Client: Work Order:	MT DEQ-Fee H16040518	deral Superfund		ANALYT	ICAL QC S Prepared by He	SUMMARY elena, MT Brar	REPO	RT		Date: 01-Jun-	16
Project:	CFR Monitor	ing-474374		В	atchID: R						
Run ID :Run Order: ICPMS204-B_160504B: 123		160504B: 123	SampType:	Initial Calibra	tion Verificatio	n Standard	Lab	ID: ICV STD	)	Method: E200.8	
Analysis Date: 05/	05/16 15:50	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Arsenic		0.0606	0.0050	0.06	0	101	90	110			
Cadmium		0.0304	0.0010	0.03	0	101	90	110			
Copper		0.0625	0.010	0.06	0	104	90	110			
Lead		0.0596	0.010	0.06	0	99	90	110			
Zinc		0.0624	0.010	0.06	0	104	90	110			
Associated sample	s: H16040518-00 005B, H16040 H16040518-00 013C, H16040 H16040518-01	11B, H16040518-001C 518-005C, H16040518 9C, H16040518-010B 518-014B, H16040518 8B, H16040518-018C	, H16040518 3-006B, H160 , H16040518 3-014C, H160	-002B, H1604 40518-006C, -010C, H1604 40518-015B,	0518-002C, H10 H16040518-007 0518-011B, H10 H16040518-015	6040518-003B, /B, H16040518- 6040518-011C, 6C, H16040518-	H1604051 007C, H16 H1604051 016B, H16	8-003C, H10 040518-008 8-012B, H10 040518-016	6040518-004B, 8B, H16040518- 6040518-012C, 6C, H16040518-	H16040518-004C, H1604( 008C, H16040518-009B, H16040518-013B, H1604( -017B, H16040518-017C,	0518- 0518-

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Run ID :Run Order: ICPMS204-B_160504B: 124		SampType:	Interference (	Check Sample A		Lab	ID: ICSA		Metho	d: <b>E200.8</b>	
Analysis Date: 05/05/16 15:54	5:54 Units				Prep Info	: Prep Da	te:		Prep Metho	d:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	-0.000261	0.0050		0							
Cadmium	0.000797	0.0010		0							
Copper	7.60E-05	0.010		0							
Lead	0.000226	0.010		0							
Zinc	0.000623	0.010		0							

Associated samples: H16040518-001B, H16040518-001C, H16040518-002B, H16040518-002C, H16040518-003B, H16040518-003C, H16040518-004B, H16040518-004C, H16040518-005B, H16040518-005C, H16040518-006B, H16040518-006C, H16040518-007B, H16040518-007C, H16040518-008B, H16040518-008C, H16040518-009B, H16040518-009C, H16040518-010B, H16040518-010C, H16040518-011B, H16040518-012B, H16040518-012C, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-017B, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-015B, H16040518-015C, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-015B, H16040518-016B, H16040518-016C, H16040518-017B, H16040518-017C, H16040518-013B, H16040518-014B, H16040518-

Run ID :Run Order: ICPMS204-B_160	504B: 125	SampType:	Interference	Check Sample AB		Lab	ID: ICSAB		Method: E200.8	
Analysis Date: 05/05/16 15:57 Un		mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Arsenic	0.00983	0.0050	0.01	0	98	70	130			
Cadmium	0.0107	0.0010	0.01	0	107	70	130			
Copper	0.0198	0.010	0.02	0	99	70	130			
Lead	0.000203	0.010		0		0	0			
Zinc	0.0101	0.010	0.01	0	101	70	130			

Qualifiers: ND - Not Detected at the Reporting Limit

- - -

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

LABORATORIES	E	Trust our People. Trust our Data. www.energylab.com	Coll	ege Station, TX <b>88</b>	8.690.2218 •	Billings, MT <b>800.735</b> Gillette, WY <b>866.686</b>	. <b>4489 •</b> Caspe . <b>7175 •</b> Helena	r, WY <b>888.235</b> a, MT <b>877.472</b>	.0515 .0711			
Client: Work Order:	MT DEC H16040	Q-Federal Superfund 518		ANALYT	CAL QC	<b>SUMMAR</b> Helena, MT Bra	<b>( REPO</b> l anch	RT		Date:	: 01-Jun-	16
Project:	CFR Mo	nitoring-474374		В	atchID:	R115055						
Run ID :Run Order:	ICPMS20	4-B_160504B: 125	SampType:	Interference (	Check Samp	le AB	Lab	ID: ICSAB		Method:	E200.8	
Analysis Date: 05/08	5/16 15:57	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	:	
Analytes 5		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Associated samples:	H160405 005B, H1 H160405 013C, H1 H160405	18-001B, H16040518-001C 6040518-005C, H16040518 18-009C, H16040518-010B 6040518-014B, H16040518 18-018B, H16040518-018C	, H16040518 3-006B, H160 , H16040518 3-014C, H160	-002B, H1604( 40518-006C,   -010C, H1604( 40518-015B,	0518-002C,   H16040518-( 0518-011B,   H16040518-(	H16040518-003B 007B, H16040518 H16040518-011C D15C, H16040518	, H1604051 3-007C, H16 , H1604051 3-016B, H16	8-003C, H10 040518-008 8-012B, H10 040518-016	6040518-004B, H 3B, H16040518-0 6040518-012C, H 6C, H16040518-0	H16040518-00 008C, H160409 H16040518-01 017B, H160409	4C, H16040 518-009B, 3B, H16040 518-017C,	1518- 1518-

Run ID :Run Order: ICPMS204-B_1605	SampType:	Method Blani	k		Lab	ID: LRB		Method	: <b>E200.8</b>		
Analysis Date: 05/05/16 17:26 Uni		mg/L			Prep Info	: Prep Da	ite:		Prep Method	1:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	6E-05									
Cadmium	ND	1E-05									
Copper	0.0001	6E-05									
Lead	ND	5E-06									
Zinc	ND	0.0002									

Associated samples: H16040518-001B, H16040518-002B, H16040518-003B, H16040518-004B, H16040518-005B, H16040518-006B, H16040518-007B, H16040518-008B, H16040518-009B, H16040518-010B, H16040518-011B, H16040518-012B, H16040518-013B, H16040518-014B, H16040518-015B, H16040518-016B, H16040518-017B, H16040518-013B, H16040518-013B, H16040518-014B, H16040518-015B, H16040518-016B, H16040518-017B, H16040518-013B, H16040518-013B, H16040518-014B, H16040518-015B, H16040518-016B, H16040518-017B, H16040518-013B, H16040518-014B, H16040518-015B, H16040518-016B, H16040518-017B, H16040518-013B, H16040518-014B, H16040518-

Run ID :Run Order: ICPMS204-B_16050	4B: 131	SampType:	Laboratory F	ortified Blank		Lab	ID: LFB		Method	E200.8	
nalysis Date: 05/05/16 17:29 U		mg/L			Prep Info:	Prep Da	te:		Prep Method	l:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0487	0.0050	0.05	0	97	85	115				
Cadmium	0.0499	0.0010	0.05	0	100	85	115				
Copper	0.0514	0.010	0.05	0.0001336	103	85	115				
Lead	0.0495	0.010	0.05	0	99	85	115				
Zinc	0.0527	0.010	0.05	0	105	85	115				

Associated samples: H16040518-001B, H16040518-002B, H16040518-003B, H16040518-004B, H16040518-005B, H16040518-006B, H16040518-007B, H16040518-008B, H16040518-009B, H16040518-010B, H16040518-011B, H16040518-012B, H16040518-013B, H16040518-014B, H16040518-015B, H16040518-016B, H16040518-017B, H16040518-018B

- S Spike Recovery outside accepted recovery limit
- 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 four times the spike amount

		rol Suporfund						DT.		Dete	01 lun	16
Work Order:	H16040518	rai Superiunu			ICAL QC SU Prenared by Hel	<b>JIVIIVIAR I</b> ena MT Bra	REPO	RI		Date	: 01-Jun-	10
Project:	CFR Monitoring	g-474374		B	atchID: R1	15055						
Run ID :Run Orde	er: ICPMS204-B_160	504B: 150	SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16040</b>	508-001BMS	Method	d: <b>E200.8</b>	
Analysis Date: 05/	/05/16 18:29	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0643	0.0010	0.05	0	129	70	130				
Cadmium		0.0490	0.0010	0.05	0.0000167	98	70	130				
Copper	0.0486		0.0050	0.05	0.0000728	97	70	130				
Lead	0.0486			0.05	0.0002246	101	70	130				
Louu		0.040	0.05	0 157	100	70	130					
Zinc Associated sample	es: H16040518-001B 009B, H16040518 H16040518-018B	0.207 , H16040518-002E 3-010B, H1604051	0.010 3, H16040518 8-011B, H160	0.05 -003B, H1604 40518-012B,	0.137 0518-004B, H160 H16040518-013B	40518-005B, , H16040518	H1604051 -014B, H16	8-006B, H10 040518-015	6040518-007B, 5B, H16040518-	H16040518-00 016B, H16040	08B, H16040 518-017B,	518-
Zinc Associated sample Run ID :Run Orde	es: H16040518-001B 009B, H16040518 H16040518-018B	0.207 , H16040518-002E 3-010B, H1604051 504B: 151	0.010 3, H16040518 8-011B, H160 SampType:	0.05 -003B, H1604 40518-012B, Sample Matr	0518-004B, H160 H16040518-013B	40518-005B, , H16040518	H1604051 -014B, H16	B-006B, H10 040518-015	6040518-007B, 5B, H16040518- 508-001BMSD	H16040518-00 016B, H16040 Method	08B, H16040 518-017B, d: E200.8	518-
Zinc Associated sample Run ID :Run Orde Analysis Date: <b>05</b> /	es: H16040518-001B 009B, H16040518 H16040518-018B r: ICPMS204-B_160 /05/16 18:38	0.207 5, H16040518-002E 3-010B, H1604051 504B: 151 Units:	0.010 3, H16040518 8-011B, H160 SampType: mg/L	0.05 -003B, H1604 40518-012B, Sample Matr	0.137 0518-004B, H160 H16040518-013B ix Spike Duplicat	40518-005B, , H16040518 e Prep Info	H1604051 -014B, H16 Lab : Prep Da	B-006B, H10 040518-015 ID: H160409 te:	6040518-007B, 5B, H16040518- 508-001BMSD	H16040518-00 016B, H16040 Methoo Prep Methoo	08B, H16040 518-017B, d: E200.8 d:	518-
Zinc Associated sample Run ID :Run Orde Analysis Date: <b>05</b> / Analytes <u>5</u>	es: H16040518-001B 009B, H16040518 H16040518-018B er: ICPMS204-B_160 /05/16 18:38	0.207 5, H16040518-002E 3-010B, H1604051 504B: 151 Units: Result	3, H16040518 8-011B, H160 SampType: mg/L PQL	0.05 -003B, H1604 40518-012B, Sample Matr SPK value	0518-004B, H160 H16040518-013B ix Spike Duplicat	40518-005B, , H16040518 e Prep Info %REC	H1604051 -014B, H16 Lab : Prep Da LowLimit	B-006B, H10 040518-015 ID: H160409 te: HighLimit	6040518-007B, 5B, H16040518- 508-001BMSD RPD Ref Val	H16040518-00 016B, H16040 Method Prep Method %RPD	08B, H16040 518-017B, d: E200.8 d: RPDLimit	518- Qual
Zinc Associated sample Run ID :Run Orde Analysis Date: <b>05</b> / Analytes <u>5</u> Arsenic	es: H16040518-001B 009B, H16040518 H16040518-018B er: ICPMS204-B_160 /05/16 18:38	0.207 5, H16040518-002E 3-010B, H1604051 504B: 151 Units: Result 0.0635	0.010 3, H16040518 8-011B, H160 SampType: mg/L PQL 0.0010	0.05 -003B, H1604 40518-012B, Sample Matr SPK value 0.05	0.137 0518-004B, H160 H16040518-013B ix Spike Duplicat SPK Ref Val 0	e Prep Info %REC 127	H16040511 -014B, H16 Lab : Prep Da LowLimit 70	B-006B, H11 040518-015 ID: H16040 te: HighLimit 130	6040518-007B, 5B, H16040518- 508-001BMSD RPD Ref Val 0.06434	H16040518-00 016B, H16040 Method Prep Method %RPD 1.3	2088, H16040 518-0178, d: E200.8 d: RPDLimit 20	518- Qual
Zinc Associated sample Run ID :Run Orde Analysis Date: <b>05</b> / Analytes <u>5</u> Arsenic Cadmium	es: H16040518-001B 009B, H16040518 H16040518-018B r: ICPMS204-B_160 /05/16 18:38	0.207 5, H16040518-002E 3-010B, H1604051 504B: 151 Units: Result 0.0635 0.0483	0.010 3, H16040518 8-011B, H160 SampType: mg/L PQL 0.0010 0.0010	0.05 -003B, H1604 40518-012B, Sample Matr SPK value 0.05 0.05	0.137 0518-004B, H160 H16040518-013B ix Spike Duplicat SPK Ref Val 0 0.0000167	e Prep Info %REC 127 97	H16040511 -014B, H16 Lab : Prep Da LowLimit 70 70	B-006B, H1 040518-015 ID: H16040 te: HighLimit 130 130	6040518-007B, 5B, H16040518- 508-001BMSD RPD Ref Val 0.06434 0.04896	H16040518-00 016B, H16040 Method Prep Method %RPD 1.3 1.3	2088, H16040 518-0178, d: E200.8 d: RPDLimit 20 20	518- Qual
Zinc Associated sample Run ID :Run Orde Analysis Date: <b>05</b> / Analytes <u>5</u> Arsenic Cadmium Copper	es: H16040518-001B 009B, H16040518 H16040518-018B er: ICPMS204-B_160 /05/16 18:38	0.207 5, H16040518-002E 3-010B, H1604051 5 5 5 5 5 5 5 5 5 5 5 5 5	0.010 3, H16040518 8-011B, H160 SampType: mg/L PQL 0.0010 0.0010 0.0050	0.05 -003B, H1604 40518-012B, Sample Matr SPK value 0.05 0.05 0.05	0.197 0518-004B, H160 H16040518-013B ix Spike Duplicat SPK Ref Val 0 0.0000167 0.0000728	40518-005B, , H16040518 e Prep Info %REC 127 97 97	H16040511 -014B, H16 Lab : Prep Da LowLimit 70 70 70 70	ID: H16040 te: HighLimit 130 130 130	6040518-007B, 5B, H16040518- 508-001BMSD RPD Ref Val 0.06434 0.04896 0.04859	H16040518-00 016B, H16040 Method Prep Method %RPD 1.3 1.3 0.4	088, H16040 518-0178, d: E200.8 d: RPDLimit 20 20 20 20	518- Qual
Zinc Associated sample Run ID :Run Orde Analysis Date: <b>05</b> Analytes <u>5</u> Arsenic Cadmium Copper Lead	es: H16040518-001B 009B, H16040518 H16040518-018B er: ICPMS204-B_160 /05/16 18:38	0.207 5, H16040518-002E 3-010B, H1604051 504B: 151 Units: Result 0.0635 0.0483 0.0484 0.0508	0.010 3, H16040518 8-011B, H160 SampType: mg/L PQL 0.0010 0.0010 0.0050 0.0010	0.05 -003B, H1604 40518-012B, Sample Matr SPK value 0.05 0.05 0.05 0.05	0.137 0518-004B, H160 H16040518-013B ix Spike Duplicat SPK Ref Val 0 0.0000167 0.0000728 0.0002246	40518-005B, , H16040518 e Prep Info %REC 127 97 97 97 101	H1604051: -014B, H16 Lab : Prep Da LowLimit 70 70 70 70 70 70	ID: H160403 te: HighLimit 130 130 130 130	6040518-007B, 5B, H16040518- 508-001BMSD RPD Ref Val 0.06434 0.04896 0.04859 0.05084	H16040518-00 016B, H16040 Method Prep Method %RPD 1.3 1.3 0.4 0.1	20 20 20 20 20 20 20 20 20 20	518- Qual
Zinc Associated sample Run ID :Run Orde Analysis Date: <b>05</b> / Analytes <u>5</u> Arsenic Cadmium Copper Lead Zinc	es: H16040518-001B 009B, H16040518 H16040518-018B	0.207 5, H16040518-002E 3-010B, H1604051 504B: 151 Units: Result 0.0635 0.0483 0.0484 0.0508 0.207	0.010 3, H16040518 8-011B, H160 SampType: mg/L PQL 0.0010 0.0010 0.0010 0.0010 0.0010 0.0010	0.05 -003B, H1604 40518-012B, Sample Matr SPK value 0.05 0.05 0.05 0.05 0.05 0.05	0.137 0518-004B, H160 H16040518-013B ix Spike Duplicat SPK Ref Val 0 0.0000167 0.0000728 0.0002246 0.157	e Prep Info %REC 127 97 97 101 100	H16040511 -014B, H16 Lab : Prep Da LowLimit 70 70 70 70 70 70 70 70	ID: H160409 te: HighLimit 130 130 130 130 130 130	6040518-007B, 5B, H16040518- 508-001BMSD RPD Ref Val 0.06434 0.04896 0.04859 0.05084 0.2069	H16040518-00 016B, H16040 Prep Method %RPD 1.3 1.3 0.4 0.1 0.0	2008B, H16040 518-017B, d: E200.8 d: RPDLimit 20 20 20 20 20 20 20	518- Qual
Zinc Associated sample Run ID :Run Orde Analysis Date: <b>05</b> , Analytes <u>5</u> Arsenic Cadmium Copper Lead Zinc Associated sample	es: H16040518-001B 009B, H16040518 H16040518-018B rr: ICPMS204-B_160 /05/16 18:38 es: H16040518-001B 009B, H16040518 H16040518-018B	0.207 3, H16040518-002E 3-010B, H1604051 504B: 151 Units: Result 0.0635 0.0483 0.0484 0.0508 0.207 , H16040518-002E 3-010B, H16040518	5.010 3, H16040518 8-011B, H160 SampType: mg/L PQL 0.0010 0.0010 0.0010 0.0010 0.0010 0.0010 3, H16040518 8-011B, H160	0.05 -003B, H1604 40518-012B, Sample Matr 0.05 0.05 0.05 0.05 0.05 -003B, H1604 40518-012B,	0.137 0518-004B, H160 H16040518-013B ix Spike Duplicat SPK Ref Val 0 0.0000167 0.0000728 0.0002246 0.157 0518-004B, H160 H16040518-013B	e Prep Info %REC 127 97 97 101 100 40518-005B, , H16040518	H1604051 -014B, H16 Lab : Prep Da LowLimit 70 70 70 70 70 70 116040511 -014B, H16	B-006B, H11 040518-015 ID: H160400 te: HighLimit 130 130 130 130 8-006B, H10 040518-015	6040518-007B, 508-001BMSD 708-001BMSD RPD Ref Val 0.06434 0.04896 0.04859 0.05084 0.2069 6040518-007B, I 5B, H16040518-0	H16040518-00 016B, H16040 Prep Method %RPD 1.3 1.3 0.4 0.1 0.0 H16040518-00 016B, H16040	20 20 20 20 20 20 20 20 20 20 20 20 20 2	518- Qual

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Run ID :Run Order: ICPMS204-B_160504	4B: 194	Samp Type:	Sample Matri	ix Spike		Lab	ID: H16040	518-007BMS	Method	: E200.8	
Analysis Date: 05/05/16 20:54	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0641	0.0010	0.05	0.01292	102	70	130				
Cadmium	0.0494	0.0010	0.05	0.0000495	99	70	130				
Copper	0.0579	0.0050	0.05	0.008008	100	70	130				
Lead	0.0475	0.0010	0.05	0.0003479	94	70	130				
Zinc	0.0600	0.010	0.05	0.009302	101	70	130				

Associated samples: H16040518-001B, H16040518-002B, H16040518-003B, H16040518-004B, H16040518-005B, H16040518-006B, H16040518-007B, H16040518-008B, H16040518-009B, H16040518-010B, H16040518-012B, H16040518-013B, H16040518-014B, H16040518-015B, H16040518-016B, H16040518-017B, H16040518-013B, H16040518-013B, H16040518-014B, H16040518-015B, H16040518-016B, H16040518-017B, H16040518-013B, H16040518-013B, H16040518-014B, H16040518-015B, H16040518-016B, H16040518-017B, H16040518-013B, H16040518-014B, H16040518-016B, H16040518-017B, H16040518-014B, H16040518-

Qualifiers: ND - Not Detected at the Reporting Limit

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S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Fede H16040518	ral Superfund		ANALYT		Date	:: 01-Jun-	16				
Project:	CFR Monitoring	g-474374		В	atchID: R1	115055						
Run ID :Run Order	r: ICPMS204-B_160	)504B: 195	SampType:	Sample Matr	ix Spike Duplica	te	Lab	ID: <b>H16040</b>	518-007BMSD	Method	d: <b>E200.8</b>	
Analysis Date: 05/	05/16 20:57	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	d:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0638	0.0010	0.05	0.01292	102	70	130	0.06406	0.4	20	,
Cadmium		0.0498	0.0010	0.05	0.0000495	99	70	130	0.04939	0.8	20	
Copper		0.0579	0.0050	0.05	0.008008	100	70	130	0.0579	0.0	20	
Lead		0.0477	0.0010	0.05	0.0003479	95	70	130	0.04754	0.4	20	
Zinc		0.0608	0.010	0.05	0.009302	103	70	130	0.05997	1.4	20	
Run ID :Run Order	r: ICPMS204-B_160	)504B: 226	SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16040</b>	518-017BMS	Method	ງ: <b>E200.8</b>	
Analysis Date: 05/	05/16 22:36	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	d:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0695	0.0010	0.05	0.02091	97	70	130				
Cadmium		0.0495	0.0010	0.05	0.0000201	99	70	130				
Copper		0.0545	0.0050	0.05	0.003966	101	70	130				
Lead		0.0466	0.0010	0.05	0.0002166	93	70	130				
Zinc		0.0566	0.010	0.05	0.005597	102	70	130				
Associated sample	s: H16040518-001B 009B, H16040518 H16040518-018B	8, H16040518-0028 8-010B, H1604051 8	B, H16040518 8-011B, H160	-003B, H1604 940518-012B,	0518-004B, H160 H16040518-013E	040518-005B, 3, H16040518	H1604051 -014B, H16	8-006B, H10 040518-015	6040518-007B, 5B, H16040518-	H16040518-00 016B, H16040	8B, H16040 518-017B,	1518-
Run ID :Run Order	r: ICPMS204-B_160	)504B: 227	SampType:	Sample Matr	ix Spike Duplica	te	Lab	ID: <b>H16040</b>	518-017BMSD	Method	d: <b>E200.8</b>	
Analysis Date: 05/	05/16 22:39	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	j:	
		Deset	DOI				Laure insta	111-01-11-02				0

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Analytes <u>5</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0701	0.0010	0.05	0.02091	98	70	130	0.06952	0.9	20	
Cadmium	0.0498	0.0010	0.05	0.0000201	99	70	130	0.04946	0.6	20	
Copper	0.0552	0.0050	0.05	0.003966	103	70	130	0.05448	1.4	20	
Lead	0.0471	0.0010	0.05	0.0002166	94	70	130	0.04659	1.0	20	
Zinc	0.0577	0.010	0.05	0.005597	104	70	130	0.05661	1.9	20	
Zinc	0.0577	0.010	0.05	0.005597	104	70	130	0.05661	1.9	20	

Associated samples: H16040518-001B, H16040518-002B, H16040518-003B, H16040518-004B, H16040518-005B, H16040518-006B, H16040518-007B, H16040518-008B, H16040518-003B, H16040518-009B, H16040518-010B, H16040518-012B, H16040518-013B, H16040518-014B, H16040518-015B, H16040518-016B, H16040518-017B, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-013B, H16040518-014B, H16040518-015B, H16040518-016B, H16040518-017B, H16040518-013B, H16040518-014B, H16040518-015B, H16040518-016B, H16040518-017B, H16040518-013B, H16040518-013B, H16040518-014B, H16040518-015B, H16040518-016B, H16040518-017B, H16040518-018B, H16040518-018B, H16040518-014B, H16040518-

Qualifiers: ND - Not Detected at the Reporting Limit

ENERGY

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S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federa H16040518	l Superfund	)	ANALYT	Date: 01-Jun-16							
Project:	CFR Monitoring-	474374		В								
Run ID :Run Order:	FIA202-HE_160505	B: 9	SampType:	Initial Calibra	tion Verifica	tion Standard	Lab	ID: ICV		Method:	E365.1	
Analysis Date: 05/0	5/16 11:30	Units: <b>n</b>	ng/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.239	0.010	0.25		D <b>96</b>	90	110				
Associated samples	: H16040518-001D,   009D, H16040518-(	H16040518-002D, 010D, H16040518 <sup>,</sup>	H16040518 -011D, H160	-003D, H1604 040518-012D,	0518-004D, I H16040518-(	H16040518-005D, 013D, H16040518	, H1604051 -014D, H10	8-006D, H1 6040518-01	6040518-007D, 5D	H16040518-008	3D, H1604	)518-
Run ID :Run Order:	FIA202-HE_160505	B: 10	SampType:	Continuing C	alibration Ve	erification Standa	n <b>r</b> Lab	ID: CCV		Method:	E365.1	
Analysis Date: 05/0	05/16 11:31	Units: <b>n</b>	ng/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.0937	0.010	0.1	(	0 <b>94</b>	90	110				
Associated samples	: H16040518-001D,   009D, H16040518-(	H16040518-002D, 010D, H16040518 <sup>,</sup>	H16040518 -011D, H160	-003D, H1604 040518-012D,	0518-004D, I H16040518-(	H16040518-005D 013D, H16040518	, H1604051 -014D, H10	8-006D, H1 6040518-01	6040518-007D, 5D	H16040518-008	3D, H1604	)518-
Run ID :Run Order:	FIA202-HE_160505	B: 11	SampType:	Initial Calibra	tion Blank, I	nstrument Blank	Lab	ID: ICB		Method:	E365.1	
Analysis Date: 05/0	05/16 11:32	Units: <b>n</b>	ng/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	-0.00161	0.010		(	C	0	0				
Associated samples	: H16040518-001D,   009D, H16040518-0	H16040518-002D, 010D, H16040518	H16040518 -011D, H160	-003D, H1604 940518-012D,	0518-004D, I H16040518-0	H16040518-005D 013D, H16040518	, H1604051 -014D, H10	8-006D, H1 6040518-01	6040518-007D, 5D	H16040518-008	3D, H1604(	)518-
Run ID :Run Order:	FIA202-HE_160505	B: 27	SampType:	Continuing C	alibration Ve	erification Standa	n <b>r</b> Lab	ID: CCV		Method:	E365.1	
Analysis Date: 05/0	05/16 11:49	Units: <b>n</b>	ng/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.0933	0.010	0.1	(	D <b>93</b>	90	110				
Associated samples	H16040518-001D, 1	H16040518-002D, 010D, H16040518-	H16040518 -011D. H160	-003D, H1604 040518-012D.	0518-004D, I H16040518-0	H16040518-005D 013D, H16040518	, H1604051 -014D. H10	8-006D, H1 6040518-01	6040518-007D, 5D	H16040518-008	3D, H1604	)518-

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

<b>ENERGY</b> LABORATORIES	Trust our People.	Trust our Data.	Colle	ege Station, TX <b>88</b>									
Client: Work Order:	MT DEQ-Federal Su H16040518	Iperfund		ANALYT	Date: 01-Jun-16								
Project:	CFR Monitoring-474	374		В	atchID: R	115074							
Run ID :Run Orde	r: ICP2-HE_160505A: 6		SampType:	Initial Calibra	tion Verification	n Standard	Standard Lab ID: ICV				Method: E200.7		
Analysis Date: 05/	/05/16 13:24	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	:		
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Calcium		40.0	1.0	40	0	100	95	105					
Magnesium		40.0	1.0	40	0	100	95	105					
Potassium		39.7	1.0	40	0	99	95	105					
Sodium		39.7	1.0	40	0	99	95	105					
Run ID :Run Orde	H16040518-018C		SampType:	Continuing C	alibration Verifi	cation Standa	<b>r</b> Lab	ID: CCV-1		Method	: <b>E200.7</b>		
Analysis Date: 05/	/05/16 13:28	Units:	ma/L	-		Prep Info	: Prep Da	ate:		Prep Method	:		
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Calcium		24.9	1.0	25	0	100	95	105					
Magnesium		24.6	1.0	25	0	98	95	105					
Potassium		25.6	1.0	25	0	103	95	105					
Sodium		25.5	1.0	25	0	102	95	105					
Associated sample	s: H16040518-001C, H160 009C, H16040518-010C H16040518-018C	040518-0020 C, H1604051	C, H16040518 8-011C, H160	·003C, H1604 40518-012C,	0518-004C, H16 H16040518-013	040518-005C, C, H16040518	H1604051 -014C, H10	18-006C, H1 6040518-01	6040518-007C, 5C, H16040518	H16040518-00 -016C, H16040	)8C, H1604 518-017C,	0518-	
Run ID :Run Orde	r: ICP2-HE_160505A: 16		SampType:	Interference	Check Sample A	A	Lab	ID: ICSA		Method	E200.7		
Analysis Date: 05/	/05/16 14:03	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	:		
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Calcium		467	1.0	500	0	93	80	120					
Magnesium		490	1.0	500	0	98	80	120					
Potassium		0.0426	1.0		0		0	0					
Sodium		0.0564	1.0		0		0	0					

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal \$ H16040518	Superfund		ANALYTI F	CAL QC SU Prepared by Hele	<b>JMMARY</b> ena, MT Bra	REPOI	RT		Date:	01-Jun-	16
Project:	CFR Monitoring-47	74374		B	atchID: R1	15074						
Run ID :Run Order:	ICP2-HE_160505A: 17	7	SampType:	Interference (	Check Sample AB	3	Lab	ID: ICSAB		Method:	E200.7	
Analysis Date: 05/0	5/16 14:07	Units: n	ng/L			Prep Info:	Prep Da	te:		Prep Method:		
Analytes <u>4</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		466	1.0	500	0	93	80	120				
Magnesium		494	1.0	500	0	99	80	120				
Potassium		20.3	1.0	20	0	102	80	120				
Sodium		20.3	1.0	20	0	101	80	120				
Associated samples	: H16040518-001C, H1 009C, H16040518-01 H16040518-018C	6040518-002C, 0C, H16040518	H16040518- -011C, H1604	003C, H16040 40518-012C, I	0518-004C, H160 H16040518-013C	40518-005C, , H16040518	H1604051 -014C, H16	8-006C, H1 6040518-01	6040518-007C, 5C, H16040518-	H16040518-008 -016C, H160405	3C, H16040 518-017C,	1518-
Run ID :Run Order:	ICP2-HE_160505A: 68	3	SampType:	Continuing C	alibration Verific	ation Standa	r Lab	ID: <b>CCV</b>		Method:	E200.7	
Analysis Date: 05/0	5/16 19:49	Units: n	ng/L			Prep Info:	Prep Da	te:		Prep Method:		
Analytes <u>4</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		25.1	1.0	25	0	100	90	110				
Magnesium		24.8	1.0	25	0	99	90	110				
Potassium		24.3	1.0	25	0	97	90	110				
Sodium		24.2	1.0	25	0	97	90	110				
Associated samples	: H16040518-001C, H1 009C, H16040518-01 H16040518-018C	6040518-002C, 0C, H16040518	H16040518- -011C, H160	003C, H1604 40518-012C, I	0518-004C, H160 H16040518-013C	40518-005C, , H16040518	H1604051 -014C, H16	8-006C, H1 6040518-01	6040518-007C, 5C, H16040518	H16040518-008 -016C, H160405	BC, H1604( 518-017C,	)518-
Run ID :Run Order:	ICP2-HE_160505A: 80	)	SampType:	Continuing C	alibration Verific	ation Standa	<b>r</b> Lab	ID: CCV		Method:	E200.7	
Analysis Date: 05/0	5/16 20:34	Units: n	ng/L			Prep Info:	Prep Da	te:		Prep Method:		
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		25.5	1.0	25	0	102	90	110				
Magnesium		25.2	1.0	25	0	101	90	110				
Potassium		24.8	1.0	25	0	99	90	110				
Sodium		24.5	1.0	25	0	98	90	110				

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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<b>ENERGY</b> LABORATORIES	Trust our People." www.energylab.co	<b>Trust our Data.</b>	Coll	ege Station, TX <b>8</b>								
Client: Work Order:	MT DEQ-Federal Su H16040518	perfund		ANALYT		Date: 01-Jun-16						
Project:	CFR Monitoring-474	374		В								
Run ID :Run Order:	: ICP2-HE_160505A: 99		SampType:	Continuing C	Calibration \	Verification Stand	lar Lab	ID: CCV		Method:	E200.7	
Analysis Date: 05/0	05/16 21:45	Units:	mg/L			Prep Inf	o: Prep Da	ate:		Prep Method:		
Analytes 4		Result	PQL	SPK value	SPK Ref V	/al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		24.7	1.0	25		0 99	90	110				
Magnesium		24.5	1.0	25		0 98	90	110				
Potassium		25.3	1.0	25		0 101	90	110				
Sodium		25.2	1.0	25		0 101	90	110				
Associated samples	8: H16040518-001C, H160 009C, H16040518-010C H16040518-018C	40518-002C , H16040518	, H16040518 3-011C, H160	-003C, H1604 040518-012C,	0518-004C, H16040518	, H16040518-005( -013C, H1604051	C, H160405 8-014C, H1	18-006C, H1 6040518-01	6040518-007C, 5C, H16040518	H16040518-008 -016C, H160405	3C, H1604( 518-017C,	0518-
Run ID :Run Order:	: ICP2-HE_160505A: 111		SampType:	Continuing C	Calibration \	Verification Stand	lar Lab	ID: CCV		Method:	E200.7	
Analysis Date: 05/0	05/16 22:30	Units:	mg/L			Prep Inf	o: Prep Da	ate:		Prep Method:		
Analytes 4		Result	PQL	SPK value	SPK Ref V	/al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		24.9	1.0	25		0 100	90	110				
Magnesium		24.3	1.0	25		0 <b>97</b>	90	110				
Potassium		24.6	1.0	25		0 98	90	110				

0

90

98

110

25

Sodium

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

24.5

1.0

R - RPD outside accepted recovery limits

LABORATORIES	Trust our Peop www.energyla	ple. Trust our Data. b.com	Coll	ege Station, TX <b>88</b>	Billir 88.690.2218 • Gille	ngs, MT <b>800.735.</b> 4 ette, WY <b>866.686.</b>	<b>1489 •</b> Caspe 7175 • Helena	r, WY <b>888.235</b> a, MT <b>877.472</b>	.0515 .0711				
Client: Work Order:	MT DEQ-Federal H16040518	Superfund		ANALYT	ICAL QC S Prepared by He	UMMARY elena, MT Bra	REPO	RT		Date: 01-Jun-16			
Project:	CFR Monitoring-4	74374		В	atchID: R	115091							
Run ID :Run Order	: FIA202-HE_160506A	: 9	SampType:	Initial Calibra	tion Verification	n Standard	Lab	D: ICV		Method: E	365.1		
Analysis Date: 05/0	06/16 14:33	Units:	mg/L			Prep Info	Prep Da	te:		Prep Method:			
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RI	PDLimit	Qual	
Phosphorus, Total	as P	0.239	0.010	0.25	0	96	90	110					
Associated samples	s: H16040518-016D, H <sup>.</sup>	16040518-017D	, H16040518	-018D									
Run ID :Run Order	: FIA202-HE_160506A	: 10	SampType:	Continuing C	alibration Verifi	ication Standa	<b>r</b> Lab	D: CCV		Method: E	E365.1		
Run ID :Run Order Analysis Date: <b>05/</b>	:FIA202-HE_160506A 06/16 14:34	: 10 Units:	SampType: <b>mg/L</b>	Continuing C	alibration Verifi	ication Standa Prep Info	r Lab : Prep Da	ID: <b>CCV</b> te:		Method: E Prep Method:	E365.1		
Run ID :Run Order Analysis Date: <b>05/(</b> Analytes <u>1</u>	: FIA202-HE_160506A 06/16 14:34	: <b>10</b> Units: Result	SampType: <b>mg/L</b> PQL	Continuing C	alibration Verifi	ication Standa Prep Info %REC	r Lab : Prep Da LowLimit	ID: <b>CCV</b> te: HighLimit	RPD Ref Val	Method: E Prep Method: %RPD Rf	E365.1 PDLimit	Qual	
Run ID :Run Order Analysis Date: <b>05/</b> Analytes <u>1</u> Phosphorus, Total	: FIA202-HE_160506A 06/16 14:34 as P	: <b>10</b> Units: Result 0.0925	SampType: mg/L PQL 0.010	Continuing C SPK value 0.1	<b>alibration Verifi</b> SPK Ref Val 0	ication Standa Prep Info %REC 92	r Lab : Prep Da LowLimit 90	ID: <b>CCV</b> te: HighLimit 110	RPD Ref Val	Method: E Prep Method: %RPD RI	E <b>365.1</b> PDLimit	Qual	
Run ID :Run Order Analysis Date: <b>05//</b> Analytes <u>1</u> Phosphorus, Total Associated samples	: FIA202-HE_160506A 06/16 14:34 as P s: H16040518-016D, H <sup>o</sup>	: 10 Units: Result 0.0925 16040518-017D	SampType: mg/L PQL 0.010 , H16040518	Continuing C SPK value 0.1 -018D	SPK Ref Val	ication Standa Prep Info %REC 92	r Lab : Prep Da LowLimit 90	ID: <b>CCV</b> te: HighLimit 110	RPD Ref Val	Method: E Prep Method: %RPD RI	E365.1 PDLimit	Qual	
Run ID :Run Order Analysis Date: <b>05/</b> Analytes <u>1</u> Phosphorus, Total Associated samples Run ID :Run Order	: FIA202-HE_160506A 06/16 14:34 as P s: H16040518-016D, H <sup>2</sup> : FIA202-HE_160506A	: 10 Units: Result 0.0925 16040518-017D	SampType: mg/L PQL 0.010 9, H16040518 SampType:	Continuing C SPK value 0.1 -018D Initial Calibra	SPK Ref Val 0 tion Blank, Inst	ication Standa Prep Info %REC 92 :rument Blank	r Lab : Prep Da LowLimit 90 Lab	D: CCV te: HighLimit 110 D: ICB	RPD Ref Val	Method: E Prep Method: %RPD RI	E365.1 PDLimit	Qual	
Run ID :Run Order Analysis Date: <b>05/</b> ( Analytes <u>1</u> Phosphorus, Total Associated samples Run ID :Run Order Analysis Date: <b>05/</b> (	: FIA202-HE_160506A 06/16 14:34 as P s: H16040518-016D, H : FIA202-HE_160506A 06/16 14:35	: 10 Units: Result 0.0925 16040518-017D : 11 Units:	SampType: mg/L PQL 0.010 9, H16040518 SampType: mg/L	Continuing C SPK value 0.1 -018D Initial Calibra	SPK Ref Val 0 tion Blank, Inst	ication Standa Prep Info %REC 92 rument Blank Prep Info	r Lab : Prep Da LowLimit 90 Lab : Prep Da	ID: CCV te: HighLimit 110 ID: ICB te:	RPD Ref Val	Method: E Prep Method: %RPD RI Method: E Prep Method:	E365.1 PDLimit	Qual	
Run ID :Run Order Analysis Date: 05/0 Analytes <u>1</u> Phosphorus, Total Associated samples Run ID :Run Order Analysis Date: 05/0 Analytes <u>1</u>	: FIA202-HE_160506A 06/16 14:34 as P s: H16040518-016D, H <sup>-</sup> : FIA202-HE_160506A 06/16 14:35	: 10 Units: Result 0.0925 16040518-017D : 11 Units: Result	SampType: mg/L PQL 0.010 9, H16040518 SampType: mg/L PQL	Continuing C SPK value 0.1 -018D Initial Calibra SPK value	SPK Ref Val 0 tion Blank, Inst	ication Standa Prep Info %REC 92 crument Blank Prep Info %REC	r Lab : Prep Da LowLimit 90 Lab : Prep Da LowLimit	ID: CCV te: HighLimit 110 ID: ICB te: HighLimit	RPD Ref Val	Method: E Prep Method: %RPD RI Method: E Prep Method: %RPD RI	E365.1 PDLimit E365.1 PDLimit	Qual	
Run ID :Run Order Analysis Date: 05/0 Analytes <u>1</u> Phosphorus, Total Associated samples Run ID :Run Order Analysis Date: 05/0 Analytes <u>1</u> Phosphorus, Total	: FIA202-HE_160506A 06/16 14:34 as P s: H16040518-016D, H : FIA202-HE_160506A 06/16 14:35 as P	: 10 Units: Result 0.0925 16040518-017D : 11 Units: Result -0.00206	SampType: mg/L PQL 0.010 7, H16040518 SampType: mg/L PQL 0.010	Continuing C SPK value 0.1 -018D Initial Calibra SPK value	SPK Ref Val 0 tion Blank, Inst SPK Ref Val 0	ication Standa Prep Info %REC 92 rument Blank Prep Info %REC	r Lab : Prep Da LowLimit 90 Lab : Prep Da LowLimit 0	ID: CCV te: HighLimit 110 ID: ICB te: HighLimit 0	RPD Ref Val	Method: E Prep Method: %RPD RI Method: E Prep Method: %RPD RI	E365.1 PDLimit E365.1 PDLimit	Qual	

N - Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

ENERGY	Trust or www.er	ur People. Trust our Data. nergylab.com	Coll	ege Station, TX <b>8</b> 8									
Client: Work Order:	MT DEQ-Fed H16040518	eral Superfund		ANALYT	ICAL QC SU Prepared by Hele	JMMARY ena, MT Brai	REPO	RT		Date: 01-Jun-16			
Project:	CFR Monitori	ng-474374		В	atchID: R1	15139							
Run ID :Run Orde	er: ICPMS204-B_16	60506C: 9	SampType:	Initial Calibra	tion Verification	Standard	Lab	ID: ICV STI	)	Method: E200.8			
Analysis Date: 05	5/06/16 17:48	Units:	mg/L			Prep Info:	: Prep Da	ate:		Prep Method:			
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual		
Copper		0.0599	0.010	0.06	0	100	90	110					
Zinc		0.0625	0.010	0.06	0	104	90	110					
Associated sample	es: H16040518-002	B, H16040518-003B	8, H16040518	-004B, H1604	0518-008B								
Run ID :Run Orde	er: ICPMS204-B_1	60506C: 10	SampType:	Interference	Check Sample A		Lab	ID: ICSA		Method: E200.8			
Analysis Date: 05	5/06/16 17:51	Units:	mg/L			Prep Info:	: Prep Da	ate:		Prep Method:			
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual		
Copper		0.000390	0.010		0								
Zinc		0.000801	0.010		0								
Associated sample	es: H16040518-002	B, H16040518-003B	8, H16040518	-004B, H1604	0518-008B								
Run ID :Run Orde	er: ICPMS204-B_1	60506C: 11	SampType:	Interference	Check Sample Al	3	Lab	ID: ICSAB		Method: E200.8			
Analysis Date: 05	5/06/16 17:54	Units:	mg/L			Prep Info:	: Prep Da	ate:		Prep Method:			
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual		
Copper		0.0203	0.010	0.02	0	102	70	130					
Zinc		0.0102	0.010	0.01	0	102	70	130					
Associated sample	es: H16040518-002	B, H16040518-003B?	8, H16040518	-004B, H1604	0518-008B								
Run ID :Run Orde	er: ICPMS204-B_1	60506C: 16	SampType:	Method Blan		Lab	ID: LRB	Method: E200.8					
Analysis Date: 05	5/06/16 18:10	Units:	mg/L			Prep Info:	: Prep Da	ate:		Prep Method:			
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual		
Copper		0.0001	6E-05										
Zinc		0.0006	0.0002										
Associated sample	es: H16040518-002	B, H16040518-003B	8, H16040518	-004B, H1604	0518-008B								
Run ID :Run Orde	er: ICPMS204-B_1	60506C: 17	SampType:	Laboratory F	ortified Blank		Lab	ID: LFB		Method: E200.8			
Analysis Date: 05	5/06/16 18:14	Units:	mg/L			Prep Info:	Prep Da	ate:		Prep Method:			
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual		
Copper		0.0528	0.010	0.05	0.0001306	105	85	115					
Zinc		0.0548	0.010	0.05	0.0005792	108	85	115					
Qualifiers: N	D - Not Detected at t	he Reporting Limit	S	- Spike Reco	very outside accer	oted recovery	limit N	- Analyte co	oncentration was	not sufficiently high to calc	ulate RPI		
J -	- Analyte detected be	elow quantitation limit	s F	R - RPD outsid	e accepted recove	ery limits	А	- Analyte co	oncentration grea	ater than four times the spik	ke amount		
<b>ENERGY</b> LABORATORIES	Trust our Peo www.energyl	ople. Trust our Data. lab.com	Coll	Billings, MT 800.735.4489 • Casper, WY 888.235.0515 College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711									
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Client: Work Order:	MT DEQ-Federal H16040518	I Superfund		ANALYT	ICAL QC SU Prepared by Hele	<b>JMMARY</b> ena, MT Bra	REPO	RT		Date:	01-Jun-	16	
Project:	CFR Monitoring-4	474374		BatchID: R115139									
Run ID :Run Order:	ICPMS204-B_16050	06C: 17	SampType:	Laboratory F	ortified Blank		Lab	ID: LFB		Method:	E200.8		
Analysis Date: 05/0	06/16 18:14	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:			
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual	
Associated samples: H16040518-002B, H16040518-003B, H16040518-004B, H16040518-008B													
Run ID :Run Order:	ICPMS204-B_16050	6C: 20	SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16040</b>	518-002BMS	Method:	E200.8		
Analysis Date: 05/0	06/16 18:23	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:			
Analysis Date: <b>05/0</b> Analytes <u>2</u>	06/16 18:23	Units: Result	mg/L PQL	SPK value	SPK Ref Val	Prep Info %REC	: Prep Da LowLimit	te: HighLimit	RPD Ref Val	Prep Method: %RPD F	RPDLimit	Qual	
Analysis Date: <b>05/0</b> Analytes <u>2</u> Copper	06/16 18:23	Units: Result 0.0510	mg/L PQL 0.0050	SPK value 0.05	SPK Ref Val	Prep Info %REC 102	: Prep Da LowLimit 70	te: HighLimit 130	RPD Ref Val	Prep Method: %RPD	RPDLimit	Qual	
Analysis Date: <b>05/0</b> Analytes <u>2</u> Copper Zinc	06/16 18:23	Units: Result 0.0510 0.0634	mg/L PQL 0.0050 0.010	SPK value 0.05 0.05	SPK Ref Val 0 0.008371	Prep Info %REC 102 110	: Prep Da LowLimit 70 70	te: HighLimit 130 130	RPD Ref Val	Prep Method: %RPD F	RPDLimit	Qual	
Analysis Date: 05/0 Analytes 2 Copper Zinc Associated samples	06/16 18:23 :: H16040518-002B, H	Units: Result 0.0510 0.0634 116040518-003B	mg/L PQL 0.0050 0.010 , H16040518	SPK value 0.05 0.05 -004B, H16040	SPK Ref Val 0 0.008371 0518-008B	Prep Info %REC 102 110	: Prep Da LowLimit 70 70	te: HighLimit 130 130	RPD Ref Val	Prep Method: %RPD F	RPDLimit	Qual	
Analysis Date: 05/0 Analytes 2 Copper Zinc Associated samples Run ID :Run Order:	06/16 18:23 E H16040518-002B, H	Units: Result 0.0510 0.0634 116040518-003B	mg/L PQL 0.0050 0.010 , H16040518 SampType:	SPK value 0.05 0.05 -004B, H1604( Sample Matri	SPK Ref Val 0 0.008371 0518-008B	Prep Info %REC 102 110	: Prep Da LowLimit 70 70 Lab	te: HighLimit 130 130 ID: <b>H16040</b>	RPD Ref Val	Prep Method: %RPD F	RPDLimit	Qual	
Analysis Date: 05/0 Analytes <u>2</u> Copper Zinc Associated samples Run ID :Run Order: Analysis Date: 05/0	06/16 18:23 H16040518-002B, H ICPMS204-B_16050 06/16 18:26	Units: Result 0.0510 0.0634 116040518-003B 16C: 21 Units:	mg/L PQL 0.0050 0.010 , H16040518 SampType: mg/L	SPK value 0.05 0.05 -004B, H16040 Sample Matri	SPK Ref Val 0 0.008371 0518-008B ix Spike Duplicate	Prep Info %REC 102 110 e Prep Info	: Prep Da LowLimit 70 70 Lab : Prep Da	te: HighLimit 130 130 ID: <b>H16040!</b> te:	RPD Ref Val	Prep Method: %RPD r Method: Prep Method:	RPDLimit	Qual	
Analysis Date: 05/0 Analytes 2 Copper Zinc Associated samples Run ID :Run Order: Analysis Date: 05/0 Analytes 2	06/16 18:23 E H16040518-002B, H E ICPMS204-B_16050 06/16 18:26	Units: Result 0.0510 0.0634 116040518-003B 06C: 21 Units: Result	mg/L PQL 0.0050 0.010 , H16040518 SampType: mg/L PQL	SPK value 0.05 0.05 -004B, H16040 Sample Matri SPK value	SPK Ref Val 0 0.008371 0518-008B ix Spike Duplicate SPK Ref Val	Prep Info %REC 102 110 e Prep Info %REC	: Prep Da LowLimit 70 70 Lab : Prep Da LowLimit	te: HighLimit 130 130 ID: <b>H16040</b> te: HighLimit	RPD Ref Val	Prep Method: %RPD F Method: Prep Method: %RPD F	RPDLimit E200.8	Qual	
Analysis Date: 05/0 Analytes 2 Copper Zinc Associated samples Run ID :Run Order: Analysis Date: 05/0 Analytes 2 Copper	06/16 18:23 E H16040518-002B, H ICPMS204-B_16050 06/16 18:26	Units: Result 0.0510 0.0634 116040518-003B 16C: 21 Units: Result 0.0518	mg/L PQL 0.0050 0.010 , H16040518 SampType: mg/L PQL 0.0050	SPK value 0.05 0.05 •004B, H16040 Sample Matri SPK value 0.05	SPK Ref Val 0 0.008371 0518-008B ix Spike Duplicate SPK Ref Val 0	Prep Info %REC 102 110 e Prep Info %REC 103	: Prep Da LowLimit 70 70 Lab : Prep Da LowLimit 70	te: HighLimit 130 130 ID: <b>H16040!</b> te: HighLimit 130	RPD Ref Val	Prep Method: %RPD F Method: Prep Method: %RPD F 1.4	RPDLimit E200.8 RPDLimit 20	Qual	

Associated samples: H16040518-002B, H16040518-003B, H16040518-004B, H16040518-008B

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

 $\ensuremath{\mathsf{A}}$  - Analyte concentration greater than four times the spike amount

<b>ENERGY</b> LABORATORIES	Trust our Peop www.energyla	ole. Trust our Data. b.com	Col	Billings, MT 800.735.4489 • Casper, WY 888.235.0515 College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711								
Client: Work Order:	MT DEQ-Federal H16040518	Superfund		ANALYTICAL QC SUMMARY REPORT Prepared by Helena, MT Branch						Date: 01-Jun-16		
Project:	CFR Monitoring-4	74374		В	atchID:	TSS160502A	4					
Run ID :Run Order	: ACCU-124 (14410200	))_160502A: 1	SampType:	Method Blan	k		Lab	ID: <b>MB-1_1</b>	60502A	Metho	d: <b>A2540 D</b>	
Analysis Date: 05/0	02/16 14:35	Units:	mg/L			Prep Info:	Prep Da	ite:		Prep Metho	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	ended TSS @ 105 C	ND	0.1									
	009A, H16040518-00TA, H 009A, H16040518-01 H16040518-018A	16040518-002A 10A, H16040518	, H16040518 3-011A, H160	003A, H1604 040518-012A, I	H16040518-01	13A, H16040518-	014A, H16	8-006A, HT 6040518-01	5A, H16040518-	016A, H16040	08A, H16040 0518-017A,	516-
Run ID :Run Order	: ACCU-124 (14410200	0)_160502A: 2	SampType:	Laboratory C	ontrol Sample	e	Lab	ID: LCS-2_	160502A	Metho	d: <b>A2540 D</b>	
Analysis Date: 05/0	02/16 14:35	Units:	mg/L			Prep Info:	Prep Da	ite:		Prep Metho	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	ended TSS @ 105 C	91.0	10	100	0	91	80	120				
Run ID :Run Order	H16040518-018A	)_160502A: 4	SampType:	Sample Dupl	icate	,	Lab	ID: <b>H16040</b>	494-003ADUP	Metho	id: <b>A2540 D</b>	
Analysis Date: 05/0	02/16 14:36	Units:	mg/L			Prep Info:	Prep Da	ite:		Prep Metho	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	ended TSS @ 105 C	2.00	10		0				1		5	
Associated samples	<ul> <li>H16040518-001A, H1 009A, H16040518-01 H16040518-018A</li> <li>between he analytical rest</li> </ul>	16040518-002A 10A, H16040518 ult for the sample a	, H16040518 3-011A, H160 and its duplicate	9-003A, H1604 940518-012A, I e is less than he r	0518-004A, H <sup>2</sup> H16040518-01	16040518-005A, 13A, H16040518- e RPD variance is no	H1604051 014A, H16 ot considered	8-006A, H1 040518-01	6040518-007A, 5A, H16040518-	H16040518-0 016A, H16040	08A, H1604( 0518-017A,	0518-
Run ID :Run Order	: ACCU-124 (14410200	)_160502A: 1	SampType:	Sample Dupl	icate		Lab	ID: <b>H16040</b>	518-009ADUP	Metho	d: <b>A2540 D</b>	
Analysis Date: 05/0	02/16 14:38	Units:	mg/L			Prep Info:	Prep Da	ite:		Prep Metho	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	ended TSS @ 105 C	24.2	10		0				23.2	4.2	5	
Associated samples	s: H16040518-001A, H1	16040518-002A	, H16040518	-003A, H1604	0518-004A, H <sup>·</sup>	16040518-005A,	H1604051	8-006A, H1	6040518-007A,	H16040518-0	08A, H1604(	0518-

S - Spike Recovery outside accepted recovery limit

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 four times the spike amount Page 84 of 96



May 30, 2016

Energy Laboratories, Inc. ATTN: Jonathan Dee Hager PO Box 5688 Helena MT 59604 jhager@energylab.com

RE: Project ENL-HL1201

Client Project: H16040518

Dear Jonathan Dee Hager,

This report contains results for the 5 samples received by Brooks Applied Labs (BAL) on May 03, 2016. The samples were logged-in for the contracted analyses according to the chain-of-custody form(s). The samples were received, prepared, analyzed, and stored according to BAL SOPs and EPA methodology.

The results were method blank corrected as described in the calculations section of the relevant BAL SOP(s) and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details. All data was reported without qualification (with the exception of concentration qualifiers), and all associated quality control sample results meet the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more details, please see the *Report Information* page in your report. Please feel free to contact us if you have any questions regarding this report.

Sincerely,

dia L'reover

Lydia Greaves Project Manager Lydia@brooksapplied.com

11 avgant

Margaret Shultz Project Coordinator margaret@brooksapplied.com



# **Report Information**

# Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <a href="http://www.brooksapplied.com/resources/certificates-permits/">http://www.brooksapplied.com/resources/certificates-permits/</a>. Results reported relate only to the samples listed in the report.

# **Field Quality Control Samples**

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

# **Common Abbreviations**

BAL	Brooks Applied Labs	MS	matrix spike
BLK	method blank	MSD	matrix spike duplicate
BS	laboratory fortified blank	ND	non-detect
CAL	calibration standard	NR	non-reportable
CCB	continuing calibration blank	N/C	not calculated
CCV	continuing calibration verification	PS	post preparation spike
COC	chain of custody record	REC	percent recovery
D	dissolved fraction	RPD	relative percent difference
DUP	duplicate	SCV	secondary calibration verification
IBL	instrument blank	SOP	standard operating procedure
ICV	initial calibration verification	SRM	standard reference material
MDL	method detection limit	T	total fraction
MRL	method reporting limit	TR	total recoverable fraction

# **Definition of Data Qualifiers**

(Effective 9/23/09)

- B Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
- **E** An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
- **H** Holding time and/or preservation requirements not met. Result is estimated.
- J Estimated value. A full explanation is presented in the narrative.
- J-M Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
- J-N Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
- **M** Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
- **N** Spike recovery was not within acceptance criteria. Result is estimated.
- **R** Rejected, unusable value. A full explanation is presented in the narrative.
- U Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
- X Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA <u>SOW ILM03.0</u>, Exhibit B, Section III, pg. B-18, and the <u>USEPA Contract Laboratory Program National Functional Guidelines for Inorganic</u> <u>Superfund Data Review; USEPA; January 2010</u>. These supersede all previous qualifiers ever employed by BAL.

Project ID: ENL-HL1201 PM: Lydia Greaves



# Sample Information

Sample	Lab ID	<b>Report Matrix</b>	Туре	Sampled	Received
H16040518-002F	1619017-01	Water	Sample	04/27/2016	05/03/2016
H16040518-003F	1619017-02	Water	Sample	04/27/2016	05/03/2016
H16040518-004F	1619017-03	Water	Sample	04/27/2016	05/03/2016
H16040518-019A	1619017-04	Water	Sample	04/27/2016	05/03/2016
H16040518-020A	1619017-05	Water	Trip Blank	04/27/2016	05/03/2016

# **Batch Summary**

Analyte MeHg

Lab Matrix Water

**Method** EPA 1630

Prepared Analyzed 05/18/2016 05/20/2016

Batch B161261 **Sequence** 1600606



# Sample Results

Sample	Analyte	<b>Report Matrix</b>	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
H16040518-00	02F									
1619017-01	MeHg	Water	TR	≤ 0.024	U	0.024	0.059	ng/L	B161261	1600606
H16040518-00	03F									
1619017-02	MeHg	Water	TR	4.05		0.025	0.062	ng/L	B161261	1600606
H16040518-00	04F									
1619017-03	MeHg	Water	TR	4.01		0.023	0.058	ng/L	B161261	1600606
H16040518-01	19A									
1619017-04	MeHg	Water	TR	1.75		0.025	0.063	ng/L	B161261	1600606
H16040518-02	20A									
1619017-05	MeHg	Water	TR	≤ 0.024	U	0.024	0.061	ng/L	B161261	1600606



# Accuracy & Precision Summary

Batch: B161261 Lab Matrix: Water Method: EPA 1630

Sample B161261-BS1	Analyte Laboratory Fortified Bla MeHg	Native ank, (161	<b>Spike</b> 7027) 1.000	Result 1.027	Units ng/L	REC & Limits	RPD & Limits
B161261-BS2	Laboratory Fortified Bla MeHg	ank, (161	<b>7027)</b> 1.000	1.078	ng/L	108% 67-133	
B161261-MS3	Matrix Spike, (1619017 MeHg	7 <b>-03)</b> 4.011	2.000	5.700	ng/L	84% 65-135	
B161261-MSD3	Matrix Spike Duplicate, MeHg	<b>(161901</b> ) 4.011	<b>7-03)</b> 2.000	6.121	ng/L	106% 65-135	7% 35

# Method Blanks & Reporting Limits

Batch: B161261 Matrix: Water Method: EPA 1630 Analyte: MeHg			
Sample	Result	Units	
B161261-BLK1	0.014	ng/L	
B161261-BLK2	0.017	ng/L	
B161261-BLK3	0.014	ng/L	
B161261-BLK4	0.021	ng/L	
	Average: 0.016	Standard Deviation: 0.003	MDL: 0.023
	Limit: 0.045	Limit: 0.015	MRL: 0.058

Project ID: ENL-HL1201 PM: Lydia Greaves



BAL Report 1619017 Client PM: Jonathan Dee Hager Client PO: 13183

# Sample Containers

Lab Sam	ID: 1619017-01 ple: H16040518-002F		Rep Sar	oort Matrix: Water nple Type: Sample		Collected: 04/27/2016 Received: 05/03/2016		
Des		Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Bottle FLPE Hg-SP	250mi	15-0278	2mi 6N HCI (PP)	1609109	<2	Cooler	
Lab Sam	<b>ID:</b> 1619017-02 ID: H16040518-003F		Rep Sar	oort Matrix: Water		Collect Receiv	ed: 04/27/2016 ed: 05/03/2016	
Des	Container	Size	Lot	Preservation	P-Lot	рН	Ship. Cont.	
A	Bottle FLPE Hg-SP	250ml	15-0278	2ml 6N HCI (PP)	1609109	<2	Cooler	
Lab Sarr	<b>ID:</b> 1619017-03 I <b>ple:</b> H16040518-004F		Rep Sar	oort Matrix: Water nple Type: Sample		Collect Receiv	ed: 04/27/2016 ed: 05/03/2016	
Des	Container	Size	Lot	Preservation	P-Lot	рН	Ship. Cont.	
A	Bottle FLPE Hg-SP	250ml	15-0278	2ml 6N HCI (PP)	1609109	<2	Cooler	
Lab Sam	<b>ID:</b> 1619017-04		Rep Sar	oort Matrix: Water		Collect	ed: 04/27/2016	
Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.	
A	Bottle FLPE Hg-SP	250ml	15-0278	2ml 6N HCI (PP)	1609109	<2	Cooler	
Lab	<b>ID:</b> 1619017-05		Rep	oort Matrix: Water		Collect	ed: 04/27/2016	
Des	Container	Size	Sar Lot	Preservation	P-Lot	Ha	Ship. Cont.	
A	Bottle FLPE Hg-SP	250ml	15-0278	0.4% HCI (BAL)	2609106	<2	Cooler	

Project ID: ENL-HL1201 PM: Lydia Greaves



BAL Report 1619017 Client PM: Jonathan Dee Hager Client PO: 13183

# **Shipping Containers**

Cooler

Received: May 3, 2016 10:00 Tracking No: 1Z37EW970154811555 via UPS Coolant Type: Ice Temperature: 4.5 °C

**Description:** Cooler Damaged in transit? No Returned to client? No Comments: IR#4

Custody seals present? Yes Custody seals intact? Yes COC present? Yes

Energy Laboratories Inc 3161 East Lyndale Avenue Helena, MT 59601 (406) 442-0711	H16040518	CHAIN-OF-CUSTODY RECORD Custody Seal: Y N Intact: Y N Shipped By:	BAL Report 1619017 Page 1 of 1 02-May-16
Subcontractor:		Signature Match: Y N Receipt Temp:	
Brooks Applied Labs 18804 North Creek Parkway Bothell, WA 98011 TEL: (206) 632-6206 FAX: ( Acct #: Subcontractor's Client:	(206) 632-6017	Requested Tests	
B. H16040518-002F   Surface Wa	ter 04/27/16 11:45 A 1-CLIENT-SLD		
H16040518-003F Surface Wa	ter 04/27/16 12:15 P 1-C Nord-SLD		
H16040518-004F Surface Wa	ter 04/27/16 12:15 P 1-CLIENT-SLD		
H16040518-019A Aqueous	04/27/16 10:30 A 1-CLIENT-SLD		
H16040518-020A Trip Blank	04/27/16 10:30 A 1-TRIP BLANK		

# Earliest Due Date: 5/10/2016

#### Comments:

QC Level: POH 13183 STD					
	Date/Time		2		
Relinquished by: Westy-	5-2-16 7 12	Received by: Received by:	an	5/3/16 10:00	



# Work Order Receipt Checklist

# MT DEQ-Federal Superfund

# H16040518

Login completed by:	Wanda Johnson	Date Received: 4/29/2016						
Reviewed by:	BL2000\rwilliams		Re	ceived by: TLL				
Reviewed Date:	5/4/2016		Carrier name: Hand Del					
Shipping container/cooler ir	Yes 🖌	No 🗌	Not Present					
Custody seals intact on all s	shipping container(s)/cooler(s)?	Yes	No 🗌	Not Present				
Custody seals intact on all s	sample bottles?	Yes	No 🗌	Not Present				
Chain of custody present?		Yes 🗹	No 🗌					
Chain of custody signed wh	Yes 🗹	No 🗌						
Chain of custody agrees with	th sample labels?	Yes 🗹	No 🗌					
Samples in proper containe	r/bottle?	Yes 🗹	No 🗌					
Sample containers intact?		Yes 🗹	No 🗌					
Sufficient sample volume for	or indicated test?	Yes 🗹	No 🗌					
All samples received within (Exclude analyses that are a such as pH, DO, Res Cl, S	holding time? considered field parameters ulfite, Ferrous Iron, etc.)	Yes 🖌	No 🗌					
Temp Blank received in all	shipping container(s)/cooler(s)?	Yes 🗹	No 🗌	Not Applicable				
Container/Temp Blank temp	perature:	°C See Comment	s					
Water - VOA vials have zero	o headspace?	Yes	No 🗌	Not Applicable				
Water - pH acceptable upor	n receipt?	Yes 🗹	No 🗌	Not Applicable				

# **Standard Reporting Procedures:**

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

# **Contact and Corrective Action Comments:**

Cooler 1 was received at 0.7C, Cooler 2 at 0.3C, Cooler 3 0.5 all received on wet ice, Cooler 4 Methyl Mercury samples received at 3.0 on blue ice. All coolers had temperature blanks. wj 4/29/16



# ANALYTICAL SUMMARY REPORT

July 07, 2016

MT DEQ-Federal Superfund PO Box 200901 Helena, MT 59620-0901

Work Order: H16060056 Quote ID: H1085

Project Name: CFR Monitoring-474374

Energy Laboratories Inc Helena MT received the following 19 samples for MT DEQ-Federal Superfund on 6/2/2016 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H16060056-001	CFR-116A	05/31/16 9:00	0 06/02/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Hardness as CaCO3 Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Total P Water Nitrogen, Total Persulfate Phosphorus, Total Solids, Total Suspended
H16060056-002	Field Blank #1 (FC-CFR)	05/31/16 11:4	45 06/02/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Mercury, Total Recoverable Hardness as CaCO3 Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Mercury by CVAA Digestion, Total P Water Nitrogen, Total Persulfate Phosphorus, Total Solids, Total Suspended Subcontracted, Analytics
H16060056-003	FC-CFR	05/31/16 12:0	00 06/02/16	Surface Water	Same As Above
H16060056-004	FC-CFR Duplicate	05/31/16 12:0	00 06/02/16	Surface Water	Same As Above



# ANALYTICAL SUMMARY REPORT

H16060056-005	LBR-CFR-02	05/31/16 13:45 06/02/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Hardness as CaCO3 Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Total P Water Nitrogen, Total Persulfate Phosphorus, Total Solids, Total Suspended
H16060056-006	CFR-34	05/31/16 15:00 06/02/16	Surface Water	Same As Above
H16060056-007	CFR-27H	05/31/16 16:15 06/02/16	Surface Water	Same As Above
H16060056-008	CFR-11F	06/01/16 8:15 06/02/16	Surface Water	Same As Above
H16060056-009	CFR-07D	06/01/16 9:15 06/02/16	Surface Water	Same As Above
H16060056-010	CFR-03A	06/01/16 10:15 06/02/16	Surface Water	Same As Above
H16060056-011	WSC-SBC	06/01/16 11:00 06/02/16	Surface Water	Same As Above
H16060056-012	SS-25	06/01/16 11:45 06/02/16	Surface Water	Same As Above
H16060056-013	SS-25 Duplicate	06/01/16 11:45 06/02/16	Surface Water	Same As Above
H16060056-014	MWB-SBC	06/01/16 12:30 06/02/16	Surface Water	Same As Above
H16060056-015	SBC-P2	06/01/16 12:45 06/02/16	Surface Water	Same As Above
H16060056-016	MCWC-MWB	06/01/16 13:45 06/02/16	Surface Water	Same As Above
H16060056-017	Field Blank #2 (MCWC- MWB)	06/01/16 14:00 06/02/16	Surface Water	Same As Above
H16060056-018	CFR-84F	05/31/16 10:45 06/02/16	Aqueous	Mercury, Total Recoverable Digestion, Mercury by CVAA Subcontracted, Analytics
H16060056-019	Trip Blank	05/31/16 9:00 06/02/16	Trip Blank	Subcontracted, Analytics

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. 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:



Project: CFR Monitoring-474374 Work Order: H16060056

# CASE NARRATIVE

Tests associated with analyst identified as ELI-CA were subcontracted to Energy Laboratories, 2393 Salt Creek Hwy., Casper, WY, EPA Number WY00002 and WY00937.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-116ALab ID:H16060056-001Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 05/31/16 09:00 **DateReceived:** 06/02/16

Report Date: 07/07/16

Datontooonrou

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	21	mg/L	D	7		A2540 D	06/03/16 09:01 / MA		124 (14410200)_1606	03A : 17	TSS160603A
INORGANICS											
Alkalinity, Total as CaCO3	83	mg/L		4		A2320 B	06/03/16 09:38 / SR		PHSC_101-H_1606	03A : 10	R115727
Bicarbonate as HCO3	100	mg/L		4		A2320 B	06/03/16 09:38 / SR		PHSC_101-H_1606	03A : 10	R115727
Chloride	2	mg/L		1		E300.0	06/03/16 12:51 / SR		IC102-H_1606	03A : 19	R115769
Sulfate	25	mg/L		1		E300.0	06/03/16 12:51 / SR		IC102-H_1606	03A : 19	R115769
Hardness as CaCO3	102	mg/L		1		A2340 B	06/06/16 17:02 / abc		CALC_16060	7A : 267	R115820
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.1	mg/L		0.5		A5310 C	06/07/16 00:00 / eli-c		SUB-C212	371 : 14	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 11:54 / cm		FIA203-HE_1606	06B : 17	R115783
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/03/16 08:43 / cm		FIA203-HE_1606	03A : 40	R115738
Nitrogen, Total	0.24	mg/L		0.05		A4500 N-C	06/06/16 10:25 / cm	06/03/16 10:22	FIA203-HE_1606	06A : 15	33158
Phosphorus, Total as P	0.039	mg/L		0.003		E365.1	06/07/16 13:12 / cm	06/07/16 12:22	FIA202-HE_1606	07C : 15	33181
METALS, DISSOLVED											
Arsenic	0.006	mg/L		0.001		E200.8	06/08/16 00:48 / dck		ICPMS204-B_16060	7A : 173	R115831
Cadmium	ND	mg/L		0.00003		E200.8	06/08/16 00:48 / dck		ICPMS204-B_16060	7A : 173	R115831
Copper	0.004	mg/L		0.001		E200.8	06/08/16 00:48 / dck		ICPMS204-B_16060	7A : 173	R115831
Lead	ND	mg/L		0.0003		E200.8	06/08/16 00:48 / dck		ICPMS204-B_16060	7A : 173	R115831
Zinc	ND	mg/L		0.008		E200.8	06/08/16 00:48 / dck		ICPMS204-B_16060	7A : 173	R115831
METALS, TOTAL RECOVERABLE											
Arsenic	0.007	mg/L		0.001		E200.8	06/08/16 00:52 / dck	06/03/16 09:55	ICPMS204-B_16060	7A : 174	33156
Cadmium	0.00010	mg/L		0.00003		E200.8	06/08/16 00:52 / dck	06/03/16 09:55	ICPMS204-B_16060	7A : 174	33156
Calcium	29	mg/L		1		E200.7	06/06/16 17:02 / sld	06/03/16 09:55	ICP2-HE_1606	06C : 80	33156
Copper	0.017	mg/L		0.001		E200.8	06/08/16 00:52 / dck	06/03/16 09:55	ICPMS204-B_16060	7A : 174	33156
Lead	0.0025	mg/L		0.0003		E200.8	06/08/16 00:52 / dck	06/03/16 09:55	ICPMS204-B_16060	7A : 174	33156

Report 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-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-116A
 Collection Date:
 05/31/16 09:00
 DateReceived:
 06/02/16

 Lab ID:
 H16060056-001
 Report Date:
 07/07/16
 DateReceived:
 06/02/16

 Matrix:
 Surface Water
 Surface Water
 District Superfunction Superfunctin Superfunction Superfunctin Superfunction Sup

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	7	mg/L		1		E200.7	06/06/16 17:02 / sld	06/03/16 09:55	ICP2-HE_160606	SC : 80	33156
Potassium	2	mg/L		1		E200.7	06/06/16 17:02 / sld	06/03/16 09:55	ICP2-HE_160606	6C:80	33156
Sodium	6	mg/L		1		E200.7	06/06/16 17:02 / sld	06/03/16 09:55	ICP2-HE_160606	6C:80	33156
Zinc	0.022	mg/L		800.0		E200.8	06/08/16 00:52 / dck	06/03/16 09:55	ICPMS204-B_160607/	A:174	33156



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:Field Blank #1 (FC-CFR)Lab ID:H16060056-002Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 05/31/16 11:45 **DateReceived:** 06/02/16

Report Date: 07/07/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	ND	mg/L	D	5		A2540 D	06/03/16 09:01 / MA		124 (14410200)_16060	3A : 18	TSS160603A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	06/03/16 09:43 / SR		PHSC_101-H_16060	3A : 12	R115727
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	06/03/16 09:43 / SR		PHSC_101-H_16060	3A : 12	R115727
Chloride	ND	mg/L		1		E300.0	06/03/16 13:02 / SR		IC102-H_16060	3A : 20	R115769
Sulfate	ND	mg/L		1		E300.0	06/03/16 13:02 / SR		IC102-H_16060	3A : 20	R115769
Hardness as CaCO3	ND	mg/L		1		A2340 B	06/09/16 11:09 / sld		WATERCALC_1606	09A : 3	R115866
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	ND	mg/L		0.5		A5310 C	06/07/16 01:05 / eli-c		SUB-C2123	371 : 18	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 11:58 / cm		FIA203-HE_16060	6B : 20	R115783
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/03/16 08:46 / cm		FIA203-HE_16060	3A : 43	R115738
Nitrogen, Total	ND	mg/L		0.05		A4500 N-C	06/06/16 10:28 / cm	06/03/16 10:22	FIA203-HE_16060	6A : 18	33158
Phosphorus, Total as P	ND	mg/L		0.003		E365.1	06/07/16 13:13 / cm	06/07/16 12:22	FIA202-HE_16060	7C : 16	33181
METALS, DISSOLVED											
Arsenic	ND	mg/L		0.001		E200.8	06/08/16 00:55 / dck		ICPMS204-B_160607	A : 175	R115831
Cadmium	ND	mg/L		0.00003		E200.8	06/08/16 00:55 / dck		ICPMS204-B_160607	A : 175	R115831
Copper	ND	mg/L		0.001		E200.8	06/08/16 00:55 / dck		ICPMS204-B_160607	A : 175	R115831
Lead	ND	mg/L		0.0003		E200.8	06/08/16 00:55 / dck		ICPMS204-B_160607	A : 175	R115831
Zinc	0.010	mg/L		0.008		E200.8	06/08/16 00:55 / dck		ICPMS204-B_160607	A : 175	R115831
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.001		E200.8	06/08/16 00:58 / dck	06/03/16 09:55	ICPMS204-B_160607	A : 176	33156
Cadmium	ND	mg/L		0.00003		E200.8	06/08/16 00:58 / dck	06/03/16 09:55	ICPMS204-B_160607	A : 176	33156
Calcium	ND	mg/L		1		E200.7	06/06/16 17:06 / sld	06/03/16 09:55	ICP2-HE_16060	6C : 81	33156
Copper	ND	mg/L		0.001		E200.8	06/08/16 00:58 / dck	06/03/16 09:55	ICPMS204-B_160607.	A : 176	33156
Lead	ND	mg/L		0.0003		E200.8	06/08/16 00:58 / dck	06/03/16 09:55	ICPMS204-B_160607	A : 176	33156

Report 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-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 Field Blank #1 (FC-CFR)
 Collection Date:
 05/31/16 11:45
 DateReceived:
 06/02/16

 Lab ID:
 H16060056-002
 Report Date:
 07/07/16
 V

 Matrix:
 Surface Water
 Surface
 V
 V
 V

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	ND	mg/L		1		E200.7	06/06/16 17:06 / sld	06/03/16 09:55	ICP2-HE_1606060	C:81	33156
Mercury	ND	mg/L		5E-06		E245.1	06/08/16 12:40 / rgk	06/07/16 08:18	HGCV202-H_160608/	A:26	33174
Potassium	ND	mg/L		1		E200.7	06/06/16 17:06 / sld	06/03/16 09:55	ICP2-HE_1606060	C:81	33156
Sodium	ND	mg/L		1		E200.7	06/06/16 17:06 / sld	06/03/16 09:55	ICP2-HE_1606060	C:81	33156
Zinc	ND	mg/L		0.008		E200.8	06/08/16 00:58 / dck	06/03/16 09:55	ICPMS204-B_160607A	: 176	33156



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:FC-CFRLab ID:H16060056-003Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 05/31/16 12:00 DateReceived: 06/02/16

Run

Report Date: 07/07/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	19	mg/L	D	7		A2540 D	06/03/16 09:01 / MA		124 (14410200)_160603	3A : 19	TSS160603A
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	06/03/16 09:48 / SR		PHSC_101-H_160603	3A : 14	R115727
Bicarbonate as HCO3	150	mg/L		4		A2320 B	06/03/16 09:48 / SR		PHSC_101-H_160603	3A : 14	R115727
Chloride	2	mg/L		1		E300.0	06/03/16 13:13 / SR		IC102-H_160603	3A : 21	R115769
Sulfate	12	mg/L		1		E300.0	06/03/16 13:13 / SR		IC102-H_160603	3A : 21	R115769
Hardness as CaCO3	125	mg/L		1		A2340 B	06/06/16 17:10 / abc		CALC_160607/	A : 289	R115820
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.6	mg/L		0.5		A5310 C	06/07/16 01:20 / eli-c		SUB-C2123	71 : 19	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 11:59 / cm		FIA203-HE_160606	6B : 21	R115783
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/03/16 08:48 / cm		FIA203-HE_160603	3A : 44	R115738
Nitrogen, Total	0.20	mg/L		0.05		A4500 N-C	06/06/16 10:29 / cm	06/03/16 10:22	2 FIA203-HE_160606	6A : 19	33158
Phosphorus, Total as P	0.044	mg/L		0.003		E365.1	06/07/16 13:16 / cm	06/07/16 12:22	2 FIA202-HE_160607	7C : 19	33181
METALS, DISSOLVED											
Arsenic	0.006	mg/L		0.001		E200.8	06/08/16 01:01 / dck		ICPMS204-B_160607/	A : 177	R115831
Cadmium	ND	mg/L		0.00003		E200.8	06/08/16 01:01 / dck		ICPMS204-B_160607/	A : 177	R115831
Copper	ND	mg/L		0.001		E200.8	06/08/16 01:01 / dck		ICPMS204-B_160607/	A : 177	R115831
Lead	ND	mg/L		0.0003		E200.8	06/08/16 01:01 / dck		ICPMS204-B_160607/	A : 177	R115831
Zinc	ND	mg/L		0.008		E200.8	06/08/16 01:01 / dck		ICPMS204-B_160607/	A : 177	R115831
METALS, TOTAL RECOVERABLE											
Arsenic	0.010	mg/L		0.001		E200.8	06/08/16 01:14 / dck	06/03/16 09:55	5 ICPMS204-B_160607/	A : 181	33156
Cadmium	0.00005	mg/L		0.00003		E200.8	06/08/16 01:14 / dck	06/03/16 09:55	5 ICPMS204-B_160607/	A : 181	33156
Calcium	34	mg/L		1		E200.7	06/06/16 17:10 / sld	06/03/16 09:55	5 ICP2-HE_160606	6C : 82	33156
Copper	0.003	mg/L		0.001		E200.8	06/08/16 01:14 / dck	06/03/16 09:55	5 ICPMS204-B_160607/	A : 181	33156
Lead	0.0053	mg/L		0.0003		E200.8	06/08/16 01:14 / dck	06/03/16 09:55	5 ICPMS204-B_160607	A : 181	33156

Report 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-Federal SuperfundProject:CFR Monitoring-474374Client Sample ID:FC-CFRCollection Date:05/31/16 12:00DateReceived:06/02/16Lab ID:H16060056-003Report Date:07/07/16Collection Date:07/07/16Matrix:Surface WaterSurface WaterCollection Date:07/07/16Collection Date:07/07/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	10	mg/L		1		E200.7	06/06/16 17:10 / sld	06/03/16 09:55	ICP2-HE_16060	6C : 82	33156
Mercury	0.00042	mg/L		5E-06		E245.1	06/08/16 12:43 / rgk	06/07/16 08:18	HGCV202-H_16060	8A : 27	33174
Potassium	2	mg/L		1		E200.7	06/06/16 17:10 / sld	06/03/16 09:55	ICP2-HE_16060	6C : 82	33156
Sodium	6	mg/L		1		E200.7	06/06/16 17:10 / sld	06/03/16 09:55	ICP2-HE_16060	6C : 82	33156
Zinc	0.016	mg/L		800.0		E200.8	06/08/16 01:14 / dck	06/03/16 09:55	ICPMS204-B_160607	A : 181	33156



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:FC-CFR DuplicateLab ID:H16060056-004Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 05/31/16 12:00 DateReceived: 06/02/16

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Report Date: 07/07/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	17	mg/L	D	7		A2540 D	06/03/16 09:02 / MA		124 (14410200)_16060	)3A : 20	TSS160603A
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	06/03/16 09:54 / SR		PHSC_101-H_16060	03A : 16	R115727
Bicarbonate as HCO3	150	mg/L		4		A2320 B	06/03/16 09:54 / SR		PHSC_101-H_16060	03A : 16	R115727
Chloride	2	mg/L		1		E300.0	06/03/16 13:24 / SR		IC102-H_16060	)3A : 22	R115769
Sulfate	12	mg/L		1		E300.0	06/03/16 13:24 / SR		IC102-H_16060	)3A : 22	R115769
Hardness as CaCO3	127	mg/L		1		A2340 B	06/06/16 17:14 / abc		CALC_160607	7A : 300	R115820
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	4.2	mg/L		0.5		A5310 C	06/07/16 01:39 / eli-c		SUB-C212	371 : 20	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 12:00 / cm		FIA203-HE_16060	)6B : 22	R115783
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/03/16 08:49 / cm		FIA203-HE_16060	)3A : 45	R115738
Nitrogen, Total	0.29	mg/L		0.05		A4500 N-C	06/06/16 10:31 / cm	06/03/16 10:22	FIA203-HE_16060	06A : 20	33158
Phosphorus, Total as P	0.041	mg/L		0.003		E365.1	06/07/16 13:17 / cm	06/07/16 12:22	FIA202-HE_16060	07C : 20	33181
METALS, DISSOLVED											
Arsenic	0.006	mg/L		0.001		E200.8	07/06/16 16:47 / dck		ICPMS204-B_16070	06A : 38	R116572
Cadmium	ND	mg/L		0.00003		E200.8	07/06/16 16:47 / dck		ICPMS204-B_16070	06A : 38	R116572
Copper	0.001	mg/L		0.001		E200.8	07/06/16 16:47 / dck		ICPMS204-B_16070	06A : 38	R116572
Lead	ND	mg/L		0.0003		E200.8	07/06/16 16:47 / dck		ICPMS204-B_16070	06A : 38	R116572
Zinc	ND	mg/L		0.008		E200.8	07/06/16 16:47 / dck		ICPMS204-B_16070	06A : 38	R116572
METALS, TOTAL RECOVERABLE											
Arsenic	0.010	mg/L		0.001		E200.8	06/08/16 01:21 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 183	33156
Cadmium	0.00007	mg/L		0.00003		E200.8	06/08/16 01:21 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 183	33156
Calcium	35	mg/L		1		E200.7	06/06/16 17:14 / sld	06/03/16 09:55	ICP2-HE_16060	)6C : 83	33156
Copper	0.003	mg/L		0.001		E200.8	06/08/16 01:21 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 183	33156
Lead	0.0052	mg/L		0.0003		E200.8	06/08/16 01:21 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 183	33156

Report 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-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 FC-CFR Duplicate
 Collection Date:
 05/31/16 12:00
 DateReceived:
 06/02/16

 Lab ID:
 H16060056-004
 Report Date:
 07/07/16
 DateReceived:
 06/02/16

 Matrix:
 Surface Water
 Surface
 Surface

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	10	mg/L		1		E200.7	06/06/16 17:14 / sld	06/03/16 09:55	ICP2-HE_1606060	C:83	33156
Mercury	0.00033	mg/L		5E-06		E245.1	06/08/16 12:45 / rgk	06/07/16 08:18	HGCV202-H_160608/	A : 28	33174
Potassium	3	mg/L		1		E200.7	06/06/16 17:14 / sld	06/03/16 09:55	ICP2-HE_1606060	C : 83	33156
Sodium	6	mg/L		1		E200.7	06/06/16 17:14 / sld	06/03/16 09:55	ICP2-HE_1606060	C:83	33156
Zinc	0.017	mg/L		800.0		E200.8	06/08/16 01:21 / dck	06/03/16 09:55	ICPMS204-B_160607A	: 183	33156



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:LBR-CFR-02Lab ID:H16060056-005Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 05/31/16 13:45 **DateReceived:** 06/02/16

Report Date: 07/07/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	6	mg/L	D	5		A2540 D	06/03/16 09:02 / MA		124 (14410200)_16060	03A : 21	TSS160603A
INORGANICS											
Alkalinity, Total as CaCO3	86	mg/L		4		A2320 B	06/03/16 10:00 / SR		PHSC_101-H_16060	03A : 18	R115727
Bicarbonate as HCO3	100	mg/L		4		A2320 B	06/03/16 10:00 / SR		PHSC_101-H_16060	03A : 18	R115727
Chloride	1	mg/L		1		E300.0	06/03/16 13:35 / SR		IC102-H_16060	)3A : 23	R115769
Sulfate	10	mg/L		1		E300.0	06/03/16 13:35 / SR		IC102-H_16060	)3A : 23	R115769
Hardness as CaCO3	91	mg/L		1		A2340 B	06/06/16 17:18 / abc		CALC_160607	7A : 311	R115820
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.3	mg/L		0.5		A5310 C	06/07/16 01:59 / eli-c		SUB-C212	371 : 21	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 12:04 / cm		FIA203-HE_16060	06B : 25	R115783
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/03/16 08:50 / cm		FIA203-HE_16060	03A : 46	R115738
Nitrogen, Total	0.14	mg/L		0.05		A4500 N-C	06/06/16 10:32 / cm	06/03/16 10:22	FIA203-HE_16060	06A : 21	33158
Phosphorus, Total as P	0.025	mg/L		0.003		E365.1	06/07/16 13:18 / cm	06/07/16 12:22	FIA202-HE_16060	07C : 21	33181
METALS, DISSOLVED											
Arsenic	0.004	mg/L		0.001		E200.8	06/08/16 01:24 / dck		ICPMS204-B_160607	7A : 184	R115831
Cadmium	ND	mg/L		0.00003		E200.8	06/08/16 01:24 / dck		ICPMS204-B_160607	7A : 184	R115831
Copper	ND	mg/L		0.001		E200.8	06/08/16 01:24 / dck		ICPMS204-B_160607	7A : 184	R115831
Lead	ND	mg/L		0.0003		E200.8	06/08/16 01:24 / dck		ICPMS204-B_160607	7A : 184	R115831
Zinc	ND	mg/L		0.008		E200.8	06/08/16 01:24 / dck		ICPMS204-B_160607	7A : 184	R115831
METALS, TOTAL RECOVERABLE											
Arsenic	0.005	mg/L		0.001		E200.8	06/08/16 01:37 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 188	33156
Cadmium	ND	mg/L		0.00003		E200.8	06/08/16 01:37 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 188	33156
Calcium	26	mg/L		1		E200.7	06/06/16 17:18 / sld	06/03/16 09:55	ICP2-HE_16060	06C : 84	33156
Copper	0.001	mg/L		0.001		E200.8	06/08/16 01:37 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 188	33156
Lead	0.0005	mg/L		0.0003		E200.8	06/08/16 01:37 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 188	33156

Report 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-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 LBR-CFR-02
 Collection Date:
 05/31/16 13:45
 DateReceived:
 06/02/16

 Lab ID:
 H16060056-005
 Report Date:
 07/07/16
 DateReceived:
 06/02/16

 Matrix:
 Surface Water
 Surface Water
 Discretion Date:
 07/07/16
 Discretion Date:
 Discretion Date:

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	6	mg/L		1		E200.7	06/06/16 17:18 / sld	06/03/16 09:55	ICP2-HE_160606	C : 84	33156
Potassium	2	mg/L		1		E200.7	06/06/16 17:18 / sld	06/03/16 09:55	ICP2-HE_160606	C : 84	33156
Sodium	5	mg/L		1		E200.7	06/06/16 17:18 / sld	06/03/16 09:55	ICP2-HE_160606	C : 84	33156
Zinc	ND	mg/L		0.008		E200.8	06/08/16 01:37 / dck	06/03/16 09:55	ICPMS204-B_160607	. : 188	33156



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-34Lab ID:H16060056-006Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 05/31/16 15:00 DateReceived: 06/02/16

Report Date: 07/07/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	25	mg/L	D	7		A2540 D	06/03/16 09:02 / MA		124 (14410200)_1606	03A : 22	TSS160603A
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	06/03/16 10:05 / SR		PHSC_101-H_1606	03A : 20	R115727
Bicarbonate as HCO3	140	mg/L		4		A2320 B	06/03/16 10:05 / SR		PHSC_101-H_1606	03A : 20	R115727
Chloride	6	mg/L		1		E300.0	06/03/16 13:46 / SR		IC102-H_1606	03A : 24	R115769
Sulfate	55	mg/L		1		E300.0	06/03/16 13:46 / SR		IC102-H_1606	03A : 24	R115769
Hardness as CaCO3	168	mg/L		1		A2340 B	06/06/16 17:21 / abc		CALC_16060	7A : 322	R115820
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	4.0	mg/L		0.5		A5310 C	06/07/16 02:19 / eli-c		SUB-C212	371 : 22	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 12:07 / cm		FIA203-HE 1606	06B : 28	R115783
Nitrogen, Nitrate+Nitrite as N	0.03	mg/L		0.02		E353.2	06/03/16 08:51 / cm		FIA203-HE_1606	03A : 47	R115738
Nitrogen, Total	0.34	mg/L		0.05		A4500 N-C	06/06/16 10:33 / cm	06/03/16 10:22	FIA203-HE_1606	06A : 22	33158
Phosphorus, Total as P	0.053	mg/L		0.003		E365.1	06/07/16 13:19 / cm	06/07/16 12:22	FIA202-HE_1606	07C : 22	33181
METALS, DISSOLVED											
Arsenic	0.019	mg/L		0.001		E200.8	06/08/16 01:40 / dck		ICPMS204-B_16060	7A : 189	R115831
Cadmium	0.00005	mg/L		0.00003		E200.8	06/08/16 01:40 / dck		ICPMS204-B_16060	7A : 189	R115831
Copper	0.011	mg/L		0.001		E200.8	06/08/16 01:40 / dck		ICPMS204-B_16060	7A : 189	R115831
Lead	ND	mg/L		0.0003		E200.8	06/08/16 01:40 / dck		ICPMS204-B_16060	7A : 189	R115831
Zinc	0.009	mg/L		0.008		E200.8	06/08/16 01:40 / dck		ICPMS204-B_16060	7A : 189	R115831
METALS, TOTAL RECOVERABLE											
Arsenic	0.024	mg/L		0.001		E200.8	06/08/16 01:43 / dck	06/03/16 09:55	ICPMS204-B_16060	7A : 190	33156
Cadmium	0.00023	mg/L		0.00003		E200.8	06/08/16 01:43 / dck	06/03/16 09:55	ICPMS204-B_16060	7A : 190	33156
Calcium	49	mg/L		1		E200.7	06/06/16 17:21 / sld	06/03/16 09:55	ICP2-HE_1606	06C : 85	33156
Copper	0.052	mg/L		0.001		E200.8	06/08/16 01:43 / dck	06/03/16 09:55	ICPMS204-B_16060	7A : 190	33156
Lead	0.0058	mg/L		0.0003		E200.8	06/08/16 01:43 / dck	06/03/16 09:55	ICPMS204-B_16060	7A : 190	33156

Report 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-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-34
 Collection Date:
 05/31/16 15:00
 DateReceived:
 06/02/16

 Lab ID:
 H16060056-006
 Report Date:
 07/07/16
 DateReceived:
 06/02/16

 Matrix:
 Surface Water
 Surface Water
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Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	11	mg/L		1		E200.7	06/06/16 17:21 / sld	06/03/16 09:55	ICP2-HE_1606060	: 85	33156
Potassium	3	mg/L		1		E200.7	06/06/16 17:21 / sld	06/03/16 09:55	ICP2-HE_1606060	: 85	33156
Sodium	13	mg/L		1		E200.7	06/06/16 17:21 / sld	06/03/16 09:55	ICP2-HE_1606060	: 85	33156
Zinc	0.041	mg/L		0.008		E200.8	06/08/16 01:43 / dck	06/03/16 09:55	ICPMS204-B_160607A	190	33156



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-27HLab ID:H16060056-007Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 05/31/16 16:15 **DateReceived:** 06/02/16

Report Date: 07/07/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	25	mg/L	D	7		A2540 D	06/03/16 09:03 / MA		124 (14410200)_16060	03A : 23	TSS160603A
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	06/03/16 10:12 / SR		PHSC_101-H_16060	)3A : 22	R115727
Bicarbonate as HCO3	130	mg/L		4		A2320 B	06/03/16 10:12 / SR		PHSC_101-H_16060	)3A : 22	R115727
Chloride	6	mg/L		1		E300.0	06/03/16 13:57 / SR		IC102-H_16060	)3A : 25	R115769
Sulfate	57	mg/L		1		E300.0	06/03/16 13:57 / SR		IC102-H_16060	)3A : 25	R115769
Hardness as CaCO3	157	mg/L		1		A2340 B	06/06/16 17:32 / abc		CALC_160607	7A : 333	R115820
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.7	mg/L		0.5		A5310 C	06/07/16 02:39 / eli-c		SUB-C212	371 : 23	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 12:08 / cm		FIA203-HE_16060	06B : 29	R115783
Nitrogen, Nitrate+Nitrite as N	0.03	mg/L		0.02		E353.2	06/03/16 08:52 / cm		FIA203-HE_16060	03A : 48	R115738
Nitrogen, Total	0.32	mg/L		0.05		A4500 N-C	06/06/16 10:34 / cm	06/03/16 10:22	FIA203-HE_16060	06A : 23	33158
Phosphorus, Total as P	0.046	mg/L		0.003		E365.1	06/07/16 13:20 / cm	06/07/16 12:22	FIA202-HE_16060	07C : 23	33181
METALS, DISSOLVED											
Arsenic	0.019	mg/L		0.001		E200.8	06/08/16 01:46 / dck		ICPMS204-B_160607	7A : 191	R115831
Cadmium	0.00005	mg/L		0.00003		E200.8	06/08/16 01:46 / dck		ICPMS204-B_160607	7A : 191	R115831
Copper	0.010	mg/L		0.001		E200.8	06/08/16 01:46 / dck		ICPMS204-B_160607	7A : 191	R115831
Lead	ND	mg/L		0.0003		E200.8	06/08/16 01:46 / dck		ICPMS204-B_160607	7A : 191	R115831
Zinc	ND	mg/L		0.008		E200.8	06/08/16 01:46 / dck		ICPMS204-B_160607	7A : 191	R115831
METALS, TOTAL RECOVERABLE											
Arsenic	0.025	mg/L		0.001		E200.8	06/08/16 01:59 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 195	33156
Cadmium	0.00024	mg/L		0.00003		E200.8	06/08/16 01:59 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 195	33156
Calcium	46	mg/L		1		E200.7	06/06/16 17:32 / sld	06/03/16 09:55	ICP2-HE_16060	06C : 88	33156
Copper	0.050	mg/L		0.001		E200.8	06/08/16 01:59 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 195	33156
Lead	0.0054	mg/L		0.0003		E200.8	06/08/16 01:59 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 195	33156

Report 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-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-27H
 Collection Date:
 05/31/16 16:15
 DateReceived:
 06/02/16

 Lab ID:
 H16060056-007
 Report Date:
 07/07/16
 DateReceived:
 06/02/16

 Matrix:
 Surface Water
 Surface Water
 Dimension
 Dimension

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	10	mg/L		1		E200.7	06/06/16 17:32 / sld	06/03/16 09:55	ICP2-HE_160606	C : 88	33156
Potassium	3	mg/L		1		E200.7	06/06/16 17:32 / sld	06/03/16 09:55	ICP2-HE_160606	C : 88	33156
Sodium	12	mg/L		1		E200.7	06/06/16 17:32 / sld	06/03/16 09:55	ICP2-HE_160606	C : 88	33156
Zinc	0.040	mg/L		0.008		E200.8	06/08/16 01:59 / dck	06/03/16 09:55	ICPMS204-B_160607A	. : 195	33156



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-11FLab ID:H16060056-008Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 06/01/16 08:15 **DateReceived:** 06/02/16

Report Date: 07/07/16

24101100011

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	15	mg/L	D	7		A2540 D	06/03/16 09:03 / MA		124 (14410200)_16060	03A : 24	TSS160603A
INORGANICS											
Alkalinity, Total as CaCO3	98	mg/L		4		A2320 B	06/03/16 10:18 / SR		PHSC_101-H_16060	)3A : 24	R115727
Bicarbonate as HCO3	120	mg/L		4		A2320 B	06/03/16 10:18 / SR		PHSC_101-H_16060	)3A : 24	R115727
Chloride	6	mg/L		1		E300.0	06/03/16 14:08 / SR		IC102-H_16060	03A : 26	R115769
Sulfate	57	mg/L		1		E300.0	06/03/16 14:08 / SR		IC102-H_16060	03A : 26	R115769
Hardness as CaCO3	147	mg/L		1		A2340 B	06/06/16 17:36 / abc		CALC_160607	7A : 344	R115820
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.5	mg/L		0.5		A5310 C	06/07/16 02:58 / eli-c		SUB-C212	371 : 24	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 12:10 / cm		FIA203-HE_16060	06B : 30	R115783
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/03/16 08:54 / cm		FIA203-HE_16060	03A : 49	R115738
Nitrogen, Total	0.29	mg/L		0.05		A4500 N-C	06/06/16 10:54 / cm	06/03/16 10:22	FIA203-HE_16060	06A : 40	33158
Phosphorus, Total as P	0.041	mg/L		0.003		E365.1	06/07/16 13:21 / cm	06/07/16 12:22	FIA202-HE_16060	07C : 24	33181
METALS, DISSOLVED											
Arsenic	0.018	mg/L		0.001		E200.8	06/08/16 02:02 / dck		ICPMS204-B_160607	7A : 196	R115831
Cadmium	0.00005	mg/L		0.00003		E200.8	06/08/16 02:02 / dck		ICPMS204-B_160607	7A : 196	R115831
Copper	0.007	mg/L		0.001		E200.8	06/08/16 02:02 / dck		ICPMS204-B_160607	7A : 196	R115831
Lead	ND	mg/L		0.0003		E200.8	06/08/16 02:02 / dck		ICPMS204-B_160607	7A : 196	R115831
Zinc	0.009	mg/L		0.008		E200.8	06/08/16 02:02 / dck		ICPMS204-B_160607	7A : 196	R115831
METALS, TOTAL RECOVERABLE											
Arsenic	0.022	mg/L		0.001		E200.8	06/08/16 02:06 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 197	33156
Cadmium	0.00016	mg/L		0.00003		E200.8	06/08/16 02:06 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 197	33156
Calcium	43	mg/L		1		E200.7	06/06/16 17:36 / sld	06/03/16 09:55	ICP2-HE_16060	06C : 89	33156
Copper	0.029	mg/L		0.001		E200.8	06/08/16 02:06 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 197	33156
Lead	0.0032	mg/L		0.0003		E200.8	06/08/16 02:06 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 197	33156

Report 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-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-11F
 Collection Date:
 06/01/16 08:15
 DateReceived:
 06/02/16

 Lab ID:
 H16060056-008
 Report Date:
 07/07/16
 DateReceived:
 06/02/16

 Matrix:
 Surface Water
 Surface Water
 Difter Sample ID:
 Difter

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	10	mg/L		1		E200.7	06/06/16 17:36 / sld	06/03/16 09:55	ICP2-HE_1606060	: 89	33156
Potassium	2	mg/L		1		E200.7	06/06/16 17:36 / sld	06/03/16 09:55	ICP2-HE_1606060	;:89	33156
Sodium	10	mg/L		1		E200.7	06/06/16 17:36 / sld	06/03/16 09:55	ICP2-HE_1606060	: 89	33156
Zinc	0.029	mg/L		0.008		E200.8	06/08/16 02:06 / dck	06/03/16 09:55	ICPMS204-B_160607A	197	33156



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-07DLab ID:H16060056-009Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 06/01/16 09:15 **DateReceived:** 06/02/16

Report Date: 07/07/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	11	mg/L	D	2		A2540 D	06/03/16 08:26 / MA		124 (14410200)_16060	02A : 27	TSS160602A
INORGANICS											
Alkalinity, Total as CaCO3	92	mg/L		4		A2320 B	06/03/16 10:24 / SR		PHSC_101-H_16060	03A : 26	R115727
Bicarbonate as HCO3	110	mg/L		4		A2320 B	06/03/16 10:24 / SR		PHSC_101-H_16060	03A : 26	R115727
Chloride	5	mg/L		1		E300.0	06/03/16 14:20 / SR		IC102-H_16060	03A : 27	R115769
Sulfate	53	mg/L		1		E300.0	06/03/16 14:20 / SR		IC102-H_16060	03A : 27	R115769
Hardness as CaCO3	138	mg/L		1		A2340 B	06/06/16 17:40 / abc		CALC_160607	7A : 355	R115820
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.6	mg/L		0.5		A5310 C	06/07/16 03:14 / eli-c		SUB-C212	371 : 25	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 12:11 / cm		FIA203-HE_16060	06B : 31	R115783
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/03/16 08:55 / cm		FIA203-HE_16060	03A : 50	R115738
Nitrogen, Total	0.26	mg/L		0.05		A4500 N-C	06/06/16 10:37 / cm	06/03/16 10:22	FIA203-HE_16060	06A : 25	33158
Phosphorus, Total as P	0.047	mg/L		0.003		E365.1	06/07/16 13:22 / cm	06/07/16 12:22	FIA202-HE_16060	07C : 25	33181
METALS, DISSOLVED											
Arsenic	0.018	mg/L		0.001		E200.8	06/08/16 02:09 / dck		ICPMS204-B_160607	7A : 198	R115831
Cadmium	0.00004	mg/L		0.00003		E200.8	06/08/16 02:09 / dck		ICPMS204-B_160607	7A : 198	R115831
Copper	0.007	mg/L		0.001		E200.8	06/08/16 02:09 / dck		ICPMS204-B_160607	7A : 198	R115831
Lead	ND	mg/L		0.0003		E200.8	06/08/16 02:09 / dck		ICPMS204-B_160607	7A : 198	R115831
Zinc	0.010	mg/L		0.008		E200.8	06/08/16 02:09 / dck		ICPMS204-B_160607	7A : 198	R115831
METALS, TOTAL RECOVERABLE											
Arsenic	0.021	mg/L		0.001		E200.8	06/08/16 02:12 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 199	33156
Cadmium	0.00014	mg/L		0.00003		E200.8	06/08/16 02:12 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 199	33156
Calcium	40	mg/L		1		E200.7	06/06/16 17:40 / sld	06/03/16 09:55	ICP2-HE_16060	06C : 90	33156
Copper	0.026	mg/L		0.001		E200.8	06/08/16 02:12 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 199	33156
Lead	0.0028	mg/L		0.0003		E200.8	06/08/16 02:12 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 199	33156

Report 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-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-07D
 Collection Date:
 06/01/16 09:15
 DateReceived:
 06/02/16

 Lab ID:
 H16060056-009
 Report Date:
 07/07/16
 Ditereceived:
 06/02/16

 Matrix:
 Surface Water
 Surface Water
 Ditereceived:
 07/07/16
 Ditereceived:
 06/02/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	9	mg/L		1		E200.7	06/06/16 17:40 / sld	06/03/16 09:55	ICP2-HE_160606	SC:90	33156
Potassium	2	mg/L		1		E200.7	06/06/16 17:40 / sld	06/03/16 09:55	ICP2-HE_160606	SC:90	33156
Sodium	10	mg/L		1		E200.7	06/06/16 17:40 / sld	06/03/16 09:55	ICP2-HE_160606	SC:90	33156
Zinc	0.025	mg/L		800.0		E200.8	06/08/16 02:12 / dck	06/03/16 09:55	ICPMS204-B_160607/	A:199	33156



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-03ALab ID:H16060056-010Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 06/01/16 10:15 **DateReceived:** 06/02/16

Report Date: 07/07/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	18	mg/L		1		A2540 D	06/03/16 08:27 / MA		124 (14410200)_16060	)2A : 29	TSS160602A
INORGANICS											
Alkalinity, Total as CaCO3	84	mg/L		4		A2320 B	06/03/16 10:36 / SR		PHSC_101-H_16060	)3A : 30	R115727
Bicarbonate as HCO3	95	mg/L		4		A2320 B	06/03/16 10:36 / SR		PHSC_101-H_16060	)3A : 30	R115727
Chloride	6	mg/L		1		E300.0	06/03/16 15:26 / SR		IC102-H_16060	)3A : 33	R115769
Sulfate	41	mg/L		1		E300.0	06/03/16 15:26 / SR		IC102-H_16060	)3A : 33	R115769
Hardness as CaCO3	121	mg/L		1		A2340 B	06/06/16 17:44 / abc		CALC_160607	7A : 366	R115820
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.5	mg/L		0.5		A5310 C	06/07/16 04:18 / eli-c		SUB-C212	371 : 27	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 12:12 / cm		FIA203-HE_16060	)6B : 32	R115783
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/03/16 08:56 / cm		FIA203-HE_16060	)3A : 51	R115738
Nitrogen, Total	0.25	mg/L		0.05		A4500 N-C	06/06/16 10:38 / cm	06/03/16 10:22	FIA203-HE_16060	06A : 26	33158
Phosphorus, Total as P	0.048	mg/L		0.003		E365.1	06/07/16 13:25 / cm	06/07/16 12:22	FIA202-HE_16060	)7C : 28	33181
METALS, DISSOLVED											
Arsenic	0.016	mg/L		0.001		E200.8	06/08/16 02:15 / dck		ICPMS204-B_160607	7A : 200	R115831
Cadmium	0.00005	mg/L		0.00003		E200.8	06/08/16 02:15 / dck		ICPMS204-B_160607	7A : 200	R115831
Copper	0.006	mg/L		0.001		E200.8	06/08/16 02:15 / dck		ICPMS204-B_160607	7A : 200	R115831
Lead	ND	mg/L		0.0003		E200.8	06/08/16 02:15 / dck		ICPMS204-B_160607	7A : 200	R115831
Zinc	0.008	mg/L		0.008		E200.8	06/08/16 02:15 / dck		ICPMS204-B_160607	7A : 200	R115831
METALS, TOTAL RECOVERABLE											
Arsenic	0.019	mg/L		0.001		E200.8	06/08/16 02:18 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 201	33156
Cadmium	0.00014	mg/L		0.00003		E200.8	06/08/16 02:18 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 201	33156
Calcium	36	mg/L		1		E200.7	06/06/16 17:44 / sld	06/03/16 09:55	ICP2-HE_16060	)6C : 91	33156
Copper	0.020	mg/L		0.001		E200.8	06/08/16 02:18 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 201	33156
Lead	0.0023	mg/L		0.0003		E200.8	06/08/16 02:18 / dck	06/03/16 09:55	ICPMS204-B_160607	7A : 201	33156

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.


# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-03A
 Collection Date:
 06/01/16 10:15
 DateReceived:
 06/02/16

 Lab ID:
 H16060056-010
 Report Date:
 07/07/16
 DiteReceived:
 06/02/16

 Matrix:
 Surface Water
 Surface Water
 DiteReceived:
 06/02/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	8	mg/L		1		E200.7	06/06/16 17:44 / sld	06/03/16 09:55	ICP2-HE_160606C	: 91	33156
Potassium	2	mg/L		1		E200.7	06/06/16 17:44 / sld	06/03/16 09:55	ICP2-HE_160606C	: 91	33156
Sodium	9	mg/L		1		E200.7	06/06/16 17:44 / sld	06/03/16 09:55	ICP2-HE_160606C	: 91	33156
Zinc	0.023	mg/L		0.008		E200.8	06/08/16 02:18 / dck	06/03/16 09:55	ICPMS204-B_160607A	201	33156



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:WSC-SBCLab ID:H16060056-011Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/01/16 11:00 DateReceived: 06/02/16

Report Date: 07/07/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	8	mg/L		1		A2540 D	06/03/16 08:27 / MA		124 (14410200)_1606	602A : 30	TSS160602A
INORGANICS											
Alkalinity, Total as CaCO3	81	mg/L		4		A2320 B	06/03/16 10:42 / SR		PHSC_101-H_1606	603A : 32	R115727
Bicarbonate as HCO3	98	mg/L		4		A2320 B	06/03/16 10:42 / SR		PHSC_101-H_1606	603A : 32	R115727
Chloride	ND	mg/L		1		E300.0	06/03/16 15:37 / SR		IC102-H_1606	603A : 34	R115769
Sulfate	20	mg/L		1		E300.0	06/03/16 15:37 / SR		IC102-H_1606	603A : 34	R115769
Hardness as CaCO3	97	mg/L		1		A2340 B	06/06/16 17:59 / abc		CALC_16060	)7A : 377	R115820
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.5	mg/L		0.5		A5310 C	06/07/16 05:23 / eli-c		SUB-C212	2371 : 31	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 12:13 / cm		FIA203-HE_1606	606B : 33	R115783
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/03/16 09:00 / cm		FIA203-HE_1606	603A : 54	R115738
Nitrogen, Total	0.08	mg/L		0.05		A4500 N-C	06/06/16 10:41 / cm	06/03/16 10:22	FIA203-HE_1606	606A : 29	33158
Phosphorus, Total as P	0.012	mg/L		0.003		E365.1	06/07/16 13:28 / cm	06/07/16 12:22	FIA202-HE_1606	607C : 31	33181
METALS, DISSOLVED											
Arsenic	0.003	mg/L		0.001		E200.8	06/08/16 02:40 / dck		ICPMS204-B_16060	)7A : 208	R115831
Cadmium	ND	mg/L		0.00003		E200.8	06/08/16 02:40 / dck		ICPMS204-B_16060	)7A : 208	R115831
Copper	0.003	mg/L		0.001		E200.8	06/08/16 02:40 / dck		ICPMS204-B_16060	)7A : 208	R115831
Lead	ND	mg/L		0.0003		E200.8	06/08/16 02:40 / dck		ICPMS204-B_16060	)7A : 208	R115831
Zinc	ND	mg/L		0.008		E200.8	06/08/16 02:40 / dck		ICPMS204-B_16060	)7A : 208	R115831
METALS, TOTAL RECOVERABLE											
Arsenic	0.005	mg/L		0.001		E200.8	06/08/16 02:44 / dck	06/03/16 09:55	ICPMS204-B_16060	)7A : 209	33156
Cadmium	0.00006	mg/L		0.00003		E200.8	06/08/16 02:44 / dck	06/03/16 09:55	ICPMS204-B_16060	)7A : 209	33156
Calcium	30	mg/L		1		E200.7	06/06/16 17:59 / sld	06/03/16 09:55	ICP2-HE_1606	606C : 95	33156
Copper	0.013	mg/L		0.001		E200.8	06/08/16 02:44 / dck	06/03/16 09:55	ICPMS204-B_16060	)7A : 209	33156
Lead	0.0013	mg/L		0.0003		E200.8	06/08/16 02:44 / dck	06/03/16 09:55	ICPMS204-B_16060	07A : 209	33156

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 WSC-SBC
 Collection Date:
 06/01/16 11:00
 DateReceived:
 06/02/16

 Lab ID:
 H16060056-011
 Report Date:
 07/07/16

 Matrix:
 Surface Water
 Order
 Order

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	6	mg/L		1		E200.7	06/06/16 17:59 / sld	06/03/16 09:55	ICP2-HE_16060	6C : 95	33156
Potassium	1	mg/L		1		E200.7	06/06/16 17:59 / sld	06/03/16 09:55	ICP2-HE_16060	6C : 95	33156
Sodium	2	mg/L		1		E200.7	06/06/16 17:59 / sld	06/03/16 09:55	ICP2-HE_16060	6C : 95	33156
Zinc	ND	mg/L		0.008		E200.8	06/08/16 02:44 / dck	06/03/16 09:55	ICPMS204-B_160607	A : 209	33156



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:SS-25Lab ID:H16060056-012Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 06/01/16 11:45 **DateReceived:** 06/02/16

Run

Report Date: 07/07/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	6	mg/L		1		A2540 D	06/03/16 08:28 / MA	l	24 (14410200)_16060	)2A : 31	TSS160602A
INORGANICS											
Alkalinity, Total as CaCO3	84	mg/L		4		A2320 B	06/03/16 10:47 / SR		PHSC_101-H_16060	)3A : 34	R115727
Bicarbonate as HCO3	80	mg/L		4		A2320 B	06/03/16 10:47 / SR		PHSC_101-H_16060	)3A : 34	R115727
Chloride	9	mg/L		1		E300.0	06/03/16 15:48 / SR		IC102-H_16060	)3A : 35	R115769
Sulfate	53	mg/L		1		E300.0	06/03/16 15:48 / SR		IC102-H_16060	)3A : 35	R115769
Hardness as CaCO3	122	mg/L		1		A2340 B	06/07/16 12:54 / sld		WATERCALC_1606	607B : 9	R115814
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	5.0	mg/L		0.5		A5310 C	06/07/16 05:39 / eli-c		SUB-C212	371 : 32	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 12:14 / cm		FIA203-HE_16060	06B : 34	R115783
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/03/16 09:03 / cm		FIA203-HE_16060	)3A : 57	R115738
Nitrogen, Total	0.32	mg/L		0.05		A4500 N-C	06/06/16 10:47 / cm 0	6/03/16 10:22	FIA203-HE_16060	06A : 34	33158
Phosphorus, Total as P	0.054	mg/L		0.003		E365.1	06/07/16 13:29 / cm 0	6/07/16 12:22	FIA202-HE_16060	07C : 32	33181
METALS, DISSOLVED											
Arsenic	0.025	mg/L		0.001		E200.8	06/08/16 02:47 / dck		ICPMS204-B_160607	7A : 210	R115831
Cadmium	0.00006	mg/L	(	0.00003		E200.8	06/08/16 02:47 / dck		ICPMS204-B_160607	7A : 210	R115831
Copper	0.007	mg/L		0.001		E200.8	06/08/16 02:47 / dck		ICPMS204-B_160607	7A : 210	R115831
Lead	ND	mg/L		0.0003		E200.8	06/08/16 02:47 / dck		ICPMS204-B_160607	7A : 210	R115831
Zinc	ND	mg/L		0.008		E200.8	06/08/16 02:47 / dck		ICPMS204-B_160607	7A : 210	R115831
METALS, TOTAL RECOVERABLE											
Arsenic	0.028	mg/L		0.001		E200.8	06/06/16 19:03 / dck 0	6/06/16 08:34	ICPMS204-B_16060	06A : 74	33160
Cadmium	0.00013	mg/L	(	0.00003		E200.8	06/06/16 19:03 / dck 0	6/06/16 08:34	ICPMS204-B_16060	06A : 74	33160
Calcium	35	mg/L		1		E200.8	06/06/16 19:03 / dck 0	6/06/16 08:34	ICPMS204-B_16060	06A : 74	33160
Copper	0.012	mg/L		0.001		E200.8	06/06/16 19:03 / dck 0	6/06/16 08:34	ICPMS204-B_16060	06A : 74	33160
Lead	0.0013	mg/L		0.0003		E200.8	06/06/16 19:03 / dck 0	6/06/16 08:34	ICPMS204-B_16060	06A : 74	33160

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 SS-25
 Collection Date:
 06/01/16
 11:45
 DateReceived:
 06/02/16

 Lab ID:
 H16060056-012
 Report Date:
 07/07/16
 DiteReceived:
 06/02/16

 Matrix:
 Surface Water
 Surface Water
 DiteReceived:
 06/02/16

Analyses	Result	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	8	mg/L		1		E200.8	06/06/16 19:03 / dck 0	6/06/16 08:34	ICPMS204-B_16060	)6A : 74	33160
Potassium	3	mg/L		1		E200.8	06/06/16 19:03 / dck 0	6/06/16 08:34	ICPMS204-B_16060	)6A : 74	33160
Sodium	13	mg/L		1		E200.8	06/06/16 19:03 / dck 0	6/06/16 08:34	ICPMS204-B_16060	)6A : 74	33160
Zinc	0.018	mg/L		800.0		E200.8	06/06/16 19:03 / dck 0	6/06/16 08:34	ICPMS204-B_16060	)6A : 74	33160



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:SS-25 DuplicateLab ID:H16060056-013Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 06/01/16 11:45 **DateReceived:** 06/02/16

Report Date: 07/07/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	6	mg/L		1		A2540 D	06/03/16 08:28 / MA		124 (14410200)_160602	A : 32	TSS160602A
INORGANICS											
Alkalinity, Total as CaCO3	84	mg/L		4		A2320 B	06/03/16 10:53 / SR		PHSC_101-H_160603	A : 36	R115727
Bicarbonate as HCO3	81	mg/L		4		A2320 B	06/03/16 10:53 / SR		PHSC_101-H_160603	A : 36	R115727
Chloride	9	mg/L		1		E300.0	06/03/16 16:00 / SR		IC102-H_160603	A : 36	R115769
Sulfate	53	mg/L		1		E300.0	06/03/16 16:00 / SR		IC102-H_160603	A : 36	R115769
Hardness as CaCO3	127	mg/L		1		A2340 B	06/06/16 18:02 / abc		CALC_160607A	: 399	R115820
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	5.1	mg/L		0.5		A5310 C	06/07/16 05:54 / eli-c	:	SUB-C21237	1:33	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 12:15 / cm		FIA203-HE_160606	B : 35	R115783
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/03/16 09:04 / cm		FIA203-HE_160603	A : 58	R115738
Nitrogen, Total	0.30	mg/L		0.05		A4500 N-C	06/06/16 10:48 / cm	06/03/16 10:22	FIA203-HE_160606	A : 35	33158
Phosphorus, Total as P	0.058	mg/L		0.003		E365.1	06/07/16 13:30 / cm	06/07/16 12:22	FIA202-HE_160607	C : 33	33181
METALS, DISSOLVED											
Arsenic	0.025	mg/L		0.001		E200.8	06/08/16 02:50 / dck		ICPMS204-B_160607A	: 211	R115831
Cadmium	0.00006	mg/L		0.00003		E200.8	06/08/16 02:50 / dck		ICPMS204-B_160607A	: 211	R115831
Copper	0.007	mg/L		0.001		E200.8	06/08/16 02:50 / dck		ICPMS204-B_160607A	: 211	R115831
Lead	ND	mg/L		0.0003		E200.8	06/08/16 02:50 / dck		ICPMS204-B_160607A	: 211	R115831
Zinc	ND	mg/L		0.008		E200.8	06/08/16 02:50 / dck		ICPMS204-B_160607A	: 211	R115831
METALS, TOTAL RECOVERABLE											
Arsenic	0.026	mg/L		0.001		E200.8	06/08/16 02:53 / dck	06/03/16 09:55	ICPMS204-B_160607A	: 212	33156
Cadmium	0.00012	mg/L		0.00003		E200.8	06/08/16 02:53 / dck	06/03/16 09:55	ICPMS204-B_160607A	: 212	33156
Calcium	37	mg/L		1		E200.7	06/06/16 18:02 / sld	06/03/16 09:55	ICP2-HE_160606	C:96	33156
Copper	0.011	mg/L		0.001		E200.8	06/08/16 02:53 / dck	06/03/16 09:55	ICPMS204-B_160607A	: 212	33156
Lead	0.0012	mg/L		0.0003		E200.8	06/08/16 02:53 / dck	06/03/16 09:55	ICPMS204-B_160607A	: 212	33156

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 SS-25 Duplicate
 Collection Date:
 06/01/16 11:45
 DateReceived:
 06/02/16

 Lab ID:
 H16060056-013
 Report Date:
 07/07/16
 DateReceived:
 06/02/16

 Matrix:
 Surface Water
 Surface Water
 Dimension
 Dimension

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	8	mg/L		1		E200.7	06/06/16 18:02 / sld	06/03/16 09:55	ICP2-HE_160606	C:96	33156
Potassium	3	mg/L		1		E200.7	06/06/16 18:02 / sld	06/03/16 09:55	ICP2-HE_160606	C:96	33156
Sodium	13	mg/L		1		E200.7	06/06/16 18:02 / sld	06/03/16 09:55	ICP2-HE_160606	C:96	33156
Zinc	0.016	mg/L		0.008		E200.8	06/08/16 02:53 / dck	06/03/16 09:55	ICPMS204-B_160607A	: 212	33156



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:MWB-SBCLab ID:H16060056-014Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/01/16 12:30 DateReceived: 06/02/16

Report Date: 07/07/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	10	mg/L		1		A2540 D	06/03/16 08:28 / MA		124 (14410200)_1606	02A : 33	TSS160602A
INORGANICS											
Alkalinity, Total as CaCO3	74	mg/L		4		A2320 B	06/03/16 10:59 / SR		PHSC_101-H_1606	03A : 38	R115727
Bicarbonate as HCO3	90	mg/L		4		A2320 B	06/03/16 10:59 / SR		PHSC_101-H_1606	03A : 38	R115727
Chloride	1	mg/L		1		E300.0	06/03/16 16:11 / SR		IC102-H_1606	03A : 37	R115769
Sulfate	35	mg/L		1		E300.0	06/03/16 16:11 / SR		IC102-H_1606	03A : 37	R115769
Hardness as CaCO3	98	mg/L		1		A2340 B	06/06/16 18:06 / abc		CALC_16060	97A : 410	R115820
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	4.2	mg/L		0.5		A5310 C	06/07/16 06:14 / eli-c		SUB-C212	2371 : 34	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 12:17 / cm		FIA203-HE_1606	06B : 36	R115783
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/03/16 09:06 / cm		FIA203-HE_1606	603A : 59	R115738
Nitrogen, Total	0.25	mg/L		0.05		A4500 N-C	06/06/16 10:50 / cm	06/03/16 10:22	FIA203-HE_1606	06A : 36	33158
Phosphorus, Total as P	0.043	mg/L		0.003		E365.1	06/07/16 13:31 / cm	06/07/16 12:22	FIA202-HE_1606	07C : 34	33181
METALS, DISSOLVED											
Arsenic	0.036	mg/L		0.001		E200.8	06/08/16 02:56 / dck		ICPMS204-B_16060	7A : 213	R115831
Cadmium	ND	mg/L		0.00003		E200.8	06/08/16 02:56 / dck		ICPMS204-B_16060	7A : 213	R115831
Copper	0.005	mg/L		0.001		E200.8	06/08/16 02:56 / dck		ICPMS204-B_16060	7A : 213	R115831
Lead	ND	mg/L		0.0003		E200.8	06/08/16 02:56 / dck		ICPMS204-B_16060	7A : 213	R115831
Zinc	ND	mg/L		0.008		E200.8	06/08/16 02:56 / dck		ICPMS204-B_16060	7A : 213	R115831
METALS, TOTAL RECOVERABLE											
Arsenic	0.040	mg/L		0.001		E200.8	06/08/16 03:00 / dck	06/03/16 09:55	ICPMS204-B_16060	7A : 214	33156
Cadmium	0.00010	mg/L		0.00003		E200.8	06/08/16 03:00 / dck	06/03/16 09:55	ICPMS204-B_16060	7A : 214	33156
Calcium	28	mg/L		1		E200.7	06/06/16 18:06 / sld	06/03/16 09:55	ICP2-HE_1606	06C : 97	33156
Copper	0.010	mg/L		0.001		E200.8	06/08/16 03:00 / dck	06/03/16 09:55	ICPMS204-B_16060	7A : 214	33156
Lead	0.0019	mg/L		0.0003		E200.8	06/08/16 03:00 / dck	06/03/16 09:55	ICPMS204-B_16060	7A : 214	33156

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 MWB-SBC
 Collection Date:
 06/01/16
 12:30
 DateReceived:
 06/02/16

 Lab ID:
 H16060056-014
 Report Date:
 07/07/16
 Project:
 CR
 Collection Date:
 06/01/16
 12:30
 DateReceived:
 06/02/16

 Matrix:
 Surface Water
 Surface Water
 OF/07/16
 Surface
 Su

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	7	mg/L		1		E200.7	06/06/16 18:06 / sld	06/03/16 09:55	ICP2-HE_160606	C:97	33156
Potassium	1	mg/L		1		E200.7	06/06/16 18:06 / sld	06/03/16 09:55	ICP2-HE_160606	C:97	33156
Sodium	7	mg/L		1		E200.7	06/06/16 18:06 / sld	06/03/16 09:55	ICP2-HE_160606	C:97	33156
Zinc	0.012	mg/L		800.0		E200.8	06/08/16 03:00 / dck	06/03/16 09:55	ICPMS204-B_160607A	: 214	33156



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:SBC-P2Lab ID:H16060056-015Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 06/01/16 12:45 **DateReceived:** 06/02/16

Report Date: 07/07/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	3	mg/L		1		A2540 D	06/03/16 08:28 / MA		124 (14410200)_16060	02A : 34	TSS160602A
INORGANICS											
Alkalinity, Total as CaCO3	92	mg/L		4		A2320 B	06/03/16 11:05 / SR		PHSC_101-H_16060	3A : 40	R115727
Bicarbonate as HCO3	67	mg/L		4		A2320 B	06/03/16 11:05 / SR		PHSC_101-H_16060	)3A : 40	R115727
Chloride	18	mg/L		1		E300.0	06/03/16 16:22 / SR		IC102-H_16060	3A : 38	R115769
Sulfate	69	mg/L		1		E300.0	06/03/16 16:22 / SR		IC102-H_16060	3A : 38	R115769
Hardness as CaCO3	145	mg/L		1		A2340 B	06/06/16 18:17 / abc		CALC_160607	'A : 421	R115820
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	5.8	mg/L		0.5		A5310 C	06/07/16 06:29 / eli-c	;	SUB-C212	371 : 35	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 12:20 / cm		FIA203-HE_16060	6B:39	R115783
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/03/16 09:07 / cm		FIA203-HE_16060	3A : 60	R115738
Nitrogen, Total	0.34	mg/L		0.05		A4500 N-C	06/06/16 10:51 / cm	06/03/16 10:22	FIA203-HE_16060	06A : 37	33158
Phosphorus, Total as P	0.065	mg/L		0.003		E365.1	06/07/16 13:32 / cm	06/07/16 12:22	FIA202-HE_16060	7C : 35	33181
METALS, DISSOLVED											
Arsenic	0.014	mg/L		0.001		E200.8	06/08/16 03:03 / dck		ICPMS204-B_160607	'A : 215	R115831
Cadmium	0.00010	mg/L		0.00003		E200.8	06/08/16 03:03 / dck		ICPMS204-B_160607	'A : 215	R115831
Copper	0.010	mg/L		0.001		E200.8	06/08/16 03:03 / dck		ICPMS204-B_160607	'A : 215	R115831
Lead	ND	mg/L		0.0003		E200.8	06/08/16 03:03 / dck		ICPMS204-B_160607	'A : 215	R115831
Zinc	0.011	mg/L		0.008		E200.8	06/08/16 03:03 / dck		ICPMS204-B_160607	'A : 215	R115831
METALS, TOTAL RECOVERABLE											
Arsenic	0.015	mg/L		0.001		E200.8	06/08/16 03:22 / dck	06/03/16 09:55	ICPMS204-B_160607	'A : 221	33156
Cadmium	0.00015	mg/L		0.00003		E200.8	06/08/16 03:22 / dck	06/03/16 09:55	ICPMS204-B_160607	'A : 221	33156
Calcium	43	mg/L		1		E200.7	06/06/16 18:17 / sld	06/03/16 09:55	ICP2-HE_160606	C: 100	33156
Copper	0.012	mg/L		0.001		E200.8	06/08/16 03:22 / dck	06/03/16 09:55	ICPMS204-B_160607	'A : 221	33156
Lead	0.0007	mg/L		0.0003		E200.8	06/08/16 03:22 / dck	06/03/16 09:55	ICPMS204-B_160607	'A : 221	33156

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 SBC-P2
 Collection Date:
 06/01/16 12:45
 DateReceived:
 06/02/16

 Lab ID:
 H16060056-015
 Report Date:
 07/07/16
 DateReceived:
 06/02/16

 Matrix:
 Surface Water
 Surface Water
 Discretion Date:
 07/07/16
 Discretion Date:
 Discretion Date:

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	10	mg/L		1		E200.7	06/06/16 18:17 / sld	06/03/16 09:55	ICP2-HE_160606C	: 100	33156
Potassium	4	mg/L		1		E200.7	06/06/16 18:17 / sld	06/03/16 09:55	ICP2-HE_160606C	: 100	33156
Sodium	18	mg/L		1		E200.7	06/06/16 18:17 / sld	06/03/16 09:55	ICP2-HE_160606C	: 100	33156
Zinc	0.022	mg/L		800.0		E200.8	06/08/16 03:22 / dck	06/03/16 09:55	ICPMS204-B_160607A	: 221	33156



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:MCWC-MWBLab ID:H16060056-016Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 06/01/16 13:45 **DateReceived:** 06/02/16

Report Date: 07/07/16

- -----

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	9	mg/L		1		A2540 D	06/03/16 08:29 / MA		124 (14410200)_1606	602A : 35	TSS160602A
INORGANICS											
Alkalinity, Total as CaCO3	70	mg/L		4		A2320 B	06/03/16 11:18 / SR		PHSC_101-H_1606	603A : 44	R115727
Bicarbonate as HCO3	85	mg/L		4		A2320 B	06/03/16 11:18 / SR		PHSC_101-H_1606	603A : 44	R115727
Chloride	ND	mg/L		1		E300.0	06/03/16 16:33 / SR		IC102-H_1606	603A : 39	R115769
Sulfate	11	mg/L		1		E300.0	06/03/16 16:33 / SR		IC102-H_1606	603A : 39	R115769
Hardness as CaCO3	70	mg/L		1		A2340 B	06/06/16 18:21 / abc		CALC_16060	)7A : 432	R115820
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	4.6	mg/L		0.5		A5310 C	06/07/16 06:44 / eli-c		SUB-C212	2371 : 36	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 12:24 / cm		FIA203-HE_1606	606B : 42	R115783
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/03/16 09:08 / cm		FIA203-HE_1606	603A : 61	R115738
Nitrogen, Total	0.25	mg/L		0.05		A4500 N-C	06/06/16 10:56 / cm	06/03/16 10:22	FIA203-HE_1606	606A : 41	33158
Phosphorus, Total as P	0.045	mg/L		0.003		E365.1	06/07/16 13:33 / cm	06/07/16 12:22	FIA202-HE_1606	07C : 36	33181
METALS, DISSOLVED											
Arsenic	0.038	mg/L		0.001		E200.8	06/08/16 03:25 / dck		ICPMS204-B_16060	)7A : 222	R115831
Cadmium	0.00004	mg/L		0.00003		E200.8	06/08/16 03:25 / dck		ICPMS204-B_16060	)7A : 222	R115831
Copper	0.005	mg/L		0.001		E200.8	06/08/16 03:25 / dck		ICPMS204-B_16060	7A : 222	R115831
Lead	ND	mg/L		0.0003		E200.8	06/08/16 03:25 / dck		ICPMS204-B_16060	7A : 222	R115831
Zinc	ND	mg/L		0.008		E200.8	06/08/16 03:25 / dck		ICPMS204-B_16060	)7A : 222	R115831
METALS, TOTAL RECOVERABLE											
Arsenic	0.041	mg/L		0.001		E200.8	06/08/16 03:29 / dck	06/03/16 09:55	ICPMS204-B_16060	)7A : 223	33156
Cadmium	0.00010	mg/L		0.00003		E200.8	06/08/16 03:29 / dck	06/03/16 09:55	ICPMS204-B_16060	)7A : 223	33156
Calcium	20	mg/L		1		E200.7	06/06/16 18:21 / sld	06/03/16 09:55	ICP2-HE_16060	6C:101	33156
Copper	0.010	mg/L		0.001		E200.8	06/08/16 03:29 / dck	06/03/16 09:55	ICPMS204-B_16060	)7A : 223	33156
Lead	0.0019	mg/L		0.0003		E200.8	06/08/16 03:29 / dck	06/03/16 09:55	ICPMS204-B_16060	07A : 223	33156

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 MCWC-MWB
 Collection Date:
 06/01/16 13:45
 DateReceived:
 06/02/16

 Lab ID:
 H16060056-016
 Report Date:
 07/07/16
 DateReceived:
 06/02/16

 Matrix:
 Surface Water
 Surface Water
 Dimension
 Dimension

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	5	mg/L		1		E200.7	06/06/16 18:21 / sld	06/03/16 09:55	ICP2-HE_160606C	: 101	33156
Potassium	1	mg/L		1		E200.7	06/06/16 18:21 / sld	06/03/16 09:55	ICP2-HE_160606C	: 101	33156
Sodium	6	mg/L		1		E200.7	06/06/16 18:21 / sld	06/03/16 09:55	ICP2-HE_160606C	: 101	33156
Zinc	0.011	mg/L		800.0		E200.8	06/08/16 03:29 / dck	06/03/16 09:55	ICPMS204-B_160607A	: 223	33156



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:Field Blank #2 (MCWC-MWB)Lab ID:H16060056-017Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/01/16 14:00 DateReceived: 06/02/16

Report Date: 07/07/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	ND	mg/L		1		A2540 D	06/03/16 08:29 / MA		124 (14410200)_1606	602A : 36	TSS160602A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	06/03/16 11:23 / SR		PHSC_101-H_1606	603A : 46	R115727
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	06/03/16 11:23 / SR		PHSC_101-H_1606	603A : 46	R115727
Chloride	ND	mg/L		1		E300.0	06/03/16 16:44 / SR		IC102-H_1606	603A : 40	R115769
Sulfate	ND	mg/L		1		E300.0	06/03/16 16:44 / SR		IC102-H_1606	603A : 40	R115769
Hardness as CaCO3	ND	mg/L		1		A2340 B	06/09/16 11:09 / sld		WATERCALC_160	0609A : 4	R115866
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	ND	mg/L		0.5		A5310 C	06/07/16 07:02 / eli-c		SUB-C212	2371 : 37	C_R212371
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/06/16 12:25 / cm		FIA203-HE_1606	606B : 43	R115783
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/03/16 09:09 / cm		FIA203-HE_1606	603A : 62	R115738
Nitrogen, Total	ND	mg/L		0.05		A4500 N-C	06/06/16 10:53 / cm	06/03/16 10:22	FIA203-HE_1606	606A : 39	33158
Phosphorus, Total as P	ND	mg/L		0.003		E365.1	06/08/16 13:16 / cm	06/08/16 11:45	FIA202-HE_1606	608B : 14	33198
METALS, DISSOLVED											
Arsenic	ND	mg/L		0.001		E200.8	06/08/16 03:32 / dck		ICPMS204-B_16060	)7A : 224	R115831
Cadmium	ND	mg/L		0.00003		E200.8	06/08/16 03:32 / dck		ICPMS204-B_16060	)7A : 224	R115831
Copper	ND	mg/L		0.001		E200.8	06/08/16 03:32 / dck		ICPMS204-B_16060	)7A : 224	R115831
Lead	ND	mg/L		0.0003		E200.8	06/08/16 03:32 / dck		ICPMS204-B_16060	)7A : 224	R115831
Zinc	0.012	mg/L		0.008		E200.8	06/08/16 03:32 / dck		ICPMS204-B_16060	)7A : 224	R115831
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.001		E200.8	06/08/16 03:35 / dck	06/03/16 09:55	ICPMS204-B_16060	)7A : 225	33156
Cadmium	ND	mg/L	(	0.00003		E200.8	06/08/16 03:35 / dck	06/03/16 09:55	ICPMS204-B_16060	)7A : 225	33156
Calcium	ND	mg/L		1		E200.7	06/06/16 18:25 / sld	06/03/16 09:55	ICP2-HE_16060	06C : 102	33156
Copper	ND	mg/L		0.001		E200.8	06/08/16 03:35 / dck	06/03/16 09:55	ICPMS204-B_16060	)7A : 225	33156
Lead	ND	mg/L		0.0003		E200.8	06/08/16 03:35 / dck	06/03/16 09:55	ICPMS204-B_16060	)7A : 225	33156

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 Field Blank #2 (MCWC-MWB)
 Collection Date:
 06/01/16 14:00
 DateReceived:
 06/02/16

 Lab ID:
 H16060056-017
 Report Date:
 07/07/16
 DateReceived:
 06/02/16

 Matrix:
 Surface Water
 Surface Water
 Dimension
 Dimension

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	ND	mg/L		1		E200.7	06/06/16 18:25 / sld	06/03/16 09:55	ICP2-HE_160	606C : 102	33156
Potassium	ND	mg/L		1		E200.7	06/06/16 18:25 / sld	06/03/16 09:55	ICP2-HE_160	606C : 102	33156
Sodium	ND	mg/L		1		E200.7	06/06/16 18:25 / sld	06/03/16 09:55	ICP2-HE_160	606C : 102	33156
Zinc	ND	mg/L		0.008		E200.8	06/08/16 03:35 / dck	06/03/16 09:55	ICPMS204-B_160	607A : 225	33156



### LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:	MT DEQ-Federal Sup	erfund	und Project: CFR Monitoring-474374										
<b>Client Sample ID:</b>	CFR-84F		<b>Collection Date:</b> 05/31/16 10:45 <b>DateReceived:</b> 06/02/16										
Lab ID:	H16060056-018						R	eport Date: 07/07/16					
Matrix:	Aqueous												
Analyses		Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID	
METALS, TOTAL	RECOVERABLE	0.000037	ma/L		5E-06		E245.1	06/08/16 12:53 / rak	06/07/16 08:18	HGCV202-H 160	608A : 31	33174	



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Client: Work Order:	MT DEQ-Federal H16060056	Superfund		ANALYT	ICAL QC S Prepared by He	UMMARY elena, MT Brai	REPO	RT		Date: 07-Jul-1	16
Project:	CFR Monitoring-4	74374		В	atchID: 10	60608WA-H	IGCV20	2			
Run ID :Run Order	: HGCV202-H_160608	A: 8	SampType:	Initial Calibra	ation Verificatio	n Standard	Lab	D: ICV		Method: E245.1	
Analysis Date: 06/	08/16 11:35	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Mercury		0.000195	0.00010	0.0002	0	97	90	110			
Associated samples	s: H16060056-002C, H	16060056-003C	C, H16060056	6-004C, H1606	0056-018A						
Run ID :Run Order	: HGCV202-H_160608	A: 9	SampType:	Continuing C	Calibration Verifi	ication Standa	r Lab	D: CCV1		Method: E245.1	
Run ID :Run Order Analysis Date: <b>06/</b>	∵ HGCV202-H_160608 08/16 11:37	A: 9 Units:	SampType: <b>mg/L</b>	Continuing C	Calibration Verifi	ication Standa Prep Info:	r Lab Prep Da	ID: <b>CCV1</b> te:		Method: E245.1 Prep Method:	
Run ID :Run Order Analysis Date: <b>06/</b> Analytes <u>1</u>	∷ HGCV202-H_160608 08/16 11:37	<b>A: 9</b> Units: Result	SampType: <b>mg/L</b> PQL	Continuing C	Calibration Verifi	ication Standa Prep Info: %REC	r Lab Prep Da LowLimit	ID: <b>CCV1</b> te: HighLimit	RPD Ref Val	Method: <b>E245.1</b> Prep Method: %RPD RPDLimit	Qual
Run ID :Run Order Analysis Date: <b>06/</b> Analytes <u>1</u> Mercury	∵ HGCV202-H_160608 08/16 11:37	A: 9 Units: Result 0.000203	SampType: <b>mg/L</b> PQL 0.00010	Continuing C SPK value 0.0002	Calibration Verifi SPK Ref Val 0	ication Standa Prep Info: %REC 102	r Lab Prep Da LowLimit 90	ID: <b>CCV1</b> te: HighLimit 110	RPD Ref Val	Method: <b>E245.1</b> Prep Method: %RPD RPDLimit	Qual
Run ID :Run Order Analysis Date: <b>06/</b> Analytes <u>1</u> Mercury Associated samples	:: HGCV202-H_160608 08/16 11:37 s: H16060056-002C, H	A: 9 Units: Result 0.000203 16060056-003C	SampType: mg/L PQL 0.00010 C, H16060056	Continuing C SPK value 0.0002 5-004C, H1606	SPK Ref Val 0 0056-018A	ication Standa Prep Info: %REC 102	r Lab Prep Da LowLimit 90	ID: <b>CCV1</b> te: HighLimit 110	RPD Ref Val	Method: <b>E245.1</b> Prep Method: %RPD RPDLimit	Qual
Run ID :Run Order Analysis Date: <b>06/</b> Analytes <u>1</u> Mercury Associated samples Run ID :Run Order	<ul> <li>∷ HGCV202-H_160608</li> <li>08/16 11:37</li> <li>s: H16060056-002C, H</li> <li>∷ HGCV202-H_160608</li> </ul>	A: 9 Units: Result 0.000203 16060056-003C A: 29	SampType: mg/L PQL 0.00010 C, H16060056 SampType:	Continuing C SPK value 0.0002 5-004C, H1606 Continuing C	SPK Ref Val 0 00056-018A Calibration Verifi	ication Standa Prep Info: %REC 102 ication Standa	r Lab Prep Da LowLimit 90 r Lab	ID: CCV1 te: HighLimit 110 ID: CCV	RPD Ref Val	Method: E245.1 Prep Method: %RPD RPDLimit Method: E245.1	Qual
Run ID :Run Order Analysis Date: 06/ Analytes <u>1</u> Mercury Associated samples Run ID :Run Order Analysis Date: 06/	<ul> <li>∷ HGCV202-H_160608</li> <li>08/16 11:37</li> <li>s: H16060056-002C, H</li> <li>∷ HGCV202-H_160608</li> <li>08/16 12:48</li> </ul>	A: 9 Units: Result 0.000203 16060056-003C A: 29 Units:	SampType: mg/L 0.00010 C, H16060056 SampType: mg/L	Continuing C SPK value 0.0002 5-004C, H1606 Continuing C	Calibration Verifi SPK Ref Val 0 00056-018A Calibration Verifi	ication Standa Prep Info: %REC 102 ication Standa Prep Info:	r Lab Prep Da LowLimit 90 r Lab Prep Da	ID: CCV1 te: HighLimit 110 ID: CCV te:	RPD Ref Val	Method: E245.1 Prep Method: %RPD RPDLimit Method: E245.1 Prep Method:	Qual
Run ID :Run Order Analysis Date: 06/ Analytes <u>1</u> Mercury Associated samples Run ID :Run Order Analysis Date: 06/ Analytes <u>1</u>	<ul> <li>∷ HGCV202-H_160608</li> <li>08/16 11:37</li> <li>s: H16060056-002C, H</li> <li>∷ HGCV202-H_160608</li> <li>08/16 12:48</li> </ul>	A: 9 Units: Result 0.000203 16060056-003C A: 29 Units: Result	SampType: mg/L 0.00010 C, H16060056 SampType: mg/L PQL	Continuing C SPK value 0.0002 5-004C, H1606 Continuing C SPK value	SPK Ref Val 0 00056-018A Calibration Verifi	ication Standa Prep Info: %REC 102 ication Standa Prep Info: %REC	r Lab Prep Da LowLimit 90 r Lab Prep Da LowLimit	ID: CCV1 te: HighLimit 110 ID: CCV te: HighLimit	RPD Ref Val	Method: E245.1 Prep Method: %RPD RPDLimit Method: E245.1 Prep Method: %RPD RPDLimit	Qual
Run ID :Run Order Analysis Date: 06/ Analytes <u>1</u> Mercury Associated samples Run ID :Run Order Analysis Date: 06/ Analytes <u>1</u> Mercury	<ul> <li>∷ HGCV202-H_160608</li> <li>08/16 11:37</li> <li>s: H16060056-002C, H</li> <li>∷ HGCV202-H_160608</li> <li>08/16 12:48</li> </ul>	A: 9 Units: Result 0.000203 16060056-003C A: 29 Units: Result 0.00020	SampType: mg/L 0.00010 C, H16060056 SampType: mg/L PQL 0.00010	Continuing C SPK value 0.0002 5-004C, H1606 Continuing C SPK value 0.0002	Calibration Verifi SPK Ref Val 0 00056-018A Calibration Verifi SPK Ref Val 0	ication Standa Prep Info: %REC 102 ication Standa Prep Info: %REC 98	r Lab Prep Da LowLimit 90 r Lab Prep Da LowLimit 90	ID: CCV1 te: HighLimit 110 ID: CCV te: HighLimit 110	RPD Ref Val	Method: E245.1 Prep Method: %RPD RPDLimit Method: E245.1 Prep Method: %RPD RPDLimit	Qual

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

 $\ensuremath{\mathsf{A}}$  - Analyte concentration greater than four times the spike amount

LABORATORIES	Trust our People. www.energylab.co	Trust our Data.	Colle	ege Station, TX <b>88</b>	Billing 8.690.2218 • Gillet	gs, MT <b>800.735.</b> 4 te, WY <b>866.686.</b> 7	<b>4489 •</b> Caspe <b>7175 •</b> Helen	er, WY <b>888.235</b> 1a, MT <b>877.472</b>	.0515 .0711			
Client: Work Order:	MT DEQ-Federal Su H16060056	Iperfund		ANALYTI F	CAL QC SU Prepared by Hel	<b>JMMARY</b> ena, MT Bra	<b>REPO</b>	RT		Date:	: 07-Jul-1	6
Project:	CFR Monitoring-474	374		B	atchID: 33	156						
Run ID :Run Order:	ICP2-HE_160606C: 63		SampType:	Method Blank	(		Lab	ID: MB-331	56	Method	E200.7	
Analysis Date: 06/0	6/16 15:59	Units:	mg/L			Prep Info	: Prep Da	ate: 6/3/2016	i	Prep Method:	E200.2	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		ND	0.04									
Magnesium		ND	0.01									
Potassium		0.05	0.04									
Sodium		0.02	0.02									
Associated samples	H16060056-001C, H160 009C, H16060056-010C	060056-0020 C, H1606005	C, H16060056- 6-011C, H160	003C, H1606 60056-013C, I	0056-004C, H160 H16060056-014C	)60056-005C, ;, H16060056	H1606005 -015C, H1	56-006C, H1 6060056-016	6060056-007C, 6C, H16060056-	H16060056-00 017C	8C, H16060	0056-

Run ID :Run Order: ICP2-HE_160606C: 64		SampType: I	Laboratory C	ontrol Sample		Lab	ID: LCS-331	56	Method	E200.7	
Analysis Date: 06/06/16 16:03	Units:	mg/L			Prep Info	: Prep Da	te: 6/3/2016	;	Prep Method	E200.2	
Analytes <u>4</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	23.7	1.0	25	0	95	85	115				
Magnesium	23.7	1.0	25	0	95	85	115				
Potassium	24.7	1.0	25	0.04645	99	85	115				
Sodium	24.9	1.0	25	0.0194	100	85	115				

Associated samples: H16060056-001C, H16060056-002C, H16060056-003C, H16060056-004C, H16060056-005C, H16060056-006C, H16060056-007C, H16060056-008C, H16060056-

Run ID :Run Order: ICP2-HE_160606C: 78		SampType: \$	Sample Matri	x Spike		Lab I	D: <b>H16060</b>	022-001BMS3	Method	: <b>E200.7</b>	
Analysis Date: 06/06/16 16:55	Units:	mg/L			Prep Info	: Prep Da	te: 6/3/2016	5	Prep Method	E200.2	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	38.1	1.0	25	0	<u>152</u>	70	130				S
Magnesium	28.0	1.0	25	0	112	70	130				
Potassium	31.0	1.0	25	0	124	70	130				
Sodium	36.2	1.0	25	0	<u>145</u>	70	130				S

Associated samples: H16060056-001C, H16060056-002C, H16060056-003C, H16060056-004C, H16060056-005C, H16060056-006C, H16060056-007C, H16060056-008C, H16060056-

Run ID :Run Order: ICP2-HE_160606C: 79		SampType:	Sample Matri	x Spike Duplicate		Lab I	D: <b>H16060</b>	022-001BMSD3	Method	: <b>E200.7</b>	
Analysis Date: 06/06/16 16:59	Units: <b>r</b>	ng/L			Prep Info:	Prep Da	te: 6/3/2016		Prep Method	E200.2	
Analytes <u>4</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	38.1	1.0	25	0	<u>152</u>	70	130	38.12	0.0	20	S
Magnesium	28.0	1.0	25	0	112	70	130	27.99	0.1	20	

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

LABORATORIES		www.energylab.com	our Data.	Colle	ge Station, TX <b>88</b>	88.690.2218 •	.0711							
Client: Work Order:	MT DEQ H160600	-Federal Super )56	fund	ANALYTICAL QC SUMMARY REPORT Prepared by Helena, MT Branch BotoblD: 22156							Date	: 07-Jul-1	6	
Project:	CFR Mo	nitoring-474374			В									
Run ID :Run Order:       ICP2-HE_160606C: 79       SampType:       Sample Matrix Spike Duplicate       Lab ID: H16060022-001BMSD3								Method	E200.7					
Analysis Date: 06/0	06/16 16:59		Units:	mg/L				Prep Info:	Prep Da	te: 6/3/2016	5	Prep Method	E200.2	
Analytes <u>4</u>		R	esult	PQL	SPK value	SPK Ref Va	al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium			31.2	1.0	25		0	125	70	130	31.02	0.6	20	
Sodium			36.4	1.0	25		0	<u>146</u>	70	130	36.21	0.6	20	S
Associated samples	H1606005	6-001C H160600	56-002C	H16060056-	003C. H1606	0056-004C	H160600	)56-005C	H1606005	6-006C H1	6060056-007C	H16060056-00	08C H16060	0056-

Dillingo MT 000 725 4400 - Cooper WV 000 225 0515

samples: H16060056-001C, H16060056-002C, H16060056-003C, H16060056-004C, H16060056-005C, H16060056-006C, H16060056-007C, H16060056-008C, H16060056

Run ID :Run Order: ICP2-HE_160606C: 92		SampType:	Serial Dilutio	n		Lab I	D: H160600	056-010CDIL	Method	E200.7	
Analysis Date: 06/06/16 17:48	Units:	mg/L			Prep Info	: Prep Dat	te: 6/3/2016	5	Prep Method	:	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	33.5	1.0		0		0	0	35.85	<u>6.8</u>	10	
Magnesium	7.25	1.0		0		0	0	7.528	<u>3.8</u>	10	
Potassium	2.15	1.0		0		0	0	2.07	<u>3.6</u>	10	
Sodium	8.33	1.0		0		0	0	9.115	<u>9.0</u>	10	

Associated samples: H16060056-001C, H16060056-002C, H16060056-003C, H16060056-004C, H16060056-005C, H16060056-006C, H16060056-007C, H16060056-008C, H16060056-

Run ID :Run Order: ICP2-HE_160606C: 93		SampType:	Sample Matri	x Spike		Lab I	D: <b>H16060</b>	056-010CMS3	Method	E200.7	
Analysis Date: 06/06/16 17:51	Units:	mg/L			Prep Info:	Prep Da	te: 6/3/2016	;	Prep Method	E200.2	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	59.8	1.0	25	35.85	96	70	130				
Magnesium	32.3	1.0	25	7.528	99	70	130				
Potassium	27.8	1.0	25	2.07	103	70	130				
Sodium	34.8	1.0	25	9.115	103	70	130				

Associated samples: H16060056-001C, H16060056-002C, H16060056-003C, H16060056-004C, H16060056-005C, H16060056-006C, H16060056-007C, H16060056-008C, H16060056-

Run ID :Run Order: ICP2-HE_160606C: 94		SampType:	Sample Matri	x Spike Duplicate		Lab I	D: H160600	56-010CMSD3	Method	: E200.7	
Analysis Date: 06/06/16 17:55	Units:	mg/L			Prep Info:	Prep Dat	te: 6/3/2016		Prep Method	E200.2	
Analytes <u>4</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	61.0	1.0	25	35.85	101	70	130	59.78	2.1	20	
Magnesium	32.9	1.0	25	7.528	102	70	130	32.26	2.0	20	
Potassium	28.3	1.0	25	2.07	105	70	130	27.8	1.7	20	
Sodium	35.4	1.0	25	9.115	105	70	130	34.79	1.7	20	

Qualifiers: ND - Not Detected at the Reporting Limit

EDCV

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ed at the Reporting Limit S - Spik

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16060056	erfund		ANALYT	ICAL QC SUP	<b>MMARY</b> a, MT Brar	REPORT nch		Date: 07-Jul-1	6
Project:	CFR Monitoring-4743	74		В	atchID: 331	56				
Run ID :Run Order:	ICP2-HE_160606C: 94		SampType:	Sample Matri	x Spike Duplicate		Lab ID: <b>H160600</b>	056-010CMSD3	Method: E200.7	
Analysis Date: 06/0	6/16 17:55	Units:	mg/L			Prep Info:	Prep Date: 6/3/2016	;	Prep Method: E200.2	
Analytes <u>4</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit	RPD Ref Val	%RPD RPDLimit	Qual

Associated samples: H16060056-001C, H16060056-002C, H16060056-003C, H16060056-004C, H16060056-005C, H16060056-006C, H16060056-007C, H16060056-008C, H16060056-

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Work Order:

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Client: MT DEQ-Federal Superfund

# ANALYTICAL QC SUMMARY REPORT

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Billings, MT 800.735.4489 • Casper, WY 888.235.0515

Date: 07-Jul-16

H16060056

Project: CFR Monitoring-474374

Prepared by Helena, MT Branch

# BatchID: 33156

Run ID :Run Order: ICPMS204-B_160607A: 161 Inalysis Date: 06/08/16 00:11 Ui		SampType:	Method Blank	(		Lab	ID: <b>MB-331</b>	56	Method: <b>E200.8</b>		
Analysis Date: 06/08/16 00:11	Units:	mg/L			Prep Info	: Prep Da	te: 6/3/2016	3	Prep Method	: <b>E200.2</b>	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	7E-05									
Cadmium	ND	1E-05									
Calcium	ND	0.009									
Copper	5E-05	5E-05									
Lead	ND	2E-05									
Magnesium	ND	0.002									
Potassium	0.02	0.01									
Sodium	ND	0.005									
Zinc	0.002	0.0003									

Associated samples: H16060056-001C, H16060056-002C, H16060056-003C, H16060056-004C, H16060056-005C, H16060056-006C, H16060056-007C, H16060056-008C, H16060056-009C, H16060056-010C, H16060056-011C, H16060056-013C, H16060056-014C, H16060056-015C, H16060056-016C, H16060056-017C

Run ID :Run Order: ICPM	S204-B_160607A: 162	SampType:	Laboratory C	ontrol Sample		Lab	ID: <b>LCS-33</b> 1	156	Method	: E200.8	
Analysis Date: 06/08/16 00	D:14 Units:	mg/L			Prep Info:	Prep Da	te: 6/3/2016	i	Prep Method	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.488	0.0010	0.5	0	98	85	115				
Cadmium	0.242	0.0010	0.25	0	97	85	115				
Calcium	24.3	1.0	25	0	97	85	115				
Copper	0.487	0.0050	0.5	0.0000522	97	85	115				
Lead	0.484	0.0010	0.5	0	97	85	115				
Magnesium	23.8	1.0	25	0	95	85	115				
Potassium	23.9	1.0	25	0.01628	96	85	115				
Sodium	23.6	1.0	25	0	94	85	115				
Zinc	0.478	0.010	0.5	0.0016	95	85	115				

Associated samples: H16060056-001C, H16060056-002C, H16060056-003C, H16060056-004C, H16060056-005C, H16060056-006C, H16060056-007C, H16060056-008C, H16060056-

Run ID :Run Order: ICPMS204-B_1606	07A: 167	SampType: Sample Matrix Spike					D: <b>H160600</b>	22-001BMS3	Method: E200.8		
Analysis Date: 06/08/16 00:30	Units:	mg/L			Prep Info	: Prep Da	te: 6/3/2016		Prep Method:	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.490	0.0010	0.5	0.003048	97	70	130				
Cadmium	0.239	0.0010	0.25	0.0002437	96	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client:	MT DEQ-Federal Superfund	ANALYTICAL QC SUMMARY REPORT
Work Order:	H16060056	Prepared by Helena, MT Branch
Project:	CFR Monitoring-474374	BatchID: 33156

Date: 07-Jul-16

#### Run ID :Run Order: ICPMS204-B\_160607A: 167 SampType: Sample Matrix Spike Lab ID: H16060022-001BMS3 Method: E200.8 Analysis Date: 06/08/16 00:30 Prep Date: 6/3/2016 Prep Method: E200.2 Units: mg/L Prep Info: PQL SPK value SPK Ref Val LowLimit HighLimit RPD Ref Val %RPD RPDLimit Result %REC Qual Analytes 9 34.5 12.12 70 Calcium 1.0 25 90 130 Copper 0.504 0.0050 0.5 0.01308 98 70 130 Lead 0.494 0.0010 0.5 0.01016 70 130 97 70 Magnesium 26.2 1.0 25 2.523 95 130 Potassium 28.4 1.0 25 70 130 4.176 97 Sodium 32.7 1.0 25 9.17 94 70 130 0.010 0.5 0.2573 92 70 130 Zinc 0.717

Associated samples: H16060056-001C, H16060056-002C, H16060056-003C, H16060056-004C, H16060056-005C, H16060056-006C, H16060056-007C, H16060056-008C, H16060056-013C, H16060056-014C, H16060056-015C, H16060056-016C, H16060056-017C

Run ID :Run Order: ICPMS204-E	3_160607A: 168	SampType:	Sample Matri	x Spike Duplicate		Lab I	D: <b>H160600</b>	22-001BMSD3	Method	E200.8	
Analysis Date: 06/08/16 00:33	Units:	mg/L			Prep Info:	Prep Da	te: 6/3/2016		Prep Method	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.486	0.0010	0.5	0.003048	97	70	130	0.49	0.9	20	
Cadmium	0.239	0.0010	0.25	0.0002437	96	70	130	0.2395	0.2	20	
Calcium	34.2	1.0	25	12.12	88	70	130	34.51	0.9	20	
Copper	0.500	0.0050	0.5	0.01308	97	70	130	0.5041	0.7	20	
Lead	0.490	0.0010	0.5	0.01016	96	70	130	0.4942	0.8	20	
Magnesium	26.3	1.0	25	2.523	95	70	130	26.18	0.6	20	
Potassium	28.2	1.0	25	4.176	96	70	130	28.4	0.6	20	
Sodium	32.4	1.0	25	9.17	93	70	130	32.68	0.9	20	
Zinc	0.718	0.010	0.5	0.2573	92	70	130	0.7171	0.1	20	

Associated samples: H16060056-001C, H16060056-002C, H16060056-003C, H16060056-004C, H16060056-005C, H16060056-006C, H16060056-007C, H16060056-008C, H16060056-

Run ID :Run Order: ICPMS204-B_160607	7A: 202	SampType:	Sample Matri	x Spike		Lab I	D: <b>H16060</b>	056-010CMS3	3 Method: E200.8		
Analysis Date: 06/08/16 02:21	Units:	Units: <b>mg/L</b> Result PQL SPK value SPK Ref Val				: Prep Da	te: 6/3/2016	;	Prep Method: E200.2		
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLim	t Qual	
Arsenic	0.538	0.0010	0.5	0.01902	104	70	130				
Cadmium	0.257	0.0010	0.25	0.0001424	103	70	130				
Calcium	57.7	1.0	25	34.31	93	70	130				
Copper	0.525	0.0050	0.5	0.02008	101	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ H160600	-Federal Superfund )56		ANALYT	ICAL QC S Prepared by He	UMMARY elena, MT Brai	REPOI	RT		Date:	07-Jul-1	6
Project:	CFR Mo	nitoring-474374		В	atchID: 3	3156						
Run ID :Run Order:	ICPMS204	4-B_160607A: 202	SampType:	Sample Matri	x Spike		Lab I	D: <b>H16060</b>	056-010CMS3	Method:	E200.8	
Analysis Date: 06/0	8/16 02:21	Units:	mg/L			Prep Info:	Prep Da	te: 6/3/2016	;	Prep Method:	E200.2	
Analytes 9		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual
Lead		0.516	0.0010	0.5	0.002268	103	70	130				
Magnesium		32.6	1.0	25	7.545	100	70	130				
Potassium		27.8	1.0	25	2.044	103	70	130				
Sodium		34.2	1.0	25	8.946	101	70	130				
Zinc		0.518	0.010	0.5	0.0226	99	70	130				
Associated samples	: H1606005 009C, H10	66-001C, H16060056-002C 6060056-010C, H1606005	C, H16060056 6-011C, H160	-003C, H1606 60056-013C,	0056-004C, H10 H16060056-014	5060056-005C, C, H16060056	H1606005 -015C, H16	6-006C, H1 060056-010	6060056-007C, 5C, H16060056	H16060056-008 -017C	C, H1606	0056-

Run ID :Run Order: ICPMS204-B_160607A: 203 Inalysis Date: 06/08/16 02:24		SampType: Sample Matrix Spike Duplicate			Lab ID: H16060056-010CMSE				8 Method: <b>E200.8</b>		
Analysis Date: 06/08/16 02:24	Units:	mg/L			Prep Info:	Prep Dat	te: 6/3/2016		Prep Method	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.536	0.0010	0.5	0.01902	103	70	130	0.5378	0.3	20	
Cadmium	0.254	0.0010	0.25	0.0001424	102	70	130	0.2567	0.9	20	
Calcium	58.3	1.0	25	34.31	96	70	130	57.66	1.1	20	
Copper	0.524	0.0050	0.5	0.02008	101	70	130	0.5252	0.3	20	
Lead	0.506	0.0010	0.5	0.002268	101	70	130	0.516	2.0	20	
Magnesium	32.9	1.0	25	7.545	101	70	130	32.61	0.9	20	
Potassium	27.5	1.0	25	2.044	102	70	130	27.75	0.8	20	
Sodium	34.5	1.0	25	8.946	102	70	130	34.19	0.8	20	
Zinc	0.514	0.010	0.5	0.0226	98	70	130	0.5184	0.9	20	

Associated samples: H16060056-001C, H16060056-002C, H16060056-003C, H16060056-004C, H16060056-005C, H16060056-006C, H16060056-007C, H16060056-008C, H16060056-

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16060056	erfund		ANALYT	ICAL QC S	UMMARY lena, MT Bra	REPOI	RT		Date:	07-Jul-1	6
Project:	CFR Monitoring-4743	74		В	atchID: 33	s158						
Run ID :Run Orde	FIA203-HE_160606A: 12		SampType:	Method Blan	k		Lab	ID: <b>MB-331</b>	58	Method:	A4500 N-C	;
Analysis Date: 06/	06/16 10:21	Units:	mg/L			Prep Info	Prep Da	te: 6/3/2016	i	Prep Method:	A4500 N-C	;
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	₹PDLimit	Qual
Nitrogen, Total		ND	0.007									
Associated sample	s: H16060056-001A, H1606 009A, H16060056-010A, I	0056-002/ 11606005	A, H16060056 6-011A, H160	-003A, H1606 60056-012A,	0056-004A, H160 H16060056-013 <i>A</i>	060056-005A, A, H16060056-	H1606005 014A, H16	6-006A, H16 060056-015	6060056-007A, A, H16060056-	H16060056-0084 016A, H1606005	4, H160600 6-017A	056-
Run ID :Run Orde	FIA203-HE_160606A: 14		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-331	58	Method:	A4500 N-C	;
Analysis Date: 06/	06/16 10:23	Units:	mg/L			Prep Info	Prep Da	te: 6/3/2016	i	Prep Method:	A4500 N-C	;
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	₹PDLimit	Qual
Nitrogen, Total		6.71	0.15	6.37	0	105	90	110				
Associated sample	s: H16060056-001A, H16060 009A, H16060056-010A, I	0056-0027 11606005	A, H16060056 6-011A, H160	-003A, H1606 060056-012A,	0056-004A, H160 H16060056-013 <i>A</i>	060056-005A, A, H16060056-	H16060050 014A, H16	6-006A, H16 060056-015	6060056-007A, A, H16060056-	H16060056-008A 016A, H1606005	∖, H160600 /6-017A	056-
Run ID :Run Orde	C FIA203-HE_160606A: 16		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H160600</b>	)56-001Ams	Method:	A4500 N-C	;
Analysis Date: 06/	06/16 10:26	Units:	mg/L			Prep Info	Prep Da	te: 6/3/2016	i	Prep Method:	A4500 N-C	;
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	₹PDLimit	Qual
Nitrogen, Total		1.00	0.10	1	0.2378	<u>76</u>	90	110				S
Associated sample	s: H16060056-001A, H1606 009A, H16060056-010A, I	0056-002/ 11606005	A, H16060056 6-011A, H160	-003A, H1606 60056-012A,	0056-004A, H160 H16060056-013 <i>A</i>	060056-005A, A, H16060056-	H1606005 014A, H16	6-006A, H16 060056-015	6060056-007A, A, H16060056-	H16060056-0084 016A, H1606005	4, H160600 6-017A	056-
Run ID :Run Orde	: FIA203-HE_160606A: 17		SampType:	Sample Matri	ix Spike Duplica	te	Lab	ID: <b>H160600</b>	)56-001Amsd	Method:	A4500 N-C	;
Analysis Date: 06/	06/16 10:27	Units:	mg/L			Prep Info	: Prep Da	te: 6/3/2016	i	Prep Method:	A4500 N-C	;
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual
Nitrogen, Total		1.02	0.10	1	0.2378	<u>79</u>	90	110	1.002	2.2	20	S
Associated sample	s: H16060056-001A, H1606 009A, H16060056-010A, I	0056-002/ H1606005	A, H16060056 6-011A, H160	-003A, H1606 60056-012A,	0056-004A, H160 H16060056-013 <i>A</i>	060056-005A, A, H16060056-	H1606005 014A, H16	6-006A, H16 060056-015	6060056-007A, A, H16060056-	H16060056-008A 016A, H1606005	4, H160600 6-017A	056-
Run ID :Run Orde	: FIA203-HE_160606A: 30		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H160600</b>	)56-011Ams	Method:	A4500 N-C	;
Analysis Date: 06	06/16 10:43	Units:	mg/L			Prep Info	: Prep Da	te: 6/3/2016	i	Prep Method:	A4500 N-C	;
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	₹PDLimit	Qual
Nitrogen, Total		0.992	0.10	1	0.07839	91	90	110				
Qualifiers: ND J -	- Not Detected at the Reportin Analyte detected below quant	ng Limit Itation limi	ts F	S - Spike Reco R - RPD outsid	very outside acce e accepted recov	pted recovery ery limits	limit N A	- Analyte co - Analyte co	ncentration was	not sufficiently hi	gh to calcu s the spike Page	Jate RPD amount e 47 of 101

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Client: Work Order:	MT DEQ-Federal Sup H16060056	erfund		ANALYT	ICAL QC SU Prepared by Hele	<b>JMMARY</b> ena, MT Brai	REPOI	RT		Date	: 07-Jul-10	6
Project:	CFR Monitoring-4743	74		В	atchID: 33	158						
Run ID :Run Order:	FIA203-HE_160606A: 30		SampType:	Sample Matri	ix Spike		Lab I	D: <b>H160600</b>	056-011Ams	Method	: A4500 N-C	
Analysis Date: 06/0	6/16 10.42	Linita.				Dueu Infe	Bron Do	+o+ 6/2/2016		Drop Mathad	- A4500 N C	
7 (narysis Date. 00/0	0/10 10.43	Units.	mg/L			Prep into:	Flep Da	le. 0/3/2010		Prep Method	A4500 N-C	
Analytes <u>1</u>	0/10 10.43	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Run ID :Run Order: FIA203-HE_160606A: 31	Sar	npType:	Sample Matri	x Spike Duplicate		Lab I	ID: <b>H16060</b>	)56-011Amsd	Method	: A4500 N-C	;
Analysis Date: 06/06/16 10:44	Units: mg/L				Prep Info:	Prep Da	te: 6/3/2016	;	Prep Method	: A4500 N-C	;
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.930	0.10	1	0.07839	<u>85</u>	90	110	0.9916	<u>6.4</u>	20	S

Associated samples: H16060056-001A, H16060056-002A, H16060056-003A, H16060056-004A, H16060056-005A, H16060056-006A, H16060056-007A, H16060056-008A, H16060056-

- S Spike Recovery outside accepted recovery limit
- 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 four times the spike amount



Work Order:

Project:

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MT DEQ-Federal Superfund Client: H16060056

CFR Monitoring-474374

# ANALYTICAL QC SUMMARY REPORT

College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

Billings, MT 800.735.4489 • Casper, WY 888.235.0515

Date: 07-Jul-16

Prepared by Helena, MT Branch

# BatchID: 33160

Run ID :Run Order: ICPMS204-B_160606	A: 66	SampType:	Method Blan	¢		Lab	ID: MB-331	60	Method: E200.8		
Analysis Date: 06/06/16 18:38	Units:	mg/L			Prep Info	: Prep Da	te: 6/6/2016	5	Prep Method	: E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	7E-05									
Cadmium	ND	1E-05									
Calcium	0.02	0.009									
Copper	ND	5E-05									
Lead	ND	2E-05									
Magnesium	ND	0.002									
Potassium	0.02	0.01									
Sodium	ND	0.005									
Zinc	0.001	0.0003									
Associated samples: H16060056-012C											

Run ID :Run Order: ICPMS204-B_160606A	: 67	SampType:	Laboratory C	ontrol Sample		Lab	ID: <b>LCS-33</b> 1	160	Method: <b>E200.8</b>		
Analysis Date: 06/06/16 18:41	Units:	mg/L			Prep Info:	Prep Da	te: 6/6/2016	i	Prep Method	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.547	0.0010	0.5	0	109	85	115				
Cadmium	0.271	0.0010	0.25	0	108	85	115				
Calcium	27.8	1.0	25	0.01865	111	85	115				
Copper	0.530	0.0050	0.5	0	106	85	115				
Lead	0.528	0.0010	0.5	0	106	85	115				
Magnesium	26.6	1.0	25	0	107	85	115				
Potassium	26.6	1.0	25	0.01689	106	85	115				
Sodium	26.5	1.0	25	0	106	85	115				
Zinc	0.535	0.010	0.5	0.001406	107	85	115				

Associated samples: H16060056-012C

Run ID :Run Order: ICPMS204-B_16060	6A: 75	SampType:	Sample Matri	x Spike		Lab I	D: <b>H16060</b>	056-012CMS3	Method	E200.8	
Analysis Date: 06/06/16 19:06	Units:	mg/L			Prep Info	: Prep Da	te: 6/6/2016	5	Prep Method	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.553	0.0010	0.5	0.02795	105	70	130				
Cadmium	0.257	0.0010	0.25	0.0001317	103	70	130				
Calcium	59.9	1.0	25	34.86	100	70	130				
Copper	0.521	0.0050	0.5	0.01169	102	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Super H16060056	und ANALYTICAL G	C SUMMARY	REPORT Inch	Date: 07-Jul-16
Project:	CFR Monitoring-474374	BatchID	33160		
Run ID :Run Orde	er: ICPMS204-B_160606A: 75	SampType: Sample Matrix Spike		Lab ID: H16060056-012CMS3	Method: E200.8
Analysis Date: 06	/06/16 19:06	Units: ma/L	Prep Info:	Prep Date: 6/6/2016	Prep Method: E200.2

7 analysis Date: 00/00/10 10.00	ernte.	ng/L			i iep inio			•	i iop motiou.	LLUU.L	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual
Lead	0.516	0.0010	0.5	0.001283	103	70	130				
Magnesium	34.2	1.0	25	8.387	103	70	130				
Potassium	28.5	1.0	25	2.601	104	70	130				
Sodium	38.9	1.0	25	13.17	103	70	130				
Zinc	0.512	0.010	0.5	0.0176	99	70	130				

Associated samples: H16060056-012C

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Run ID :Run Order: ICPMS204-B_	160606A: 76	SampType:	Sample Matri	x Spike Duplicate		Lab I	D: H160600	56-012CMSD3	Method	: E200.8	
Analysis Date: 06/06/16 19:09	Units:	mg/L			Prep Info:	Prep Dat	te: 6/6/2016		Prep Method	: E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.572	0.0010	0.5	0.02795	109	70	130	0.553	<u>3.4</u>	20	
Cadmium	0.266	0.0010	0.25	0.0001317	106	70	130	0.2572	<u>3.2</u>	20	
Calcium	62.5	1.0	25	34.86	111	70	130	59.89	<u>4.3</u>	20	
Copper	0.536	0.0050	0.5	0.01169	105	70	130	0.5213	2.7	20	
Lead	0.532	0.0010	0.5	0.001283	106	70	130	0.5161	<u>3.1</u>	20	
Magnesium	35.0	1.0	25	8.387	106	70	130	34.19	2.2	20	
Potassium	29.6	1.0	25	2.601	108	70	130	28.52	<u>3.7</u>	20	
Sodium	40.1	1.0	25	13.17	108	70	130	38.9	<u>3.0</u>	20	
Zinc	0.528	0.010	0.5	0.0176	102	70	130	0.5121	<u>3.1</u>	20	

Associated samples: H16060056-012C

Run ID :Run Order: ICPMS204-B_16	0607A: 227	SampType:	Method Blank		Lab ID: <b>MB-33160</b>	Method: E200.8
Analysis Date: 06/08/16 03:42	Units:	mg/L		Prep Info	Prep Date: 6/6/2016	Prep Method: E200.2
Analytes 9	Result	PQL	SPK value SPK	Ref Val %REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Arsenic	ND	7E-05				
Cadmium	ND	1E-05				
Calcium	ND	0.009				
Copper	ND	5E-05				
Lead	ND	2E-05				
Magnesium	ND	0.002				
Potassium	ND	0.01				
Sodium	ND	0.005				

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Fe H16060056	deral Superfund		ANALYT	ICAL QC SU Prepared by Hele	<b>JMMARY</b> ena, MT Bra	REPO	RT		Date	07-Jul-1	6
Project:	CFR Monitor	ing-474374		В	atchID: 33	160						
Run ID :Run Order	: ICPMS204-B_	160607A: 227	SampType:	Method Blan	k		Lab	ID: <b>MB-331</b>	60	Method	E200.8	
Analysis Date: 06/	08/16 03:42	Units:	mg/L			Prep Info	Prep Da	ite: 6/6/2016	;	Prep Method	E200.2	
Analytes 9 Result			PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc		0.001	0.0003									
Accordated comple		20										

Associated samples: H16060056-012C

Run ID :Run Order: ICPMS204-B_160607	: 229	SampType:	Sample Matri	x Spike		Lab	ID: <b>H16060</b>	060-001AMS3	Method	E200.8	
Analysis Date: 06/08/16 03:48	Units:	mg/L			Prep Info:	: Prep Da	te: 6/6/2016	5	Prep Method	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.522	0.0010	0.5	0.002284	104	70	130				
Cadmium	0.259	0.0010	0.25	0	104	70	130				
Calcium	39.0	1.0	25	14.43	98	70	130				
Copper	0.517	0.0050	0.5	0.000633	103	70	130				
Lead	0.517	0.0010	0.5	0.0000201	103	70	130				
Magnesium	29.4	1.0	25	3.852	102	70	130				
Potassium	26.5	1.0	25	1.001	102	70	130				
Sodium	30.1	1.0	25	4.452	103	70	130				
Zinc	0.506	0.010	0.5	0.001769	101	70	130				

Associated samples: H16060056-012C

Run ID :Run Order: ICPMS204-B_160607A	: 230	SampType:	Sample Matri	x Spike Duplicate		Lab I	D: <b>H160600</b>	060-001AMSD3	Method	E200.8	
Analysis Date: 06/08/16 03:51	Units:	mg/L			Prep Info:	Prep Da	te: 6/6/2016		Prep Method	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.516	0.0010	0.5	0.002284	103	70	130	0.5225	1.2	20	
Cadmium	0.254	0.0010	0.25	0	101	70	130	0.2591	2.1	20	
Calcium	37.8	1.0	25	14.43	93	70	130	38.95	<u>3.0</u>	20	
Copper	0.512	0.0050	0.5	0.000633	102	70	130	0.5173	1.1	20	
Lead	0.507	0.0010	0.5	0.0000201	101	70	130	0.5175	2.0	20	
Magnesium	29.1	1.0	25	3.852	101	70	130	29.36	0.8	20	
Potassium	26.2	1.0	25	1.001	101	70	130	26.5	1.1	20	
Sodium	29.5	1.0	25	4.452	100	70	130	30.08	1.9	20	
Zinc	0.499	0.010	0.5	0.001769	99	70	130	0.506	1.4	20	

Associated samples: H16060056-012C

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

R - RPD outside accepted recovery limits A - Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Federa H16060056	al Superfund		ANALYT	ICAL QC SUI	MMARY na, MT Bra	REPO	RT		Date	: 07-Jul-1	6
Project:	CFR Monitoring	-474374		В	atchID: 331	74						
Run ID :Run Order:	HGCV202-H_1606	08A: 11	SampType:	Method Blan	k		Lab	ID: <b>MB-330</b>	90	Method	: E245.1	
Analysis Date: 06/0	8/16 11:55	Units:	mg/L			Prep Info	Prep Da	ite: 6/7/2016	i	Prep Method	: E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		ND	2E-06									
Associated samples	: H16060056-002C,	H16060056-003C	, H16060056	6-004C, H1606	0056-018A							
Run ID :Run Order:	HGCV202-H_1606	08A: 14	SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-33	174	Method	E245.1	
Analysis Date: 06/0	Ilysis Date: 06/08/16 12:08 Units: mg/L					Prep Info	Prep Da	ite: 6/7/2016	i	Prep Method	: E245.1	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.000162	0.00010	0.00015	0	108	90	110				
Associated samples	: H16060056-002C,	H16060056-003C	, H16060056	5-004C, H1606	0056-018A							
Run ID :Run Order:	HGCV202-H_1606	08A: 32	SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16060</b>	056-018AMS	Method	E245.1	
Analysis Date: 06/0	8/16 12:56	Units:	mg/L			Prep Info	: Prep Da	ite: 6/7/2016	5	Prep Method	E245.1	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00020	0.00010	0.00015	0.00003744	106	70	130				
Associated samples	: H16060056-002C,	H16060056-003C	, H16060056	5-004C, H1606	0056-018A							
Run ID :Run Order:	HGCV202-H_1606	08A: 33	SampType:	Sample Matri	ix Spike Duplicate		Lab	ID: <b>H16060</b>	056-018AMSD	Method	E245.1	
Analysis Date: 06/0	8/16 12:58	Units:	mg/L			Prep Info	: Prep Da	ite: 6/7/2016	5	Prep Method	: E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00021	0.00010	0.00015	0.00003744	115	70	130	0.000197	<u>6.5</u>	20	

Associated samples: H16060056-002C, H16060056-003C, H16060056-004C, H16060056-018A

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16060056	perfund		ANALYTICAL QC SUMMARY REPORT							Date: 07-Jul-16		
Project:	CFR Monitoring-4743	74		В	atchID: 3	3181							
Run ID :Run Ord	der: FIA202-HE_160607C: 12		SampType:	Laboratory C	ontrol Sample		Lab	ID: <b>LCS-33</b>	181	Method:	E365.1		
Analysis Date: 0	06/07/16 13:09	Units: r	ng/L			Prep Info	: Prep Da	te: 6/7/2016	5	Prep Method:			
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD R	PDLimit	Qual	
Phosphorus, Total as P		0.396	0.010	0.4	0.00199	99	90	110					
Associated samp	oles: H16060056-001D, H1606 009D, H16060056-010D,	0056-002D, H16060056	, H16060056 -011D, H160	003D, H1606 60056-012D,	0056-004D, H1 H16060056-01	6060056-005D 3D, H16060056	, H1606005 5-014D, H16	6-006D, H1 5060056-01	6060056-007D, 5D, H16060056	H16060056-008 -016D	D, H16060	0056-	
Run ID :Run Ord	der: FIA202-HE_160607C: 13		SampType:	Method Blan	k		Lab	ID: <b>MB-331</b>	81	Method:	E365.1		
Analysis Date: 0	06/07/16 13:10	Units: r	ng/L			Prep Info	: Prep Da	te: 6/7/2016	5	Prep Method:	E365.1		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD R	PDLimit	Qual	
Phosphorus, Tot	tal as P	0.002	0.001										
Associated samp	bles: H16060056-001D, H1606 009D, H16060056-010D,	0056-002D, H16060056	, H16060056 -011D, H160	003D, H1606 60056-012D,	0056-004D, H1 H16060056-01	6060056-005D 3D, H16060056	, H1606005 5-014D, H16	6-006D, H1 5060056-01	6060056-007D, 5D, H16060056	H16060056-008 -016D	D, H16060	0056-	
Run ID :Run Orc	der: FIA202-HE_160607C: 17		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16060</b>	056-002Dms	Method:	E365.1		
Analysis Date: 06/07/16 13:14 Uni		Units: r	ng/L			Prep Info	: Prep Da	te: 6/7/2016	;	Prep Method:	E365.1		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD R	PDLimit	Qual	
Phosphorus, Tot	tal as P	0.206	0.010	0.2	0	103	90	110					
Associated samp	bles: H16060056-001D, H1606 009D, H16060056-010D,	0056-002D, H16060056	, H16060056 -011D, H160	003D, H1606 60056-012D,	0056-004D, H1 H16060056-01	6060056-005D 3D, H16060056	, H1606005 5-014D, H16	6-006D, H1 6060056-01	6060056-007D, 5D, H16060056	H16060056-008 -016D	D, H16060	0056-	
Run ID :Run Ord	der: FIA202-HE_160607C: 18		SampType:	Sample Matri	ix Spike Duplic	ate	Lab	ID: <b>H16060</b>	)56-002Dmsd	Method:	E365.1		
Analysis Date: 0	06/07/16 13:15	Units: r	ng/L			Prep Info	: Prep Da	te: 6/7/2016	Prep Method:	E365.1			
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD R	PDLimit	Qual	
Phosphorus, Tot	tal as P	0.194	0.010	0.2	0	97	90	110	0.2057	<u>5.7</u>	20		
Associated samp	bles: H16060056-001D, H1606 009D, H16060056-010D,	0056-002D, H16060056	, H16060056 -011D, H160	003D, H1606 60056-012D,	0056-004D, H1 H16060056-01	6060056-005D 3D, H16060056	, H1606005 5-014D, H16	6-006D, H1 5060056-01	6060056-007D, 5D, H16060056	H16060056-008 -016D	D, H16060	0056-	
Run ID :Run Orc	der: FIA202-HE_160607C: 29		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16060</b>	056-010Dms	Method:	E365.1		
Analysis Date: 0	06/07/16 13:26	Units: r	ng/L			Prep Info	: Prep Da	te: 6/7/2016	5	Prep Method:	E365.1		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD R	PDLimit	Qual	
Phosphorus, Tot	tal as P	0.250	0.010	0.2	0.04843	101	90	110					
Qualifiers: N	ID - Not Detected at the Report - Analyte detected below quan	ing Limit titation limits	S s R	- Spike Reco	very outside acc e accepted recc	cepted recovery	limit N A	- Analyte co	ncentration was	not sufficiently hi	gh to calcu	ulate RPD e amount	

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<b>ENERGY</b> LABORATORIES	B	Trust our People. Trust our Data. www.energylab.com	Col	ege Station, TX <b>8</b> 8									
Client: Work Order:	MT DEQ H160600	P-Federal Superfund		ANALYTICAL QC SUMMARY REPORT Prepared by Helena, MT Branch							Date: 07-Jul-16		
Project:	CFR Mo	nitoring-474374		BatchID: 33181									
Run ID :Run Order:	FIA202-H	E_160607C: 29	SampType:	Sample Matri	ix Spike		Lab I	D: <b>H16060</b>	056-010Dms	Method:	E365.1		
Analysis Date: 06/0	7/16 13:26	Units:	mg/L			Prep Info:	Prep Dat	te: 6/7/2016	;	Prep Method:	E365.1		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Associated samples	: H1606009 009D, H1	56-001D, H16060056-002D 6060056-010D, H16060056	, H16060056 5-011D, H160	-003D, H1606 60056-012D,	0056-004D, H160 H16060056-013D	60056-005D, , H16060056-	H1606005 014D, H16	6-006D, H1 060056-01	6060056-007D, 5D, H16060056-	H16060056-008 016D	3D, H16060	0056-	

Run ID :Run Order: FIA202-HE_160607C: 30	Jer: FIA202-HE_160607C: 30 SampType: Sample Matrix Spike Duplicate					Lab I	D: <b>H16060</b>	Method			
Analysis Date: 06/07/16 13:27 Units: mg/L				Prep Info:	Prep Dat	te: 6/7/2016	i	Prep Method	E365.1		
Analytes <u>1</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.251	0.010	0.2	0.04843	101	90	110	0.2502	0.5	20	

Associated samples: H16060056-001D, H16060056-002D, H16060056-003D, H16060056-004D, H16060056-005D, H16060056-006D, H16060056-007D, H16060056-008D, H16060056-009D, H16060056-011D, H16060056-011D, H16060056-012D, H16060056-013D, H16060056-014D, H16060056-015D, H16060056-016D

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

Client:       MT DEQ-Federal Superfund       ANALYTICAL QC SUMMARY REPORT       Date: 07-         Work Order:       H16060056       Prepared by Helena, MT Branch       Date: 07-	ul-16
Project:CFR Monitoring-474374BatchID:33198	
Run ID :Run Order:       FIA202-HE_160608B: 12       SampType:       Laboratory Control Sample       Lab ID:       LCS-33198       Method:       E364	1
Analysis Date: 06/08/16 13:14 Units: mg/L Prep Info: Prep Date: 6/8/2016 Prep Method: E36	1
Analytes 1 Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPD	mit Qual
Phosphorus, Total as P 0.383 0.010 0.4 0.00395 <b>95</b> 90 110	
Associated samples: H16060056-017D	
Run ID :Run Order:     FIA202-HE_160608B: 13     SampType:     Method Blank     Lab ID:     MB-33198     Method:     E364	1
Analysis Date: 06/08/16 13:15 Units: mg/L Prep Info: Prep Date: 6/8/2016 Prep Method: E36/	1
Analytes 1 Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPD	mit Qual
Phosphorus, Total as P 0.004 0.001	
Associated samples: H16060056-017D	
Run ID :Run Order:       FIA202-HE_160608B: 15       SampType:       Sample Matrix Spike       Lab ID: H16060056-017DMS       Method: E36/2	1
Analysis Date: 06/08/16 13:17 Units: mg/L Prep Info: Prep Date: 6/8/2016 Prep Method: E36	1
Analytes 1 Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPD	mit Qual
Phosphorus, Total as P         0.199         0.010         0.2         0.00213         98         90         110	
Associated samples: H16060056-017D	
Run ID :Run Order:       FIA202-HE_160608B: 16       SampType:       Sample Matrix Spike Duplicate       Lab ID: H16060056-017DMSD       Method: E364	1
Analysis Date:         06/08/16 13:18         Units:         mg/L         Prep Info:         Prep Date:         6/8/2016         Prep Method:         E36	1
Analytes 1 Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPD	mit Qual
Phosphorus, Total as P         0.200         0.010         0.2         0.00213         99         90         110         0.1989         0.4	20

Associated samples: H16060056-017D

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal S H16060056	Superfund			Date: 07-Jul-16							
Project:	CFR Monitoring-47	74374										
Run ID :Run Orde	Run ID :Run Order: SUB-C212371: 1				k		Lab I	ID: MBLK	Method: A5310 C			
Analysis Date: 06	6/06/16 19:29	Units: m	g/L			Prep Info	: Prep Da	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RF	PDLimit	Qual
Organic Carbon, I Associated sample	Dissolved (DOC) es: H16060056-001E, H1 009E, H16060056-01	0.09 6060056-002E, H 0E, H16060056-0	0.04 116060056 11E, H160	-003E, H1606 60056-012E, I	0056-004E, H16 H16060056-013	060056-005E, E, H16060056-	H16060056 014E, H16	6-006E, H1 060056-01	6060056-007E, 5E, H16060056-	H16060056-008E, 016E, H16060056	H16060 -017E	056-
Run ID :Run Orde	er: SUB-C212371: 5	S	ampType:	Sample Matri	ix Spike		Lab I	ID: <b>H16050</b>	552-001C	Method: A	5310 C	
Analysis Date: 06	6/06/16 20:38	Units: <b>m</b>	g/L			Prep Info	: Prep Da	te:		Prep Method:		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RF	PDLimit	Qual
Organic Carbon, I	Dissolved (DOC)	26.0	0.50	20	5.712	101	85	115	0			
Associated sample	es: H16060056-001E, H1 009E, H16060056-01	6060056-002E, H 0E, H16060056-0	116060056 11E, H160	-003E, H1606 60056-012E, I	0056-004E, H16 H16060056-013	060056-005E, E, H16060056-	H16060056 014E, H16	6-006E, H1 060056-015	6060056-007E, 5E, H16060056-	H16060056-008E, 016E, H16060056	H16060 -017E	056-
Run ID :Run Orde	er: SUB-C212371: 6	S	ampType:	Sample Matri	ix Spike Duplica	ate	Lab I	ID: <b>H16050</b>	552-001C	Method: A	5310 C	
Analysis Date: 06	6/06/16 20:53	Units: m	g/L			Prep Info	: Prep Da	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RF	PDLimit	Qual
Organic Carbon, I Associated sample	Dissolved (DOC) es: H16060056-001E, H1 009E, H16060056-01	26.0 6060056-002E, H 0E, H16060056-0	0.50 116060056 11E, H160	20 -003E, H1606 60056-012E, I	5.712 0056-004E, H16 H16060056-013	102 060056-005E, E, H16060056-	85 H16060056 014E, H16	115 6-006E, H1 060056-015	25.99 6060056-007E, 5E, H16060056-	0.1 H16060056-008E, 016E, H16060056	10 , <b>H16060</b> ;- <b>017E</b>	056-
Run ID :Run Orde	er: SUB-C212371: 12	S	ampType:	Laboratory C	ontrol Sample		Lab I	ID: LCS-81	16	Method: A	.5310 C	
Analysis Date: 06	6/07/16 03:33	Units: <b>m</b>	g/L			Prep Info	: Prep Da	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RF	PDLimit	Qual
Organic Carbon, I Associated sample	Dissolved (DOC) es: H16060056-001E, H1 009E, H16060056-01	5.32 6060056-002E, H 0E, H16060056-0	0.50 116060056 11E, H160	5 -003E, H1606 60056-012E, I	0.09113 0056-004E, H16 H16060056-013	105 060056-005E, E, H16060056·	90 H16060056 014E, H16	110 6-006E, H10 060056-015	0 6060056-007E, 5E, H16060056-	H16060056-008E, 016E, H16060056	, H16060 -017E	056-
Run ID :Run Orde	er: SUB-C212371: 13	S	ampType:	Continuing C	alibration Verif	ication Standa	ı <b>r</b> Labl	ID: CCV-79	23	Method: A	.5310 C	
Analysis Date: 06	6/06/16 23:30	Units: <b>m</b>	g/L	5		Prep Info	: Prep Da	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD_RF	PDLimit	Qual
Organic Carbon, I	Dissolved (DOC)	5.20	0.50	5	0	104	90	110	0			
Qualifiers: ND	) - Not Detected at the Re Analyte detected below q	porting Limit uantitation limits	S	S - Spike Reco R - RPD outside	very outside acc	epted recovery very limits	limit N A	- Analyte co - Analyte co	ncentration was	not sufficiently hig ater than four times	h to calcu the spik	ulate RPC e amount

			~										
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Client: Work Order	MT DEQ-Federal S : H16060056	Superfund		ANALYT	Date: 07-Jul-16								
Proiect:	CFR Monitoring-47	4374		B	atchID:	C R212371	ncn						
Run ID Run C	)rder: SUB-C212371-13		amnTvne	Continuing	Calibration Ver	ification Standa	r lab		23	Methor	+ A5310 C		
Analysis Date:	06/06/16 23:30	Linits: mo	/I	oonanang e		Prop Info	Pren Da	to:	20	Pren Methor	4		
Analytes 1	00/00/10 23.30	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Associated san	nples: H16060056-001E, H1 009E, H16060056-010	6060056-002E, H DE, H16060056-0	16060056 11E, H160	-003E, H1606 60056-012E,	0056-004E, H1 H16060056-01	16060056-005E, 3E, H16060056-	H1606005 014E, H16	6-006E, H1 060056-01	6060056-007E, 5E, H16060056-	H16060056-00 016E, H16060	8E, H1606 056-017E	0056-	
	, Nederi CUD 0040074, 40	, 	, 	Comula Matu	in Calles	<i>.</i>	, 		, 	Matha			
Run ID :Run Order: <b>SUB-C212371:16</b>			ampiype:	Sample Matr	IX SPIKE		Lab	ID: H16060	056-001E	Method: A5310 C			
Analysis Date:	06/07/16 00:34	Units: mg				Prep Into:	Prep Da	te:				Qual	
Analytes 1		Result	PQL	SPK value	SPK Rei vai	%REC	LOWLIMIL		RPD Rei Vai	%RPD	RPDLIMI	Qual	
Associated san	nples: H16060056-001E, H1 009E, H16060056-01(	23.7 6060056-002E, H DE, H16060056-0 <sup>-</sup>	16060056 11E, H160	-003E, H1606 60056-012E,	0056-004E, H1 H16060056-01	102 16060056-005E, 3E, H16060056-	005 H1606005 014E, H16	6-006E, H10 060056-015	6060056-007E, 5E, H16060056-	H16060056-00 016E, H16060	8E, H1606 056-017E	0056-	
Run ID :Run C	Order: SUB-C212371: 17	S	ampType:	Sample Matr	ix Spike Dupli	cate	Lab	ID: <b>H16060</b>	056-001E	Method	1: A5310 C		
Analysis Date:	06/07/16 00:50	Units: <b>mg</b>	/L			Prep Info:	Prep Da	te:		Prep Method	<b>1</b> :		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Organic Carbo	on, Dissolved (DOC)	23.9	0.50	20	3.366	103	85	115	23.67	0.9	10		
Associated san	nples: H16060056-001E, H10 009E, H16060056-010	6060056-002E, H DE, H16060056-0	16060056 11E, H160	-003E, H1606 60056-012E,	0056-004E, H1 H16060056-01	16060056-005E, 3E, H16060056-	H1606005 014E, H16	6-006E, H1 060056-015	6060056-007E, 5E, H16060056-	H16060056-00 016E, H16060	8E, H1606 056-017E	0056-	
Run ID :Run C	Order: SUB-C212371: 26	S	ampType:	Continuing C	Calibration Ver	ification Standa	r Lab	ID: CCV-79	23	Method	1: A5310 C		
Analysis Date:	06/07/16 03:49	Units: mg	/L			Prep Info:	Prep Da	te:		Prep Method	<b>1</b> :		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Organic Carbo	on, Dissolved (DOC)	5.17	0.50	5	0	103	90	110	0				
Associated san	nples: H16060056-001E, H1 009E, H16060056-010	6060056-002E, H DE, H16060056-01	16060056 11E, H160	-003E, H1606 60056-012E,	0056-004E, H1 H16060056-01	16060056-005E, 3E, H16060056-	H1606005 014E, H16	6-006E, H1 060056-015	6060056-007E, 5E, H16060056-	H16060056-00 016E, H16060	8E, H1606 056-017E	0056-	
Run ID :Run C	Order: SUB-C212371: 29	S	ampType:	Sample Matr	ix Spike		Lab	ID: <b>H16060</b>	056-010E	Method	1: A5310 C		
Analysis Date:	06/07/16 04:53	Units: mg	/L			Prep Info:	Prep Da	te:		Prep Method	1:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Organic Carbo	on, Dissolved (DOC)	24.0	0.50	20	3.89	101	85	115	0				
Associated san	nples: H16060056-001E, H1 009E, H16060056-010	6060056-002E, H DE, H16060056-0 <sup>-</sup>	16060056 11E, H160	-003E, H1606 60056-012E,	0056-004E, H1 H16060056-01	16060056-005E, 3E, H16060056-	H1606005 014E, H16	6-006E, H10 060056-015	6060056-007E, 5E, H16060056-	H16060056-00 016E, H16060	8E, H16060 056-017E	0056-	
Qualifiers:	ND - Not Detected at the Rep	porting Limit	S	6 - Spike Reco	very outside ac	ccepted recovery	limit N	- Analyte co	ncentration was	not sufficiently	high to calc	culate RP	
	J - Analyte detected below qu	uantitation limits	F	R - RPD outsid	e accepted rec	overy limits	А	- Analyte co	ncentration grea	ater than four ti	mes the spil	ke amour	

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Client: Work Order:	MT DEQ-Federal \$ H16060056	Superfund	Superfund ANALYTICAL QC SUMMARY REPORT Prepared by Helena, MT Branch						Date: 07-Jul-16			
Project:	CFR Monitoring-47	<sup>24374</sup> BatchID: C_R212371										
Run ID :Run Order:	SUB-C212371: 30		SampType: :	Sample Matri		Lab I	D: <b>H160600</b>	056-010E	Method: A5310 C			
Analysis Date: 06/0	7/16 05:08	Units: <b>m</b>	ng/L			Prep Info:	Prep Dat	te:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Di	ssolved (DOC)	24.0	0.50	20	3.89	101	85	115	24.02	0.0	10	
Associated samples	: H16060056-001E, H1 009E, H16060056-01	6060056-002E, 0E, H16060056-	H16060056- 011E, H1606	003E, H16060 30056-012E, H	0056-004E, H1606 116060056-013E,	0056-005E, H16060056-	H16060056 014E, H16	5-006E, H16 060056-015	060056-007E, E, H16060056-	H16060056-00 016E, H160600	8E, H16060 )56-017E	056-
Run ID :Run Order:	SUB-C212371: 38	:	SampType: :	Sample Matri	x Spike		Lab I	D: <b>C16060</b> 1	29-001LMS	Method	: A5310 C	
Analysis Date: 06/0	7/16 08:55	Units: <b>m</b>	ng/L			Prep Info:	Prep Dat	te:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Di	ssolved (DOC)	29.5	0.50	20	8.38	106	85	115	0			
Associated samples	: H16060056-001E, H1 009E, H16060056-01	6060056-002E, 0E, H16060056-	H16060056- 011E, H1606	003E, H16060 60056-012E, H	0056-004E, H1606 116060056-013E,	0056-005E, H16060056-	H16060056 014E, H16	5-006E, H16 060056-015	060056-007E, E, H16060056-	H16060056-00 016E, H160600	8E, H16060 )56-017E	056-
Run ID :Run Order:	SUB-C212371: 39	:	SampType: :	Sample Matri	x Spike Duplicate		Lab I	D: <b>C16060</b> 1	29-001LMSD	Method	: A5310 C	
Analysis Date: 06/0	7/16 09:11	Units: <b>m</b>	ng/L			Prep Info:	Prep Dat	te:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Di	ssolved (DOC)	29.5	0.50	20	8.38	106	85	115	29.53	0.1	10	
Associated samples	H16060056-001E, H1	6060056-002E	H16060056-	003E. H16060	0056-004E. H1606	0056-005E	H16060056	6-006E. H16	060056-007E	H16060056-00	8E. H16060	056-

009E, H16060056-010E, H16060056-011E, H16060056-012E, H16060056-013E, H16060056-014E, H16060056-015E, H16060056-016E, H16060056-017E

S - Spike Recovery outside accepted recovery limit

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD
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Client: Work Order:	MT DEQ-Federal H16060056	Superfund		ANALYT	ICAL QC Prepared by	SUMMARY Helena, MT Bra	REPO	RT		Date	: 07-Jul-1	6
Project:	CFR Monitoring-4	474374		В	atchID:	R115727						
Run ID :Run Orde	r: PHSC_101-H_16060	)3A: 7	SampType:	Method Blan	k		Lab	ID: <b>MB</b>		Method	: A2320 B	
Analysis Date: 06/	/03/16 09:21	Units: <b>m</b>	ng/L			Prep Info:	: Prep Da	te:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
A kalinity, Total as	CaCO3	2	0.2									
Associated sample	s: H16060056-001A, H 009A, H16060056-0	116060056-002A, 10A, H16060056-	H16060056 011A, H160	-003A, H1606( 60056-012A, I	0056-004A, H H16060056-0	116060056-005A, 13A, H16060056-	H1606005 014A, H16	6-006A, H10 060056-015	6060056-007A, 5A, H16060056-	H16060056-00 016A, H160600	8A, H16060 056-017A	056-
Run ID :Run Orde	r: PHSC_101-H_16060	)3A: 9	SampType:	Laboratory C	ontrol Sampl	le	Lab	ID: LCS		Method	: A2320 B	
Analysis Date: 06/	03/16 09:26	Units: <b>m</b>	ng/L			Prep Info:	: Prep Da	te:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
A kalinity, Total as	CaCO3	580	4.0	600	1.84	4 96	90	110				
Associated sample	s: H16060056-001A, H 009A, H16060056-0	116060056-002A, 110A, H16060056-	H16060056 011A, H160	-003A, H1606 60056-012A, I	0056-004A, H H16060056-0	116060056-005A, 13A, H16060056-	H1606005 014A, H16	6-006A, H10 060056-015	6060056-007A, 5A, H16060056-	H16060056-00 016A, H160600	8A, H16060 )56-017A	056-
Run ID :Run Orde	r: PHSC_101-H_16060	)3A: 28	SampType:	Sample Dupl	icate		Lab	ID: <b>H16060</b>	056-009ADUP	Method	: A2320 B	
Analysis Date: 06/	03/16 10:30	Units: <b>n</b>	ng/L			Prep Info:	Prep Da	te:		Prep Method	:	
Analytes 2		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
A kalinity, Total as	CaCO3	94	4.0		C	)			92.5	1.1	10	
Bicarbonate as HO	CO3	110	4.0		(	)			109.6	0.9	10	
Associated sample	s: H16060056-001A, H 009A, H16060056-0	116060056-002A, 110A, H16060056-	H16060056 011A, H160	-003A, H1606 60056-012A, I	0056-004A, H H16060056-0	116060056-005A, 13A, H16060056-	H1606005 014A, H16	6-006A, H10 060056-015	6060056-007A, 5A, H16060056-	H16060056-00 016A, H160600	8A, H16060 056-017A	056-
Run ID :Run Orde	r: PHSC_101-H_16060	)3A: 42	SampType:	Sample Dupl	icate		Lab	ID: <b>H16060</b>	056-015ADUP	Method	A2320 B	
Analysis Date: 06/	/03/16 11:11	Units: <b>n</b>	ng/L			Prep Info:	Prep Da	te:		Prep Method	:	
Analytes 2		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
A kalinity, Total as	CaCO3	93	4.0		(	)			92.35	0.9	10	
Bicarbonate as H0	03	67	4.0		C	)			66.55	0.8	10	
Associated sample	s: H16060056-001A, H	116060056-002A,	H16060056	-003A, H1606	0056-004A, H	116060056-005A,	H1606005	6-006A, H1	6060056-007A,	H16060056-00	8A, H16060	056-

009A, H16060056-010A, H16060056-011A, H16060056-012A, H16060056-013A, H16060056-014A, H16060056-015A, H16060056-016A, H16060056-017A

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16060056	erfund		ANALYT	ICAL QC	SUMMARY	<b>REPOI</b>	RT	.0711	Date	: 07-Jul-1	6
Project:	CFR Monitoring-4743	74		B	atchID:	R115738	nen					
Run ID :Run Orde	FIA203-HE 160603A: 9		SampType:	Initial Calibra	ation Verifica	tion Standard	Lab I	D: ICV		Method	: E353.2	
Analysis Date: 06/	03/16 08:06	Units:	mg/L			Prep Info	: Prep Dat	te:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	ıl %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+I	Nitrite as N	0.904	0.010	1	(	) <b>90</b>	90	110				
Associated sample	s: H16060056-001D, H1606 009D, H16060056-010D,	0056-0021 H1606005	D, H16060056 56-011D, H160	5-003D, H1606 060056-012D,	0056-004D, H H16060056-0	H16060056-005D, 013D, H16060056	H1606005 -014D, H16	6-006D, H1 060056-01	6060056-007D, 5D, H16060056	H16060056-00 -016D, H16060	)8D, H16060 056-017D	0056-
Run ID :Run Orde	FIA203-HE_160603A: 10		SampType:	Initial Calibra	ation Blank, I	nstrument Blank	Lab I	D: ICB		Method	: E353.2	
Analysis Date: 06/	03/16 08:07	Units:	mg/L			Prep Info	: Prep Dat	te:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+	Nitrite as N -(	0.00167	0.010		(	)	0	0				
Associated sample	s: H16060056-001D, H1606 009D, H16060056-010D,	0056-0021 H1606005	D, H16060056 56-011D, H160	6-003D, H1606 060056-012D,	0056-004D, H H16060056-0	H16060056-005D, 013D, H16060056	H1606005 -014D, H16	6-006D, H1 060056-01	6060056-007D, 5D, H16060056	H16060056-00 -016D, H16060	)8D, H1606( 056-017D	0056-
Run ID :Run Orde	: FIA203-HE_160603A: 11		SampType:	Laboratory F	ortified Blan	k	Lab I	D: <b>LFB</b>		Method	: E353.2	
Analysis Date: 06/	03/16 08:08	Units:	mg/L			Prep Info	: Prep Dat	te:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+	Nitrite as N	0.962	0.011	1	(	) <b>96</b>	90	110				
Associated sample	s: H16060056-001D, H1606 009D, H16060056-010D,	0056-0021 H1606005	D, H16060056 56-011D, H160	5-003D, H1606 060056-012D,	0056-004D, H H16060056-0	H16060056-005D, )13D, H16060056	H1606005 -014D, H16	6-006D, H1 060056-01	6060056-007D, 5D, H16060056	H16060056-00 -016D, H16060	08D, H16060 056-017D	0056-
Run ID :Run Orde	FIA203-HE_160603A: 39		SampType:	Continuing C	alibration Ve	erification Standa	n <b>r</b> Labl	D: CCV		Method	: E353.2	
Analysis Date: 06/	03/16 08:42	Units:	mg/L			Prep Info	: Prep Dat	te:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+I	Nitrite as N	0.496	0.010	0.5	(	) 99	90	110				
Associated sample	s: H16060056-001D, H1606 009D, H16060056-010D,	0056-0021 H1606005	D, H16060056 56-011D, H160	5-003D, H1606 060056-012D,	0056-004D, H H16060056-0	H16060056-005D, 013D, H16060056	H1606005 -014D, H16	6-006D, H1 060056-01	6060056-007D, 5D, H16060056	H16060056-00 -016D, H16060	)8D, H16060 056-017D	0056-
Run ID :Run Orde	:: FIA203-HE_160603A: 41		SampType:	Sample Matri	ix Spike		Lab I	D: <b>H16060</b>	056-001DMS	Method	E353.2	
Analysis Date: 06/	03/16 08:44	Units:	mg/L			Prep Info	: Prep Dat	te:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+I	Nitrite as N	0.952	0.011	1	0.006447	7 95	90	110				
Qualifiers: ND J -	- Not Detected at the Reporti Analyte detected below quant	ng Limit itation limi	ts F	S - Spike Reco R - RPD outsid	very outside a e accepted re	accepted recovery covery limits	limit N A	- Analyte co - Analyte co	ncentration was	not sufficiently ater than four tir	high to calcones the spike Pag	ulate RPD e amount e 60 of 10

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Client: Work Order:	MT DEQ-Federal Su H16060056	perfund			ICAL QC S	UMMARY	REPO	RT	2.0711	Date: 07-Jul-	-16
Project:	CFR Monitoring-474	374		B	atchID: R	115738					
Run ID :Run Order	: FIA203-HE_160603A: 4 <sup>2</sup>	1	SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16060</b>	056-001DMS	Method: E353.2	
Analysis Date: 06/	03/16 08:44	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Associated samples	8: H16060056-001D, H160 009D, H16060056-010D	060056-0021 0, H1606005	D, H16060056 6-011D, H160	-003D, H1606 060056-012D,	0056-004D, H10 H16060056-013	6060056-005D D, H16060056	, H1606005 -014D, H10	56-006D, H1 6060056-01	16060056-007D 5D, H16060056	, H16060056-008D, H160 -016D, H16060056-017D	60056-
Run ID :Run Order	: FIA203-HE_160603A: 42	2	SampType:	Sample Matr	ix Spike Duplica	ate	Lab	ID: <b>H16060</b>	056-001DMSD	Method: E353.2	
Analysis Date: 06/	03/16 08:45	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	0.948	0.011	1	0.006447	94	90	110	0.9517	<b>0.3</b> 20	)
Associated samples	5: H16060056-001D, H160 009D, H16060056-010D	)60056-0021 ), H1606005	D, H16060056 6-011D, H160	-003D, H1606 060056-012D,	0056-004D, H10 H16060056-013	6060056-005D D, H16060056	, H1606005 -014D, H10	56-006D, H1 6060056-01	6060056-007D 5D, H16060056	, H16060056-008D, H160 -016D, H16060056-017D	60056-
Run ID :Run Order	FIA203-HE_160603A: 5	3	SampType:	Continuing C	Calibration Verif	ication Standa	ar Lab	ID: <b>CCV</b>		Method: E353.2	
Analysis Date: 06/	03/16 08:58	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	0.496	0.010	0.5	0	99	90	110			
Associated samples	S: H16060056-001D, H160 009D, H16060056-010E	)60056-0021 ), H1606005	D, H16060056 6-011D, H160	-003D, H1606 060056-012D,	0056-004D, H10 H16060056-013	6060056-005D D, H16060056	, H1606005 -014D, H10	56-006D, H1 6060056-01	6060056-007D 5D, H16060056	, H16060056-008D, H160 -016D, H16060056-017D	60056-
Run ID :Run Order	FIA203-HE_160603A: 5	5	SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16060</b>	056-011DMS	Method: E353.2	
Analysis Date: 06/	03/16 09:01	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	0.962	0.011	1	0.01756	94	90	110			
Associated samples	s: H16060056-001D, H160 009D, H16060056-010D	)60056-0021 ), H1606005	D, H16060056 6-011D, H160	-003D, H1606 060056-012D,	0056-004D, H10 H16060056-013	6060056-005D D, H16060056	, H1606005 -014D, H10	56-006D, H1 6060056-01	6060056-007D 5D, H16060056	, H16060056-008D, H160 -016D, H16060056-017D	60056-
Run ID :Run Order	FIA203-HE_160603A: 50	3	SampType:	Sample Matr	ix Spike Duplica	ate	Lab	ID: <b>H16060</b>	056-011DMSD	Method: E353.2	
Analysis Date: 06/	03/16 09:02	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	0.964	0.011	1	0.01756	95	90	110	0.9621	<b>0.2</b> 20	)
Associated samples	s: H16060056-001D, H160 009D, H16060056-010E	060056-0021 0, H1606005	D, H16060056 66-011D, H160	-003D, H1606 060056-012D,	0056-004D, H10 H16060056-013	6060056-005D D, H16060056	, H1606005 -014D, H10	56-006D, H1 6060056-01	6060056-007D 5D, H16060056	, H16060056-008D, H160 -016D, H16060056-017D	60056-
Qualifiers: ND	- Not Detected at the Repo	rting Limit	5	6 - Spike Reco	very outside acc	epted recovery	limit N	- Analyte co	oncentration was	s not sufficiently high to ca	culate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16060056	perfund		ANALYT	ICAL QC SU Prepared by Hele	MMARY	REPO	RT		Date	: 07-Jul-1	6
Project:	CFR Monitoring-4743	74		В	atchID: R1							
Run ID :Run Order:	FIA203-HE_160603A: 69		SampType:	Sample Matri	x Spike		Lab	ID: <b>H16060</b>	064-002AMS	Method	: E353.2	
Analysis Date: 06/0	alysis Date: 06/03/16 09:18 Uni					Prep Info	: Prep Da	te:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	itrite as N	13.6	0.11	10	4.234	94	90	110				
Associated samples	: H16060056-001D, H1606 009D, H16060056-010D,	0056-002D H1606005	9, H16060056 6-011D, H160	-003D, H1606 060056-012D,	0056-004D, H160 H16060056-013D	60056-005D, , H16060056	, H1606005 -014D, H16	6-006D, H1 5060056-01	6060056-007D, 5D, H16060056	, H16060056-00 -016D, H16060	08D, H16060 056-017D	)056-
Run ID :Run Order:	FIA203-HE_160603A: 70		SampType:	Sample Matri	x Spike Duplicate	•	Lab	ID: <b>H16060</b>	064-002AMSD	Method	E353.2	
Analysis Date: 06/0	3/16 09:19	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	itrite as N	13.4	0.11	10	4.234	92	90	110	13.64	1.5	20	

Associated samples: H16060056-001D, H16060056-002D, H16060056-003D, H16060056-004D, H16060056-005D, H16060056-006D, H16060056-007D, H16060056-008D, H16060056-009D, H16060056-010D, H16060056-011D, H16060056-012D, H16060056-013D, H16060056-014D, H16060056-015D, H16060056-016D, H16060056-017D

S - Spike Recovery outside accepted recovery limit

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Federal Su H16060056	perfund		ANALYT	<b>ICAL QC</b> Prepared by I	SUMMARY Helena, MT Bra	REPOI	RT		Date	: 07-Jul-1	16
Project:	CFR Monitoring-474	374		B	atchID:	R115769						
Run ID :Run Orde	r: IC102-H_160603A: 12		SampType:	Method Blan	k		Lab	ID: ICB		Method	: E300.0	
Analysis Date: 06	/03/16 11:33	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	ł:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		0.02	0.006									
Sulfate		ND	0.05									
Associated sample	s: H16060056-001A, H160 009A, H16060056-010A	060056-002 <i>4</i> A, H1606005	A, H16060056 6-011A, H160	-003A, H1606 60056-012A,	0056-004A, H H16060056-0	16060056-005A, 13A, H16060056-	H1606005 014A, H16	6-006A, H1 060056-015	6060056-007A, 5A, H16060056-	H16060056-00 016A, H16060	8A, H16060 056-017A	)056-
Run ID :Run Orde	r: IC102-H_160603A: 13		SampType:	Initial Calibra	ation Verificat	ion Standard	Lab	ID: <b>ICV</b>		Method	1: E300.0	
Analysis Date: 06	is Date: 06/03/16 11:44 Un					Prep Info:	Prep Da	te:		Prep Method	ł:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		95.6	1.0	100	0	96	90	110				
Sulfate		389	1.0	400	0	97	90	110				
Associated sample	s: H16060056-001A, H160 009A, H16060056-010A	060056-002 <i>4</i> A, H1606005	A, H16060056 6-011A, H160	-003A, H1606 60056-012A,	0056-004A, H H16060056-0	16060056-005A, 13A, H16060056-	H16060050 014A, H16	6-006A, H1 060056-015	6060056-007A, 5A, H16060056-	H16060056-00 016A, H16060	8A, H16060 056-017A	)056-
Run ID :Run Orde	r: IC102-H_160603A: 14		SampType:	Laboratory F	ortified Blank	ζ.	Lab I	ID: <b>LFB</b>		Method	i: E300.0	
Analysis Date: 06	/03/16 11:55	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	1:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		45.0	1.0	50	0.022	90	90	110				
Sulfate		201	1.0	200	0	100	90	110				
Associated sample	s: H16060056-001A, H160 009A, H16060056-010A	060056-002 <i>4</i> A, H1606005	A, H16060056 6-011A, H160	-003A, H1606 60056-012A,	0056-004A, H H16060056-0	16060056-005A, 13A, H16060056-	H1606005 014A, H16	6-006A, H1 060056-015	6060056-007A, 5A, H16060056-	H16060056-00 016A, H16060	8A, H16060 056-017A	)056-
Run ID :Run Orde	r: IC102-H_160603A: 15		SampType:	Continuing (	Calibration Ve	rification Standa	<b>r</b> Labl	ID: CCV060	316-1	Method	i: E300.0	
Analysis Date: 06	/03/16 12:06	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	1:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		95.8	1.0	100	0	96	90	110				
Sulfate		390	1.0	400	0	98	90	110				
Associated sample	s: H16060056-001A, H160 009A, H16060056-010A	390 )60056-002/ A, H1606005	1.0 A, H16060056 6-011A, H160	400 -003A, H1606 060056-012A,	0 0056-004A, H H16060056-0	98 16060056-005A, 13A, H16060056-	90 H1606005 014A, H16	110 6-006A, H1 060056-01	6060056-007A, 5A, H16060056-	H16060056-00 016A, H16060	8A, H16060 056-017A	)05

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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LABORATORIES	www.energylab.co	om	Coll	ege Station, TX 8	88.690.2218 • G	illings, MI 800.735.4 illette, WY 866.686.7	489 • Caspe 175 • Helen	er, wy 888.233 ia, MT <b>877.47</b> 2	0.0515 2.0711			
Client: Work Order:	MT DEQ-Federal Su H16060056	uperfund		ANALYT	ICAL QC	SUMMARY Helena, MT Brai	REPO	RT		Date	e: 07-Jul-1	16
Project:	CFR Monitoring-474	374		В	atchID:	R115769						
Run ID :Run Orde	er: IC102-H_160603A: 28		SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16060</b>	056-009AMS	Method	d: <b>E300.0</b>	
Analysis Date: 06	/03/16 14:31	Units:	mg/L			Prep Info:	Prep Da	ate:		Prep Method	d:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		53.2	1.0	50	5.479	95	90	110				
Sulfate		254	1.0	200	52.96	101	90	110				
Associated sample	es: H16060056-001A, H160 009A, H16060056-010A	060056-002/ A, H1606005	A, H16060056 6-011A, H160	-003A, H1606 60056-012A,	0056-004A, H H16060056-01	16060056-005A, I3A, H16060056-	H1606005 014A, H16	6-006A, H1 060056-01	6060056-007A, 5A, H16060056 <sup>,</sup>	H16060056-00 -016A, H16060	08A, H16060 056-017A	056-
Run ID :Run Orde	er: IC102-H_160603A: 29		SampType:	Sample Matr	ix Spike Dupli	icate	Lab	ID: <b>H16060</b>	056-009AMSD	Method	d: <b>E300.0</b>	
Analysis Date: 06	/03/16 14:42	Units:	mg/L			Prep Info:	Prep Da	ate:		Prep Method	d:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		53.5	1.0	50	5.479	96	90	110	53.2	0.6	20	
0 11 1												
Sulfate		257	1.0	200	52.96	102	90	110	254	1.2	20	050
Sulfate Associated sample Run ID :Run Orde	es: H16060056-001A, H160 009A, H16060056-010A	257 060056-002/ A, H1606005	1.0 A, H16060056 66-011A, H160 SampType:	200 -003A, H1606 60056-012A, Continuing C	52.96 0056-004A, H H16060056-01 Calibration Ver	102 16060056-005A, 13A, H16060056- rification Standa	90 H1606005 014A, H16 r Lab	110 6-006A, H1 5060056-01 ID: CCV060	254 6060056-007A, 5A, H16060056	1.2 H16060056-00 -016A, H16060 Method	20 08A, H16060 056-017A d: E300.0	)056-
Associated sample Run ID :Run Orde	es: H16060056-001A, H160 009A, H16060056-010A r: IC102-H_160603A: 30 /03/16 14-53	257 060056-002/ A, H1606005	1.0 A, H16060056 66-011A, H160 SampType:	200 -003A, H1606 60056-012A, Continuing C	52.96 0056-004A, H H16060056-01 Calibration Ver	102 16060056-005A, I3A, H16060056- rification Standa Pren Info	90 H1606005 014A, H16 r Lab	110 6-006A, H1 6060056-01! ID: CCV060	254 6060056-007A, 5A, H16060056 0316-2	1.2 H16060056-00 -016A, H16060 Method	20 08A, H16060 056-017A d: E300.0	0056-
Associated sample Run ID :Run Orde Analysis Date: 06, Analytes 2	es: H16060056-001A, H160 009A, H16060056-010A er: IC102-H_160603A: 30 /03/16 14:53	257 060056-002/ A, H1606005 Units: Result	1.0 A, H16060056 66-011A, H160 SampType: mg/L PQL	200 -003A, H1606 60056-012A, Continuing C	52.96 0056-004A, H H16060056-01 Calibration Ver	102 16060056-005A, I3A, H16060056- rification Standa Prep Info: %REC	90 H1606005 014A, H16 r Lab Prep Da LowLimit	110 66-006A, H1 6060056-01! ID: CCV060 ate: HighLimit	254 6060056-007A, 5A, H16060056 0316-2 RPD Ref Val	1.2 H16060056-00 -016A, H16060 Method Prep Method %RPD	20 <b>D8A, H16060</b> <b>056-017A</b> d: <b>E300.0</b> d: RPDLimit	0 <b>056-</b> Qual
Sulfate Associated sample Run ID :Run Orde Analysis Date: 06, Analytes 2 Chloride	es: H16060056-001A, H160 009A, H16060056-010A rr: IC102-H_160603A: 30 /03/16 14:53	257 060056-002/ A, H1606005 Units: Result 97.6	1.0 A, H16060056 56-011A, H160 SampType: mg/L PQL 1.0	200 -003A, H1606 60056-012A, Continuing C SPK value 100	52.96 0056-004A, H H16060056-01 Calibration Ver SPK Ref Val	102 16060056-005A, 13A, H16060056- rification Standa Prep Info: %REC 98	90 H1606005 014A, H16 r Lab Prep Da LowLimit 90	110 6-006A, H1 5060056-015 ID: CCV060 ate: HighLimit 110	254 6060056-007A, 5A, H16060056 0316-2 RPD Ref Val	1.2 H16060056-00 -016A, H16060 Method Prep Method %RPD	20 08A, H16060 056-017A d: E300.0 d: RPDLimit	0056- Qual
Sulfate Associated sample Run ID :Run Orde Analysis Date: 06, Analytes 2 Chloride Sulfate	es: H16060056-001A, H160 009A, H16060056-010A er: IC102-H_160603A: 30 /03/16 14:53	257 060056-002/ A, H1606005 Units: Result 97.6 398	1.0 A, H16060056 56-011A, H160 SampType: mg/L PQL 1.0 1.0	200 -003A, H1606 60056-012A, Continuing C SPK value 100 400	52.96 0056-004A, H H16060056-01 Calibration Ver SPK Ref Val 0 0	102 16060056-005A, 13A, H16060056- rification Standa Prep Info: %REC 98 99	90 H1606005 014A, H16 r Lab Prep Da LowLimit 90 90	110 66-006A, H1 5060056-01 ID: CCV060 ate: HighLimit 110 110	254 6060056-007A, 5A, H16060056 0316-2 RPD Ref Val	1.2 H16060056-00 -016A, H16060 Method Prep Method %RPD	20 08A, H16060 056-017A d: E300.0 d: RPDLimit	Qual
Sulfate Associated sample Run ID :Run Orde Analysis Date: 06, Analytes 2 Chloride Sulfate Associated sample	es: H16060056-001A, H160 009A, H16060056-010A or: IC102-H_160603A: 30 /03/16 14:53 es: H16060056-001A, H160 009A, H16060056-010A	257 060056-002/ A, H1606005 Units: Result 97.6 398 060056-002/ A, H1606005	1.0 A, H16060056 66-011A, H160 SampType: mg/L PQL 1.0 1.0 A, H16060056 66-011A, H160	200 -003A, H1606 60056-012A, Continuing C SPK value 100 400 -003A, H1606 60056-012A,	52.96 0056-004A, H H16060056-01 Calibration Ver SPK Ref Val 0 0 0056-004A, H H16060056-01	102 16060056-005A, I3A, H16060056- rification Standa Prep Info: %REC 98 99 16060056-005A, I3A, H16060056-	90 H1606005 014A, H16 r Lab Prep Da LowLimit 90 90 H1606005 014A, H16	110 66-006A, H1 5060056-01 ID: CCV060 ate: HighLimit 110 110 66-006A, H1 5060056-01	254 6060056-007A, 5A, H16060056 0316-2 RPD Ref Val 6060056-007A, 5A, H16060056	1.2 H16060056-00 -016A, H16060 Prep Method %RPD H16060056-00 -016A, H16060	20 08A, H16060 056-017A d: E300.0 d: RPDLimit 08A, H16060 056-017A	Qual
Sulfate Associated sample Run ID :Run Orde Analysis Date: 06, Analytes 2 Chloride Sulfate Associated sample Run ID :Run Orde	es: H16060056-001A, H160 009A, H16060056-010A r: IC102-H_160603A: 30 /03/16 14:53 es: H16060056-001A, H160 009A, H16060056-010A r: IC102-H_160603A: 42	257 060056-002/ A, H1606005 Units: Result 97.6 398 060056-002/ A, H1606005	1.0 A, H16060056 66-011A, H160 SampType: mg/L PQL 1.0 1.0 A, H16060056 66-011A, H160 SampType:	200 -003A, H1606 60056-012A, Continuing C SPK value 100 400 -003A, H1606 60056-012A, Sample Matr	52.96 0056-004A, H H16060056-01 Calibration Ver SPK Ref Val 0 0 0056-004A, H H16060056-01 ix Spike	102 16060056-005A, 13A, H16060056- rification Standa Prep Info: %REC 98 99 16060056-005A, 13A, H16060056-	90 H1606005 014A, H16 r Lab Prep Da LowLimit 90 90 H1606005 014A, H16	110 6-006A, H1 5060056-01 ID: CCV060 ate: HighLimit 110 110 66-006A, H1 5060056-01 ID: H16060	254 6060056-007A, 5A, H16060056 0316-2 RPD Ref Val 6060056-007A, 5A, H16060056 060-005AMS	1.2 H16060056-00 -016A, H16060 Prep Method %RPD H16060056-00 -016A, H16060	20 <b>D8A, H16060</b> <b>056-017A</b> d: <b>E300.0</b> d: RPDLimit <b>D8A, H16060</b> <b>056-017A</b> d: <b>E300.0</b>	Qual
Sulfate Associated sample Run ID :Run Orde Analysis Date: 06 Analytes 2 Chloride Sulfate Associated sample Run ID :Run Orde Analysis Date: 06	es: H16060056-001A, H160 009A, H16060056-010A er: IC102-H_160603A: 30 /03/16 14:53 es: H16060056-001A, H160 009A, H16060056-010A er: IC102-H_160603A: 42 /03/16 17:06	257 060056-002/ A, H1606005 Units: Result 97.6 398 060056-002/ A, H1606005	1.0 A, H16060056 66-011A, H160 SampType: mg/L 1.0 A, H16060056 66-011A, H160 SampType: mg/L	200 -003A, H1606 60056-012A, Continuing C SPK value 100 400 -003A, H1606 60056-012A, Sample Matr	52.96 0056-004A, H H16060056-01 Calibration Ver SPK Ref Val 0 0 0056-004A, H H16060056-01 ix Spike	102 16060056-005A, 13A, H16060056- rification Standa Prep Info: %REC 98 99 16060056-005A, 13A, H16060056-	90 H1606005 014A, H16 r Lab Prep Da LowLimit 90 90 H1606005 014A, H16 Lab Prep Da	110 6-006A, H1 5060056-01 ID: CCV060 ate: HighLimit 110 110 6-006A, H1 5060056-01 ID: H16060 ate:	254 6060056-007A, 5A, H16060056 0316-2 RPD Ref Val 6060056-007A, 5A, H16060056	1.2 H16060056-00 -016A, H16060 Prep Method %RPD H16060056-00 -016A, H16060 Prep Method	20 08A, H16060 056-017A d: E300.0 d: RPDLimit 08A, H16060 056-017A d: E300.0 d:	Qual
Sulfate Associated sample Run ID :Run Orde Analysis Date: 06, Analytes 2 Chloride Sulfate Associated sample Run ID :Run Orde Analysis Date: 06, Analytes 2	es: H16060056-001A, H160 009A, H16060056-010A or: IC102-H_160603A: 30 /03/16 14:53 es: H16060056-001A, H160 009A, H16060056-010A or: IC102-H_160603A: 42 /03/16 17:06	257 060056-002/ A, H1606005 Units: Result 97.6 398 060056-002/ A, H1606005 Units: Result	1.0 A, H16060056 66-011A, H160 SampType: mg/L PQL 1.0 1.0 A, H16060056 66-011A, H160 SampType: mg/L PQL	200 -003A, H1606 60056-012A, Continuing C SPK value 100 400 -003A, H1606 60056-012A, Sample Matr SPK value	52.96 0056-004A, H H16060056-01 Calibration Ver SPK Ref Val 0 0056-004A, H H16060056-01 ix Spike SPK Ref Val	102 16060056-005A, 13A, H16060056- rification Standa Prep Info: %REC 98 99 16060056-005A, 13A, H16060056- Prep Info: %REC	90 H1606005 014A, H16 r Lab Prep Da LowLimit 90 90 H1606005 014A, H16 Lab Prep Da LowLimit	110 6-006A, H1 5060056-01 ID: CCV060 ate: HighLimit 110 110 6-006A, H1 5060056-01 ID: H16060 ate: HighLimit	254 6060056-007A, 5A, H16060056 0316-2 RPD Ref Val 6060056-007A, 5A, H16060056 060-005AMS RPD Ref Val	1.2 H16060056-00 -016A, H16060 Prep Method %RPD H16060056-00 -016A, H16060 Prep Method %RPD	20 <b>D8A, H16060</b> <b>056-017A</b> d: <b>E300.0</b> d: RPDLimit <b>D8A, H16060</b> <b>056-017A</b> d: <b>E300.0</b> d: <b>E300.0</b> d: RPDLimit	Qual 0056-
Sulfate Associated sample Run ID :Run Orde Analysis Date: 06, Analytes 2 Chloride Sulfate Associated sample Run ID :Run Orde Analysis Date: 06, Analytes 2 Chloride	es: H16060056-001A, H160 009A, H16060056-010A er: IC102-H_160603A: 30 /03/16 14:53 es: H16060056-001A, H160 009A, H16060056-010A er: IC102-H_160603A: 42 /03/16 17:06	257 060056-002/ A, H1606005 Units: Result 97.6 398 060056-002/ A, H1606005 Units: Result 88.0	1.0 A, H16060056 i6-011A, H160 SampType: mg/L PQL 1.0 1.0 A, H16060056 i6-011A, H160 SampType: mg/L PQL 1.0	200 -003A, H1606 60056-012A, Continuing C SPK value 100 400 -003A, H1606 60056-012A, Sample Matr SPK value 50	52.96 0056-004A, H H16060056-01 Calibration Ver SPK Ref Val 0 0 0056-004A, H H16060056-01 ix Spike SPK Ref Val 38.94	102 16060056-005A, 13A, H16060056- rification Standa Prep Info: %REC 98 99 16060056-005A, 13A, H16060056- Prep Info: %REC 98	90 H1606005 014A, H16 r Lab Prep Da LowLimit 90 90 H1606005 014A, H16 Lab Prep Da LowLimit 90	110 6-006A, H1 5060056-01 ID: CCV060 ate: HighLimit 110 110 6-006A, H1 5060056-01 ID: H16060 ate: HighLimit 110	254 6060056-007A, 5A, H16060056 0316-2 RPD Ref Val 6060056-007A, 5A, H16060056 060-005AMS RPD Ref Val	1.2 H16060056-00 -016A, H16060 Prep Method %RPD H16060056-00 -016A, H16060 Prep Method %RPD	20 <b>D8A, H16060</b> <b>056-017A</b> d: <b>E300.0</b> d: RPDLimit <b>D8A, H16060</b> <b>056-017A</b> d: <b>E300.0</b> d: RPDLimit	Qual

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal S H16060056	uperfund		ANALYT	ICAL QC SU Prepared by Hel	<b>JMMARY</b> ena, MT Bra	( REPO	RT		Date	: 07-Jul-1	6
Project:	CFR Monitoring-474	4374		В	atchID: R1	15769						
Run ID :Run Order	IC102-H_160603A: 43		SampType:	Sample Matri	ix Spike Duplicat	е	Lab	ID: <b>H16060</b>	060-005AMSD	Method	l: E300.0	
Analysis Date: 06/	03/16 17:17	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	l:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		88.4	1.0	50	38.94	99	90	110	87.98	0.5	20	
Sulfate		242	1.0	200	39.63	101	90	110	244.6	1.3	20	
Associated samples	s: H16060056-001A, H16	060056-002A	, H16060056-	003A, H1606	0056-004A, H160	60056-005A	H1606005	6-006A, H1	6060056-007A,	H16060056-00	8A, H16060	056-

009A, H16060056-010A, H16060056-011A, H16060056-012A, H16060056-013A, H16060056-014A, H16060056-015A, H16060056-016A, H16060056-017A

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Su H16060056	perfund		ANALYT	ICAL QC Prepared by H	SUMMARY Helena, MT Bra	REPOI	RT		Date: 07-0	Jul-16	
Project:	CFR Monitoring-4743	374		В	atchID:	R115778						
Run ID :Run Order:	FIA203-HE_160606A: 9		SampType:	Continuing C	alibration Ve	rification Standa	r Lab	D: CCV		Method: A450	0 N-C	
Analysis Date: 06/0	6/16 10:17	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDL	imit Qual	
Nitrogen, Total		0.452	0.10	0.5	0	90	90	110				
Associated samples	: H16060056-001A, H160 009A, H16060056-010A	60056-002A , H1606005	A, H16060056 6-011A, H160	-003A, H1606 060056-012A,	0056-004A, H <sup>.</sup> H16060056-01	16060056-005A, I3A, H16060056-	H1606005 014A, H16	6-006A, H10 060056-015	6060056-007A, 5A, H16060056-	H16060056-008A, H1 016A, H16060056-01	6060056- 7A	
Run ID :Run Order:	FIA203-HE_160606A: 10		SampType:	Initial Calibra	tion Blank, In	strument Blank	Lab	D: ICB		Method: A450	0 N-C	
Analysis Date: 06/0	6/16 10:19	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDL	imit Qual	
Nitrogen, Total	(	0.000175	0.10		0		0	0				
Associated samples	: H16060056-001A, H160 009A, H16060056-010A	60056-002A , H1606005	A, H16060056 6-011A, H160	-003A, H1606 060056-012A,	0056-004A, H <sup>.</sup> H16060056-01	16060056-005A, I3A, H16060056-	H1606005 014A, H16	6-006A, H1 060056-015	6060056-007A, 5A, H16060056-	H16060056-008A, H1 016A, H16060056-01	6060056- 7A	
Run ID :Run Order:	FIA203-HE_160606A: 28		SampType:	Continuing C	alibration Ver	rification Standa	r Lab	D: <b>CCV</b>		Method: A450	0 N-C	
Analysis Date: 06/0	6/16 10:40	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDL	imit Qual	
Nitrogen, Total		0.455	0.10	0.5	0	91	90	110				
Associated samples	· H16060056-001A, H160	60056-002A	H16060056	-0034 H1606	0056-004A H	16060056-0054	H1606005	6-006A H1	6060056-0074	H16060056-008A H1	6060056-	

ciated samples: H16060056-001A, H16060056-002A, H16060056-003A, H16060056-004A, H16060056-005A, H16060056-006A, H16060056-007A, H16060056-008A, H16060056-017A 009A, H16060056-010A, H16060056-011A, H16060056-012A, H16060056-013A, H16060056-014A, H16060056-015A, H16060056-016A, H16060056-017A

S - Spike Recovery outside accepted recovery limit

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

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Client: Work Order:	MT DEQ-Federal Sup H16060056	erfund		ANALYT	ICAL QC S	SUMMARY elena. MT Bra	<b>REPO</b>	RT		Date:	07-Jul-1	6
Project:	CFR Monitoring-4743	74		В	atchID: F	R115783						
Run ID :Run Order	FIA203-HE_160606B: 7		SampType:	Initial Calibra	ation Verification	on Standard	Lab	ID: <b>ICV</b>		Method:	E350.1	
Analysis Date: 06/	06/16 11:42	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammoni	a as N	15.6	0.50	14.2	0	110	90	110				
Associated sample	s: H16060056-001D, H1606 009D, H16060056-010D,	0056-002 H160600	D, H16060056 56-011D, H160	-003D, H1606 060056-012D,	0056-004D, H1 H16060056-01	6060056-005D 3D, H16060056	, H1606005 -014D, H10	6-006D, H1 6060056-01	6060056-007D, 5D, H16060056	, H16060056-008 -016D, H160600	3D, H16060 56-017D	056-
Run ID :Run Order	: FIA203-HE_160606B: 8		SampType:	Laboratory F	ortified Blank		Lab	ID: LFB		Method:	E350.1	
Analysis Date: 06/	06/16 11:43	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammoni	a as N	1.06	0.055	1	0	106	90	110				
Associated sample	s: H16060056-001D, H1606 009D, H16060056-010D,	0056-002 H160600	D, H16060056 56-011D, H160	-003D, H1606 060056-012D,	60056-004D, H1 H16060056-01	6060056-005D 3D, H16060056	, H1606005 -014D, H10	6-006D, H1 6060056-01	6060056-007D, 5D, H16060056	, H16060056-008 -016D, H160600	3D, H16060 56-017D	056-
Run ID :Run Order	FIA203-HE_160606B: 9		SampType:	Continuing C	Calibration Veri	fication Standa	n <b>r</b> Lab	ID: <b>CCV</b>		Method:	E350.1	
Analysis Date: 06/	06/16 11:44	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammoni	a as N	0.528	0.050	0.5	0	106	90	110				
Associated sample	s: H16060056-001D, H1606 009D, H16060056-010D,	0056-002 H160600	D, H16060056 56-011D, H160	-003D, H1606 060056-012D,	0056-004D, H1 H16060056-01	6060056-005D 3D, H16060056	, H1606005 -014D, H10	6-006D, H1 6060056-01	6060056-007D, 5D, H16060056	, H16060056-008 -016D, H160600	3D, H16060 56-017D	056-
Run ID :Run Order	FIA203-HE_160606B: 10		SampType:	Initial Calibra	ation Blank, Ins	strument Blank	Lab	ID: ICB		Method:	E350.1	
Analysis Date: 06/	06/16 11:46	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammoni	a as N	0.0335	0.050		0		0	0				
Associated sample	s: H16060056-001D, H1606 009D, H16060056-010D,	0056-002 H160600	D, H16060056 56-011D, H160	-003D, H1606 060056-012D,	0056-004D, H1 H16060056-01	6060056-005D 3D, H16060056	, H1606005 -014D, H10	6-006D, H1 6060056-01	6060056-007D, 5D, H16060056	, H16060056-008 -016D, H160600	3D, H16060 56-017D	056-
Run ID :Run Order	FIA203-HE_160606B: 18		SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16060</b>	056-001DMS	Method:	E350.1	
Analysis Date: 06/	06/16 11:55	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	a as N	0.954	0.055	1	0	95	80	120				
Qualifiers: ND J - /	- Not Detected at the Report Analyte detected below quan	ing Limit titation lim	its F	S - Spike Reco R - RPD outsid	very outside act	cepted recovery overy limits	limit N A	- Analyte co - Analyte co	oncentration was	not sufficiently hater than four tim	iigh to calcu es the spike Page	llate RPD e amount e 67 of 10 <sup>.</sup>

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Client: Work Order:	MT DEQ-Federal Sup H16060056	erfund		ANALYT	ICAL QC	SUMMARY Helena, MT Bra	REPO	RT		Date	: 07-Jul-1	6
Project:	CFR Monitoring-4743	74		В	atchID:	R115783						
Run ID :Run Order:	FIA203-HE_160606B: 18		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16060</b>	056-001DMS	Method	E350.1	
Analysis Date: 06/0	06/16 11:55	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Associated samples	: H16060056-001D, H1606 009D, H16060056-010D,	0056-0021 H1606005	D, H16060056 6-011D, H160	-003D, H1606 060056-012D,	0056-004D, H H16060056-0 <sup>-</sup>	16060056-005D, 13D, H16060056	, H1606005 -014D, H16	6-006D, H1 6060056-01	6060056-007D, 5D, H16060056	H16060056-00 -016D, H16060	8D, H16060 056-017D	0056-
Run ID :Run Order:	FIA203-HE_160606B: 19		SampType:	Sample Matri	ix Spike Dupli	cate	Lab	ID: <b>H16060</b>	056-001DMSD	Method	E350.1	
Analysis Date: 06/0	06/16 11:56	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.970	0.055	1	0	97	80	120	0.9538	1.7	10	
Associated samples	: H16060056-001D, H1606 009D, H16060056-010D,	0056-0021 H1606005	D, H16060056 66-011D, H160	-003D, H1606 060056-012D,	0056-004D, H H16060056-0 <sup>-</sup>	16060056-005D, 13D, H16060056	, H1606005 -014D, H16	6-006D, H1 060056-01	6060056-007D, 5D, H16060056	H16060056-00 -016D, H16060	8D, H16060 056-017D	0056-
Run ID :Run Order:	FIA203-HE_160606B: 23		SampType:	Continuing C	alibration Ver	rification Standa	r Lab	ID: <b>CCV</b>		Method	E350.1	
Analysis Date: 06/0	6/16 12:01	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.528	0.050	0.5	0	106	90	110				
ssociated samples	: H16060056-001D, H1606 009D, H16060056-010D,	0056-0021 H1606005	D, H16060056 6-011D, H160	-003D, H1606 060056-012D,	0056-004D, H H16060056-0 <sup>-</sup>	16060056-005D, 13D, H16060056	, H1606005 -014D, H16	6-006D, H1 060056-01	6060056-007D, 5D, H16060056	H16060056-00 -016D, H16060	8D, H16060 056-017D	0056-
Run ID :Run Order:	FIA203-HE_160606B: 26		SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16060</b>	056-005DMS	Method	E350.1	
Analysis Date: 06/0	6/16 12:05	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.966	0.055	1	0	97	80	120				
Associated samples	: H16060056-001D, H1606 009D, H16060056-010D,	0056-0021 H1606005	D, H16060056 6-011D, H160	-003D, H1606 060056-012D,	0056-004D, H H16060056-0 <sup>-</sup>	16060056-005D, 13D, H16060056	, H1606005 -014D, H16	6-006D, H1 6060056-01	6060056-007D, 5D, H16060056	H16060056-00 -016D, H16060	8D, H16060 056-017D	0056-
Run ID :Run Order:	FIA203-HE_160606B: 27		SampType:	Sample Matri	ix Spike Dupli	cate	Lab	ID: <b>H16060</b>	056-005DMSD	Method	E350.1	
Analysis Date: 06/0	06/16 12:06	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.949	0.055	1	0	95	80	120	0.9661	1.8	10	
Associated samples	H16060056-001D, H1606 009D, H16060056-010D,	0056-0021 H1606005	D, H16060056 6-011D, H160	-003D, H1606 060056-012D,	0056-004D, H H16060056-0	16060056-005D, 13D, H16060056	, H1606005 -014D, H16	6-006D, H1 6060056-01	6060056-007D, 5D, H16060056	H16060056-00 -016D, H16060	8D, H16060 056-017D	0056-
Qualifiers: ND -	Not Detected at the Report	ng Limit		S - Spike Reco	very outside ad	ccepted recovery	limit N	- Analyte co	oncentration was	not sufficiently	high to calc	ulate RF

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order: Project:	MT DEQ-Federal Sup H16060056	erfund			ICAL QC Prepared by	SUMMARY Helena, MT Bra	REPO	RT		Date	: 07-Jul-1	'6
	CFR Monitoning-4743	/4		В	atchID:	R115783						
Run ID :Run Order:	FIA203-HE_160606B: 37		SampType:	Continuing C	alibration Ve	erification Standa	r Lab	ID: CCV		Method	E350.1	
Analysis Date: 06/0	6/16 12:18	Units:	mg/L			Prep Info:	Prep Da	ate:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.526	0.050	0.5	(	) 105	90	110				
Associated samples:	H16060056-001D, H1606 009D, H16060056-010D,	0056-002D H16060050	), H16060056 6-011D, H160	6-003D, H1606 060056-012D,	0056-004D, H H16060056-0	116060056-005D, 013D, H16060056	H1606005 -014D, H10	56-006D, H1 6060056-01	6060056-007D, 5D, H16060056	H16060056-00 -016D, H16060	08D, H1606 056-017D	0056-
Run ID :Run Order:	FIA203-HE_160606B: 40		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16060</b>	056-015DMS	Method	: E350.1	
Analysis Date: 06/0	6/16 12:21	Units:	mg/L			Prep Info:	Prep Da	ate:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.983	0.055	1	(	) 98	80	120				
Associated samples	H16060056-001D, H1606 009D, H16060056-010D,	0056-002D H1606005	), H16060056 6-011D, H160	6-003D, H1606 060056-012D,	0056-004D, H H16060056-0	116060056-005D, 13D, H16060056	H1606005 -014D, H10	56-006D, H1 6060056-01	6060056-007D, 5D, H16060056	H16060056-00 -016D, H16060	08D, H1606 0056-017D	0056-
Run ID :Run Order:	FIA203-HE_160606B: 41		SampType:	Sample Matri	ix Spike Dupl	licate	Lab	ID: <b>H16060</b>	056-015DMSD	Method	E350.1	
Analysis Date: 06/0	6/16 12:23	Units:	mg/L			Prep Info:	: Prep Da	ate:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.967	0.055	1	(	) 97	80	120	0.9827	1.6	10	
Associated samples:	H16060056-001D, H1606	0056-002D	, H16060056	6-003D, H1606	0056-004D, H	116060056-005D,	H1606005	56-006D, H1	6060056-007D,	H16060056-00	08D, H1606	0056-

009D, H16060056-010D, H16060056-011D, H16060056-012D, H16060056-013D, H16060056-014D, H16060056-015D, H16060056-016D, H16060056-017D

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

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Work Order:

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MT DEQ-Federal Superfund Client: H16060056

### ANALYTICAL QC SUMMARY REPORT

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Billings, MT 800.735.4489 • Casper, WY 888.235.0515

Date: 07-Jul-16

Project: CFR Monitoring-474374 Prepared by Helena, MT Branch

### BatchID: R115790

Run ID :Run Order: ICPMS204-B_160606	SampType:	Initial Calibra	tion Verification	Standard	Lab	ID: ICV STE	)	Method	E200.8		
Analysis Date: 06/06/16 13:10	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	:	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0626	0.0050	0.06	0	104	90	110				
Cadmium	0.0313	0.0010	0.03	0	104	90	110				
Calcium	3.17	0.50	3	0	106	90	110				
Copper	0.0636	0.010	0.06	0	106	90	110				
Lead	0.0604	0.010	0.06	0	101	90	110				
Magnesium	3.16	0.50	3	0	105	90	110				
Potassium	3.14	0.50	3	0	105	90	110				
Sodium	3.10	0.50	3	0	103	90	110				
Zinc	0.0657	0.010	0.06	0	110	90	110				
Associated samples: H16060056-012C											

Run ID :Run Order: ICPMS204-B_160	606A: 11	SampType: Interference Check Sample A		A Lab ID: ICSA			Method: <b>E200.8</b>				
Analysis Date: 06/06/16 13:13	Units:	mg/L			Prep Info:	: Prep Dat	te:		Prep Method	:	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	-0.000257	0.0050		0							
Cadmium	0.00111	0.0010		0							
Calcium	114	0.50	120	0	95	70	130				
Copper	0.000226	0.010		0							
Lead	0.000297	0.010		0							
Magnesium	40.8	0.50	40	0	102	70	130				
Potassium	41.5	0.50	40	0	104	70	130				
Sodium	103	0.50	100	0	103	70	130				
Zinc	0.000574	0.010		0							

Associated samples: H16060056-012C

Run ID :Run Order: ICPMS204-B_160	606A: 53	SampType:	Interference (	Check Sample A	Lab ID: ICSA				Method: E200.8		
Analysis Date: 06/06/16 17:20	06/16 17:20 Units: Result				Prep Info	: Prep Da	te:		Prep Method	l:	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	-0.000292	0.0050		0							
Cadmium	0.00114	0.0010		0							
Calcium	114	0.50	120	0	95	70	130				
Copper	7.10E-05	0.010		0							

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

LABORATORIES	www.ener	gylab.com	Coll	ege Station, TX 80	2.0/11						
Client: Work Order:	MT DEQ-Feder H16060056	al Superfund		ANALYT		<b>Date:</b> 07-Jul-16					
Project:	CFR Monitoring	g-474374		В	atchID: R11	5790					
Run ID :Run Orde	er: ICPMS204-B_160	606A: 53	SampType:	Interference	Check Sample A		Lab	ID: ICSA		Method: E200	.8
Analysis Date: 06	/06/16 17:20	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 9		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDL	mit Qual
Lead		0.000224	0.010		0						
Magnesium		41.5	0.50	40	0	104	70	130			
Potassium		41.4	0.50	40	0	104	70	130			
Sodium		103	0.50	100	0	103	70	130			
Zinc		0.000717	0.010		0						
Associated sample	es: H16060056-012C										
Run ID :Run Orde	er: ICPMS204-B_160	606A: 55	SampType:	Initial Calibra	tion Verification S	standard	Lab	ID: ICV STE	)	Method: E200	8
Analysis Date: 06	/06/16 17:26	Units:	mg/L			Prep Info:	: Prep Da	te:		Prep Method:	
Analytes 9		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDL	mit Qual
Arsenic		0.0615	0.0050	0.06	0	102	90	110			
Cadmium	senic 0.0615 dmium 0.0308		0.0010	0.03	0	103	90	110			

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Cadmium	0.0308	0.0010	0.03	0	103	90	110
Calcium	3.07	0.50	3	0	102	90	110
Copper	0.0618	0.010	0.06	0	103	90	110
Lead	0.0591	0.010	0.06	0	99	90	110
Magnesium	3.09	0.50	3	0	103	90	110
Potassium	3.03	0.50	3	0	101	90	110
Sodium	3.04	0.50	3	0	101	90	110
Zinc	0.0632	0.010	0.06	0	105	90	110

Associated samples: H16060056-012C

ENERGY

Run ID :Run Order: ICPMS204-B_160606	A: 100	SampType: Initial Calibration Verification Standard				rd Lab ID: ICV STD			Method: <b>E200.8</b>		
Analysis Date: 06/06/16 20:25	Units:	mg/L			Prep Info:	: Prep Da	te:		Prep Method:		
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual	
Arsenic	0.0597	0.0050	0.06	0	99	90	110				
Cadmium	0.0299	0.0010	0.03	0	100	90	110				
Calcium	2.97	0.50	3	0	99	90	110				
Copper	0.0608	0.010	0.06	0	101	90	110				
Lead	0.0575	0.010	0.06	0	96	90	110				
Magnesium	3.02	0.50	3	0	101	90	110				
Potassium	2.91	0.50	3	0	97	90	110				
Sodium	2.92	0.50	3	0	97	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

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R - RPD outside accepted recovery limits

<b>ENERGY</b> LABORATORIES	Trust our People. Trust our Data. www.energylab.com	College	Station, TX 888	0515 0711								
Client: Work Order:	MT DEQ-Federal Superfund H16060056	A	NALYTI Pi	CAL QC SU	UMMARY lena, MT Brai	REPO	RT		Date: 07-Jul-1	6		
Project:	CFR Monitoring-474374		BatchID: R115790									
Run ID :Run Order:	: ICPMS204-B_160606A: 100	SampType: Ini	tial Calibrat		Method: E200.8							
Analysis Date: 06/0	<b>06/16 20:25</b> Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:			
Analysis Date: <b>06/(</b> Analytes <mark>9</mark>	06/16 20:25 Units: Result	mg/L PQL	SPK value	SPK Ref Val	Prep Info: %REC	Prep Da LowLimit	te: HighLimit	RPD Ref Val	Prep Method: %RPD RPDLimit	Qual		
Analysis Date: 06/0 Analytes 9 Zinc	06/16 20:25 Units: Result 0.0624	mg/L PQL 0.010	SPK value 0.06	SPK Ref Val	Prep Info: %REC 104	Prep Da LowLimit 90	te: HighLimit 110	RPD Ref Val	Prep Method: %RPD RPDLimit	Qual		

Run ID :Run Order: ICPMS204-B_160606	SA: 101	SampType:	Interference	Check Sample A		Lab	D: ICSA		Method	: E200.8	
Analysis Date: 06/06/16 20:28	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	l:	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	-0.000258	0.0050		0							
Cadmium	0.00121	0.0010		0							
Calcium	110	0.50	120	0	92	70	130				
Copper	0.000274	0.010		0							
Lead	0.000233	0.010		0							
Magnesium	40.3	0.50	40	0	101	70	130				
Potassium	40.7	0.50	40	0	102	70	130				
Sodium	101	0.50	100	0	101	70	130				
Zinc	0.000711	0.010		0							
Associated samples: H16060056-012C											

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal St H16060056	iperfund		ANALYT	ICAL QC S Prepared by H	SUMMARY elena, MT Brar	REPO	RT		Date: 07-Jul-1	6
Project:	CFR Monitoring-474	374		В	atchID: F	115795					
Run ID :Run Order:	ICP2-HE_160606C: 6		SampType:	Initial Calibra	tion Verificatio	on Standard	Lab	ID: ICV		Method: E200.7	
Analysis Date: 06/0	6/16 12:25	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Calcium		39.4	1.0	40	0	99	95	105			
Magnesium		39.2	1.0	40	0	98	95	105			
Potassium		39.8	1.0	40	0	100	95	105			
Sodium		39.9	1.0	40	0	100	95	105			
Run ID :Run Order:	ICP2-HE_160606C: 7		SampType:	Continuing C	alibration Veri	fication Standa	r Lab	ID: CCV-1		Method: E200.7	
Analysis Date: 06/0	16/16 12·29	l Inits:	ma/l	e e i i i i i i i i i i i i i i i i i i		Pren Info:	Pren Da	te.		Pren Method:	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Calcium		24.8	1.0	25	0	99	95	105			
Magnesium		24.5	1.0	25	0	98	95	105			
Potassium		24.7	1.0	25	0	99	95	105			
Sodium		24.7	1.0	25	0	99	95	105			
Associated samples	: H16060056-001C, H160 009C, H16060056-010C	060056-002C C, H16060056	с, Н16060056- 6-011С, Н160	•003C, H1606 60056-013C,	0056-004C, H1 H16060056-01	6060056-005C, 4C, H16060056-	H1606005 015C, H16	6-006C, H1 6060056-01	6060056-007C, 6C, H16060056∙	H16060056-008C, H16060 -017C	0056-
Run ID :Run Order:	ICP2-HE_160606C: 16		SampType:	Interference	Check Sample	Α	Lab	ID: ICSA		Method: E200.7	
Analysis Date: 06/0	6/16 13:04	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes <u>4</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Calcium		456	1.0	500	0	91	80	120			
Magnesium		494	1.0	500	0	99	80	120			
Potassium		0.0111	1.0		0		0	0			
Sodium		0.0351	1.0		0		0	0			
Associated samples	: H16060056-001C, H160 009C, H16060056-010C	060056-002C 2, H16060056	, H16060056- 6-011C, H160	-003C, H1606 60056-013C,	0056-004C, H1 H16060056-01	6060056-005C, 4C, H16060056-	H1606005 015C, H16	6-006C, H1 6060056-01	6060056-007C, 6C, H16060056∙	H16060056-008C, H16060 -017C	0056-

Run ID :Run Order: ICP2-HE_160606C: 17		SampType: I	Interference (	Check Sample AB		Lab I	D: ICSAB		Method: E200.7	
Analysis Date: 06/06/16 13:08	Units: <b>n</b>	ng/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Calcium	460	1.0	500	0	92	80	120			
Magnesium	495	1.0	500	0	99	80	120			

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

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Client: Work Order:	MT DEQ-Federal Supe H16060056	erfund		ANALYT	ICAL QC SU		Date: 07-Jul-	16			
Project:	CFR Monitoring-47437	74		В	atchID: R11	5795					
Run ID :Run Order:	ICP2-HE_160606C: 17		SampType:	Interference	Check Sample AB		Lab	D: ICSAB		Method: E200.7	
Analysis Date: 06/0	6/16 13:08	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Potassium		19.3	1.0	20	0	97	80	120			
Sodium		19.3	1.0	20	0	97	80	120			
Associated samples:	H16060056-001C, H16060 009C, H16060056-010C, H	056-002C 11606005	с, H16060056 6-011С, H160	6-003C, H1606 060056-013C,	0056-004C, H1606 H16060056-014C,	0056-005C, H16060056-	H1606005 015C, H16	6-006C, H1 060056-01	6060056-007C 6C, H16060056	, H16060056-008C, H1606 5-017C	60056-
Run ID :Run Order:	ICP2-HE_160606C: 74		SampType:	Continuing C	alibration Verificat	tion Standar	r Lab	D: CCV		Method: E200.7	
Analysis Date: 06/0	6/16 16:40	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	

-	•				•	•			•		
Analytes <u>4</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.5	1.0	25	0	102	90	110				
Magnesium	25.6	1.0	25	0	102	90	110				
Potassium	26.2	1.0	25	0	105	90	110				
Sodium	26.0	1.0	25	0	104	90	110				

Associated samples: H16060056-001C, H16060056-002C, H16060056-003C, H16060056-004C, H16060056-005C, H16060056-006C, H16060056-007C, H16060056-008C, H16060056-

Run ID :Run Order: ICP2-HE_160606C: 86		SampType:	Continuing C	alibration Verifica	ation Standa	r Lab	D: <b>CCV</b>		Method	E200.7	
Analysis Date: 06/06/16 17:25	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	:	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	24.9	1.0	25	0	100	90	110				
Magnesium	24.9	1.0	25	0	100	90	110				
Potassium	25.1	1.0	25	0	100	90	110				
Sodium	25.0	1.0	25	0	100	90	110				

Associated samples: H16060056-001C, H16060056-002C, H16060056-003C, H16060056-004C, H16060056-005C, H16060056-006C, H16060056-007C, H16060056-008C, H16060056-

Run ID :Run Order: ICP2-HE_160606C: 98		SampType:	Continuing C	alibration Verifica	tion Standa	r Labl	D: <b>CCV</b>		Method:	E200.7	
Analysis Date: 06/06/16 18:10	SampType: 5           Units:         mg/L           Result         PQL           24.7         1.0           24.7         1.0           24.7         1.0				Prep Info:	Prep Dat	te:		Prep Method:		
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	24.7	1.0	25	0	99	90	110				
Magnesium	24.7	1.0	25	0	99	90	110				
Potassium	24.7	1.0	25	0	99	90	110				
Sodium	24.6	1.0	25	0	99	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16060056	erfund		ANALYT	ICAL QC SPrepared by H	SUMMARY lelena, MT Brar	REPORT nch		Date: 07-Jul-1	6
Project:	CFR Monitoring-4743									
Run ID :Run Order:	ICP2-HE_160606C: 98		SampType:	Continuing C	alibration Veri	fication Standar	Lab ID: CCV		Method: E200.7	
Analysis Date: 06/0	6/16 18:10	Units:	mg/L			Prep Info:	Prep Date:		Prep Method:	
Analytes <u>4</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit	RPD Ref Val	%RPD RPDLimit	Qual

Associated samples: H16060056-001C, H16060056-002C, H16060056-003C, H16060056-004C, H16060056-005C, H16060056-006C, H16060056-007C, H16060056-008C, H16060056-

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

<b>ENERGY</b> LABORATORIES	Trust our People. T www.energylab.com	<b>rust our Data.</b>	Coll	ege Station, TX <b>8</b> 8	B8.690.2218 •	Billings, MT <b>800.735.</b> Gillette, WY <b>866.686.</b>	<b>4489 •</b> Caspe <b>7175 •</b> Helen	er, WY <b>888.235</b> a, MT <b>877.472</b>	.0515 .0711			
Client: Work Order:	MT DEQ-Federal Su H16060056	perfund		ANALYT	ICAL QC Prepared by	SUMMARY Helena, MT Bra	<b>REPO</b>	RT		Date	: 07-Jul-1	6
Project:	CFR Monitoring-4743	374		В	atchID:	R115828						
Run ID :Run Order:	FIA202-HE_160607C: 9		SampType:	Initial Calibra	tion Verifica	tion Standard	Lab	ID: <b>ICV</b>		Method	: <b>E365.1</b>	
Analysis Date: 06/0	07/16 13:05	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.250	0.010	0.25	(	D <b>100</b>	90	110				
Associated samples	: H16060056-001D, H160 009D, H16060056-010D	60056-002D H16060050	9, H16060056 6-011D, H160	-003D, H1606 060056-012D,	0056-004D, H H16060056-(	H16060056-005D 013D, H16060056	, H1606005 5-014D, H10	66-006D, H1 6060056-01	6060056-007D 5D, H16060056	, H16060056-0 -016D	08D, H1606	0056-
Run ID :Run Order:	FIA202-HE_160607C: 10		SampType:	Continuing C	alibration Ve	erification Standa	ar Lab	ID: CCV		Method	: E365.1	
Analysis Date: 06/0	07/16 13:06	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.100	0.010	0.1	(	0 <b>100</b>	90	110				
Associated samples	E H16060056-001D, H160 009D, H16060056-010D	60056-002D H1606005	9, H16060056 6-011D, H160	-003D, H1606 )60056-012D,	0056-004D, H H16060056-0	H16060056-005D 013D, H16060056	, H1606005 5-014D, H10	66-006D, H1 6060056-01	6060056-007D 5D, H16060056	, H16060056-0 -016D	08D, H1606	0056-
Run ID :Run Order:	FIA202-HE_160607C: 11		SampType:	Initial Calibra	tion Blank, I	nstrument Blank	Lab	ID: ICB		Method	: E365.1	
Analysis Date: 06/0	)7/16 13:07	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P (	.000200	0.010		(	)	0	0				
Associated samples	E H16060056-001D, H160 009D, H16060056-010D	60056-002D H1606005	9, H16060056 6-011D, H160	-003D, H1606 060056-012D,	0056-004D, H H16060056-0	H16060056-005D 013D, H16060056	, H1606005 -014D, H10	6-006D, H1 6060056-01	6060056-007D 5D, H16060056	, H16060056-0 -016D	08D, H1606	0056-
Run ID :Run Order:	FIA202-HE_160607C: 27		SampType:	Continuing C	alibration Ve	erification Standa	ar Lab	ID: CCV		Method	: E365.1	
Analysis Date: 06/0	07/16 13:24	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.0957	0.010	0.1	(	) <b>96</b>	90	110				
Associated samples	E H16060056-001D, H160 009D, H16060056-010D	60056-002D H1606005	), H16060056 6-011D, H160	-003D, H1606 060056-012D,	0056-004D, H H16060056-0	H16060056-005D 013D, H16060056	, H1606005 5-014D, H10	6-006D, H1 6060056-01	6060056-007D 5D, H16060056	, H16060056-0 -016D	08D, H1606	0056-

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federa H16060056	al Superfund		ANALYT	ICAL QC SU Prepared by Hele	IMMARY	REPOF	RT		Date:	07-Jul-1	6
Project:	CFR Monitoring	-474374		В	atchID: R1	15831						
Run ID :Run Order	: ICPMS204-B_1606	07A: 10	SampType:	Initial Calibra	ation Verification S	Standard	Lab I	D: ICV STC	)	Method	E200.8	
Analysis Date: 06/	07/16 13:28	Units: I	mg/L			Prep Info:	Prep Dat	e:		Prep Method:		
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0606	0.0050	0.06	0	101	90	110				
Cadmium	rtes 5 nic C nium C		0.0010	0.03	0	101	90	110				
Copper	nic C nium C pr D		0.010	0.06	0	103	90	110				
Lead		0.0597	0.010	0.06	0	99	90	110				
Zinc		0.0601	0.010	0.06	0	100	90	110				
Associated samples	s: H16060056-001B, 005C, H16060056- H16060056-010B, 014C, H16060056-	H16060056-001C 006B, H16060056 H16060056-010C 015B, H16060056	, H16060056- -006C, H160 , H16060056- -015C, H160	002B, H1606 60056-007B, 011B, H1606 60056-016B,	0056-002C, H1606 H16060056-007C, 0056-011C, H1606 H16060056-016C,	60056-003B, H16060056- 60056-012B, H16060056-	H16060056 008B, H16 H16060056 017B, H16	5-003C, H1 060056-008 5-013B, H1 060056-017	6060056-004C, 3C, H16060056- 6060056-013C, 7C	H16060056-00 -009B, H160600 H16060056-01	5B, H16060 )56-009C, 4B, H16060	0056- 0056-
Run ID :Run Order	: ICPMS204-B_1606	07A: 11	SampType:	Interference	Check Sample A		Lab I	D: ICSA		Method	E200.8	
Analysis Date: 06/	07/16 13:32	Units: I	mg/L			Prep Info:	Prep Dat	e:		Prep Method:	•	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		-0.000349	0.0050		0							
<b>O</b> I I		0 00440	0 00 1 0		•							

Cadmium 0.00113 0.0010 0 -2.00E-06 0 Copper 0.010 0.000223 0.010 Lead 0 Zinc 0.000768 0.010 0

Associated samples: H16060056-001B, H16060056-001C, H16060056-002B, H16060056-002C, H16060056-003B, H16060056-003C, H16060056-004C, H16060056-005B, H16060056-005B, H16060056-007C, H16060056-008B, H16060056-009B, H16060056-009C, H16060056-010B, H16060056-010C, H16060056-011B, H16060056-011C, H16060056-012B, H16060056-013B, H16060056-013C, H16060056-014B, H16060056-014B, H16060056-014B, H16060056-014B, H16060056-016C, H16060056-017B, H16060056-017B, H16060056-017B, H16060056-017C

Run ID :Run Order: ICPMS204-B_16	0607A: 26	SampType:	Method Blanl	ĸ		Lab	ID: LRB		Method	: E200.8	
Analysis Date: 06/07/16 14:19	Units:			Prep Info	: Prep Da	ite:		Prep Method	1:		
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	6E-05									
Cadmium	ND	1E-05									
Copper	0.0001	6E-05									
Lead	ND	5E-06									
Zinc	0.0006	0.0002									

Associated samples: H16060056-001B, H16060056-002B, H16060056-003B, H16060056-005B, H16060056-006B, H16060056-007B, H16060056-008B, H16060056-009B, H16060056-009B, H16060056-0012B, H16060056-012B, H16060056-014B, H16060056-015B, H16060056-016B, H16060056-017B

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal H16060056	Superfund		ANALYT	ICAL QC	SUMMARY elena, MT Bra	<b>REPO</b>	RT		Date	: 07-Jul-1	16
Project:	CFR Monitoring-4	74374		В	atchID: F	R115831						
Run ID :Run Order	: ICPMS204-B_160607	7A: 27	SampType:	Laboratory F	ortified Blank		Lab	ID: LFB		Method	E200.8	
Analysis Date: 06/	07/16 14:22	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	:	
Analytes <u>5</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0497	0.0050	0.05	0	99	85	115				
Cadmium		0.0507	0.0010	0.05	0	101	85	115				
Copper		0.0503	0.010	0.05	0.0001176	100	85	115				
Lead		0.0488	0.010	0.05	0	98	85	115				
Zinc		0.0530	0.010	0.05	0.0005544	105	85	115				
Run ID :Run Order	010B, H16060056-0 	11B, H1606005 7A: 60	6-012B, H160	60056-013B,	H16060056-01	4B, H16060056	-015B, H16	ID: ICV STE	5B, H16060056-	-017B Method	: <b>E200.8</b>	
Run ID :Run Order: ICPMS204-B_160607A: 60												
Analysis Date: 06/	07/16 16:07	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	:	
Analysis Date: <b>06/</b> Analytes <u>5</u>	07/16 16:07	Units: Result	mg/L PQL	SPK value	SPK Ref Val	Prep Info %REC	Prep Da : LowLimit	ite: HighLimit	RPD Ref Val	Prep Method %RPD	: RPDLimit	Qual
Analysis Date: <b>06/</b> Analytes <u>5</u> Arsenic	07/16 16:07	Units: Result 0.0613	mg/L PQL 0.0050	SPK value 0.06	SPK Ref Val	Prep Info %REC 102	: Prep Da LowLimit 90	ite: HighLimit 110	RPD Ref Val	Prep Method %RPD	: RPDLimit	Qual
Analysis Date: <b>06/</b> Analytes <u>5</u> Arsenic Cadmium	07/16 16:07	Units: Result 0.0613 0.0302	mg/L PQL 0.0050 0.0010	SPK value 0.06 0.03	SPK Ref Val 0 0	Prep Info %REC 102 101	: Prep Da LowLimit 90 90	tte: HighLimit 110 110	RPD Ref Val	Prep Method %RPD	: RPDLimit	Qual
Analysis Date: <b>06/</b> Analytes <u>5</u> Arsenic Cadmium Copper	07/16 16:07	Units: Result 0.0613 0.0302 0.0627	mg/L PQL 0.0050 0.0010 0.010	SPK value 0.06 0.03 0.06	SPK Ref Val 0 0 0	Prep Info %REC 102 101 105	: Prep Da LowLimit 90 90 90	tte: HighLimit 110 110 110	RPD Ref Val	Prep Method %RPD	: RPDLimit	Qual
Analysis Date: 06/ Analytes <u>5</u> Arsenic Cadmium Copper Lead	07/16 16:07	Units: Result 0.0613 0.0302 0.0627 0.0595	mg/L PQL 0.0050 0.0010 0.010 0.010	SPK value 0.06 0.03 0.06 0.06	SPK Ref Val 0 0 0 0	Prep Info %REC 102 101 105 99	: Prep Da LowLimit 90 90 90 90	tte: HighLimit 110 110 110 110	RPD Ref Val	Prep Method %RPD	: RPDLimit	Qual
Analysis Date: 06/v Analytes 5 Arsenic Cadmium Copper Lead Zinc	07/16 16:07	Units: Result 0.0613 0.0302 0.0627 0.0595 0.0621	mg/L PQL 0.0050 0.0010 0.010 0.010 0.010	SPK value 0.06 0.03 0.06 0.06 0.06	SPK Ref Val 0 0 0 0 0	Prep Info %REC 102 101 105 99 104	: Prep Da LowLimit 90 90 90 90 90	tte: HighLimit 110 110 110 110 110	RPD Ref Val	Prep Method %RPD	: RPDLimit	Qual
Analysis Date: 06/ Analytes <u>5</u> Arsenic Cadmium Copper Lead Zinc Associated samples	07/16 16:07 5: H16060056-001B, H 005C, H16060056-00 H16060056-010B, H 014C, H16060056-01	Units: Result 0.0613 0.0302 0.0627 0.0595 0.0621 16060056-001C 06B, H1606005 16060056-010C 15B, H1606005	mg/L PQL 0.0050 0.0010 0.0	SPK value 0.06 0.03 0.06 0.06 0.06 60056-007B, -011B, H1606 60056-016B,	SPK Ref Val 0 0 0 0 0 0056-002C, H1 H16060056-00 0056-011C, H1 H16060056-01	Prep Info %REC 102 101 105 99 104 6060056-003B, 7C, H16060056 6060056-012B, 6C, H16060056	: Prep Da LowLimit 90 90 90 90 90 90 90 90 90 90 90 90 90	tte: HighLimit 110 110 110 110 110 6-003C, H1 5060056-003 6-013B, H1 5060056-013	RPD Ref Val 6060056-004C, 8C, H16060056- 6060056-013C, 7C	Prep Method %RPD H16060056-00 -009B, H160600 H16060056-01	: RPDLimit 5B, H1606( 056-009C, 4B, H1606(	Qual 0056- 0056-
Analysis Date: 06/ Analytes <u>5</u> Arsenic Cadmium Copper Lead Zinc Associated samples	07/16 16:07 5: H16060056-001B, H 005C, H16060056-00 H16060056-010B, H 014C, H16060056-0 : ICPMS204-B_160607	Units: Result 0.0613 0.0302 0.0627 0.0595 0.0621 16060056-0010 06B, H1606005 16060056-0100 15B, H1606005	mg/L PQL 0.0050 0.0010 0.0156 6-006C, H160 6-0056 6-015C, H160 SampType:	SPK value 0.06 0.03 0.06 0.06 0.06 0.02B, H1606 60056-007B, 011B, H1606 60056-016B, Interference	SPK Ref Val 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Prep Info %REC 102 101 105 99 104 6060056-003B, 7C, H16060056 6060056-012B, 6C, H16060056 A	: Prep Da LowLimit 90 90 90 90 90 90 90 90 90 90 90 90 90	tte: HighLimit 110 110 110 110 110 6-003C, H1 5060056-003 6-013B, H1 5060056-013 ID: ICSA	RPD Ref Val 6060056-004C, 8C, H16060056 6060056-013C, 7C	Prep Method %RPD H16060056-00 -009B, H160600 H16060056-01 Method	: RPDLimit 5B, H1606( 056-009C, 4B, H1606( : E200.8	Qual 0056- 0056-
Analysis Date: 06/ Analytes 5 Arsenic Cadmium Copper Lead Zinc Associated samples Run ID :Run Order Analysis Date: 06/	07/16 16:07 5: H16060056-001B, H 005C, H16060056-00 H16060056-010B, H 014C, H16060056-07 : ICPMS204-B_160607 07/16 16:11	Units: Result 0.0613 0.0302 0.0627 0.0595 0.0621 16060056-001C 06B, H1606005 16060056-010C 15B, H1606005 16060056-010C 16060056-010C 16060056-010C 16060056-010C 15B, H1606005 16060055 16060055 16060055 16060055 16060055 16060055 16060055 160600	mg/L PQL 0.0050 0.0010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 0.010 SampType: mg/L	SPK value 0.06 0.03 0.06 0.06 0.06 60056-007B, -011B, H1606 60056-016B, Interference	SPK Ref Val 0 0 0 0 0056-002C, H1 H16060056-00 0056-011C, H1 H16060056-01 Check Sample	Prep Info %REC 102 101 105 99 104 6060056-003B, 7C, H16060056 6060056-012B, 6C, H16060056 A Prep Info	: Prep Da LowLimit 90 90 90 90 90 90 90 90 90 90 90 90 90	tte: HighLimit 110 110 110 110 110 6-003C, H1 5060056-003 6-013B, H1 5060056-013 6-013B, H1 5060056-013	RPD Ref Val 6060056-004C, 8C, H16060056 6060056-013C, 7C	Prep Method %RPD H16060056-00 -009B, H160600 H16060056-01 Method Prep Method	: RPDLimit 5B, H16060 056-009C, 4B, H16060 : E200.8 :	Qual 0056- 0056-

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Run ID :Run Order: ICPMS204-B_160	607A: 61	SampType:	Interference (	Check Sample A		Lab	ID: ICSA		Method	: <b>E200.8</b>	
Analysis Date: 06/07/16 16:11	: 06/07/16 16:11 Units: mg/L Result PQI				Prep Info	: Prep Da	ite:		Prep Method	d:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	-0.000445	0.0050		0							
Cadmium	0.00108	0.0010		0							
Copper	0.000309	0.010		0							
Lead	0.000222	0.010		0							
Zinc	0.000743	0.010		0							

Associated samples: H16060056-001B, H16060056-001C, H16060056-002B, H16060056-002C, H16060056-003B, H16060056-003C, H16060056-004C, H16060056-005B, H16060056-005B, H16060056-009B, H16060056-009B, H16060056-009B, H16060056-009C, H16060056-010B, H16060056-010C, H16060056-011B, H16060056-011C, H16060056-012B, H16060056-013B, H16060056-013C, H16060056-014B, H16060056-015C, H16060056-015C, H16060056-015C, H16060056-015C, H16060056-015C, H16060056-016B, H16060056-016C, H16060056-017B, H16060056-017C

Qualifiers: ND - Not Detected at the Reporting Limit

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S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Fede H16060056	ral Superfund		ANALYT	ICAL QC SU Prepared by Hele	<b>JMMARY</b> ena, MT Brar	REPO	RT		Date	: 07-Jul-1	6
Project:	CFR Monitorin	g-474374		В	atchID: R1	15831						
Run ID :Run Order	: ICPMS204-B_160	)607A: 152	SampType:	Initial Calibra	ation Verification	Standard	Lab	ID: ICV STE	)	Method	E200.8	
Analysis Date: 06/0	07/16 21:02	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	i:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0611	0.0050	0.06	0	102	90	110				
Cadmium	Trust our People. Truwww.energylab.com           It:         MT DEQ-Federal Supk           K Order:         H16060056           ect:         CFR Monitoring-47437           D :Run Order:         ICPMS204-B_160607A: 15           ris Date:         06/07/16 21:02           rtes         5           nic         005C, H16060056-001B, H16060           iated samples:         H16060056-001B, H16060           014C, H16060056-010B, H16060         H16060056-010B, H16060           D :Run Order:         ICPMS204-B_160607A: 15           sis Date:         06/07/16 21:05           tes         5		0.0010	0.03	0	101	90	110				
Copper		0.0622	0.010	0.06	0	104	90	110				
Lead		0.0592	0.010	0.06	0	99	90	110				
Zinc		0.0617	0.010	0.06	0	103	90	110				
Associated samples	<ul> <li>H16060056-001E</li> <li>005C, H1606005</li> <li>H16060056-010E</li> <li>014C, H1606005</li> </ul>	8, H16060056-001C 6-006B, H16060056 8, H16060056-010C 6-015B, H16060056	, H16060056 5-006C, H160 , H16060056 5-015C, H160	-002B, H1606 60056-007B, -011B, H1606 60056-016B,	0056-002C, H1600 H16060056-007C, 0056-011C, H1600 H16060056-016C,	60056-003B, , H16060056- 60056-012B, , H16060056-	H1606005 008B, H16 H1606005 017B, H16	6-003C, H1 060056-008 6-013B, H1 060056-017	6060056-004C, 3C, H16060056 6060056-013C, 7C	H16060056-00 -009B, H16060 H16060056-01	/5B, H16060 056-009C, 4B, H16060	)056- )056-
Run ID :Run Order	: ICPMS204-B_160	0607A: 153	SampType:	Interference	Check Sample A		Lab	ID: ICSA		Method	E200.8	
Analysis Date: 06/0	07/16 21:05	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	i:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		-0.000392	0.0050		0							
Cadmium		0.00106	0.0010		0							

 Copper
 0.000215
 0.010
 0

 Lead
 0.000224
 0.010
 0

 Zinc
 0.000692
 0.010
 0

 Associated samples:
 H16060056-001B, H16060056-001C, H16060056-002B, H16060056-002C, H16060056-003B, H16060056-003C, H16060056-009B, H16060056-000B, H16060056-000B, H16060056

005C, H16060056-006B, H16060056-006C, H16060056-007B, H16060056-007C, H16060056-008B, H16060056-008C, H16060056-009B, H16060056-009C, H16060056-010B, H16060056-010C, H16060056-011B, H16060056-011C, H16060056-012B, H16060056-013B, H16060056-013C, H16060056-014B, H16060056-014C, H16060056-013B, H16060056-013C, H16060056-014B, H16060056-014C, H16060056-017B, H16060056-017C

Run ID :Run Order: ICPMS204-B_16060	)7A: 185	SampType:	Sample Matri	x Spike		Lab	D: <b>H16060</b>	056-005BMS	Method:	E200.8	
Analysis Date: 06/08/16 01:27	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:		
Analytes <u>5</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0534	0.0010	0.05	0.004008	99	70	130				
Cadmium	0.0481	0.0010	0.05	0	96	70	130				
Copper	0.0489	0.0050	0.05	0.0006159	97	70	130				
Lead	0.0462	0.0010	0.05	0.0000512	92	70	130				
Zinc	0.0542	0.010	0.05	0.005308	98	70	130				

Associated samples: H16060056-001B, H16060056-002B, H16060056-003B, H16060056-005B, H16060056-006B, H16060056-007B, H16060056-008B, H16060056-009B, H16060056-009B, H16060056-012B, H16060056-012B, H16060056-013B, H16060056-014B, H16060056-015B, H16060056-016B, H16060056-017B

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

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Client: Work Order:	MT DEQ-Federa H16060056	l Superfund		ANALYT	ICAL QC SU Prepared by Heler	MMARY na, MT Bra	REPO	RT		Date	: 07-Jul-1	6
Project:	CFR Monitoring-	474374		В	atchID: R11	5831						
Run ID :Run Order:	ICPMS204-B_1606	07A: 186	SampType:	Sample Matr	ix Spike Duplicate		Lab	D: <b>H16060</b>	056-005BMSD	Method	1: E200.8	
Analysis Date: 06/0	Units: I	mg/L			Prep Info	: Prep Da	te:		Prep Method	l:		
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0543	0.0010	0.05	0.004008	101	70	130	0.0534	1.6	20	
Cadmium		0.0497	0.0010	0.05	0	99	70	130	0.04809	<u>3.3</u>	20	
Copper		0.0507	0.0050	0.05	0.0006159	100	70	130	0.04895	<u>3.5</u>	20	
Lead		0.0479	0.0010	0.05	0.0000512	96	70	130	0.04616	<u>3.7</u>	20	
Zinc		0.0558	0.010	0.05	0.005308	101	70	130	0.05417	<u>3.0</u>	20	
Associated samples	: H16060056-001B, I 010B, H16060056-0	H16060056-002B 011B, H16060056	, H16060056- 5-012B, H160	003B, H1606 60056-013B,	0056-005B, H1606 H16060056-014B,	0056-006B, H16060056-	H1606005 -015B, H16	6-007B, H10 060056-016	6060056-008B, 6B, H16060056-	H16060056-00 017B	9B, H16060	056-
Run ID :Run Order:	ICPMS204-B_16060	07A: 216	SampType:	Sample Matr	ix Spike		Lab	D: <b>H16060</b>	056-015BMS	Method	i: E200.8	
Analysis Date: 06/0	8/16 03:06	Units: I	mg/L			Prep Info	: Prep Da	te:		Prep Method	1:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0648	0.0010	0.05	0.01408	102	70	130				
Cadmium		0.0493	0.0010	0.05	0.0001046	98	70	130				
Copper		0.0591	0.0050	0.05	0.009882	98	70	130				

Zinc 0.0613 0.010 0.05 0.01108 100 70 130 Associated samples: H16060056-001B, H16060056-002B, H16060056-003B, H16060056-005B, H16060056-006B, H16060056-007B, H16060056-008B, H16060056-009B, H16060056-010B, H16060056-011B, H16060056-012B, H16060056-013B, H16060056-014B, H16060056-015B, H16060056-016B, H16060056-017B

0.0002965

95

70

130

0.05

Run ID :Run Order: ICPMS204-B_16060	7A: 217	SampType:	Sample Matri	x Spike Duplicate		Lab	ID: <b>H16060</b>	056-015BMSD	Method	: E200.8	
Analysis Date: 06/08/16 03:09	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	1:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0647	0.0010	0.05	0.01408	101	70	130	0.06484	0.2	20	
Cadmium	0.0493	0.0010	0.05	0.0001046	98	70	130	0.04928	0.0	20	
Copper	0.0590	0.0050	0.05	0.009882	98	70	130	0.05907	0.1	20	
Lead	0.0482	0.0010	0.05	0.0002965	96	70	130	0.04794	0.5	20	
Zinc	0.0608	0.010	0.05	0.01108	99	70	130	0.06128	0.8	20	

Associated samples: H16060056-001B, H16060056-002B, H16060056-003B, H16060056-005B, H16060056-006B, H16060056-007B, H16060056-008B, H16060056-009B, H16060056-0015B, H1605005B, H1605005B,

Qualifiers: ND - Not Detected at the Reporting Limit

Lead

J - Analyte detected below quantitation limits

0.0479

0.0010

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

Client: Work Order:	MT DEQ-F H1606005	Federal Superfund 6		ANALYT	ICAL QC SU Prepared by Hele	<b>MMARY</b> na, MT Bra	REPO	RT		Date	: 07-Jul-1	16
Project:	CFR Moni	toring-474374		В	atchID: R11	5831						
Run ID :Run Order:	ICPMS204-I	B_160607A: 325	SampType:	Interference	Check Sample A		Lab	ID: ICSA		Method	E200.8	
nalysis Date: 06/08/16 10:27			mg/L			Prep Info	: Prep Da	ite:		Prep Method	:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		-0.000402	0.0050		0							
Cadmium		0.00112	0.0010		0							
Copper		-5.00E-05	0.010		0							
Lead		0.000214	0.010		0							
Zinc		0.000641	0.010		0							
Associated samples	H16060056 005C, H160 H16060056	-001B, H16060056-001C 60056-006B, H16060056 -010B, H16060056-010C	, H16060056 5-006C, H166 , H16060056	5-002B, H1606 060056-007B, 5-011B, H1606	0056-002C, H1606 H16060056-007C, 0056-011C, H1606	0056-003B, H16060056 0056-012B,	H1606005 -008B, H16 H1606005	6-003C, H1 060056-008 6-013B, H1	6060056-004C, 3C, H16060056- 6060056-013C,	H16060056-00 009B, H16060 H16060056-01	5B, H1606 056-009C, 4B, H1606	0056- 0056-

014C, H16060056-015B, H16060056-015C, H16060056-016B, H16060056-016C, H16060056-017B, H16060056-017C

Run ID :Run Order: ICPMS204-B_16060	SampType: Initial Calibration Verification Standard				Lab ID: ICV STD			Method: E200.8			
Analysis Date: 06/08/16 21:42	Units:	mg/L			Prep Info:	Prep Dat	ie:		Prep Method	:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0598	0.0050	0.06	0	100	90	110				
Cadmium	0.0301	0.0010	0.03	0	100	90	110				
Copper	0.0607	0.010	0.06	0	101	90	110				
Lead	0.0577	0.010	0.06	0	96	90	110				
Zinc	0.0618	0.010	0.06	0	103	90	110				

Associated samples: H16060056-001B, H16060056-001C, H16060056-002B, H16060056-002C, H16060056-003B, H16060056-003C, H16060056-004C, H16060056-005B, H16060056-005B, H16060056-009B, H16060056-009B, H16060056-009B, H16060056-009C, H16060056-008B, H16060056-008B, H16060056-009B, H16060056-009C, H16060056-010B, H16060056-010C, H16060056-011B, H16060056-011C, H16060056-012B, H16060056-013B, H16060056-013C, H16060056-014B, H16060056-016B, H16060056-016C, H16060056-017B, H16060056-017C

Run ID :Run Order: ICPMS204-B_1606	SampType: Interference Check Sample A			Lab ID: ICSA				Method: E200.8			
Analysis Date: 06/08/16 21:45	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	l:	
Analytes <u>5</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	-0.000162	0.0050		0							
Cadmium	0.00110	0.0010		0							
Copper	0.000343	0.010		0							
Lead	0.000217	0.010		0							
Zinc	0.000773	0.010		0							

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

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Client: Work Order:	MT DEQ-Federal Supe H16060056	erfund	ANALYT	ICAL QC SU	MMARY REPORT		Date: 07-Jul-16	6
Project:	CFR Monitoring-47437	74	В	atchID: R11	5831			
Run ID :Run Order:	ICPMS204-B_160607A: 50	4 Samp	Type: Interference (	Check Sample A	Lab ID: IC	SA	Method: E200.8	
Analysis Date: 06/0	8/16 21:45	Units: <b>mg/L</b>			Prep Info: Prep Date:		Prep Method:	
Analytes 5		Result	PQL SPK value	SPK Ref Val	%REC LowLimit High	Limit RPD Ref Val	%RPD RPDLimit	Qual

Associated samples: H16060056-001B, H16060056-001C, H16060056-002B, H16060056-002C, H16060056-003B, H16060056-003C, H16060056-004C, H16060056-005B, H16060056-005B, H16060056-005B, H16060056-009C, H16060056-006B, H16060056-006C, H16060056-007B, H16060056-007C, H16060056-008B, H16060056-008B, H16060056-009B, H16060056-009C, H16060056-010B, H16060056-010C, H16060056-011B, H16060056-011C, H16060056-012B, H16060056-013B, H16060056-013C, H16060056-014B, H16060056-014B, H16060056-014B, H16060056-014B, H16060056-017B, H16060056-017B, H16060056-017C, H16060056-017B, H16060056-015C, H16060056-015C, H16060056-016B, H16060056-016C, H16060056-017B, H16060056-017C

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Su H16060056	iperfund	ANALYTICAL QC SUMMARY REPORT Prepared by Helena, MT Branch							<b>Date:</b> 07	7-Jul-10	6
Project:	CFR Monitoring-474	374		В	atchID: R	115855						
Run ID :Run Order	FIA202-HE_160608B: 9		SampType:	Initial Calibra	tion Verification	n Standard	Lab	ID: ICV		Method: E3	65.1	
Analysis Date: 06/	08/16 13:11	Units:	mg/L			Prep Info	Prep Da	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RP	DLimit	Qual
Phosphorus, Total	as P	0.252	0.010	0.25	0	101	90	110				
Associated samples	s: H16060056-017D											
Run ID :Run Order	FIA202-HE_160608B: 10	0	SampType:	Continuing C	alibration Verifi	cation Standa	<b>r</b> Lab	ID: <b>CCV</b>		Method: E3	65.1	
Run ID :Run Order Analysis Date: <b>06/</b>	∵ FIA202-HE_160608B: 10 08/16 13:12	<b>)</b> Units:	SampType: <b>mg/L</b>	Continuing C	alibration Verifi	cation Standa Prep Info	r Lab : Prep Da	ID: <b>CCV</b> te:		Method: E3 Prep Method:	65.1	
Run ID :Run Order Analysis Date: <b>06/</b> Analytes <u>1</u>	☆ FIA202-HE_160608B: 10 08/16 13:12	0 Units: Result	SampType: mg/L PQL	Continuing C	SPK Ref Val	cation Standa Prep Info %REC	r Lab : Prep Da LowLimit	ID: <b>CCV</b> te: HighLimit	RPD Ref Val	Method: E3 Prep Method: %RPD RP	6 <b>5.1</b> DLimit	Qual
Run ID :Run Order Analysis Date: 06/ Analytes <u>1</u> Phosphorus, Total	☆ FIA202-HE_160608B: 10 08/16 13:12 as P	D Units: Result 0.101	SampType: mg/L PQL 0.010	Continuing C SPK value 0.1	SPK Ref Val	cation Standa Prep Info %REC 101	r Lab Prep Da LowLimit 90	ID: CCV te: HighLimit 110	RPD Ref Val	Method: E3 Prep Method: %RPD RP	6 <b>5.1</b> DLimit	Qual
Run ID :Run Order Analysis Date: 06/ Analytes <u>1</u> Phosphorus, Total Associated samples	<ul> <li>FIA202-HE_160608B: 10</li> <li>08/16 13:12</li> <li>as P</li> <li>s: H16060056-017D</li> </ul>	D Units: Result 0.101	SampType: mg/L PQL 0.010	Continuing C SPK value 0.1	SPK Ref Val	cation Standa Prep Info %REC 101	r Lab Prep Da LowLimit 90	ID: <b>CCV</b> te: HighLimit 110	RPD Ref Val	Method: E3 Prep Method: %RPD RP	6 <b>5.1</b> DLimit	Qual
Run ID :Run Order Analysis Date: 06/ Analytes <u>1</u> Phosphorus, Total Associated samples Run ID :Run Order	<ul> <li>FIA202-HE_160608B: 10</li> <li>08/16 13:12</li> <li>as P</li> <li>s: H16060056-017D</li> <li>FIA202-HE_160608B: 12</li> </ul>	D Units: Result 0.101	SampType: mg/L PQL 0.010 SampType:	Continuing C SPK value 0.1 Initial Calibra	SPK Ref Val	cation Standa Prep Info %REC 101 rument Blank	r Lab : Prep Da LowLimit 90 Lab	ID: CCV te: HighLimit 110 ID: ICB	RPD Ref Val	Method: E3 Prep Method: %RPD RP Method: E3	65.1 DLimit	Qual
Run ID :Run Order Analysis Date: 06/ Analytes <u>1</u> Phosphorus, Total Associated samples Run ID :Run Order Analysis Date: 06/	<ul> <li>FIA202-HE_160608B: 10</li> <li>08/16 13:12</li> <li>as P</li> <li>s: H16060056-017D</li> <li>FIA202-HE_160608B: 17</li> <li>08/16 13:13</li> </ul>	D Units: Result 0.101 1 Units:	SampType: mg/L 0.010 SampType: mg/L	Continuing C SPK value 0.1 Initial Calibra	SPK Ref Val	cation Standa Prep Info %REC 101 rument Blank Prep Info	r Lab : Prep Da LowLimit 90 Lab : Prep Da	ID: CCV te: HighLimit 110 ID: ICB te:	RPD Ref Val	Method: E3 Prep Method: %RPD RP Method: E3 Prep Method:	965.1 DLimit	Qual
Run ID :Run Order Analysis Date: 06/ Analytes <u>1</u> Phosphorus, Total Associated samples Run ID :Run Order Analysis Date: 06/ Analytes <u>1</u>	<ul> <li>FIA202-HE_160608B: 10</li> <li>08/16 13:12</li> <li>as P</li> <li>s: H16060056-017D</li> <li>FIA202-HE_160608B: 17</li> <li>08/16 13:13</li> </ul>	D Units: Result 0.101 I Units: Result	SampType: mg/L PQL 0.010 SampType: mg/L PQL	Continuing C SPK value 0.1 Initial Calibra SPK value	SPK Ref Val 0 ttion Blank, Inst	rument Blank %REC 101	r Lab : Prep Da LowLimit 90 Lab : Prep Da LowLimit	ID: CCV te: HighLimit 110 ID: ICB te: HighLimit	RPD Ref Val	Method: E3 Prep Method: %RPD RP Method: E3 Prep Method: %RPD RP	265.1 DLimit 265.1 DLimit	Qual
Run ID :Run Order Analysis Date: 06/ Analytes <u>1</u> Phosphorus, Total Associated samples Run ID :Run Order Analysis Date: 06/ Analytes <u>1</u> Phosphorus, Total	<ul> <li>FIA202-HE_160608B: 10</li> <li>08/16 13:12</li> <li>as P</li> <li>s: H16060056-017D</li> <li>FIA202-HE_160608B: 17</li> <li>08/16 13:13</li> <li>as P</li> </ul>	D Units: Result 0.101 1 Units: Result -0.00107	SampType: mg/L 0.010 SampType: mg/L PQL 0.010	Continuing C SPK value 0.1 Initial Calibra SPK value	SPK Ref Val 0 tion Blank, Instr SPK Ref Val 0	rument Blank %REC 101 v%REC 101	r Lab : Prep Da LowLimit 90 Lab : Prep Da LowLimit 0	ID: CCV te: HighLimit 110 ID: ICB te: HighLimit 0	RPD Ref Val	Method: E3 Prep Method: %RPD RP Method: E3 Prep Method: %RPD RP	65.1 DLimit 665.1 DLimit	Qual

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Fed H16060056	leral Superfund			ICAL QC S	SUMMARY	REPO	RT		Date: 07-Jul-1	6
Project:	CFR Monitori	ng-474374		В	atchID: F	R116572					
Run ID :Run Orde	er: ICPMS204-B_1	60706A: 10	SampType:	Initial Calibra	tion Verification	on Standard	Lab	ID: ICV STE	)	Method: E200.8	
Analysis Date: 07	/06/16 15:03	Units: r	ng/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Arsenic		0.0589	0.0050	0.06	0	98	90	110			
Cadmium		0.0291	0.0010	0.03	0	97	90	110			
Copper		0.0597	0.010	0.06	0	99	90	110			
Lead		0.0574	0.010	0.06	0	96	90	110			
Zinc		0.0605	0.010	0.06	0	101	90	110			
Associated sample	es: H16060056-004	4B									
Run ID :Run Orde	er: ICPMS204-B_1	60706A: 11	SampType:	Interference	Check Sample	A	Lab	ID: ICSA		Method: E200.8	
Analysis Date: 07	/06/16 15:06	Units: <b>r</b>	ng/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Arsenic		6.20E-05	0.0050		0						
Cadmium		0.000740	0.0010		0						
Copper		0.000272	0.010		0						
Lead		0.000218	0.010		0						
Zinc		0.000501	0.010		0						
Associated sample	es: H16060056-004	4B									
Run ID :Run Orde	er: ICPMS204-B_1	60706A: 35	SampType:	Method Blan	k		Lab	ID: LRB		Method: E200.8	
Analysis Date: 07	/06/16 16:33	Units: <b>r</b>	ng/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Arsenic		ND	6E-05								
Cadmium		ND	1E-05								
Copper		ND	6E-05								
Lead		ND	5E-06								
Zinc		ND	0.0002								
Associated sample	es: H16060056-004	4B									
Run ID :Run Orde	er: ICPMS204-B_1	60706A: 36	SampType:	Laboratory F	ortified Blank		Lab	ID: LFB		Method: E200.8	
Analysis Date: 07	/06/16 16:37	Units: r	mg/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Arsenic		0.0485	0.0050	0.05	0	97	85	115			
Qualifiers: ND J -	<ul> <li>Not Detected at t</li> <li>Analyte detected be</li> </ul>	he Reporting Limit elow quantitation limits	5 F	S - Spike Reco R - RPD outside	very outside ac	cepted recovery overy limits	limit N A	- Analyte co - Analyte co	oncentration was	not sufficiently high to calcu ater than four times the spike Pag	ulate RPD e amount je 84 of 10

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Client: Work Orde	MT DEQ- r: H1606005	Federal Superfund		ANALYT	ICAL QC SU Prepared by Hele	MMARY	REPO	RT		Date	e: 07-Jul-1	6
Project:	CFR Mon	itoring-474374		В	atchID: R1	16572						
Run ID :Run (	Order: ICPMS204-	B_160706A: 36	SampType:	Laboratory F	ortified Blank		Lab	ID: LFB		Method	: <b>E200.8</b>	
Analysis Date	e: 07/06/16 16:37	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	d:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium		0.0492	0.0010	0.05	0	98	85	115				
Copper		0.0501	0.010	0.05	0	100	85	115				
Lead		0.0472	0.010	0.05	0	94	85	115				
Zinc		0.0510	0.010	0.05	0	102	85	115				
Associated sa	mples: H16060056	6-004B										
Run ID :Run (	Order: ICPMS204-	B_160706A: 72	SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16060</b>	526-003BMS	Method	: <b>E200.8</b>	
Analysis Date	e: 07/06/16 18:43	Units: I	mg/L			Prep Info	: Prep Da	ite:		Prep Method	d:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0559	0.0010	0.05	0.0006729	110	70	130				
Cadmium		0.0469	0.0010	0.05	0.0007133	92	70	130				
Copper		0.0482	0.0050	0.05	0.001537	93	70	130				
Lead		0.0491	0.0010	0.05	0.0004389	97	70	130				
Zinc		0.0537	0.010	0.05	0.007515	92	70	130				
Associated sa	mples: H16060056	5-004B										
Run ID :Run (	Order: ICPMS204-	B_160706A: 73	SampType:	Sample Matri	ix Spike Duplicate	•	Lab	ID: <b>H16060</b>	526-003BMSD	Method	: <b>E200.8</b>	
Analysis Date	e: 07/06/16 18:46	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	d:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0558	0.0010	0.05	0.0006729	110	70	130	0.05591	0.1	20	
Cadmium		0.0459	0.0010	0.05	0.0007133	90	70	130	0.04688	2.2	20	
Copper		0.0477	0.0050	0.05	0.001537	92	70	130	0.04818	1.1	20	
Lead		0.0485	0.0010	0.05	0.0004389	96	70	130	0.04912	1.2	20	
Zinc		0.0525	0.010	0.05	0.007515	90	70	130	0.05374	2.4	20	
Associated sa	mples: H16060056	5-004B										
Run ID :Run (	Order: ICPMS204-	B_160706A: 148	SampType:	Initial Calibra	tion Verification	Standard	Lab	ID: ICV STE	)	Method	: <b>E200.8</b>	
Analysis Date	e: 07/06/16 22:41	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	d:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0620	0.0050	0.06	0	103	90	110				
Cadmium		0.0316	0.0010	0.03	0	105	90	110				
Qualifiers:	ND - Not Detected	d at the Reporting Limit	S	S - Spike Reco	very outside accep	ted recovery	limit N	- Analyte co	ncentration was	not sufficiently	high to calc	ulate RPD
	J - Analyte detect	ed below quantitation limits	s F	R - RPD outside	e accepted recover	y limits	А	- Analyte co	ncentration grea	ater than four ti	mes the spik	e amount

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Client: Work Order:	MT DEQ-Federa H16060056	al Superfund		ANALYT		Date: 07-Jul-	16					
Project:	CFR Monitoring	-474374		В	atchID: R	116572						
Run ID :Run Order:	ICPMS204-B_1607	706A: 148	SampType:	Initial Calibra	tion Verification	n Standard	Lab	ID: ICV STI	D	Method: E200.8		
Analysis Date: 07/0	6/16 22:41	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual	
Copper		0.0626	0.010	0.06	0	104	90	110				
Lead		0.0602	0.0010	0.06	0	100	90	110				
Zinc		0.0621	0.010	0.06	0	103	90	110				
Associated samples	: H16060056-004B											
Run ID :Run Order:	ICPMS204-B_1607	706A: 149	SampType:	Interference	Check Sample A	A	Lab	ID: ICSA		Method: E200.8		
Analysis Date: 07/0	6/16 22:43	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual	
Arsenic		0.00113	0.0050		0							
Cadmium		0.00168	0.0010		0							
Copper		0.00776	0.010		0							
Lead		0.000359	0.0010		0							

0

Associated samples: H16060056-004B

Zinc

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

0.00314

0.010

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal St H16060056	uperfund		ANALYT	ICAL QC S Prepared by He	SUMMARY elena, MT Bra	REPO	RT		Date	: 07-Jul-1	6
Project:	CFR Monitoring-474	374		В	atchID: T	SS160602	4					
Run ID :Run Order:	ACCU-124 (14410200)_	160602A: 2	SampType:	Method Blan	k		Lab	ID: <b>MB-25</b> _	160602A	Method	: A2540 D	
Analysis Date: 06/0	2/16 10:03	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	nded TSS @ 105 C	ND	0.1									
Associated samples	: H16060056-009A, H160	060056-010	A, H16060056	-011A, H1606	0056-012A, H16	6060056-013A,	H1606005	6-014A, H1	6060056-015A,	H16060056-01	6A, H16060	056-017A
Run ID :Run Order:	ACCU-124 (14410200)_	160602A: 4	SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-26	_160602A	Method	: A2540 D	
Analysis Date: 06/0	2/16 10:04	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	nded TSS @ 105 C	94.0	10	100	0	94	80	120				
Associated samples	: H16060056-009A, H160	060056-010	A, H16060056	-011A, H1606	0056-012A, H16	6060056-013A,	H1606005	6-014A, H1	6060056-015A,	H16060056-01	6A, H16060	056-017A
Run ID :Run Order:	ACCU-124 (14410200)_	160602A: 2	SampType:	Sample Dupl	icate		Lab	ID: <b>H16060</b>	056-009A DUP	Method	: A2540 D	
Analysis Date: 06/0	3/16 08:26	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	nded TSS @ 105 C	13.2	10		0				11.4	15	5	R
Associated samples - Since the difference	: H16060056-009A, H160 between he analytical result	060056-010	A, H16060056 and its duplicate	<b>-011A, H1606</b> is less than he r	0056-012A, H16 reporting limit, the f	6060056-013A, RPD variance is no	H1606005 ot considered	6-014A, H1 significant.	6060056-015A,	H16060056-01	6A, H16060	056-017A
Run ID :Run Order:	ACCU-124 (14410200)_	160602A: 3	SampType:	Sample Dupl	icate		Lab	ID: <b>H16060</b>	055-002BDUP	Method	: A2540 D	
Analysis Date: 06/0	3/16 08:30	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	nded TSS @ 105 C	52.0	10		0				42	21	5	R

Associated samples: H16060056-009A, H16060056-010A, H16060056-011A, H16060056-012A, H16060056-013A, H16060056-014A, H16060056-015A, H16060056-016A, H16060056-017A - Since the difference between he analytical result for the sample and its duplicate is less than he reporting limit, the RPD variance is not considered significant.

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal St H16060056	uperfund		ANALYT	ICAL QC	SUMMARY Helena, MT Bra	REPO	RT		Date	: 07-Jul-1	6
Project:	CFR Monitoring-474	374		В	atchID:	TSS160603/	4					
Run ID :Run Order	ACCU-124 (14410200)_	160603A: 1	SampType:	Method Blan	k		Lab	ID: MBLK		Method	: A2540 D	
Analysis Date: 06/0	03/16 08:55	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	ended TSS @ 105 C	ND	0.1									
Associated samples	E H16060056-001A, H16	060056-002A	A, H16060056	-003A, H1606	0056-004A, H <sup>2</sup>	16060056-005A,	H1606005	6-006A, H1	6060056-007A,	H16060056-00	8A	
Run ID :Run Order	ACCU-124 (14410200)_	160603A: 2	SampType:	Laboratory C	ontrol Sample	9	Lab	ID: LCS		Method	i: A2540 D	
Analysis Date: 06/0	03/16 08:56	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	ended TSS @ 105 C	95.0	10	100	0	95	80	120				
Associated samples	: H16060056-001A, H16	060056-002A	A, H16060056	-003A, H1606	0056-004A, H <sup>·</sup>	16060056-005A,	H1606005	6-006A, H1	6060056-007A,	H16060056-00	8A	
Run ID :Run Order	ACCU-124 (14410200)_	160603A: 4	SampType:	Sample Dupl	icate		Lab	ID: <b>H16060</b>	022-001A DUP	Method	i: A2540 D	
Analysis Date: 06/0	03/16 08:56	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	ended TSS @ 105 C	294	10		0				286	2.8	5	
Associated samples	: H16060056-001A, H16	060056-002A	A, H16060056	-003A, H1606	0056-004A, H <sup>·</sup>	16060056-005A,	H1606005	6-006A, H1	6060056-007A,	H16060056-00	8A	
Run ID :Run Order	ACCU-124 (14410200)_	160603A: 1	SampType:	Sample Dupl	icate		Lab	ID: <b>H16060</b>	047-001B DUP	Method	: <b>A2540 D</b>	
Analysis Date: 06/0	03/16 09:00	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	1:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	ended TSS @ 105 C	83.0	10		0				77	<u>7.5</u>	5	R
Associated samples	E H16060056-001A, H16	060056-002A	A, H16060056	-003A, H1606	0056-004A, H <sup>·</sup>	16060056-005A,	H1606005	6-006A, H1	6060056-007A,	H16060056-00	8A	
- Since the difference	e between he analytical result	for the sample a	and its duplicate	is less than he r	eporting limit, the	e RPD variance is no	ot considered	significant.				
Run ID :Run Order	ACCU-124 (14410200)_	160603A: 2	SampType:	Sample Dupl	icate		Lab	ID: <b>H16060</b>	060-003A DUP	Method	: A2540 D	
Analysis Date: 06/0	03/16 10:09	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	ended TSS @ 105 C	1.00	10		0							
Associated samples	:: H16060056-001A, H16	060056-002A	A, H16060056	-003A, H1606	0056-004A, H <sup>^</sup>	16060056-005A,	H1606005	6-006A, H1	6060056-007A,	H16060056-00	88A	

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

Page 88 of 101



July 01, 2016

Energy Laboratories, Inc. ATTN: Tracy Lorash PO Box 5688 Helena MT 59604 tlorash@energylab.com

RE: Project ENL-HL1201

Client Project: H16060056

Dear Tracy Lorash,

This report contains results for the 5 samples received by Brooks Applied Labs (BAL) on June 03, 2016. The samples were logged-in for the contracted analyses according to the chain-of-custody form(s). The samples were received, prepared, analyzed, and stored according to BAL SOPs and EPA methodology.

The results were method blank corrected as described in the calculations section of the relevant BAL SOP(s) and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details. All data was reported without qualification (with the exception of concentration qualifiers), and all associated quality control sample results meet the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more details, please see the *Report Information* page in your report. Please feel free to contact us if you have any questions regarding this report.

Sincerely,

dia L'reaves

Lydia Greaves Project Manager Lydia@brooksapplied.com

Prestbo

Anna Prestbo Project Coordinator annap@brooksapplied.com



## **Report Information**

#### **Laboratory Accreditation**

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <a href="http://www.brooksapplied.com/resources/certificates-permits/">http://www.brooksapplied.com/resources/certificates-permits/</a>. Results reported relate only to the samples listed in the report.

### **Field Quality Control Samples**

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

### **Common Abbreviations**

BAL BLK BS	Brooks Applied Labs method blank laboratory fortified blank	MS MSD ND	matrix spike matrix spike duplicate non-detect
CAL	calibration standard	NR	non-reportable
ССВ	continuing calibration blank	N/C	not calculated
CCV	continuing calibration verification	PS	post preparation spike
COC	chain of custody record	REC	percent recovery
D	dissolved fraction	RPD	relative percent difference
DUP	duplicate	SCV	secondary calibration verification
IBL	instrument blank	SOP	standard operating procedure
ICV	initial calibration verification	SRM	standard reference material
MDL	method detection limit	Т	total fraction
MRL	method reporting limit	TR	total recoverable fraction

#### **Definition of Data Qualifiers**

(Effective 9/23/09)

- **B** Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
- **E** An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
- **H** Holding time and/or preservation requirements not met. Result is estimated.
- **J** Estimated value. A full explanation is presented in the narrative.
- J-M Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
- J-N Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
- **M** Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
- **N** Spike recovery was not within acceptance criteria. Result is estimated.
- **R** Rejected, unusable value. A full explanation is presented in the narrative.
- U Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
- **X** Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA <u>SOW ILM03.0</u>, Exhibit B, Section III, pg. B-18, and the <u>USEPA Contract Laboratory Program National Functional Guidelines for Inorganic</u> <u>Superfund Data Review; USEPA; January 2010</u>. These supersede all previous gualifiers ever employed by BAL.



# Sample Information

Sample	Lab ID	<b>Report Matrix</b>	Туре	Sampled	Received
H16060056-002F	1623021-01	Water	Sample	05/02/2016	06/03/2016
H16060056-003F	1623021-02	Water	Sample	05/02/2016	06/03/2016
H16060056-004F	1623021-03	Water	Sample	05/02/2016	06/03/2016
H16060056-018B	1623021-04	Water	Sample	05/02/2016	06/03/2016
H16060056-019A	1623021-05	Water	Trip Blank	05/02/2016	06/03/2016

### **Batch Summary**

Analyte MeHg Lab Matrix Water Method EPA 1630 
 Prepared
 Analyzed

 06/27/2016
 06/28/2016

alyzedBatch8/2016B161411

Sequence 1600770



# Sample Results

Sample	Analyte	<b>Report Matrix</b>	Basis	Result	Qualifie	r MDL	MRL	Unit	Batch	Sequence
<i>H16060056-0</i>	0 <b>2F</b> MeHa	Water	TR	≤ 0.020	U	0.020	0.050	ng/L	B161411	1600770
								0		
<b>H16060056-0</b> 1623021-02	MeHg	Water	TR	1.46		0.020	0.049	ng/L	B161411	1600770
H16060056-0	04F									
1623021-03	MeHg	Water	TR	1.41		0.020	0.049	ng/L	B161411	1600770
H16060056-0	18B			/ -						
1623021-04	MeHg	Water	TR	0.543		0.020	0.049	ng/L	B161411	1600770
H16060056-0	19A Molia	Water	TR	< 0.020		0 020	0 049	ng/l	B161/11	1600770
1023021-03	weng	valer		≤ 0.020	0	0.020	0.049	ng/∟	0101411	1000770



# Accuracy & Precision Summary

Batch: B161411 Lab Matrix: Water Method: EPA 1630

Sample B161411-BS1	Analyte Laboratory Fortified Bl	Native ank, (162	Spike 27005)	Result	Units	REC & Limits	<b>RPD &amp; Limits</b>
	MeHg		1.000	1.076	ng/L	108% 67-133	
B161411-BS2	Laboratory Fortified Bl MeHg	ank, (162	2 <b>7005)</b> 1.000	0.925	ng/L	93% 67-133	
B161411-MS1	Matrix Spike, (162302 MeHg	<b>1-02)</b> 1.465	5.000	7.427	ng/L	119% 65-135	
B161411-MSD1	Matrix Spike Duplicate MeHg	, <b>(162302</b> 1.465	1 <b>-02)</b> 5.000	6.109	ng/L	93% 65-135	19% 35

## Method Blanks & Reporting Limits

Batch: B161411 Matrix: Water Method: EPA 1630 Analyte: MeHg			
Sample	Result	Units	
B161411-BLK1	0.019	ng/L	
B161411-BLK2	0.019	ng/L	
B161411-BLK3	0.018	ng/L	
B161411-BLK4	0.018	ng/L	
	Average: 0.019	Standard Deviation: 0.001	MDL: 0.020
	Limit: 0.045	Limit: 0.015	MRL: 0.049



BAL Report 1623021 Client PM: Tracy Lorash Client PO: H13195

# Sample Containers

Lab ID: 1623021-01 Sample: H16060056-002F		Rep Sar		Collected: 05/02/2016 Received: 06/03/2016			
Des A	Container Bottle FLPE Hg-SP	Size 250ml	Lot 15-0278	Preservation 2ml 6N HCI (PP)	<b>P-Lot</b> 1609109	<b>рН</b> <2	Ship. Cont. Cooler
Lab San Des A	ID: 1623021-02 ple: H16060056-003F Container Bottle FLPE Hg-SP	<mark>Size</mark> 250ml	Rep Sar Lot 15-0278	oort Matrix: Water nple Type: Sample Preservation 2ml 6N HCI (PP)	<b>P-Lot</b> 1609109	Collect Receiv pH <2	ed: 05/02/2016 ed: 06/03/2016 Ship. Cont. Cooler
Lab San Des A	ID: 1623021-03 ple: H16060056-004F Container Bottle FLPE Hg-SP	<mark>Size</mark> 250ml	Reg Sar Lot 15-0278	oort Matrix: Water nple Type: Sample Preservation 2ml 6N HCI (PP)	<b>P-Lot</b> 1609109	Collect Receiv pH <2	ed: 05/02/2016 ed: 06/03/2016 Ship. Cont. Cooler
Lab San Des A	ID: 1623021-04 nple: H16060056-018B Container Bottle FLPE Hg-SP	<mark>Size</mark> 250ml	Rep Sar Lot 15-0278	oort Matrix: Water nple Type: Sample Preservation 2ml 6N HCI (PP)	<b>P-Lot</b> 1609109	Collect Receiv pH <2	ed: 05/02/2016 ed: 06/03/2016 Ship. Cont. Cooler
Lab San Des A	ID: 1623021-05 pple: H16060056-019A Container Bottle FLPE Hg-SP	<mark>Size</mark> 250ml	Rep Sar Lot 15-0278	oort Matrix: Water nple Type: Trip Blank Preservation 0.4% HCl (BAL)	<b>P-Lot</b> 1609106	Collect Receiv pH <2	ed: 05/02/2016 ed: 06/03/2016 Ship. Cont. Cooler
**Project ID:** ENL-HL1201 **PM:** Lydia Greaves



BAL Report 1623021 Client PM: Tracy Lorash Client PO: H13195

# **Shipping Containers**

Cooler Received: June 3, 2016 10:00 Tracking No: 1Z37EW970155675362 via UPS Coolant Type: Ice Temperature: 2.7 °C

Description: Cooler Damaged in transit? No Returned to client? No Comments: IR#6 Custody seals present? Yes Custody seals intact? Yes COC present? Yes

# **Energy Laboratories Inc**

3161 East Lyndale Avenue Helena, MT 59601 (406) 442-0711



# **CHAIN-OF-CUSTODY RECORD**

1

BAL Report 1623021 Page 1 of 1 02-Jun-16

(406) 442-0711 Subcontractor:	Custody Seal:         Y         N           Intact:         Y         N           Signature Match:         Y         N
Brooks Applied Labs 18804 North Creek Parkway Bothell, WA 98011 TEL: (206) 632-6206 FAX: (206) 632-6017 Acct #: Subcontractor's Client:	Requested Tests
H16060056-002F   Surface Water   05/31/16 11:45 A   1-CLIENT-SLD	
H16060056-003F Surface Water 05/31/16 12:00 P 1-CLIENT-SLD	
H16060056-004F Surface Water 05/31/16 12:00 P 1-CLIENT-SLD	
H16060056-018B Aqueous 05/31/16 10:45 A 1-CLIENT-SLD	
H16060056-019A Trip Blank 05/31/16 09:00 A 1-TRIP BLANK	

# Earliest Due Date: 6/13/2016

Comments:	<u>PO# H13195</u>	
QC Level:		
STD		
	Date/Time	
Relinquished by:	Received by:	
elinquished by:	Macy Devan 6/2/14 15:20 Received by:	6/3/16 10:00
	8 of 9	





# Work Order Receipt Checklist

# MT DEQ-Federal Superfund

# H16060056

Login completed by:	Tracy L. Lorash	Date Received: 6/2/2016								
Reviewed by:	BL2000\rwilliams		Rec	eived by: bjs						
Reviewed Date: 6	6/3/2016	Carrier name: Hand Del								
Shipping container/cooler in go	ood condition?	Yes 🗸	No 🗌	Not Present						
Custody seals intact on all ship	oping container(s)/cooler(s)?	Yes	No 🗌	Not Present 🗹						
Custody seals intact on all sam	nple 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 s	sample labels?	Yes	Yes D No 🗹							
Samples in proper container/bo	ottle?	Yes 🗹	No 🗌							
Sample containers intact?		Yes 🗹	No 🗌							
Sufficient sample volume for in	ndicated test?	Yes 🗹	No 🗌							
All samples received within hol (Exclude analyses that are con such as pH, DO, Res CI, Sulfi	lding time? isidered field parameters te, Ferrous Iron, etc.)	Yes 🗹	No 🗌							
Temp Blank received in all ship	pping container(s)/cooler(s)?	Yes	No 🗹	Not Applicable						
Container/Temp Blank tempera	ature:	°C See comments								
Water - VOA vials have zero h	eadspace?	Yes	No 🗌	Not Applicable						
Water - pH acceptable upon re	eceipt?	Yes	No 🗹	Not Applicable						

# **Standard Reporting Procedures:**

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

# **Contact and Corrective Action Comments:**

Sample ID on COC for sample #2 and 17 contain parantheses -ID on bottles does not. Logged in with ID from COC. Cooler 1, containing methyl mercury samples, was received at 7.9°C on blue ice with the temperature taken from a client sample, Cooler 2 at 1.7°C on ice with the temperature taken from a temperature blank, Cooler 3 at 3.0°C on ice with the temperature blank, Cooler 4 at 2.0°C on ice with the temperature taken from a client sample.

SS-25 total recoverable metals sample was preserved with 2 mL nitric acid upon receipt to pH <2 in the laboratory. In accordance with the Clean Water Act, these samples must be held for 24 hours prior to analysis.

SS-25 sample for Dissolved Metals was preserved to pH <2 with 2 mL of Nitric acid per 250 mL in the laboratory.

SS-25 nutrients sample was preserved with 2 mL of sulfuric acid to pH <2 in the laboratory. tl 6/2/16



# ANALYTICAL SUMMARY REPORT

July 20, 2016

MT DEQ-Federal Superfund PO Box 200901 Helena, MT 59620-0901

Work Order: H16060430 Quote ID: H1085

Project Name: CFR Monitoring-474374

Energy Laboratories Inc Helena MT received the following 20 samples for MT DEQ-Federal Superfund on 6/22/2016 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H16060430-001	CFR-116A	06/20/16 9:00	0 06/22/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Hardness as CaCO3 Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Total P Water Nitrogen, Total Persulfate Phosphorus, Total Solids, Total Suspended
H16060430-002	Field Blank #1 (FC-CFR)	06/20/16 11:	15 06/22/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Mercury, Total Recoverable Hardness as CaCO3 Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Mercury by CVAA Digestion, Total Persulfate Phosphorus, Total Solids, Total Suspended Subcontracted, Analytics
H16060430-003	FC-CFR	06/20/16 11:	30 06/22/16	Surface Water	Same As Above
H16060430-004	FC-CFR Duplicate	06/20/16 11:	30 06/22/16	Surface Water	Same As Above



# ANALYTICAL SUMMARY REPORT

H16060430-005	LBR-CFR-02	06/20/16 13:15	06/22/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Hardness as CaCO3 Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Total P Water Nitrogen, Total Persulfate Phosphorus, Total Solids, Total Suspended
H16060430-006	CFR-34	06/20/16 14:30	06/22/16	Surface Water	Same As Above
H16060430-007	CFR-27H	06/20/16 15:30	06/22/16	Surface Water	Same As Above
H16060430-008	CFR-11F	06/21/16 8:30	06/22/16	Surface Water	Same As Above
H16060430-009	CFR-07D	06/21/16 9:30	06/22/16	Surface Water	Same As Above
H16060430-010	CFR-07D Duplicate	06/21/16 9:30	06/22/16	Surface Water	Same As Above
H16060430-011	CFR-03A	06/21/16 10:45	06/22/16	Surface Water	Same As Above
H16060430-012	Field Blank #2 (WSC-SBC)	06/21/16 11:30	06/22/16	Surface Water	Same As Above
H16060430-013	WSC-SBC	06/21/16 12:00	06/22/16	Surface Water	Same As Above
H16060430-014	SS-25	06/21/16 13:00	06/22/16	Surface Water	Same As Above
H16060430-015	MWB-SBC	06/21/16 13:30	06/22/16	Surface Water	Same As Above
H16060430-016	SBC-P2	06/21/16 13:40	06/22/16	Surface Water	Same As Above
H16060430-017	MCWC-MWB	06/21/16 14:45	06/22/16	Surface Water	Same As Above
H16060430-018	SS-19	06/21/16 15:45	06/22/16	Surface Water	Same As Above
H16060430-019	CFR-84F	06/20/16 10:30	06/22/16	Surface Water	Mercury, Total Recoverable Digestion, Mercury by CVAA Subcontracted, Analytics
H16060430-020	Trip Blank	06/20/16 9:00	06/22/16	Trip Blank	Subcontracted, Analytics

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. 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-Federal SuperfundProject:CFR Monitoring-474374Work Order:H16060430

# Report Date: 07/20/16 CASE NARRATIVE

Tests associated with analyst identified as ELI-CA were subcontracted to Energy Laboratories, 2393 Salt Creek Hwy., Casper, WY, EPA Number WY00002 and WY00937.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-116ALab ID:H16060430-001Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/20/16 09:00 DateReceived: 06/22/16

Report Date: 07/20/16

Datontooonrou

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	3	mg/L		1		A2540 D	06/22/16 16:06 / MA		124 (14410200)_16062	2A : 23	TSS160622A
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	06/23/16 09:40 / SR		PHSC_101-H_16062	3A : 10	R116238
Bicarbonate as HCO3	130	mg/L		4		A2320 B	06/23/16 09:40 / SR		PHSC_101-H_16062	3A : 10	R116238
Chloride	2	mg/L		1		E300.0	06/23/16 11:25 / SR		IC102-H_16062	3A : 18	R116280
Sulfate	29	mg/L		1		E300.0	06/23/16 11:25 / SR		IC102-H_16062	3A : 18	R116280
Hardness as CaCO3	129	mg/L		1		A2340 B	06/24/16 15:18 / abc		CALC_160628	A : 102	R116361
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.7	mg/L		0.5		A5310 C	06/28/16 00:08 / eli-c	:	SUB-C2129	44 : 16	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:23 / cm		FIA203-HE_16062	8A : 13	R116353
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/23/16 13:38 / cm		FIA203-HE_16062	3B : 88	R116262
Nitrogen, Total	0.13	mg/L		0.05		A4500 N-C	06/27/16 15:23 / cm	06/27/16 13:15	FIA203-HE_16062	7B : 34	33423
Phosphorus, Total as P	0.017	mg/L		0.003		E365.1	06/23/16 15:52 / cm	06/23/16 15:27	FIA202-HE_16062	3B : 19	33388
METALS, DISSOLVED											
Arsenic	0.006	mg/L		0.001		E200.8	06/24/16 23:30 / dck		ICPMS204-B_16062	4B : 62	R116327
Cadmium	0.00003	mg/L		0.00003		E200.8	06/24/16 23:30 / dck		ICPMS204-B_160624	4B : 62	R116327
Copper	0.004	mg/L		0.001		E200.8	06/24/16 23:30 / dck		ICPMS204-B_160624	4B : 62	R116327
Lead	ND	mg/L		0.0003		E200.8	06/24/16 23:30 / dck		ICPMS204-B_160624	4B : 62	R116327
Zinc	0.010	mg/L		0.008		E200.8	06/24/16 23:30 / dck		ICPMS204-B_16062	4B : 62	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	0.006	mg/L		0.001		E200.8	06/24/16 23:52 / dck	06/23/16 08:33	ICPMS204-B_16062	4B:69	33379
Cadmium	0.00003	mg/L		0.00003		E200.8	06/24/16 23:52 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 69	33379
Calcium	37	mg/L		1		E200.7	06/24/16 15:18 / sld	06/23/16 08:33	ICP2-HE_16062	4B : 93	33379
Copper	0.005	mg/L		0.001		E200.8	06/24/16 23:52 / dck	06/23/16 08:33	ICPMS204-B_160624	4B : 69	33379
Lead	0.0004	mg/L		0.0003		E200.8	06/27/16 16:34 / dck	06/23/16 08:33	ICPMS204-B_16062	7A : 61	33379

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-116A
 Collection Date:
 06/20/16 09:00
 DateReceived:
 06/22/16

 Lab ID:
 H16060430-001
 Report Date:
 07/20/16
 Of the term
 Of term
 Of term
 Of term

 Matrix:
 Surface Water
 Surface Water
 Of term
 Of term
 Demonstrate

Analyses	Resu	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	9	mg/L		1		E200.7	06/24/16 15:18 / sld	06/23/16 08:33	ICP2-HE_16062	4B : 93	33379
Potassium	2	mg/L		1		E200.7	06/24/16 15:18 / sld	06/23/16 08:33	ICP2-HE_16062	4B : 93	33379
Sodium	7	mg/L		1		E200.7	06/24/16 15:18 / sld	06/23/16 08:33	ICP2-HE_16062	4B : 93	33379
Zinc	ND	mg/L		0.008		E200.8	06/24/16 23:52 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 69	33379



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:Field Blank #1 (FC-CFR)Lab ID:H16060430-002Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/20/16 11:15 DateReceived: 06/22/16

Report Date: 07/20/16

241011000

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	ND	mg/L		1		A2540 D	06/22/16 16:06 / MA	l	24 (14410200)_16062	22A : 24	TSS160622A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	06/23/16 09:46 / SR		PHSC_101-H_16062	23A : 12	R116238
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	06/23/16 09:46 / SR		PHSC_101-H_16062	23A : 12	R116238
Chloride	ND	mg/L		1		E300.0	06/23/16 11:36 / SR		IC102-H_1606	23A : 19	R116280
Sulfate	ND	mg/L		1		E300.0	06/23/16 11:36 / SR		IC102-H_1606	23A : 19	R116280
Hardness as CaCO3	ND	mg/L		1		A2340 B	06/29/16 08:20 / sld		WATERCALC_160	629A : 1	R116382
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	ND	mg/L		0.5		A5310 C	06/28/16 00:27 / eli-c		SUB-C212	944:17	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:24 / cm		FIA203-HE_1606	28A : 14	R116353
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/23/16 13:42 / cm		FIA203-HE_1606	23B : 91	R116262
Nitrogen, Total	ND	mg/L		0.05		A4500 N-C	06/27/16 15:24 / cm	06/27/16 13:15	FIA203-HE_1606	27B : 35	33423
Phosphorus, Total as P	ND	mg/L		0.003		E365.1	06/23/16 15:53 / cm	06/23/16 15:27	FIA202-HE_16062	23B : 20	33388
METALS, DISSOLVED											
Arsenic	ND	mg/L		0.001		E200.8	06/24/16 23:55 / dck		ICPMS204-B_16062	24B : 70	R116327
Cadmium	ND	mg/L		0.00003		E200.8	06/24/16 23:55 / dck		ICPMS204-B_16062	24B : 70	R116327
Copper	ND	mg/L		0.001		E200.8	06/24/16 23:55 / dck		ICPMS204-B_16062	24B : 70	R116327
Lead	ND	mg/L		0.0003		E200.8	06/24/16 23:55 / dck		ICPMS204-B_16062	24B : 70	R116327
Zinc	0.012	mg/L		0.008		E200.8	06/24/16 23:55 / dck		ICPMS204-B_16062	24B : 70	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.001		E200.8	06/24/16 23:58 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 71	33379
Cadmium	ND	mg/L		0.00003		E200.8	06/24/16 23:58 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 71	33379
Calcium	ND	mg/L		1		E200.7	06/24/16 15:22 / sld	06/23/16 08:33	ICP2-HE_16062	24B : 94	33379
Copper	ND	mg/L		0.001		E200.8	06/24/16 23:58 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 71	33379
Lead	ND	mg/L		0.0003		E200.8	06/27/16 16:37 / dck	06/23/16 08:33	ICPMS204-B_16062	27A : 62	33379

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundProject:CFR Monitoring-474374Client Sample ID:Field Blank #1 (FC-CFR)Collection Date:06/20/16 11:15DateReceived:06/22/16Lab ID:H16060430-002Report Date:07/20/1607/20/16DateReceived:06/22/16Matrix:Surface WaterSurface Water07/20/16DateReceived:06/22/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	ND	mg/L		1		E200.7	06/24/16 15:22 / sld	06/23/16 08:33	ICP2-HE_160624	B:94	33379
Mercury	ND	mg/L		5E-06		E245.1	06/28/16 17:11 / rgk	06/27/16 07:58	HGCV202-H_160628	B:34	33413
Potassium	ND	mg/L		1		E200.7	06/24/16 15:22 / sld	06/23/16 08:33	ICP2-HE_160624	B : 94	33379
Sodium	ND	mg/L		1		E200.7	06/24/16 15:22 / sld	06/23/16 08:33	ICP2-HE_160624	B:94	33379
Zinc	ND	mg/L		0.008		E200.8	06/24/16 23:58 / dck	06/23/16 08:33	ICPMS204-B_160624	B:71	33379



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:FC-CFRLab ID:H16060430-003Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/20/16 11:30 DateReceived: 06/22/16

Report Date: 07/20/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By Prep	Date	Rur RunID Orde	er BatchID
PHYSICAL PROPERTIES										
Solids, Total Suspended TSS @ 105 C	6	mg/L	D	2		A2540 D	06/24/16 08:22 / MA		I24 (14410200)_160623B : 78	TSS160623A
INORGANICS										
Alkalinity, Total as CaCO3	200	mg/L		4		A2320 B	06/23/16 09:51 / SR		PHSC_101-H_160623A : 14	R116238
Bicarbonate as HCO3	240	mg/L		4		A2320 B	06/23/16 09:51 / SR		PHSC_101-H_160623A : 14	R116238
Chloride	3	mg/L		1		E300.0	06/23/16 11:47 / SR		IC102-H_160623A : 20	R116280
Sulfate	18	mg/L		1		E300.0	06/23/16 11:47 / SR		IC102-H_160623A : 20	R116280
Hardness as CaCO3	209	mg/L		1		A2340 B	06/24/16 15:26 / abc		CALC_160628A : 124	R116361
AGGREGATE ORGANICS										
Organic Carbon, Dissolved (DOC)	4.3	mg/L		0.5		A5310 C	06/28/16 00:46 / eli-c		SUB-C212944 : 18	C_R212944
NUTRIENTS										
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:28 / cm		FIA203-HE_160628A : 17	R116353
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/23/16 13:43 / cm		FIA203-HE_160623B : 92	R116262
Nitrogen, Total	0.31	mg/L		0.05		A4500 N-C	06/27/16 15:25 / cm 06/27/16	13:15	FIA203-HE_160627B : 36	33423
Phosphorus, Total as P	0.051	mg/L		0.003		E365.1	06/23/16 15:56 / cm 06/23/16	15:27	FIA202-HE_160623B : 23	33388
METALS, DISSOLVED										
Arsenic	0.009	mg/L		0.001		E200.8	06/25/16 00:01 / dck		ICPMS204-B_160624B : 72	R116327
Cadmium	ND	mg/L		0.00003		E200.8	06/25/16 00:01 / dck		ICPMS204-B_160624B : 72	R116327
Copper	0.001	mg/L		0.001		E200.8	06/25/16 00:01 / dck		ICPMS204-B_160624B : 72	R116327
Lead	ND	mg/L		0.0003		E200.8	06/25/16 00:01 / dck		ICPMS204-B_160624B : 72	R116327
Zinc	ND	mg/L		0.008		E200.8	06/25/16 00:01 / dck		ICPMS204-B_160624B : 72	R116327
METALS, TOTAL RECOVERABLE										
Arsenic	0.010	mg/L		0.001		E200.8	06/25/16 00:05 / dck 06/23/16	08:33	ICPMS204-B_160624B : 73	33379
Cadmium	ND	mg/L		0.00003		E200.8	06/25/16 00:05 / dck 06/23/16	08:33	ICPMS204-B_160624B : 73	33379
Calcium	58	mg/L		1		E200.7	06/24/16 15:26 / sld 06/23/16	08:33	ICP2-HE_160624B : 95	33379
Copper	0.002	mg/L		0.001		E200.8	06/25/16 00:05 / dck 06/23/16	08:33	ICPMS204-B_160624B : 73	33379
Lead	0.0013	mg/L		0.0003		E200.8	06/27/16 16:40 / dck 06/23/16	08:33	ICPMS204-B_160627A : 63	33379

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundProject:CFR Monitoring-474374Client Sample ID:FC-CFRCollection Date:06/20/16 11:30DateReceived:06/22/16Lab ID:H16060430-003Report Date:07/20/16TTTTMatrix:Surface WaterSurface WaterTTT</

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	16	mg/L		1		E200.7	06/24/16 15:26 / sld	06/23/16 08:33	ICP2-HE_160624	B : 95	33379
Mercury	0.000057	mg/L		5E-06		E245.1	06/28/16 17:13 / rgk	06/27/16 07:58	HGCV202-H_160628	3B : 35	33413
Potassium	4	mg/L		1		E200.7	06/24/16 15:26 / sld	06/23/16 08:33	ICP2-HE_160624	B : 95	33379
Sodium	10	mg/L		1		E200.7	06/24/16 15:26 / sld	06/23/16 08:33	ICP2-HE_160624	B : 95	33379
Zinc	ND	mg/L		800.0		E200.8	06/25/16 00:05 / dck	06/23/16 08:33	ICPMS204-B_160624	IB : 73	33379



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:FC-CFR DuplicateLab ID:H16060430-004Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/20/16 11:30 DateReceived: 06/22/16

Report Date: 07/20/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	6	mg/L		1		A2540 D	06/23/16 13:34 / MA	l	24 (14410200)_16062	3B : 58	TSS160623A
INORGANICS											
Alkalinity, Total as CaCO3	200	mg/L		4		A2320 B	06/23/16 10:06 / SR		PHSC_101-H_16062	3A : 18	R116238
Bicarbonate as HCO3	240	mg/L		4		A2320 B	06/23/16 10:06 / SR		PHSC_101-H_16062	3A : 18	R116238
Chloride	3	mg/L		1		E300.0	06/23/16 11:58 / SR		IC102-H_16062	3A : 21	R116280
Sulfate	18	mg/L		1		E300.0	06/23/16 11:58 / SR		IC102-H_16062	3A : 21	R116280
Hardness as CaCO3	212	mg/L		1		A2340 B	06/24/16 15:37 / abc		CALC_160628	A : 135	R116361
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	4.3	mg/L		0.5		A5310 C	06/28/16 01:05 / eli-c	:	SUB-C2129	44 : 19	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:29 / cm		FIA203-HE 16062	8A : 18	R116353
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/23/16 13:44 / cm		FIA203-HE_16062	3B : 93	R116262
Nitrogen, Total	0.32	mg/L		0.05		A4500 N-C	06/27/16 15:26 / cm	06/27/16 13:15	FIA203-HE_16062	7B : 37	33423
Phosphorus, Total as P	0.054	mg/L		0.003		E365.1	06/23/16 15:57 / cm	06/23/16 15:27	FIA202-HE_16062	3B : 24	33388
METALS, DISSOLVED											
Arsenic	0.009	mg/L		0.001		E200.8	06/25/16 00:08 / dck		ICPMS204-B_16062	4B : 74	R116327
Cadmium	ND	mg/L		0.00003		E200.8	06/25/16 00:08 / dck		ICPMS204-B_16062	4B : 74	R116327
Copper	ND	mg/L		0.001		E200.8	06/25/16 00:08 / dck		ICPMS204-B_16062	4B : 74	R116327
Lead	ND	mg/L		0.0003		E200.8	06/25/16 00:08 / dck		ICPMS204-B_16062	4B : 74	R116327
Zinc	ND	mg/L		0.008		E200.8	06/25/16 00:08 / dck		ICPMS204-B_16062	4B : 74	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	0.009	mg/L		0.001		E200.8	06/25/16 00:11 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 75	33379
Cadmium	0.00003	mg/L		0.00003		E200.8	06/25/16 00:11 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 75	33379
Calcium	58	mg/L		1		E200.7	06/24/16 15:37 / sld	06/23/16 08:33	ICP2-HE_16062	4B : 98	33379
Copper	0.002	mg/L		0.001		E200.8	06/25/16 00:11 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 75	33379
Lead	0.0014	mg/L		0.0003		E200.8	06/27/16 16:43 / dck	06/23/16 08:33	ICPMS204-B_16062	7A : 64	33379

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundProject:CFR Monitoring-474374Client Sample ID:FC-CFR DuplicateCollection Date:06/20/16 11:30DateReceived:06/22/16Lab ID:H16060430-004Report Date:07/20/1607/20/16DateReceived:06/22/16Matrix:Surface WaterSurface Water07/20/16DateReceived:06/22/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	16	mg/L		1		E200.7	06/24/16 15:37 / sld	06/23/16 08:33	ICP2-HE_160624	B:98	33379
Mercury	0.000057	mg/L		5E-06		E245.1	06/28/16 17:16 / rgk	06/27/16 07:58	HGCV202-H_160628	B:36	33413
Potassium	4	mg/L		1		E200.7	06/24/16 15:37 / sld	06/23/16 08:33	ICP2-HE_160624	B:98	33379
Sodium	10	mg/L		1		E200.7	06/24/16 15:37 / sld	06/23/16 08:33	ICP2-HE_160624	B:98	33379
Zinc	ND	mg/L		0.008		E200.8	06/25/16 00:11 / dck	06/23/16 08:33	ICPMS204-B_160624	B:75	33379



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:LBR-CFR-02Lab ID:H16060430-005Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/20/16 13:15 DateReceived: 06/22/16

Report Date: 07/20/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By Pre	ep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	1	mg/L		1		A2540 D	06/23/16 08:54 / MA		-124 (14410200)_16062	23B : 3	TSS160623A
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	06/23/16 10:14 / SR		PHSC_101-H_160623	3A : 20	R116238
Bicarbonate as HCO3	130	mg/L		4		A2320 B	06/23/16 10:14 / SR		PHSC_101-H_160623	3A : 20	R116238
Chloride	2	mg/L		1		E300.0	06/23/16 12:09 / SR		IC102-H_160623	3A : 22	R116280
Sulfate	11	mg/L		1		E300.0	06/23/16 12:09 / SR		IC102-H_160623	3A : 22	R116280
Hardness as CaCO3	115	mg/L		1		A2340 B	06/24/16 15:41 / abc		CALC_1606284	A : 146	R116361
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.6	mg/L		0.5		A5310 C	06/28/16 01:25 / eli-c		SUB-C21294	44 : 20	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:30 / cm		FIA203-HE_160628	3A : 19	R116353
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/23/16 13:46 / cm		FIA203-HE_160623	3B : 94	R116262
Nitrogen, Total	0.12	mg/L		0.05		A4500 N-C	06/27/16 15:28 / cm 06/27/	16 13:15	FIA203-HE_160627	7B : 38	33423
Phosphorus, Total as P	0.018	mg/L		0.003		E365.1	06/23/16 15:58 / cm 06/23/	16 15:27	FIA202-HE_160623	3B : 25	33388
METALS, DISSOLVED											
Arsenic	0.004	mg/L		0.001		E200.8	06/25/16 00:14 / dck		ICPMS204-B_160624	4B : 76	R116327
Cadmium	ND	mg/L		0.00003		E200.8	06/25/16 00:14 / dck		ICPMS204-B_160624	4B : 76	R116327
Copper	ND	mg/L		0.001		E200.8	06/25/16 00:14 / dck		ICPMS204-B_160624	4B : 76	R116327
Lead	ND	mg/L		0.0003		E200.8	06/25/16 00:14 / dck		ICPMS204-B_160624	4B : 76	R116327
Zinc	ND	mg/L		0.008		E200.8	06/25/16 00:14 / dck		ICPMS204-B_160624	4B : 76	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	0.005	mg/L		0.001		E200.8	06/25/16 00:17 / dck 06/23/	16 08:33	ICPMS204-B_160624	4B : 77	33379
Cadmium	0.00004	mg/L		0.00003		E200.8	06/25/16 00:17 / dck 06/23/	16 08:33	ICPMS204-B_160624	4B : 77	33379
Calcium	34	mg/L		1		E200.7	06/24/16 15:41 / sld 06/23/	16 08:33	ICP2-HE_160624	4B : 99	33379
Copper	0.001	mg/L		0.001		E200.8	06/25/16 00:17 / dck 06/23/	16 08:33	ICPMS204-B_160624	4B : 77	33379
Lead	ND	mg/L		0.0003		E200.8	06/27/16 16:47 / dck 06/23/	16 08:33	ICPMS204-B_160627	7A : 65	33379

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 LBR-CFR-02
 Collection Date:
 06/20/16 13:15
 DateReceived:
 06/22/16

 Lab ID:
 H16060430-005
 Report Date:
 07/20/16
 DateReceived:
 06/22/16

 Matrix:
 Surface Water
 Surface Water
 DateReceived:
 06/22/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVERABLE												
Magnesium	8	mg/L		1		E200.7	06/24/16 15:41 / sld (	06/23/16 08:33	ICP2-HE_16062	4B : 99	33379	
Potassium	2	mg/L		1		E200.7	06/24/16 15:41 / sld (	06/23/16 08:33	ICP2-HE_16062	4B : 99	33379	
Sodium	6	mg/L		1		E200.7	06/24/16 15:41 / sld (	06/23/16 08:33	ICP2-HE_16062	4B : 99	33379	
Zinc	ND	mg/L		0.008		E200.8	06/25/16 00:17 / dck (	06/23/16 08:33	ICPMS204-B_16062	4B : 77	33379	



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-34Lab ID:H16060430-006Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/20/16 14:30 DateReceived: 06/22/16

Report Date: 07/20/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	5	mg/L		1		A2540 D	06/23/16 08:55 / MA		-124 (14410200)_16063	23B : 4	TSS160623A
INORGANICS											
Alkalinity, Total as CaCO3	130	mg/L		4		A2320 B	06/23/16 10:19 / SR		PHSC_101-H_16062	3A : 22	R116238
Bicarbonate as HCO3	130	mg/L		4		A2320 B	06/23/16 10:19 / SR		PHSC_101-H_16062	3A : 22	R116238
Chloride	5	mg/L		1		E300.0	06/23/16 12:21 / SR		IC102-H_16062	3A : 23	R116280
Sulfate	46	mg/L		1		E300.0	06/23/16 12:21 / SR		IC102-H_16062	3A : 23	R116280
Hardness as CaCO3	167	mg/L		1		A2340 B	06/24/16 15:45 / abc		CALC_160628	A : 157	R116361
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.1	mg/L		0.5		A5310 C	06/28/16 01:45 / eli-c		SUB-C2129	44 : 21	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:31 / cm		FIA203-HE_16062	8A : 20	R116353
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/23/16 13:47 / cm		FIA203-HE_16062	3B : 95	R116262
Nitrogen, Total	0.29	mg/L		0.05		A4500 N-C	06/23/16 17:09 / cm	06/23/16 10:19	FIA203-HE_160623	3D : 46	33371
Phosphorus, Total as P	0.028	mg/L		0.003		E365.1	06/23/16 16:01 / cm	06/23/16 15:27	FIA202-HE_16062	3B : 28	33388
METALS, DISSOLVED											
Arsenic	0.018	mg/L		0.001		E200.8	06/25/16 00:20 / dck		ICPMS204-B_16062	4B : 78	R116327
Cadmium	0.00005	mg/L		0.00003		E200.8	06/25/16 00:20 / dck		ICPMS204-B_160624	4B : 78	R116327
Copper	0.008	mg/L		0.001		E200.8	06/25/16 00:20 / dck		ICPMS204-B_160624	4B : 78	R116327
Lead	ND	mg/L		0.0003		E200.8	06/25/16 00:20 / dck		ICPMS204-B_160624	4B : 78	R116327
Zinc	ND	mg/L		0.008		E200.8	06/25/16 00:20 / dck		ICPMS204-B_16062	4B : 78	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	0.020	mg/L		0.001		E200.8	06/25/16 00:33 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 82	33379
Cadmium	0.00008	mg/L		0.00003		E200.8	06/25/16 00:33 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 82	33379
Calcium	49	mg/L		1		E200.7	06/24/16 15:45 / sld	06/23/16 08:33	ICP2-HE_160624	B : 100	33379
Copper	0.015	mg/L		0.001		E200.8	06/25/16 00:33 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 82	33379
Lead	0.0012	mg/L		0.0003		E200.8	06/27/16 16:50 / dck	06/23/16 08:33	ICPMS204-B_16062	7A : 66	33379

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-34
 Collection Date:
 06/20/16 14:30
 DateReceived:
 06/22/16

 Lab ID:
 H16060430-006
 Report Date:
 07/20/16
 Project:
 CFR Monitoring-474374

 Matrix:
 Surface Water
 Project:
 CFR Monitoring-474374
 DateReceived:
 06/22/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	11	mg/L		1		E200.7	06/24/16 15:45 / sld	06/23/16 08:33	ICP2-HE_160624	3:100	33379
Potassium	2	mg/L		1		E200.7	06/24/16 15:45 / sld	06/23/16 08:33	ICP2-HE_160624	3:100	33379
Sodium	12	mg/L		1		E200.7	06/24/16 15:45 / sld	06/23/16 08:33	ICP2-HE_160624	3:100	33379
Zinc	0.011	mg/L		0.008		E200.8	06/25/16 00:33 / dck	06/23/16 08:33	ICPMS204-B_160624	4B : 82	33379



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-27HLab ID:H16060430-007Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/20/16 15:30 DateReceived: 06/22/16

Report Date: 07/20/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	5	mg/L		1		A2540 D	06/23/16 08:56 / MA		-124 (14410200)_160	623B : 5	TSS160623A
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	06/23/16 10:26 / SR		PHSC_101-H_1606	23A : 24	R116238
Bicarbonate as HCO3	120	mg/L		4		A2320 B	06/23/16 10:26 / SR		PHSC_101-H_16062	23A : 24	R116238
Chloride	4	mg/L		1		E300.0	06/23/16 12:32 / SR		IC102-H_1606	23A : 24	R116280
Sulfate	45	mg/L		1		E300.0	06/23/16 12:32 / SR		IC102-H_1606	23A : 24	R116280
Hardness as CaCO3	151	mg/L		1		A2340 B	06/24/16 15:48 / abc		CALC_16062	8A : 168	R116361
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.8	mg/L		0.5		A5310 C	06/28/16 02:00 / eli-c		SUB-C212	944 : 22	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:33 / cm		FIA203-HE_1606	28A : 21	R116353
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/23/16 13:48 / cm		FIA203-HE_1606	23B : 96	R116262
Nitrogen, Total	0.25	mg/L		0.05		A4500 N-C	06/23/16 17:13 / cm	06/23/16 10:19	FIA203-HE_16062	23D : 49	33371
Phosphorus, Total as P	0.021	mg/L		0.003		E365.1	06/23/16 16:04 / cm	06/23/16 15:27	FIA202-HE_16062	23B : 31	33388
METALS, DISSOLVED											
Arsenic	0.017	mg/L		0.001		E200.8	06/25/16 00:36 / dck		ICPMS204-B_16062	24B : 83	R116327
Cadmium	0.00003	mg/L		0.00003		E200.8	06/25/16 00:36 / dck		ICPMS204-B_16062	24B : 83	R116327
Copper	0.007	mg/L		0.001		E200.8	06/25/16 00:36 / dck		ICPMS204-B_16062	24B : 83	R116327
Lead	ND	mg/L		0.0003		E200.8	06/25/16 00:36 / dck		ICPMS204-B_16062	24B : 83	R116327
Zinc	ND	mg/L		0.008		E200.8	06/25/16 00:36 / dck		ICPMS204-B_16062	24B : 83	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	0.019	mg/L		0.001		E200.8	06/25/16 00:39 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 84	33379
Cadmium	0.00007	mg/L		0.00003		E200.8	06/25/16 00:39 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 84	33379
Calcium	45	mg/L		1		E200.7	06/24/16 15:48 / sld	06/23/16 08:33	ICP2-HE_160624	4B : 101	33379
Copper	0.015	mg/L		0.001		E200.8	06/25/16 00:39 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 84	33379
Lead	0.0011	mg/L		0.0003		E200.8	06/27/16 16:53 / dck	06/23/16 08:33	ICPMS204-B_16062	27A : 67	33379

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-27H
 Collection Date:
 06/20/16 15:30
 DateReceived:
 06/22/16

 Lab ID:
 H16060430-007
 Report Date:
 07/20/16
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Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	9	mg/L		1		E200.7	06/24/16 15:48 / sld	06/23/16 08:33	ICP2-HE_160624E	: 101	33379
Potassium	2	mg/L		1		E200.7	06/24/16 15:48 / sld	06/23/16 08:33	ICP2-HE_160624E	: 101	33379
Sodium	10	mg/L		1		E200.7	06/24/16 15:48 / sld	06/23/16 08:33	ICP2-HE_160624E	: 101	33379
Zinc	0.010	mg/L		0.008		E200.8	06/25/16 00:39 / dck	06/23/16 08:33	ICPMS204-B_160624	B : 84	33379



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-11FLab ID:H16060430-008Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/21/16 08:30 DateReceived: 06/22/16

Report Date: 07/20/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	4	mg/L		1		A2540 D	06/23/16 08:56 / MA		-124 (14410200)_1606	623B : 6	TSS160623A
INORGANICS											
Alkalinity, Total as CaCO3	97	mg/L		4		A2320 B	06/23/16 10:33 / SR		PHSC_101-H_16062	23A : 26	R116238
Bicarbonate as HCO3	120	mg/L		4		A2320 B	06/23/16 10:33 / SR		PHSC_101-H_16062	23A : 26	R116238
Chloride	3	mg/L		1		E300.0	06/23/16 12:43 / SR		IC102-H_16062	23A : 25	R116280
Sulfate	47	mg/L		1		E300.0	06/29/16 16:26 / SR		IC102-H_16062	29A : 38	R116409
Hardness as CaCO3	144	mg/L		1		A2340 B	06/29/16 08:20 / sld		WATERCALC_1606	629A : 2	R116382
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.7	mg/L		0.5		A5310 C	06/28/16 03:04 / eli-c		SUB-C2129	944 : 23	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:34 / cm		FIA203-HE_16062	28A : 22	R116353
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/23/16 13:49 / cm		FIA203-HE_16062	23B : 97	R116262
Nitrogen, Total	0.23	mg/L		0.05		A4500 N-C	06/23/16 17:14 / cm	06/23/16 10:19	FIA203-HE_16062	23D : 50	33371
Phosphorus, Total as P	0.026	mg/L		0.003		E365.1	06/23/16 16:05 / cm	06/23/16 15:27	FIA202-HE_16062	23B : 32	33388
METALS, DISSOLVED											
Arsenic	0.017	mg/L		0.001		E200.8	06/25/16 00:42 / dck		ICPMS204-B_16062	24B : 85	R116327
Cadmium	ND	mg/L		0.00003		E200.8	06/25/16 00:42 / dck		ICPMS204-B_16062	24B : 85	R116327
Copper	0.005	mg/L		0.001		E200.8	06/25/16 00:42 / dck		ICPMS204-B_16062	24B : 85	R116327
Lead	ND	mg/L		0.0003		E200.8	06/25/16 00:42 / dck		ICPMS204-B_16062	24B : 85	R116327
Zinc	0.012	mg/L		0.008		E200.8	06/25/16 00:42 / dck		ICPMS204-B_16062	24B : 85	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	0.020	mg/L		0.001		E200.8	06/25/16 00:45 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 86	33379
Cadmium	0.00006	mg/L		0.00003		E200.8	06/25/16 00:45 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 86	33379
Calcium	42	mg/L		1		E200.7	06/24/16 15:52 / sld	06/23/16 08:33	ICP2-HE_160624	4B : 102	33379
Copper	0.012	mg/L		0.001		E200.8	06/25/16 00:45 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 86	33379
Lead	0.0010	mg/L		0.0003		E200.8	06/27/16 16:56 / dck	06/23/16 08:33	ICPMS204-B_16062	27A : 68	33379

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-11F
 Collection Date:
 06/21/16 08:30
 DateReceived:
 06/22/16

 Lab ID:
 H16060430-008
 Report Date:
 07/20/16
 Project:
 CFR Monitoring-474374

 Matrix:
 Surface Water
 Project:
 CFR Monitoring-474374
 DateReceived:
 06/22/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	9	mg/L		1		E200.7	06/24/16 15:52 / sld	06/23/16 08:33	ICP2-HE_160624	3:102	33379
Potassium	2	mg/L		1		E200.7	06/24/16 15:52 / sld	06/23/16 08:33	ICP2-HE_160624	3:102	33379
Sodium	8	mg/L		1		E200.7	06/24/16 15:52 / sld	06/23/16 08:33	ICP2-HE_160624	3 : 102	33379
Zinc	0.010	mg/L		800.0		E200.8	06/25/16 00:45 / dck	06/23/16 08:33	ICPMS204-B_160624	B : 86	33379



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-07DLab ID:H16060430-009Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/21/16 09:30 DateReceived: 06/22/16

Report Date: 07/20/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	5	mg/L		1		A2540 D	06/23/16 08:57 / MA		-124 (14410200)_160623	3B : 7	TSS160623A
INORGANICS											
Alkalinity, Total as CaCO3	88	mg/L		4		A2320 B	06/23/16 10:38 / SR		PHSC_101-H_160623/	A : 28	R116238
Bicarbonate as HCO3	110	mg/L		4		A2320 B	06/23/16 10:38 / SR		PHSC_101-H_160623/	۹ : 28	R116238
Chloride	3	mg/L		1		E300.0	06/23/16 12:54 / SR		IC102-H_160623/	4:26	R116280
Sulfate	41	mg/L		1		E300.0	06/23/16 12:54 / SR		IC102-H_160623/	4:26	R116280
Hardness as CaCO3	126	mg/L		1		A2340 B	06/24/16 15:56 / abc		CALC_160628A	: 179	R116361
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.6	mg/L		0.5		A5310 C	06/28/16 04:05 / eli-c		SUB-C21294	4:26	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:37 / cm		FIA203-HE_160628/	A : 25	R116353
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/23/16 13:50 / cm		FIA203-HE_160623E	3 : 98	R116262
Nitrogen, Total	0.23	mg/L		0.05		A4500 N-C	06/23/16 17:15 / cm (	06/23/16 10:19	FIA203-HE_160623[	D:51	33371
Phosphorus, Total as P	0.028	mg/L		0.003		E365.1	06/23/16 16:06 / cm (	06/23/16 15:27	FIA202-HE_160623	3 : 33	33388
METALS, DISSOLVED											
Arsenic	0.018	mg/L		0.001		E200.8	06/25/16 00:48 / dck		ICPMS204-B_160624E	3:87	R116327
Cadmium	0.00003	mg/L		0.00003		E200.8	06/25/16 00:48 / dck		ICPMS204-B_1606248	3 : 87	R116327
Copper	0.005	mg/L		0.001		E200.8	06/25/16 00:48 / dck		ICPMS204-B_1606248	3 : 87	R116327
Lead	ND	mg/L		0.0003		E200.8	06/25/16 00:48 / dck		ICPMS204-B_1606248	3:87	R116327
Zinc	0.014	mg/L		0.008		E200.8	06/25/16 00:48 / dck		ICPMS204-B_160624	8 : 87	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	0.019	mg/L		0.001		E200.8	06/25/16 00:51 / dck (	06/23/16 08:33	ICPMS204-B_160624E	3:88	33379
Cadmium	0.00006	mg/L		0.00003		E200.8	06/25/16 00:51 / dck (	06/23/16 08:33	ICPMS204-B_1606248	3:88	33379
Calcium	37	mg/L		1		E200.7	06/24/16 15:56 / sld (	06/23/16 08:33	ICP2-HE_160624B	: 103	33379
Copper	0.012	mg/L		0.001		E200.8	06/25/16 00:51 / dck (	06/23/16 08:33	ICPMS204-B_1606248	3 : 88	33379
Lead	0.0011	mg/L		0.0003		E200.8	06/27/16 16:59 / dck (	06/23/16 08:33	ICPMS204-B_160627/	A:69	33379

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-07D
 Collection Date:
 06/21/16 09:30
 DateReceived:
 06/22/16

 Lab ID:
 H16060430-009
 Report Date:
 07/20/16
 Project:
 CFR Monitoring-474374

 Matrix:
 Surface Water
 Project:
 CFR Monitoring-474374
 DateReceived:
 06/22/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	8	mg/L		1		E200.7	06/24/16 15:56 / sld (	06/23/16 08:33	ICP2-HE_160624E	3 : 103	33379
Potassium	2	mg/L		1		E200.7	06/24/16 15:56 / sld (	06/23/16 08:33	ICP2-HE_160624E	3 : 103	33379
Sodium	7	mg/L		1		E200.7	06/24/16 15:56 / sld (	06/23/16 08:33	ICP2-HE_160624E	3 : 103	33379
Zinc	0.010	mg/L		0.008		E200.8	06/25/16 00:51 / dck (	06/23/16 08:33	ICPMS204-B_160624	B : 88	33379



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-07D DuplicateLab ID:H16060430-010Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/21/16 09:30 DateReceived: 06/22/16

Report Date: 07/20/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	5	mg/L		1		A2540 D	06/23/16 08:57 / MA		-124 (14410200)_16062	23B : 8	TSS160623A
INORGANICS											
Alkalinity, Total as CaCO3	87	mg/L		4		A2320 B	06/23/16 10:44 / SR		PHSC_101-H_160623	3A : 30	R116238
Bicarbonate as HCO3	110	mg/L		4		A2320 B	06/23/16 10:44 / SR		PHSC_101-H_160623	3A : 30	R116238
Chloride	3	mg/L		1		E300.0	06/23/16 13:05 / SR		IC102-H_160623	3A : 27	R116280
Sulfate	41	mg/L		1		E300.0	06/23/16 13:05 / SR		IC102-H_160623	3A : 27	R116280
Hardness as CaCO3	126	mg/L		1		A2340 B	06/24/16 16:00 / abc		CALC_160628	A : 190	R116361
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.6	mg/L		0.5		A5310 C	06/28/16 04:20 / eli-c		SUB-C2129	44 : 27	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:41 / cm		FIA203-HE_160628	BA : 28	R116353
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/23/16 13:52 / cm		FIA203-HE_160623	3B : 99	R116262
Nitrogen, Total	0.23	mg/L		0.05		A4500 N-C	06/23/16 17:16 / cm	06/23/16 10:19	FIA203-HE_160623	3D : 52	33371
Phosphorus, Total as P	0.028	mg/L		0.003		E365.1	06/23/16 16:07 / cm	06/23/16 15:27	FIA202-HE_160623	3B : 34	33388
METALS, DISSOLVED											
Arsenic	0.017	mg/L		0.001		E200.8	06/25/16 00:55 / dck		ICPMS204-B_160624	4B : 89	R116327
Cadmium	ND	mg/L		0.00003		E200.8	06/25/16 00:55 / dck		ICPMS204-B_160624	4B : 89	R116327
Copper	0.005	mg/L		0.001		E200.8	06/25/16 00:55 / dck		ICPMS204-B_160624	4B : 89	R116327
Lead	ND	mg/L		0.0003		E200.8	06/25/16 00:55 / dck		ICPMS204-B_160624	4B : 89	R116327
Zinc	ND	mg/L		0.008		E200.8	06/25/16 00:55 / dck		ICPMS204-B_160624	4B : 89	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	0.019	mg/L		0.001		E200.8	06/25/16 00:58 / dck	06/23/16 08:33	ICPMS204-B_160624	4B : 90	33379
Cadmium	0.00007	mg/L		0.00003		E200.8	06/25/16 00:58 / dck	06/23/16 08:33	ICPMS204-B_160624	4B : 90	33379
Calcium	37	mg/L		1		E200.7	06/24/16 16:00 / sld	06/23/16 08:33	ICP2-HE_160624I	B : 104	33379
Copper	0.013	mg/L		0.001		E200.8	06/25/16 00:58 / dck	06/23/16 08:33	ICPMS204-B_160624	4B : 90	33379
Lead	0.0013	mg/L		0.0003		E200.8	06/27/16 17:02 / dck	06/23/16 08:33	ICPMS204-B_16062	7A : 70	33379

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundProject:CFR Monitoring-474374Client Sample ID:CFR-07D DuplicateCollection Date:06/21/16 09:30DateReceived:06/22/16Lab ID:H16060430-010Report Date:07/20/1607/20/16Matrix:Surface WaterCollection Date:07/20/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	8	mg/L		1		E200.7	06/24/16 16:00 / sld	06/23/16 08:33	ICP2-HE_160624B	: 104	33379
Potassium	2	mg/L		1		E200.7	06/24/16 16:00 / sld	06/23/16 08:33	ICP2-HE_160624B	: 104	33379
Sodium	7	mg/L		1		E200.7	06/24/16 16:00 / sld	06/23/16 08:33	ICP2-HE_160624B	: 104	33379
Zinc	0.010	mg/L		0.008		E200.8	06/25/16 00:58 / dck	06/23/16 08:33	ICPMS204-B_160624	3:90	33379



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-03ALab ID:H16060430-011Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/21/16 10:45 DateReceived: 06/22/16

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Report Date: 07/20/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	6	mg/L		1		A2540 D	06/23/16 08:57 / MA		-124 (14410200)_160	623B : 9	TSS160623A
INORGANICS											
Alkalinity, Total as CaCO3	84	mg/L		4		A2320 B	06/23/16 10:49 / SR		PHSC_101-H_1606	23A : 32	R116238
Bicarbonate as HCO3	100	mg/L		4		A2320 B	06/23/16 10:49 / SR		PHSC_101-H_1606	23A : 32	R116238
Chloride	3	mg/L		1		E300.0	06/23/16 14:12 / SR		IC102-H_1606	23A : 33	R116280
Sulfate	35	mg/L		1		E300.0	06/23/16 14:12 / SR		IC102-H_1606	23A : 33	R116280
Hardness as CaCO3	105	mg/L		1		A2340 B	06/25/16 01:32 / abc		CALC_16062	8A : 201	R116361
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.5	mg/L		0.5		A5310 C	06/28/16 04:36 / eli-c		SUB-C212	944 : 28	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:42 / cm		FIA203-HE_1606	28A : 29	R116353
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/23/16 13:55 / cm		FIA203-HE_16062	3B : 102	R116262
Nitrogen, Total	0.22	mg/L		0.05		A4500 N-C	06/23/16 17:18 / cm	06/23/16 10:19	FIA203-HE_1606	23D : 53	33371
Phosphorus, Total as P	0.029	mg/L		0.003		E365.1	06/23/16 16:08 / cm	06/23/16 15:27	FIA202-HE_1606	23B : 35	33388
METALS, DISSOLVED											
Arsenic	0.017	mg/L		0.001		E200.8	06/25/16 01:19 / dck		ICPMS204-B_1606	24B : 97	R116327
Cadmium	ND	mg/L	(	0.00003		E200.8	06/25/16 01:19 / dck		ICPMS204-B_1606	24B : 97	R116327
Copper	0.004	mg/L		0.001		E200.8	06/25/16 01:19 / dck		ICPMS204-B_1606	24B : 97	R116327
Lead	ND	mg/L		0.0003		E200.8	06/25/16 01:19 / dck		ICPMS204-B_1606	24B : 97	R116327
Zinc	ND	mg/L		0.008		E200.8	06/25/16 01:19 / dck		ICPMS204-B_1606	24B : 97	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	0.018	mg/L		0.001		E200.8	06/25/16 01:32 / dck	06/23/16 08:33	ICPMS204-B_160624	4B : 101	33379
Cadmium	0.00007	mg/L		0.00003		E200.8	06/25/16 01:32 / dck	06/23/16 08:33	ICPMS204-B_160624	4B : 101	33379
Calcium	31	mg/L		1		E200.8	06/25/16 01:32 / dck	06/23/16 08:33	ICPMS204-B_160624	4B : 101	33379
Copper	0.010	mg/L		0.001		E200.8	06/25/16 01:32 / dck	06/23/16 08:33	ICPMS204-B_160624	4B : 101	33379
Lead	0.0012	mg/L		0.0003		E200.8	06/28/16 11:07 / dck	06/23/16 08:33	ICPMS204-B_16062	7A : 108	33379

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-03A
 Collection Date:
 06/21/16 10:45
 DateReceived:
 06/22/16

 Lab ID:
 H16060430-011
 Report Date:
 07/20/16
 DiteReceived:
 06/22/16

 Matrix:
 Surface Water
 Surface Water
 DiteReceived:
 06/22/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	7	mg/L		1		E200.8	06/25/16 01:32 / dck (	06/23/16 08:33	ICPMS204-B_160624	B : 101	33379
Potassium	2	mg/L		1		E200.7	06/27/16 13:08 / sld (	06/23/16 08:33	ICP2-HE_16062	7B : 27	33379
Sodium	6	mg/L		1		E200.8	06/25/16 01:32 / dck (	06/23/16 08:33	ICPMS204-B_160624	B : 101	33379
Zinc	0.009	mg/L		0.008		E200.8	06/25/16 01:32 / dck (	06/23/16 08:33	ICPMS204-B_160624	B : 101	33379



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

**Project:** CFR Monitoring-474374

Client:MT DEQ-Federal SuperfundClient Sample ID:Field Blank #2 (WSC-SBC)Lab ID:H16060430-012Matrix:Surface Water

Collection Date: 06/21/16 11:30

**DateReceived:** 06/22/16

Run

Report Date: 07/20/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	ND	mg/L		1		A2540 D	06/23/16 08:58 / MA		124 (14410200)_1606	23B : 10	TSS160623A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	06/23/16 10:54 / SR		PHSC_101-H_1606	23A : 34	R116238
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	06/23/16 10:54 / SR		PHSC_101-H_1606	23A : 34	R116238
Chloride	ND	mg/L		1		E300.0	06/23/16 14:23 / SR		IC102-H_1606	23A : 34	R116280
Sulfate	ND	mg/L		1		E300.0	06/23/16 14:23 / SR		IC102-H_1606	23A : 34	R116280
Hardness as CaCO3	ND	mg/L		1		A2340 B	06/29/16 14:17 / sld		WATERCALC_160	629B:1	R116396
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	ND	mg/L		0.5		A5310 C	06/28/16 04:51 / eli-c		SUB-C212	944 : 29	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:43 / cm		FIA203-HE_1606	28A : 30	R116353
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/23/16 13:59 / cm		FIA203-HE_16062	3B : 105	R116262
Nitrogen, Total	ND	mg/L		0.05		A4500 N-C	06/23/16 17:19 / cm	06/23/16 10:19	FIA203-HE_1606	23D : 54	33371
Phosphorus, Total as P	ND	mg/L		0.003		E365.1	06/23/16 16:09 / cm	06/23/16 15:27	FIA202-HE_1606	23B : 36	33388
METALS, DISSOLVED											
Arsenic	ND	mg/L		0.001		E200.8	06/25/16 01:35 / dck		ICPMS204-B_16062	4B : 102	R116327
Cadmium	ND	mg/L	C	0.00003		E200.8	06/25/16 01:35 / dck		ICPMS204-B_16062	4B : 102	R116327
Copper	ND	mg/L		0.001		E200.8	06/25/16 01:35 / dck		ICPMS204-B_16062	4B : 102	R116327
Lead	ND	mg/L		0.0003		E200.8	06/25/16 01:35 / dck		ICPMS204-B_16062	4B : 102	R116327
Zinc	0.012	mg/L		0.008		E200.8	06/25/16 01:35 / dck		ICPMS204-B_16062	4B : 102	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.001		E200.8	06/25/16 01:38 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 103	33379
Cadmium	ND	mg/L	C	0.00003		E200.8	06/25/16 01:38 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 103	33379
Calcium	ND	mg/L		1		E200.7	06/24/16 16:26 / sld	06/23/16 08:33	ICP2-HE_16062	4B : 111	33379
Copper	ND	mg/L		0.001		E200.8	06/25/16 01:38 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 103	33379
Lead	ND	mg/L		0.0003		E200.8	06/28/16 11:10 / dck	06/23/16 08:33	ICPMS204-B_16062	7A : 109	33379

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 Field Blank #2 (WSC-SBC)
 Collection Date:
 06/21/16 11:30
 DateReceived:
 06/22/16

 Lab ID:
 H16060430-012
 Report Date:
 07/20/16
 V

 Matrix:
 Surface Water
 Surface Water
 V
 V

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	ND	mg/L		1		E200.7	06/24/16 16:26 / sld	06/23/16 08:33	ICP2-HE_160624	IB : 111	33379
Potassium	ND	mg/L		1		E200.7	06/24/16 16:26 / sld	06/23/16 08:33	ICP2-HE_160624	IB : 111	33379
Sodium	ND	mg/L		1		E200.7	06/24/16 16:26 / sld	06/23/16 08:33	ICP2-HE_160624	IB : 111	33379
Zinc	ND	mg/L		0.008		E200.8	06/25/16 01:38 / dck	06/23/16 08:33	ICPMS204-B_160624	B : 103	33379



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:WSC-SBCLab ID:H16060430-013Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/21/16 12:00 DateReceived: 06/22/16

Report Date: 07/20/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	6	mg/L	D	2		A2540 D	06/23/16 08:58 / MA		124 (14410200)_16062	3B : 11	TSS160623A
INORGANICS											
Alkalinity, Total as CaCO3	81	mg/L		4		A2320 B	06/23/16 11:00 / SR		PHSC_101-H_16062	3A : 36	R116238
Bicarbonate as HCO3	98	mg/L		4		A2320 B	06/23/16 11:00 / SR		PHSC_101-H_16062	3A : 36	R116238
Chloride	ND	mg/L		1		E300.0	06/23/16 14:34 / SR		IC102-H_16062	3A : 35	R116280
Sulfate	21	mg/L		1		E300.0	06/23/16 14:34 / SR		IC102-H_16062	3A : 35	R116280
Hardness as CaCO3	104	mg/L		1		A2340 B	06/24/16 16:29 / abc		CALC_160628	A : 223	R116361
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.3	mg/L		0.5		A5310 C	06/28/16 05:09 / eli-c		SUB-C2129	944 : 30	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:45 / cm		FIA203-HE_16062	8A : 31	R116353
Nitrogen, Nitrate+Nitrite as N	0.03	mg/L		0.02		E353.2	06/23/16 14:00 / cm		FIA203-HE_160623	B : 106	R116262
Nitrogen, Total	0.15	mg/L		0.05		A4500 N-C	06/23/16 17:20 / cm	06/23/16 10:19	FIA203-HE_16062	3D : 55	33371
Phosphorus, Total as P	0.012	mg/L		0.003		E365.1	06/23/16 16:10 / cm	06/23/16 15:27	FIA202-HE_16062	3B : 37	33388
METALS, DISSOLVED											
Arsenic	0.004	mg/L		0.001		E200.8	06/25/16 01:41 / dck		ICPMS204-B_160624	B : 104	R116327
Cadmium	0.00005	mg/L		0.00003		E200.8	06/25/16 01:41 / dck		ICPMS204-B_160624	B : 104	R116327
Copper	0.003	mg/L		0.001		E200.8	06/25/16 01:41 / dck		ICPMS204-B_160624	B : 104	R116327
Lead	ND	mg/L		0.0003		E200.8	06/25/16 01:41 / dck		ICPMS204-B_160624	B : 104	R116327
Zinc	ND	mg/L		0.008		E200.8	06/25/16 01:41 / dck		ICPMS204-B_160624	B : 104	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	0.005	mg/L		0.001		E200.8	06/25/16 01:44 / dck	06/23/16 08:33	ICPMS204-B_160624	B : 105	33379
Cadmium	0.00005	mg/L		0.00003		E200.8	06/25/16 01:44 / dck	06/23/16 08:33	ICPMS204-B_160624	B : 105	33379
Calcium	32	mg/L		1		E200.7	06/24/16 16:29 / sld	06/23/16 08:33	ICP2-HE_160624	B : 112	33379
Copper	0.011	mg/L		0.001		E200.8	06/25/16 01:44 / dck	06/23/16 08:33	ICPMS204-B_160624	B : 105	33379
Lead	0.0011	mg/L		0.0003		E200.8	06/28/16 11:13 / dck	06/23/16 08:33	ICPMS204-B_160627	A : 110	33379

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 WSC-SBC
 Collection Date:
 06/21/16
 12:00
 DateReceived:
 06/22/16

 Lab ID:
 H16060430-013
 Report Date:
 07/20/16
 07/20/16

 Matrix:
 Surface Water
 Output
 Of /20/16
 Output
 Of /20/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	6	mg/L		1		E200.7	06/24/16 16:29 / sld	06/23/16 08:33	ICP2-HE_16062	24B : 112	33379
Potassium	1	mg/L		1		E200.7	06/24/16 16:29 / sld	06/23/16 08:33	ICP2-HE_16062	24B : 112	33379
Sodium	2	mg/L		1		E200.7	06/24/16 16:29 / sld	06/23/16 08:33	ICP2-HE_16062	24B : 112	33379
Zinc	ND	mg/L		0.008		E200.8	06/25/16 01:44 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 105	33379


## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:SS-25Lab ID:H16060430-014Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/21/16 13:00 DateReceived: 06/22/16

Report Date: 07/20/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	4	mg/L		1		A2540 D	06/23/16 08:59 / MA		124 (14410200)_1606	623B : 13	TSS160623A
INORGANICS											
Alkalinity, Total as CaCO3	83	mg/L		4		A2320 B	06/23/16 11:06 / SR		PHSC_101-H_1606	623A : 38	R116238
Bicarbonate as HCO3	98	mg/L		4		A2320 B	06/23/16 11:06 / SR		PHSC_101-H_1606	623A : 38	R116238
Chloride	5	mg/L		1		E300.0	06/23/16 14:45 / SR		IC102-H_1606	623A : 36	R116280
Sulfate	46	mg/L		1		E300.0	06/23/16 14:45 / SR		IC102-H_1606	623A : 36	R116280
Hardness as CaCO3	111	mg/L		1		A2340 B	06/25/16 01:51 / abc		CALC_16062	28A : 234	R116361
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.7	mg/L		0.5		A5310 C	06/28/16 05:24 / eli-c		SUB-C212	2944 : 31	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:46 / cm		FIA203-HE_1606	628A : 32	R116353
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/23/16 14:01 / cm		FIA203-HE_16062	23B : 107	R116262
Nitrogen, Total	0.32	mg/L		0.05		A4500 N-C	06/23/16 17:21 / cm	06/23/16 10:19	FIA203-HE_1606	23D : 56	33371
Phosphorus, Total as P	0.053	mg/L		0.003		E365.1	06/23/16 16:11 / cm	06/23/16 15:27	FIA202-HE_1606	23B : 38	33388
METALS, DISSOLVED											
Arsenic	0.036	mg/L		0.001		E200.8	06/25/16 01:48 / dck		ICPMS204-B_16062	24B : 106	R116327
Cadmium	ND	mg/L		0.00003		E200.8	06/25/16 01:48 / dck		ICPMS204-B_16062	24B : 106	R116327
Copper	0.003	mg/L		0.001		E200.8	06/25/16 01:48 / dck		ICPMS204-B_16062	24B : 106	R116327
Lead	ND	mg/L		0.0003		E200.8	06/25/16 01:48 / dck		ICPMS204-B_16062	4B : 106	R116327
Zinc	ND	mg/L		0.008		E200.8	06/25/16 01:48 / dck		ICPMS204-B_16062	24B : 106	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	0.036	mg/L		0.001		E200.8	06/25/16 01:51 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 107	33379
Cadmium	0.00006	mg/L		0.00003		E200.8	06/25/16 01:51 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 107	33379
Calcium	32	mg/L		1		E200.8	06/25/16 01:51 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 107	33379
Copper	0.005	mg/L		0.001		E200.8	06/25/16 01:51 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 107	33379
Lead	0.0009	mg/L		0.0003		E200.8	06/28/16 11:16 / dck	06/23/16 08:33	ICPMS204-B_16062	27A : 111	33379

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 SS-25
 Collection Date:
 06/21/16 13:00
 DateReceived:
 06/22/16

 Lab ID:
 H16060430-014
 Report Date:
 07/20/16
 DiteReceived:
 06/22/16

 Matrix:
 Surface Water
 Surface Water
 DiteReceived:
 06/22/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	8	mg/L		1		E200.8	06/25/16 01:51 / dck (	06/23/16 08:33	ICPMS204-B_160624	IB : 107	33379
Potassium	2	mg/L		1		E200.7	06/27/16 13:11 / sld (	06/23/16 08:33	ICP2-HE_16062	27B : 28	33379
Sodium	9	mg/L		1		E200.8	06/25/16 01:51 / dck (	06/23/16 08:33	ICPMS204-B_160624	IB : 107	33379
Zinc	ND	mg/L		0.008		E200.8	06/25/16 01:51 / dck (	06/23/16 08:33	ICPMS204-B_160624	4B : 107	33379



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:MWB-SBCLab ID:H16060430-015Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/21/16 13:30 DateReceived: 06/22/16

Report Date: 07/20/16

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	5	mg/L		1		A2540 D	06/23/16 08:59 / MA		124 (14410200)_1606	623B : 14	TSS160623A
INORGANICS											
Alkalinity, Total as CaCO3	78	mg/L		4		A2320 B	06/23/16 11:12 / SR		PHSC_101-H_1606	623A : 40	R116238
Bicarbonate as HCO3	94	mg/L		4		A2320 B	06/23/16 11:12 / SR		PHSC_101-H_1606	623A : 40	R116238
Chloride	2	mg/L		1		E300.0	06/23/16 14:56 / SR		IC102-H_1606	623A : 37	R116280
Sulfate	39	mg/L		1		E300.0	06/23/16 14:56 / SR		IC102-H_1606	623A : 37	R116280
Hardness as CaCO3	113	mg/L		1		A2340 B	06/24/16 16:37 / abc		CALC_16062	28A : 245	R116361
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.1	mg/L		0.5		A5310 C	06/28/16 05:40 / eli-c		SUB-C212	2944 : 32	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:47 / cm		FIA203-HE_1606	528A : 33	R116353
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/23/16 14:02 / cm		FIA203-HE_16062	23B : 108	R116262
Nitrogen, Total	0.24	mg/L		0.05		A4500 N-C	06/23/16 17:22 / cm	06/23/16 10:19	FIA203-HE_1606	623D : 57	33371
Phosphorus, Total as P	0.029	mg/L		0.003		E365.1	06/23/16 16:12 / cm	06/23/16 15:27	FIA202-HE_1606	623B : 39	33388
METALS, DISSOLVED											
Arsenic	0.039	mg/L		0.001		E200.8	06/25/16 02:03 / dck		ICPMS204-B_16062	24B : 111	R116327
Cadmium	ND	mg/L	(	0.00003		E200.8	06/25/16 02:03 / dck		ICPMS204-B_16062	24B : 111	R116327
Copper	0.003	mg/L		0.001		E200.8	06/25/16 02:03 / dck		ICPMS204-B_16062	24B : 111	R116327
Lead	ND	mg/L		0.0003		E200.8	06/25/16 02:03 / dck		ICPMS204-B_16062	24B : 111	R116327
Zinc	0.011	mg/L		0.008		E200.8	06/25/16 02:03 / dck		ICPMS204-B_16062	24B : 111	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	0.040	mg/L		0.001		E200.8	06/25/16 02:06 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 112	33379
Cadmium	0.00007	mg/L		0.00003		E200.8	06/25/16 02:06 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 112	33379
Calcium	33	mg/L		1		E200.7	06/24/16 16:37 / sld	06/23/16 08:33	ICP2-HE_16062	24B : 114	33379
Copper	0.005	mg/L		0.001		E200.8	06/25/16 02:06 / dck	06/23/16 08:33	ICPMS204-B_16062	24B : 112	33379
Lead	0.0010	mg/L		0.0003		E200.8	06/28/16 11:19 / dck	06/23/16 08:33	ICPMS204-B_16062	27A : 112	33379

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 MWB-SBC
 Collection Date:
 06/21/16
 13:30
 DateReceived:
 06/22/16

 Lab ID:
 H16060430-015
 Report Date:
 07/20/16
 OT/20/16

 Matrix:
 Surface Water
 Surface Water
 Dimension

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	7	mg/L		1		E200.7	06/24/16 16:37 / sld	06/23/16 08:33	ICP2-HE_160624	3:114	33379
Potassium	1	mg/L		1		E200.7	06/24/16 16:37 / sld	06/23/16 08:33	ICP2-HE_160624	3 : 114	33379
Sodium	7	mg/L		1		E200.7	06/24/16 16:37 / sld	06/23/16 08:33	ICP2-HE_160624	3:114	33379
Zinc	ND	mg/L		800.0		E200.8	06/25/16 02:06 / dck	06/23/16 08:33	ICPMS204-B_160624	3:112	33379



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:SBC-P2Lab ID:H16060430-016Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/21/16 13:40 DateReceived: 06/22/16

Run

Report Date: 07/20/16

Daterteberret

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	2	mg/L		1		A2540 D	06/23/16 09:00 / MA		124 (14410200)_16062	23B : 15	TSS160623A
INORGANICS											
Alkalinity, Total as CaCO3	99	mg/L		4		A2320 B	06/23/16 11:18 / SR		PHSC_101-H_16062	23A : 42	R116238
Bicarbonate as HCO3	110	mg/L		4		A2320 B	06/23/16 11:18 / SR		PHSC_101-H_16062	23A : 42	R116238
Chloride	19	mg/L		1		E300.0	06/23/16 15:07 / SR		IC102-H_16062	23A : 38	R116280
Sulfate	70	mg/L		1		E300.0	06/23/16 15:07 / SR		IC102-H_16062	23A : 38	R116280
Hardness as CaCO3	161	mg/L		1		A2340 B	06/24/16 16:41 / abc		CALC_160628	3A : 256	R116361
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	6.3	mg/L		0.5		A5310 C	06/28/16 05:55 / eli-c		SUB-C212	944 : 33	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:48 / cm		FIA203-HE_16062	28A : 34	R116353
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/23/16 14:03 / cm		FIA203-HE_160623	3B : 109	R116262
Nitrogen, Total	0.56	mg/L		0.05		A4500 N-C	06/27/16 15:34 / cm	06/27/16 13:36	FIA203-HE_16062	27B : 43	33424
Phosphorus, Total as P	0.156	mg/L		0.003		E365.1	06/23/16 16:18 / cm	06/23/16 15:28	FIA202-HE_16062	23B : 44	33389
METALS, DISSOLVED											
Arsenic	0.023	mg/L		0.001		E200.8	06/25/16 02:10 / dck		ICPMS204-B_160624	4B : 113	R116327
Cadmium	ND	mg/L	(	0.00003		E200.8	06/25/16 02:10 / dck		ICPMS204-B_160624	4B : 113	R116327
Copper	0.004	mg/L		0.001		E200.8	06/25/16 02:10 / dck		ICPMS204-B_160624	4B : 113	R116327
Lead	ND	mg/L		0.0003		E200.8	06/25/16 02:10 / dck		ICPMS204-B_160624	4B : 113	R116327
Zinc	ND	mg/L		0.008		E200.8	06/25/16 02:10 / dck		ICPMS204-B_160624	4B : 113	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	0.024	mg/L		0.001		E200.8	06/25/16 02:13 / dck	06/23/16 08:33	ICPMS204-B_160624	4B : 114	33379
Cadmium	0.00004	mg/L	(	0.00003		E200.8	06/25/16 02:13 / dck	06/23/16 08:33	ICPMS204-B_160624	4B : 114	33379
Calcium	47	mg/L		1		E200.7	06/24/16 16:41 / sld	06/23/16 08:33	ICP2-HE_160624	4B : 115	33379
Copper	0.005	mg/L		0.001		E200.8	06/25/16 02:13 / dck	06/23/16 08:33	ICPMS204-B_160624	4B : 114	33379
Lead	0.0003	mg/L		0.0003		E200.8	06/28/16 11:23 / dck	06/23/16 08:33	ICPMS204-B_160627	7A : 113	33379

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 SBC-P2
 Collection Date:
 06/21/16 13:40
 DateReceived:
 06/22/16

 Lab ID:
 H16060430-016
 Report Date:
 07/20/16
 DateReceived:
 06/22/16

 Matrix:
 Surface Water
 Surface Water
 Dimension
 Dimension

Analyses	Result	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	11	mg/L		1		E200.7	06/24/16 16:41 / sld	06/23/16 08:33	ICP2-HE_160	624B : 115	33379
Potassium	4	mg/L		1		E200.7	06/24/16 16:41 / sld	06/23/16 08:33	ICP2-HE_160	624B : 115	33379
Sodium	20	mg/L		1		E200.7	06/24/16 16:41 / sld	06/23/16 08:33	ICP2-HE_160	624B : 115	33379
Zinc	ND	mg/L		0.008		E200.8	06/25/16 02:13 / dck	06/23/16 08:33	ICPMS204-B_160	624B : 114	33379



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:MCWC-MWBLab ID:H16060430-017Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/21/16 14:45 DateReceived: 06/22/16

Report Date: 07/20/16

- -----

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	4	mg/L		1		A2540 D	06/23/16 09:00 / MA		124 (14410200)_1606	23B : 16	TSS160623A
INORGANICS											
Alkalinity, Total as CaCO3	71	mg/L		4		A2320 B	06/23/16 11:24 / SR		PHSC_101-H_1606	23A : 44	R116238
Bicarbonate as HCO3	86	mg/L		4		A2320 B	06/23/16 11:24 / SR		PHSC_101-H_1606	23A : 44	R116238
Chloride	ND	mg/L		1		E300.0	06/23/16 15:19 / SR		IC102-H_1606	23A : 39	R116280
Sulfate	10	mg/L		1		E300.0	06/23/16 15:19 / SR		IC102-H_1606	23A : 39	R116280
Hardness as CaCO3	75	mg/L		1		A2340 B	06/24/16 16:45 / abc		CALC_16062	8A : 267	R116361
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.3	mg/L		0.5		A5310 C	06/28/16 06:10 / eli-c		SUB-C212	2944 : 34	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:49 / cm		FIA203-HE_1606	28A : 35	R116353
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	06/23/16 14:05 / cm		FIA203-HE_16062	3B : 110	R116262
Nitrogen, Total	0.18	mg/L		0.05		A4500 N-C	06/27/16 15:37 / cm	06/27/16 13:36	FIA203-HE_1606	27B : 46	33424
Phosphorus, Total as P	0.034	mg/L		0.003		E365.1	06/23/16 16:21 / cm	06/23/16 15:28	FIA202-HE_1606	23B : 47	33389
METALS, DISSOLVED											
Arsenic	0.039	mg/L		0.001		E200.8	06/25/16 02:16 / dck		ICPMS204-B_16062	4B : 115	R116327
Cadmium	0.00003	mg/L		0.00003		E200.8	06/25/16 02:16 / dck		ICPMS204-B_16062	4B : 115	R116327
Copper	0.003	mg/L		0.001		E200.8	06/25/16 02:16 / dck		ICPMS204-B_16062	4B : 115	R116327
Lead	ND	mg/L		0.0003		E200.8	06/25/16 02:16 / dck		ICPMS204-B_16062	4B : 115	R116327
Zinc	ND	mg/L		0.008		E200.8	06/25/16 02:16 / dck		ICPMS204-B_16062	4B : 115	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	0.040	mg/L		0.001		E200.8	06/25/16 02:19 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 116	33379
Cadmium	0.00007	mg/L		0.00003		E200.8	06/25/16 02:19 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 116	33379
Calcium	22	mg/L		1		E200.7	06/24/16 16:45 / sld	06/23/16 08:33	ICP2-HE_16062	4B : 116	33379
Copper	0.005	mg/L		0.001		E200.8	06/25/16 02:19 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 116	33379
Lead	0.0010	mg/L		0.0003		E200.8	06/28/16 11:26 / dck	06/23/16 08:33	ICPMS204-B_16062	7A : 114	33379

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 MCWC-MWB
 Collection Date:
 06/21/16
 14:45
 DateReceived:
 06/22/16

 Lab ID:
 H16060430-017
 Report Date:
 07/20/16
 Hiteration
 DateReceived:
 06/22/16

 Matrix:
 Surface Water
 Surface Water
 Official Superstance
 DateReceived:
 06/22/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	5	mg/L		1		E200.7	06/24/16 16:45 / sld	06/23/16 08:33	ICP2-HE_160624E	: 116	33379
Potassium	1	mg/L		1		E200.7	06/24/16 16:45 / sld	06/23/16 08:33	ICP2-HE_160624E	5 : 116	33379
Sodium	6	mg/L		1		E200.7	06/24/16 16:45 / sld	06/23/16 08:33	ICP2-HE_160624E	: 116	33379
Zinc	ND	mg/L		0.008		E200.8	06/25/16 02:19 / dck	06/23/16 08:33	ICPMS204-B_160624E	: 116	33379



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:SS-19Lab ID:H16060430-018Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 06/21/16 15:45 DateReceived: 06/22/16

Report Date: 07/20/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	2	mg/L		1		A2540 D	06/23/16 09:00 / MA		124 (14410200)_1606	23B : 17	TSS160623A
INORGANICS											
Alkalinity, Total as CaCO3	98	mg/L		4		A2320 B	06/23/16 11:35 / SR		PHSC_101-H_1606	23A : 48	R116238
Bicarbonate as HCO3	86	mg/L		4		A2320 B	06/23/16 11:35 / SR		PHSC_101-H_1606	23A : 48	R116238
Chloride	21	mg/L		1		E300.0	06/23/16 15:52 / SR		IC102-H_1606	23A : 42	R116280
Sulfate	70	mg/L		1		E300.0	06/23/16 15:52 / SR		IC102-H_1606	23A : 42	R116280
Hardness as CaCO3	161	mg/L		1		A2340 B	06/24/16 16:48 / abc		CALC_16062	8A : 278	R116361
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	4.0	mg/L		0.5		A5310 C	06/28/16 07:00 / eli-c		SUB-C212	944 : 35	C_R212944
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	06/28/16 09:51 / cm		FIA203-HE_1606	28A : 36	R116353
Nitrogen, Nitrate+Nitrite as N	0.03	mg/L		0.02		E353.2	06/23/16 14:06 / cm		FIA203-HE_16062	3B : 111	R116262
Nitrogen, Total	0.35	mg/L		0.05		A4500 N-C	06/27/16 15:39 / cm	06/27/16 13:36	FIA203-HE_1606	27B : 47	33424
Phosphorus, Total as P	0.167	mg/L		0.003		E365.1	06/23/16 16:22 / cm	06/23/16 15:28	FIA202-HE_1606	23B : 48	33389
METALS, DISSOLVED											
Arsenic	0.007	mg/L		0.001		E200.8	06/25/16 02:22 / dck		ICPMS204-B_16062	4B : 117	R116327
Cadmium	0.00012	mg/L		0.00003		E200.8	06/25/16 02:22 / dck		ICPMS204-B_16062	4B : 117	R116327
Copper	0.009	mg/L		0.001		E200.8	06/25/16 02:22 / dck		ICPMS204-B_16062	4B : 117	R116327
Lead	ND	mg/L		0.0003		E200.8	06/25/16 02:22 / dck		ICPMS204-B_16062	4B : 117	R116327
Zinc	0.011	mg/L		0.008		E200.8	06/25/16 02:22 / dck		ICPMS204-B_16062	4B : 117	R116327
METALS, TOTAL RECOVERABLE											
Arsenic	0.008	mg/L		0.001		E200.8	06/25/16 02:25 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 118	33379
Cadmium	0.00013	mg/L		0.00003		E200.8	06/25/16 02:25 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 118	33379
Calcium	49	mg/L		1		E200.7	06/24/16 16:48 / sld	06/23/16 08:33	ICP2-HE_16062	4B : 117	33379
Copper	0.011	mg/L		0.001		E200.8	06/25/16 02:25 / dck	06/23/16 08:33	ICPMS204-B_16062	4B : 118	33379
Lead	0.0006	mg/L		0.0003		E200.8	06/28/16 11:29 / dck	06/23/16 08:33	ICPMS204-B_16062	7A : 115	33379

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 SS-19
 Collection Date:
 06/21/16 15:45
 DateReceived:
 06/22/16

 Lab ID:
 H16060430-018
 Report Date:
 07/20/16
 Project:
 CFR Monitoring-474374

 Matrix:
 Surface Water
 Project:
 CFR Monitoring-474374
 DateReceived:
 06/22/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	10	mg/L		1		E200.7	06/24/16 16:48 / sld	06/23/16 08:33	ICP2-HE_160624E	: 117	33379
Potassium	4	mg/L		1		E200.7	06/24/16 16:48 / sld	06/23/16 08:33	ICP2-HE_160624E	: 117	33379
Sodium	21	mg/L		1		E200.7	06/24/16 16:48 / sld	06/23/16 08:33	ICP2-HE_160624E	: 117	33379
Zinc	0.020	mg/L		0.008		E200.8	06/25/16 02:25 / dck	06/23/16 08:33	ICPMS204-B_160624E	: 118	33379



### LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:	MT DEQ-Federal Supe	Superfund Project: CFR Monitoring-474374											
Client Sample ID:	CFR-84F						Colle	ction Date: 06/20/16	10:30 D	ateReceived: 0	6/22/16		
Lab ID:	H16060430-019						R	eport Date: 07/20/16					
Matrix:	Surface Water												
Analyses		Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID	
METALS, TOTAL	RECOVERABLE	7 05 00					50454	00/00/40 47.40 /	00/07/40 07-00		00000 - 07	00440	•
wercury		1.22-00	mg/∟		00-⊐C		E243.1	00/28/10 17:19/1gk	00/27/10 07.56	HGCV202-H_10	00200:37	33413	



<b>ENERGY</b> LABORATORIES	E	Trust our People. Trust our Data. www.energylab.com	Col	lege Station, TX <b>8</b> 8	.0515 .0711						
Client: Work Order:	MT DEC H16060	Q-Federal Superfund 430		ANALYT	ICAL QC SPrepared by H	SUMMARY lelena, MT Bra	REPO	RT		Date: 20-Jul-16	6
Project:	CFR Mo	onitoring-474374		В	atchID: 1	60628wa-2	02				
Run ID :Run Order	HGCV20	2-H_160628B: 8	SampType:	Initial Calibra	tion Verification	on Standard	Lab	ID: ICV		Method: E245.1	
Analysis Date: 06/	28/16 15:28	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Mercury		0.000188	0.00010	0.0002	0	94	90	110			
Associated samples	s: H160604	30-002C, H16060430-003C	;, H16060430	0-004C, H1606	0430-019A						
Run ID :Run Order	: HGCV20	2-H_160628B: 27	SampType:	Continuing C	alibration Veri	ification Standa	<b>ir</b> Lab	ID: CCV		Method: E245.1	
Analysis Date: 06/	28/16 16:52	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Mercury		0.000202	0.00010	0.0002	0	101	90	110			
Associated samples	s: H160604	30-002C, H16060430-003C	, H16060430	0-004C, H1606	0430-019A						

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16060430	erfund		ANALYT	ICAL QC S	UMMARY	REPO	RT		Date	: 20-Jul-1	16
Project:	CFR Monitoring-47437	74		В	atchID: 33	371						
Run ID :Run Order:	FIA203-HE_160623D: 30		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-33	371	Method	: <b>A4500 N-</b>	С
Analysis Date: 06/2	3/16 16:50	Units:	mg/L			Prep Info:	Prep Da	te: 6/22/201	16	Prep Method	: A4500 N-0	С
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		6.60	0.15	6.37	0.02703	103	90	110				
Associated samples:	H16060430-006A, H16060 014A, H16060430-015A	0430-007	A, H16060430	-008A, H1606	0430-009A, H160	060430-010A,	H1606043	0-011A, H10	6060430-012A,	H16060430-01	3A, H16060	0430-
Run ID :Run Order:	FIA203-HE_160623D: 31		SampType:	Method Blan	k		Lab	ID: <b>MB-333</b>	71	Method	: A4500 N-0	С
Analysis Date: 06/2	3/16 16:51	Units:	mg/L			Prep Info:	Prep Da	te: 6/22/201	16	Prep Method	: A4500 N-	С
Analytes 1	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RP				RPD Ref Val	%RPD	RPDLimit	Qual				
Nitrogen, Total		0.03	0.007									
Associated samples:	H16060430-006A, H16060 014A, H16060430-015A	0430-007/	A, H16060430	-008A, H1606	0430-009A, H160	)60430-010A,	H1606043	0-011A, H10	6060430-012A,	H16060430-01	3A, H16060	0430-
Run ID :Run Order:	FIA203-HE_160623D: 47		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16060</b>	430-006AMS	Method	: A4500 N-	С
Analysis Date: 06/2	3/16 17:11	Units:	mg/L			Prep Info:	Prep Da	te: 6/23/201	16	Prep Method	: A4500 N-0	С
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		1.28	0.10	1	0.2909	99	90	110				
Associated samples:	H16060430-006A, H16060 014A, H16060430-015A	0430-007/	A, H16060430	-008A, H1606	0430-009A, H160	)60430-010A,	H1606043	0-011A, H10	6060430-012A,	H16060430-01	3A, H16060	0430-
Run ID :Run Order:	FIA203-HE_160623D: 48		SampType:	Sample Matri	ix Spike Duplica	te	Lab	ID: <b>H16060</b> 4	430-006AMSD	Method	: A4500 N-(	С
Analysis Date: 06/2	3/16 17:12	Units:	mg/L			Prep Info:	Prep Da	te: 6/23/201	16	Prep Method	: A4500 N-	с
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		1.26	0.10	1	0.2909	97	90	110	1.278	1.3	20	

Associated samples: H16060430-006A, H16060430-007A, H16060430-008A, H16060430-009A, H16060430-010A, H16060430-011A, H16060430-012A, H16060430-013A, H16060430-008A, H16060430-009A, H16060430-010A, H16060430-012A, H16060430-013A, H16060430-

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order: Project:	MT DEQ-Federal Su H16060430	perfund		ANALYT	ICAL QC Prepared by	SUMMARY Helena, MT Bran	REPO	RT		Date	e: 20-Jul-1	6
		77-		D		33379						
Run ID :Run Order	: ICP2-HE_160624B: 86		Samp Type:	Method Blan	k		Lab	ID: MB-333	79	Method	d: E200.7	
Analysis Date: 06/	24/16 14:52	Units:	mg/L			Prep Info:	Prep Da	ite: 6/23/201	6	Prep Method	: <b>E200.2</b>	
Analytes 4		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		0.07	0.04									
Magnesium		ND	0.01									
Potassium		ND	0.04									
Sodium		ND	0.02									
	009C, H16060430-010C, H16060430-018C	H1606043	0-011C, H160	060430-012C,	H16060430-0	013C, H16060430	-014C, H16	5060430-01	5C, H16060430	016C, H16060	)430-017C,	
Run ID :Run Order	: ICP2-HE_160624B: 87		SampType:	Laboratory C	ontrol Samp	le	Lab	ID: LCS-33	379	Method	: <b>E200.7</b>	
Analysis Date: 06/	24/16 14:56	Units:	mg/L			Prep Info:	Prep Da	ite: 6/23/201	6	Prep Method	: <b>E200.2</b>	
Analytes 4		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		26.1	1.0	25	0.06605	5 <b>104</b>	85	115				
Magnesium		25.7	1.0	25	(	D <b>103</b>	85	115				
Potassium		25.1	1.0	25	(	D <b>100</b>	85	115				
Sodium		24.8	1.0	25	(	) <b>99</b>	85	115				
Associated samples	E H16060430-001C, H1600 009C, H16060430-010C, H16060430-018C	60430-0020 H1606043	C, H16060430 0-011C, H160	-003C, H1606 )60430-012C,	0430-004C, H H16060430-0	116060430-005C, 013C, H16060430	H1606043 -014C, H16	0-006C, H1 5060430-01	6060430-007C, 5C, H16060430	H16060430-00 -016C, H16060	08C, H1606 0430-017C,	0430-
Run ID :Run Order	ICP2-HE_160624B: 89		SampType:	Serial Dilutio	n		Lab	ID: <b>H16060</b>	413-001BDIL	Method	: <b>E200.7</b>	
Analysis Date: 06/	24/16 15:04	Units:	mg/L			Prep Info:	: Prep Da	ite: 6/23/201	6	Prep Method	d:	
Analytes 4		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		211	1.0		(	)	0	0	209.1	1.0	10	
Magnesium		119	1.0		(	0	0	0	120	1.0	10	
Potassium		20.6	1.0		(	D	0	0	20.47	0.7	10	

Associated samples: H16060430-001C, H16060430-002C, H16060430-003C, H16060430-004C, H16060430-005C, H16060430-006C, H16060430-007C, H16060430-008C, H16060430-012C, H16060430-013C, H16060430-014C, H16060430-015C, H16060430-016C, H16060430-017C, H16060430-017C, H16060430-018C

0

0

0

113

Sodium

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

113

1.0

R - RPD outside accepted recovery limits

A - Analyte concentration greater than four times the spike amount

0.3

10

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Client: Work Order:	MT DEQ-Federal Sup H16060430	perfund		ANALYT	ICAL QC S Prepared by He	<b>UMMARY</b> lena, MT Bra	REPO	RT		Date	: 20-Jul-1	6
Project:	CFR Monitoring-4743	574		В	atchID: 33	379						
Run ID :Run Order	: ICP2-HE_160624B: 90		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16060</b> 4	413-001BMS3	Method	ታ: <b>E200.7</b>	
Analysis Date: 06/2	24/16 15:07	Units:	mg/L			Prep Info:	: Prep Da	nte: 6/23/201	6	Prep Method	1: <b>E200.2</b>	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		234	1.0	25	209.1		70	130				А
Magnesium		147	1.0	25	120		70	130				А
Potassium		46.2	1.0	25	20.47	103	70	130				
Sodium		138	1.0	25	113		70	130				А
Run ID :Run Order	H16060430-018C		SampType:	Sample Matri	ix Spike Duplica	te	Lab	ID: <b>H16060</b> 4	413-001BMSD3	Method	d: <b>E200.7</b>	
Analvsis Date: 06/	24/16 15:11	Units:	ma/L	•		Prep Info:	: Prep Da	nte: 6/23/201	6	Prep Method	: E200.2	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	' %RPD	RPDLimit	Qual
Calcium		229	1.0	25	209.1		70	130	234.2	2.4	20	А
Magnesium		143	1.0	25	120		70	130	146.8	2.5	20	А
Potassium		46.1	1.0	25	20.47	102	70	130	46.16	0.2	20	
Sodium		137	1.0	25	113		70	130	138.4	0.9	20	А
Associated samples	E: H16060430-001C, H1606 009C, H16060430-010C, H16060430-018C	60430-0020 H1606043	C, H16060430 80-011C, H160	0-003C, H1606 060430-012C,	0430-004C, H16 H16060430-013(	060430-005C, C, H16060430	H1606043 -014C, H10	80-006C, H1 6060430-01	6060430-007C, 5C, H16060430-	H16060430-0 -016C, H16060	08C, H16060 )430-017C,	0430-
Run ID :Run Order	: ICP2-HE_160624B: 105		SampType:	Serial Dilutio	'n		Lab	ID: <b>H16060</b> 4	430-010CDIL	Method	1: <b>E200.7</b>	
Analysis Date: 06/2	24/16 16:03	Units:	mg/L			Prep Info:	: Prep Da	te: 6/23/201	6	Prep Method	<b>1</b> :	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		37.8	1.0		0		0	0	37.14	1.9	10	
Magnesium		8.22	1.0		0		0	0	7.977	<u>3.1</u>	10	
Potassium		1.70	1.0		0		0	0	1.675		10	Ν
Sodium		6.66	1.0		0		0	0	6.646	0.2	10	

Associated samples: H16060430-001C, H16060430-002C, H16060430-003C, H16060430-004C, H16060430-005C, H16060430-006C, H16060430-007C, H16060430-008C, H16060430-008C, H16060430-013C, H16060430-014C, H16060430-015C, H16060430-016C, H16060430-017C, H16060430-018C

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Su H16060430	perfund		ANALYT	ICAL QC SU	<b>MMARY</b> na, MT Bra	<b>REPOI</b>	RT		Date	: 20-Jul-1	6
Project:	CFR Monitoring-4743	374		В	atchID: 333	79						
Run ID :Run Order:	ICP2-HE_160624B: 106		SampType:	Sample Matri	ix Spike		Lab I	D: <b>H160604</b>	30-010CMS3	Method	E200.7	
Analysis Date: 06/2	4/16 16:07	Units:	mg/L			Prep Info	: Prep Dat	te: 6/23/201	6	Prep Method	E200.2	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		64.1	1.0	25	37.14	108	70	130				
Magnesium		34.4	1.0	25	7.977	106	70	130				
Potassium		27.9	1.0	25	1.675	105	70	130				
Sodium		32.5	1.0	25	6.646	103	70	130				
Run ID :Run Order:	ICP2-HE_160624B: 107		SampType:	Sample Matri	x Spike Duplicate		Lab I	D: <b>H16060</b> 4	30-010CMSD3	Method	: <b>E200.7</b>	
Analysis Date: 06/2	4/16 16:11	Units:	mg/L			Prep Info	Prep Dat	te: 6/23/201	6	Prep Method	E200.2	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		63.6	1.0	25	37.14	106	70	130	64.14	0.8	20	
Magnesium		34.1	1.0	25	7.977	105	70	130	34.4	0.8	20	
Potassium		27.5	1.0	25	1.675	103	70	130	27.91	1.6	20	
Sodium		32.0	1.0	25	6.646	102	70	130	32.47	1.3	20	
Associated samples	H16060430-001C, H160 009C, H16060430-010C H16060430-018C	60430-0020 , H1606043	C, H16060430 0-011C, H160	-003C, H1606 60430-012C,	0430-004C, H1606 H16060430-013C,	0430-005C, H16060430	H1606043 -014C, H16	0-006C, H10 060430-015	6060430-007C, 5C, H16060430-	H16060430-00 016C, H16060	08C, H1606 0430-017C,	0430-
Run ID :Run Order:	ICP2-HE_160627B: 26	CP2-HE_160627B: 26 SampType: Method Blank						D: MB-3337	/9	Method	E200.7	
Analysis Date: 06/2	7/16 13:04	Units:	mg/L			Prep Info	: Prep Dat	te: 6/23/201	6	Prep Method	: E200.2	

Analysis Date. 00/2//10 13.04	Units. Ing	/L			Frep mild	. Fiep Da		0	Fieb Method	. E200.2	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.04									
Magnesium	ND	0.01									
Potassium	0.04	0.04									
Sodium	0.03	0.02									

Associated samples: H16060430-001C, H16060430-002C, H16060430-003C, H16060430-004C, H16060430-005C, H16060430-006C, H16060430-007C, H16060430-008C, H16060430-008C, H16060430-008C, H16060430-017C, H16060430-010C, H16060430-011C, H16060430-012C, H16060430-013C, H16060430-014C, H16060430-015C, H16060430-016C, H16060430-017C, H16060430-018C

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Work Order:	H16060	430		F	Prepared by	Helena, MT Brar	nch					
Project:	CFR Mc	onitoring-474374		В	atchID:	33379						
Run ID :Run Order	ICPMS20	4-B_160624B: 52	SampType:	Method Blan	ĸ		Lab I	D: MB-333	79	Method:	E200.8	
Analysis Date: 06/	24/16 22:59	Units:	mg/L			Prep Info:	Prep Da	te: 6/23/201	6	Prep Method:	E200.2	
Analytes 9		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		ND	7E-05									
Cadmium		ND	1E-05									
Calcium		ND	0.009									
Copper		ND	5E-05									
Lead		ND	2E-05									
Magnesium		ND	0.002									
Potassium		ND	0.01									
Sodium		ND	0.005									
Zinc		0.002	0.0003									

Associated samples: H16060430-001C, H16060430-002C, H16060430-003C, H16060430-004C, H16060430-005C, H16060430-006C, H16060430-007C, H16060430-008C, H16060430-009C, H16060430-010C, H16060430-011C, H16060430-012C, H16060430-013C, H16060430-014C, H16060430-015C, H16060430-016C, H16060430-017C, H16060430-018C

Run ID :Run Order: ICPMS204-B_160	624B: 57	SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16060</b>	413-001BMS3	Method: E200.8	
Analysis Date: 06/24/16 23:15	Units:	mg/L			Prep Info	: Prep Da	ite: 6/23/201	16	Prep Method: E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Arsenic	0.524	0.0010	0.5	0	105	70	130			
Cadmium	0.250	0.0010	0.25	0.0000603	100	70	130			
Calcium	282	1.0	25	243.2		70	130			А
Copper	0.497	0.0050	0.5	0.0005336	99	70	130			
Lead	0.638	0.0010	0.5	0.0000329	128	70	130			
Magnesium	141	1.0	25	111.7		70	130			А
Potassium	45.4	1.0	25	19.38	104	70	130			
Sodium	136	1.0	25	108.4		70	130			А
Zinc	0.492	0.010	0.5	0.0186	95	70	130			

009C, H16060430-010C, H16060430-011C, H16060430-012C, H16060430-013C, H16060430-014C, H16060430-015C, H16060430-016C, H16060430-017C, H16060430-018C

Run ID :Run Order: ICPMS204-B_160624B: 5	В	SampType:	Sample Matri	x Spike Duplicate		Lab I	D: H160604	13-001BMSD3	Method	E200.8	
Analysis Date: 06/24/16 23:18	Units:	mg/L			Prep Info	: Prep Da	te: 6/23/201	6	Prep Method	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.506	0.0010	0.5	0	101	70	130	0.5235	<u>3.4</u>	20	
Qualifiers: ND - Not Detected at the Reporti	S	- Spike Recov	very outside accept	ed recovery	limit N	- Analyte co	ncentration was	not sufficiently	high to calcu	ulate RPD	

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

tration was not sumclently high

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Client: Work Order:	MT DEC H16060	Q-Federal Superfund 430		ANALYT	ICAL QC SUI	MMARY na, MT Brai	REPO	RT		Date	: 20-Jul-1	6
Project:	CFR Mc	nitoring-474374		В	atchID: 3337	79						
Run ID :Run Order	ICPMS20	4-B_160624B: 58	SampType:	Sample Matri	x Spike Duplicate		Lab	ID: <b>H16060</b> 4	413-001BMSD3	Method	E200.8	
Analysis Date: 06/2	24/16 23:18	Units:	mg/L			Prep Info:	Prep Da	te: 6/23/201	6	Prep Method	: E200.2	
Analytes 9		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium		0.243	0.0010	0.25	0.0000603	97	70	130	0.2498	2.8	20	
Calcium		269	1.0	25	243.2		70	130	282.3	<u>4.8</u>	20	А
Copper		0.479	0.0050	0.5	0.0005336	96	70	130	0.4966	<u>3.6</u>	20	
Lead		0.613	0.0010	0.5	0.0000329	123	70	130	0.6383	<u>4.0</u>	20	
Magnesium		134	1.0	25	111.7		70	130	140.6	<u>4.8</u>	20	А
Potassium		43.4	1.0	25	19.38	96	70	130	45.37	<u>4.4</u>	20	
Sodium		130	1.0	25	108.4		70	130	135.9	<u>4.8</u>	20	А
Zinc		0.476	0.010	0.5	0.0186	92	70	130	0.4915	<u>3.1</u>	20	

Associated samples: H16060430-001C, H16060430-002C, H16060430-003C, H16060430-004C, H16060430-005C, H16060430-006C, H16060430-007C, H16060430-008C, H16060430-008C, H16060430-008C, H16060430-016C, H16060430-017C, H16060430-013C, H16060430-013C, H16060430-014C, H16060430-015C, H16060430-016C, H16060430-017C, H16060430-018C

Run ID :Run Order: ICPMS204-B_1606	24B: 91	SampType:	Sample Matri	x Spike		Lab	ID: H160604	430-010CMS3	Method	E200.8	
Analysis Date: 06/25/16 01:01	Units:	mg/L			Prep Info:	Prep Da	te: 6/23/201	6	Prep Method	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.537	0.0010	0.5	0.01928	104	70	130				
Cadmium	0.260	0.0010	0.25	0.0000729	104	70	130				
Calcium	61.5	1.0	25	33.77	111	70	130				
Copper	0.519	0.0050	0.5	0.0128	101	70	130				
Lead	0.637	0.0010	0.5	0.001262	127	70	130				
Magnesium	33.2	1.0	25	7.696	102	70	130				
Potassium	27.2	1.0	25	1.211	104	70	130				
Sodium	32.2	1.0	25	6.718	102	70	130				
Zinc	0.507	0.010	0.5	0.009935	99	70	130				

Associated samples: H16060430-001C, H16060430-002C, H16060430-003C, H16060430-004C, H16060430-005C, H16060430-006C, H16060430-007C, H16060430-008C, H16060430-008C, H16060430-012C, H16060430-013C, H16060430-014C, H16060430-015C, H16060430-016C, H16060430-017C, H16060430-018C

Run ID :Run Order: ICPMS204-B_160624B:	92	SampType:	Sample Matri	x Spike Duplicate		Lab I	D: H160604	30-010CMSD3	Method	E200.8	
Analysis Date: 06/25/16 01:04	Units:	mg/L			Prep Info:	Prep Dat	te: 6/23/201	6	Prep Method	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.516	0.0010	0.5	0.01928	99	70	130	0.5374	<u>4.0</u>	20	
Cadmium	0.251	0.0010	0.25	0.0000729	101	70	130	0.2603	<u>3.4</u>	20	

Qualifiers: ND - Not Detected at the Reporting Limit

porting Limit S - Spike R

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEC H16060	Q-Federal Superfund 430		ANALYTICAL QC SUMMARY REPORT Prepared by Helena, MT Branch							: 20-Jul-1	6
Project:	CFR Mo	onitoring-474374		В	atchID: 333							
Run ID :Run Order	ICPMS20	4-B_160624B: 92	SampType:	Sample Matri	x Spike Duplicate		Lab I	ID: <b>H16060</b> 4	430-010CMSD3	Method	E200.8	
Analysis Date: 06/2	25/16 01:04	Units:	mg/L			Prep Info:	Prep Da	te: 6/23/201	6	Prep Method	: E200.2	
Analytes 9		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		59.0	1.0	25	33.77	101	70	130	61.49	<u>4.2</u>	20	
Copper		0.500	0.0050	0.5	0.0128	97	70	130	0.5187	<u>3.7</u>	20	
Lead		0.614	0.0010	0.5	0.001262	123	70	130	0.6366	<u>3.6</u>	20	
Magnesium		32.1	1.0	25	7.696	98	70	130	33.16	<u>3.1</u>	20	
Potassium		26.0	1.0	25	1.211	99	70	130	27.2	<u>4.6</u>	20	
Sodium		31.2	1.0	25	6.718	98	70	130	32.18	<u>3.0</u>	20	

Associated samples: H16060430-001C, H16060430-002C, H16060430-003C, H16060430-004C, H16060430-005C, H16060430-006C, H16060430-007C, H16060430-008C, H16060430-008C, H16060430-009C, H16060430-010C, H16060430-011C, H16060430-012C, H16060430-013C, H16060430-014C, H16060430-015C, H16060430-016C, H16060430-017C, H16060430-018C

0.009935

0.5

95

70

130

0.507

Run ID :Run Order: ICPMS204-B_160	627A: 50	SampType: Method Blank				Lab	D: <b>MB-333</b>	79	Method	: E200.8	
Analysis Date: 06/27/16 16:00	Units:	mg/L			Prep Info	: Prep Da	te: 6/23/201	6	Prep Method	: <b>E200.2</b>	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	7E-05									
Cadmium	ND	1E-05									
Calcium	ND	0.009									
Copper	ND	5E-05									
Lead	ND	2E-05									
Magnesium	ND	0.002									
Potassium	0.06	0.01									
Sodium	0.05	0.005									
Zinc	0.001	0.0003									

Associated samples: H16060430-001C, H16060430-002C, H16060430-003C, H16060430-004C, H16060430-005C, H16060430-006C, H16060430-007C, H16060430-008C, H16060430-008C, H16060430-009C, H16060430-010C, H16060430-012C, H16060430-013C, H16060430-014C, H16060430-015C, H16060430-016C, H16060430-017C, H16060430-018C

Run ID :Run Order: ICPMS204-B_160627A	: 51	SampType:	Laboratory C		Lab I	D: LCS-333	379	Method: E	200.8		
Analysis Date: 06/27/16 16:04	Units:	mg/L			Prep Info:	Prep Dat	te: 6/23/201	6	Prep Method: E	200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RF	PDLimit	Qual
Arsenic	0.511	0.0010	0.5	0	102	85	115				
Cadmium	0.255	0.0010	0.25	0	102	85	115				
Calcium	27.3	1.0	25	0	109	85	115				

Qualifiers: ND - Not Detected at the Reporting Limit

Zinc

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

0.484

0.010

R - RPD outside accepted recovery limits

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20

4.6

LABORATORIES	www.er	nergylab.com	College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711									
Client: Work Order:	MT DEQ-Fed H16060430	eral Superfund		ANALYTI	CAL QC SU Prepared by Hele	<b>JMMARY</b> ena, MT Brai	REPO	RT		Date:	20-Jul-1	6
Project:	CFR Monitori	ng-474374		B	atchID: 33	379						
Run ID :Run Order:	ICPMS204-B_16	60627A: 51	SampType:	Laboratory C	ontrol Sample		Lab	D: LCS-333	379	Method:	E200.8	
Analysis Date: 06/2	alysis Date: 06/27/16 16:04 Un					Prep Info:	Prep Da	te: 6/23/201	6	Prep Method:	E200.2	
Analytes 9		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		0.503	0.0050	0.5	0	101	85	115				
Lead		0.509	0.0010	0.5	0	102	85	115				
Magnesium		25.2	1.0	25	0	101	85	115				
Potassium		26.4	1.0	25	0.06407	105	85	115				
Sodium		25.5	1.0	25	0.04813	102	85	115				
Zinc		0.496	0.010	0.5	0.001395	99	85	115				
Associated samples	: H16060430-001	C, H16060430-0020	C, H16060430	-003C, H1606	0430-004C, H160	60430-005C,	H1606043	0-006C, H1	6060430-007C,	H16060430-008	8C, H1606(	)430-

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009C, H16060430-010C, H16060430-002C, H16060430-003C, H16060430-004C, H16060430-003C, H16060430-006C, H16060430-017C, H16060430-016C, H16060430-017C, H16060430-017C, H16060430-018C

Run ID :Run Order: ICPMS204-B_160627A: 55		SampType: Sample Matrix Spike				Lab I	D: H160604	13-001BMS3	Method: E200.8	
Analysis Date: 06/27/16 16:16	Units:	mg/L			Prep Info:	Prep Dat	te: 6/23/201	6	Prep Method: E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Arsenic	0.532	0.0010	0.5	0.0001916	106	70	130			
Cadmium	0.251	0.0010	0.25	0.0000623	100	70	130			
Calcium	221	1.0	25	193		70	130			А
Copper	0.492	0.0050	0.5	0.0002644	98	70	130			
Lead	0.525	0.0010	0.5	0.0000232	105	70	130			
Magnesium	143	1.0	25	112.7		70	130			А
Potassium	48.7	1.0	25	21.23	110	70	130			
Sodium	144	1.0	25	112.7		70	130			А
Zinc	0.485	0.010	0.5	0.01922	93	70	130			

Associated samples: H16060430-001C, H16060430-002C, H16060430-003C, H16060430-004C, H16060430-005C, H16060430-006C, H16060430-007C, H16060430-008C, H16060430-008C, H16060430-009C, H16060430-010C, H16060430-011C, H16060430-012C, H16060430-013C, H16060430-014C, H16060430-015C, H16060430-016C, H16060430-017C, H16060430-018C

Run ID :Run Order: ICPMS204-B_160627	A: 56	SampType:		Lab I	D: H160604	13-001BMSD3	Method	: E200.8			
Analysis Date: 06/27/16 16:18	Units: <b>mg/L</b> Result PQ				Prep Info:	Prep Dat	te: 6/23/201	6	Prep Method	: E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.535	0.0010	0.5	0.0001916	107	70	130	0.5324	0.5	20	
Cadmium	0.255	0.0010	0.25	0.0000623	102	70	130	0.2513	1.6	20	
Calcium	218	1.0	25	193		70	130	221.1	1.4	20	А
Copper	0.493	0.0050	0.5	0.0002644	99	70	130	0.4925	0.2	20	

Qualifiers: ND - Not Detected at the Reporting Limit

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S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Fe H16060430	deral Superfund		ANALYT	ICAL QC SU Prepared by Hele	<b>MMARY</b> na, MT Bra	REPO	RT		Date	: 20-Jul-1	6
Project:	CFR Monito	ring-474374		В	atchID: 333	79						
Run ID :Run Order:	Lab	ID: <b>H16060</b> 4	13-001BMSD3	Method	: <b>E200.8</b>							
Analysis Date: 06/2	27/16 16:18	Units:		Prep Info	Prep Da	te: 6/23/201	6	Prep Method	: E200.2			
Analytes 9		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		0.521	0.0010	0.5	0.0000232	104	70	130	0.525	0.7	20	
Magnesium		144	1.0	25	112.7		70	130	142.9	0.4	20	А
Potassium		48.8	1.0	25	21.23	110	70	130	48.68	0.3	20	
Sodium		146	1.0	25	112.7		70	130	144.3	1.4	20	А
Zinc		0.480	0.010	0.5	0.01922	92	70	130	0.4854	1.1	20	
Associated samples	E H16060430-00 009C, H16060 H16060430-0	01C, H16060430-002C 0430-010C, H1606043 18C	C, H16060430 0-011C, H160	-003C, H1606 060430-012C,	0430-004C, H1606 H16060430-013C,	60430-005C, H16060430	H1606043 -014C, H16	0-006C, H1 6060430-015	6060430-007C, 5C, H16060430-	H16060430-00 016C, H16060	08C, H16060 0430-017C,	0430-
Run ID :Run Order:	ICPMS204-B_	160627A: 71	SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16060</b> 4	130-010CMS3	Method	: <b>E200.8</b>	
Analysis Date: 06/2	7/16 17:05	Units:	ma/l			Prep Info	Prep Da	te: 6/23/201	6	Prep Method	E200.2	

Analysis Date: 06/27/16 17:05	Units: r	ng/L			Prep Info	Prep Da	te: 6/23/201	6	Prep Method: E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimi	t Qual
Arsenic	0.524	0.0010	0.5	0.02033	101	70	130			
Cadmium	0.251	0.0010	0.25	0.0000672	101	70	130			
Calcium	61.0	1.0	25	35.67	101	70	130			
Copper	0.495	0.0050	0.5	0.01275	96	70	130			
Lead	0.501	0.0010	0.5	0.001316	100	70	130			
Magnesium	32.8	1.0	25	8.057	99	70	130			
Potassium	27.3	1.0	25	1.787	102	70	130			
Sodium	32.6	1.0	25	7.168	102	70	130			
Zinc	0.484	0.010	0.5	0.01092	95	70	130			

Associated samples: H16060430-001C, H16060430-002C, H16060430-003C, H16060430-004C, H16060430-005C, H16060430-006C, H16060430-007C, H16060430-008C, H16060430-008C, H16060430-008C, H16060430-018C, H16060430-013C, H16060430-013C, H16060430-014C, H16060430-015C, H16060430-016C, H16060430-017C, H16060430-018C

Run ID :Run Order: ICPMS204-B_160	0627A: 72	SampType:	)	Lab	D: H160604	430-010CMSD3	Method	E200.8			
Analysis Date: 06/27/16 17:08	Units:	mg/L			Prep Info	: Prep Da	te: 6/23/201	6	Prep Method	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.539	0.0010	0.5	0.02033	104	70	130	0.5243	2.8	20	
Cadmium	0.259	0.0010	0.25	0.0000672	103	70	130	0.2515	2.8	20	
Calcium	62.6	1.0	25	35.67	108	70	130	60.99	2.6	20	
Copper	0.511	0.0050	0.5	0.01275	100	70	130	0.4948	<u>3.1</u>	20	
Lead	0.522	0.0010	0.5	0.001316	104	70	130	0.5011	<u>4.1</u>	20	

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEC H160604	Q-Federal Superfund 430		ANALYT	ICAL QC SU Prepared by Hele	<b>MMARY</b> na, MT Bra	<b>REPO</b>	RT		Date	: 20-Jul-1	6
Project:	CFR Mo	nitoring-474374		В	atchID: 333							
Run ID :Run Order: ICPMS204-B_160627A: 72			SampType:	Sample Matri	x Spike Duplicate		Lab I	D: H160604	430-010CMSD3	Method	E200.8	
Analysis Date: 06/2	Analysis Date: 06/27/16 17:08 Unit		mg/L			Prep Info	: Prep Dat	te: 6/23/201	6	Prep Method	E200.2	
Analytes 9		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium		33.7	1.0	25	8.057	103	70	130	32.77	2.8	20	
Potassium		28.4	1.0	25	1.787	106	70	130	27.28	<u>4.1</u>	20	
Sodium		33.7	1.0	25	7.168	106	70	130	32.57	<u>3.4</u>	20	
Zinc 0.493			0.010	0.5	0.01092	96	70	130	0.4844	1.8	20	

Associated samples: H16060430-001C, H16060430-002C, H16060430-003C, H16060430-004C, H16060430-005C, H16060430-006C, H16060430-007C, H16060430-008C, H16060430-008C, H16060430-008C, H16060430-008C, H16060430-018C, H16060430-013C, H16060430-013C, H16060430-014C, H16060430-015C, H16060430-016C, H16060430-017C, H16060430-018C

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

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Client: Work Order	MT DEQ-Federal Su H16060430	perfund		ANALYT	ICAL QC	SUMMARY Helena, MT Bra	REPO	RT		Date: 2	?0-Jul-1	6
Project:	CFR Monitoring-4743	374		В	atchID:	33388						
Run ID :Run O	rder: FIA202-HE_160623B: 12		SampType:	Laboratory C	ontrol Sample	9	Lab	ID: LCS-333	88	Method: E	365.1	
Analysis Date:	06/23/16 15:45	Units:	mg/L			Prep Info	: Prep Da	ite: 6/23/201	6	Prep Method: E	365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RI	PDLimit	Qual
Phosphorus, T	otal as P	0.391	0.010	0.4	0	98	90	110				
Associated sam	ples: H16060430-001D, H160 009D, H16060430-010D,	60430-002D H1606043	0, H16060430 0-011D, H160	-003D, H1606 060430-012D,	0430-004D, H H16060430-0	16060430-005D 13D, H16060430	, H1606043 -014D, H16	0-006D, H1 5060430-01	6060430-007D 5D	, H16060430-008D	), H16060	)430-
Run ID :Run O	rder: FIA202-HE_160623B: 13		SampType:	Method Blan	k		Lab	ID: <b>MB-333</b>	38	Method: E	365.1	
Analysis Date:	06/23/16 15:46	Units:	mg/L			Prep Info	: Prep Da	ite: 6/23/201	6	Prep Method: E	365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RI	PDLimit	Qual
Phosphorus, T	otal as P	ND	0.001									
Associated sam	ples: H16060430-001D, H160 009D, H16060430-010D,	60430-002D H1606043	0, H16060430 0-011D, H160	-003D, H1606 060430-012D,	0430-004D, H H16060430-0	16060430-005D 13D, H16060430	, H1606043 -014D, H16	0-006D, H1 5060430-01	6060430-007D 5D	, H16060430-008D	), H16060	)430-
Run ID :Run O	rder: FIA202-HE_160623B: 21		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16060</b> 4	30-002DMS	Method: E	365.1	
Analysis Date:	06/23/16 15:54	Units:	mg/L			Prep Info	: Prep Da	ite: 6/23/201	6	Prep Method: E	365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RI	PDLimit	Qual
Phosphorus, T	otal as P	0.199	0.010	0.2	0	99	90	110				
Associated sam	ples: H16060430-001D, H160 009D, H16060430-010D,	60430-002D H1606043	0, H16060430 0-011D, H160	-003D, H1606 060430-012D,	0430-004D, H H16060430-0	16060430-005D 13D, H16060430	, H1606043 -014D, H16	0-006D, H1 6060430-01	6060430-007D 5D	, H16060430-008D	), H16060	)430-
Run ID :Run O	rder: FIA202-HE_160623B: 22		SampType:	Sample Matri	ix Spike Dupli	icate	Lab	ID: <b>H16060</b> 4	30-002DMSD	Method: E	365.1	
Analysis Date:	06/23/16 15:55	Units:	mg/L			Prep Info	: Prep Da	ite: 6/23/201	6	Prep Method: E	365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RI	PDLimit	Qual
Phosphorus, T	otal as P	0.200	0.010	0.2	0	100	90	110	0.1988	0.5	20	
Associated sam	ples: H16060430-001D, H160 009D, H16060430-010D	60430-002D H1606043	), H16060430 0-011D, H160	-003D, H1606 060430-012D,	0430-004D, H H16060430-0	16060430-005D 13D, H16060430	, H1606043 -014D, H16	0-006D, H1 5060430-01	6060430-007D 5D	, H16060430-008D	), H16060	)430-
Run ID :Run O	rder: FIA202-HE_160623B: 29		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16060</b> 4	30-006DMS	Method: E	365.1	
Analysis Date:	06/23/16 16:02	Units:	mg/L			Prep Info	: Prep Da	ite: 6/23/201	6	Prep Method: E	365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RI	PDLimit	Qual
Phosphorus, T	otal as P	0.234	0.010	0.2	0.02798	103	90	110				
Qualifiers:	ND - Not Detected at the Repor J - Analyte detected below quar	ting Limit	s F	6 - Spike Reco R - RPD outsid	very outside ac	ccepted recovery	limit N A	- Analyte co - Analyte co	ncentration was	not sufficiently hig	Ih to calcu the spike	ulate RPD e amount

<b>ENERGY</b> LABORATORIES	Trust o www.e	ur People. Trust our Data. nergylab.com	Coll	Billings, MT 800.735.4489 • Casper, WY 888.235.0515 College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711												
Client: Work Order:	MT DEQ-Fed H16060430	leral Superfund		ANALYT	ICAL QC S Prepared by He		<b>Date:</b> 2	:0-Jul-16	3							
Project:	CFR Monitori	ng-474374	BatchID: 33388													
Run ID :Run Order:	FIA202-HE_160	623B: 29	0430-006DMS	Method: E365.1												
Analysis Date: 06/2	3/16 16:02	Units: I	mg/L			Prep Info:	Prep Date: 6/23/2	016	Prep Method: E	365.1						
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLim	it RPD Ref Val	%RPD RF	PDLimit	Qual					
Associated samples	H16060430-00 009D, H160604	1D, H16060430-002D I30-010D, H16060430	, H16060430 011D, H160	·003D, H1606 60430-012D,	0430-004D, H10 H16060430-013	6060430-005D, 3D, H16060430-	H16060430-006D,   014D, H16060430-(	H16060430-007D, )15D	H16060430-008D	, H16060	430-					

Run ID :Run Order: FIA202-HE_160623B: 30	S	SampType:	Sample Matri	x Spike Duplicate		Lab I	D: H160604	130-006DMSD	Method	: E365.1	
Analysis Date: 06/23/16 16:03	Units: m	g/L			Prep Info:	Prep Dat	te: 6/23/201	6	Prep Method	E365.1	
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.237	0.010	0.2	0.02798	104	90	110	0.2337	1.4	20	

Associated samples: H16060430-001D, H16060430-002D, H16060430-003D, H16060430-004D, H16060430-005D, H16060430-006D, H16060430-007D, H16060430-008D, H16060430-009D, H16060430-010D, H16060430-011D, H16060430-012D, H16060430-013D, H16060430-014D, H16060430-015D

S - Spike Recovery outside accepted recovery limit

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

 $<sup>\</sup>ensuremath{\mathsf{N}}\xspace$  - Analyte concentration was not sufficiently high to calculate  $\ensuremath{\mathsf{RPD}}\xspace$ 

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Client: Work Order:	MT DEQ-Federal Sup H16060430	erfund		ANALYT	ICAL QC SUI	MMARY ha, MT Bra	REPO	RT		Date	: 20-Jul-1	6
Project:	CFR Monitoring-4743	74		В	atchID: 3338	89						
Run ID :Run Order:	FIA202-HE_160623B: 42		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-33	389	Method	E365.1	
Analysis Date: 06/2	23/16 16:15	Units:	mg/L			Prep Info	: Prep Da	te: 6/23/201	6	Prep Method	: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.391	0.010	0.4	0	98	90	110				
Associated samples	: H16060430-016D, H1606	0430-017D	), H16060430	0-018D								
Run ID :Run Order:	FIA202-HE_160623B: 43		SampType:	Method Blan	k		Lab	ID: <b>MB-333</b>	89	Method	E365.1	
Analysis Date: 06/2	3/16 16:17	Units:	mg/L			Prep Info	: Prep Da	te: 6/23/201	6	Prep Method	: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total a Associated samples	as P : <b>H16060430-016D, H1606</b>	ND 0430-017D	0.001 <b>), H16060430</b>	)-018D								
Run ID :Run Order:	FIA202-HE_160623B: 45		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16060</b> 4	430-016DMS	Method	E365.1	
Analysis Date: 06/2	23/16 16:19	Units:	mg/L			Prep Info	: Prep Da	te: 6/23/201	6	Prep Method	E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.361	0.010	0.2	0.1564	103	90	110				
Associated samples	: H16060430-016D, H1606	0430-017D	), H16060430	0-018D								
Run ID :Run Order:	FIA202-HE_160623B: 46		SampType:	Sample Matri	x Spike Duplicate		Lab	ID: <b>H16060</b> 4	430-016DMSD	Method	E365.1	
Analysis Date: 06/2	23/16 16:20	Units:	mg/L			Prep Info	: Prep Da	te: 6/23/201	6	Prep Method	: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.379	0.010	0.2	0.1564	<u>111</u>	90	110	0.3614	<u>4.6</u>	20	S

Associated samples: H16060430-016D, H16060430-017D, H16060430-018D

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federa H16060430	al Superfund		ANALYT	ICAL QC SU Prepared by Heler	MMARY	<b>REPO</b>	RT		Date	: 20-Jul-1	6
Project:	CFR Monitoring-	474374		В	atchID: 334	13						
Run ID :Run Order:	HGCV202-H_16062	28B: 13	SampType:	Method Blan	k		Lab	ID: <b>MB-334</b>	13	Method	E245.1	
Analysis Date: 06/2	8/16 16:15	Units:	mg/L			Prep Info	: Prep Da	te: 6/27/201	6	Prep Method	E245.1	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		ND	1E-06									
Associated samples	H16060430-002C,	H16060430-003C	, H16060430	0-004C, H1606	0430-019A							
Run ID :Run Order:	HGCV202-H_16062	28B: 14	SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-33	413	Method	E245.1	
Analysis Date: 06/2	nalysis Date: 06/28/16 16:18 U		mg/L			Prep Info	: Prep Da	te: 6/27/201	6	Prep Method	E245.1	
Analytes 1	nalysis Date: 06/28/16 16:18 0 nalytes <u>1</u> Resi		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.000155	0.00010	0.00015	0	103	90	110				
Associated samples	H16060430-002C,	H16060430-003C	, H16060430	0-004C, H1606	0430-019A							
Run ID :Run Order:	HGCV202-H_16062	28B: 30	SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16060</b>	353-024BMS	Method	E245.1	
Analysis Date: 06/2	8/16 17:00	Units:	mg/L			Prep Info	: Prep Da	te: 6/27/201	6	Prep Method	E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.000168	0.00010	0.00015	0.00001294	103	70	130				
Associated samples	H16060430-002C,	H16060430-003C	, H16060430	0-004C, H1606	0430-019A							
Run ID :Run Order:	HGCV202-H_16062	28B: 31	SampType:	Sample Matri	ix Spike Duplicate		Lab	ID: <b>H16060</b>	353-024BMSD	Method	E245.1	
Analysis Date: 06/2	8/16 17:03	Units:	mg/L			Prep Info	: Prep Da	te: 6/27/201	6	Prep Method	E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.000173	0.00010	0.00015	0.00001294	107	70	130	0.0001681	2.9	20	

Associated samples: H16060430-002C, H16060430-003C, H16060430-004C, H16060430-019A

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

<b>ENERGY</b> LABORATORIES	Instruction         Instruction           ABORATORIES         Image: Construction of the second			lege Station, TX <b>8</b>	Billing 88.690.2218 • Gillett	s, MT <b>800.735.</b> e, WY <b>866.686.</b>	<b>4489 •</b> Caspe <b>7175 •</b> Helen	er, WY <b>888.235</b> a, MT <b>877.472</b>	.0515 .0711			
Client: Work Order:	MT DEQ-Federal Sup H16060430	erfund		ANALYT	ICAL QC SU Prepared by Hele	<b>JMMARY</b> ena, MT Bra	<b>REPO</b>	RT		Date	: 20-Jul-1	16
Project:	CFR Monitoring-4743	74		В	atchID: 334	423						
Run ID :Run Orde	r: FIA203-HE_160627B: 11		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-334	423	Method	: A4500 N-C	C
Analysis Date: 06/	27/16 14:55	Units:	mg/L			Prep Info	: Prep Da	nte: 6/27/201	6	Prep Method	: A4500 N-C	C
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		6.58	0.15	6.37	0	103	90	110				
Associated sample	s: H16060430-001A, H1606	0430-002/	A, H16060430	-003A, H1606	0430-004A, H160	60430-005A						
Run ID :Run Orde	r: FIA203-HE_160627B: 12		SampType:	Method Blan	k		Lab	ID: <b>MB-334</b>	23	Method	: A4500 N-C	C
Analysis Date: 06/	27/16 14:57	Units:	mg/L			Prep Info	: Prep Da	nte: 6/27/201	6	Prep Method	: A4500 N-C	C
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		ND	0.007									
Associated sample	s: H16060430-001A, H1606	0430-002/	A, H16060430	-003A, H1606	0430-004A, H160	60430-005A						
Run ID :Run Orde	r: FIA203-HE_160627B: 29		SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16060</b> 4	410-006Cms	Method	: A4500 N-C	C
Analysis Date: 06/	27/16 15:17	Units:	mg/L			Prep Info	: Prep Da	nte: 6/27/201	6	Prep Method	: A4500 N-C	C
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		3.18	0.10	2	1.336	92	90	110				
Associated sample	s: H16060430-001A, H1606	0430-002/	A, H16060430	-003A, H1606	0430-004A, H160	60430-005A						
Run ID :Run Orde	r: FIA203-HE_160627B: 30		SampType:	Sample Matr	ix Spike Duplicate	9	Lab	ID: <b>H16060</b> 4	410-006Cmsd	Method	: A4500 N-C	C
Analysis Date: 06/	27/16 15:18	Units:	mg/L			Prep Info	: Prep Da	nte: 6/27/201	6	Prep Method	: A4500 N-C	C
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		3.15	0.10	2	1.336	91	90	110	3.184	1.1	20	
Associated sample	s: H16060430-001A, H1606	0430-002	A, H16060430	-003A, H1606	0430-004A, H160	60430-005A						

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

 $\ensuremath{\mathsf{A}}$  - Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Federal Sup H16060430	erfund		ANALYT	ICAL QC SUI Prepared by Heler	MMARY na, MT Bra	REPO	RT		Date	: 20-Jul-1	6
Project:	CFR Monitoring-4743	74		В	atchID: 334	24						
Run ID :Run Order:	FIA203-HE_160627B: 41		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-334	424	Method	: A4500 N-0	<b>;</b>
Analysis Date: 06/2	7/16 15:31	Units:	mg/L			Prep Info:	: Prep Da	te: 6/27/201	6	Prep Method	: A4500 N-C	5
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		6.54	0.15	6.37	0	103	90	110				
Associated samples	: H16060430-016A, H1606	0430-017A	, H16060430	-018A								
Run ID :Run Order:	FIA203-HE_160627B: 42		SampType:	Method Blan	k		Lab	ID: <b>MB-334</b> 2	24	Method	: A4500 N-C	
Analysis Date: 06/2	7/16 15:33	Units:	mg/L			Prep Info:	: Prep Da	te: 6/27/201	6	Prep Method	: A4500 N-C	3
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		ND	0.007									
Associated samples	: H16060430-016A, H1606	0430-017A	, H16060430	0-018A								
Run ID :Run Order:	FIA203-HE_160627B: 44		SampType:	Sample Matri	x Spike		Lab	ID: <b>H16060</b> 4	430-016Ams	Method	: A4500 N-C	2
Analysis Date: 06/2	7/16 15:35	Units:	mg/L			Prep Info:	: Prep Da	te: 6/27/201	6	Prep Method	: A4500 N-0	2
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		1.57	0.10	1	0.561	101	90	110				
Associated samples	: H16060430-016A, H1606	0430-017A	, H16060430	-018A								
Run ID :Run Order:	FIA203-HE_160627B: 45		SampType:	Sample Matri	ix Spike Duplicate		Lab	ID: <b>H16060</b> 4	430-016Amsd	Method	: A4500 N-0	)
Analysis Date: 06/2	7/16 15:36	Units:	mg/L			Prep Info:	: Prep Da	te: 6/23/201	6	Prep Method	: A4500 N-0	2
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		1.53	0.10	1	0.561	97	90	110	1.568	2.2	20	

Associated samples: H16060430-016A, H16060430-017A, H16060430-018A

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federa H16060430	al Superfund	/	ANALYT	ICAL QC S	UMMARY	REPOI	RT		Date	e: 20-Jul-1	16
Project:	CFR Monitoring-	474374		В	atchID: C	_R212944						
Run ID :Run Order	: SUB-C212944: 1	:	SampType:	Method Blan	k		Lab I	D: MBLK		Method	: A5310 C	
Analysis Date: 06/	27/16 17:29	Units: m	g/L			Prep Info:	: Prep Da	te:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, D	issolved (DOC)	0.4	0.04									
Associated sample	8: H16060430-001E, 009E, H16060430- H16060430-018E	H16060430-002E,   010E, H16060430-(	H16060430 D11E, H160	-003E, H1606 60430-012E,	0430-004E, H16 H16060430-013I	060430-005E, E, H16060430-	H16060430 014E, H16	D-006E, H10 060430-015	6060430-007E, 5E, H16060430-	H16060430-00 016E, H16060	98E, H16060 430-017E,	0430-
Run ID :Run Order	: SUB-C212944: 4	(	SampType:	Sample Matr	ix Spike		Lab I	D: C16060	778-001GMS	Method	: A5310 C	
Analysis Date: 06/	27/16 18:14	Units: <b>m</b>	g/L			Prep Info:	Prep Da	te:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, D	issolved (DOC)	34.0	0.50	20	12.37	108	85	115	0			
Associated sample	E: H16060430-001E, 009E, H16060430- H16060430-018E	H16060430-002E, I 010E, H16060430-(	H16060430 D11E, H160	-003E, H1606 60430-012E,	0430-004E, H16 H16060430-013I	060430-005E, E, H16060430-	H16060430 014E, H16	D-006E, H10 060430-015	6060430-007E, 5E, H16060430-	H16060430-00 016E, H16060	98E, H16060 430-017E,	0430-
Run ID :Run Order	SUB-C212944: 5	:	SampType:	Sample Matr	ix Spike Duplica	ite	Lab I	D: C16060	778-001GMSD	Method	d: A5310 C	
Analysis Date: 06/	27/16 18:29	Units: <b>m</b>	g/L			Prep Info:	Prep Da	te:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, D	issolved (DOC)	34.1	0.50	20	12.37	109	85	115	34.02	0.3	10	
Associated sample	<ul> <li>H16060430-001E,</li> <li>009E, H16060430-</li> <li>H16060430-018E</li> </ul>	H16060430-002E,   010E, H16060430-(	H16060430 D11E, H160	-003E, H1606 60430-012E,	0430-004E, H16 H16060430-013I	060430-005E, E, H16060430-	H16060430 014E, H16	D-006E, H10 060430-015	6060430-007E, 5E, H16060430-	H16060430-00 016E, H16060	98E, H16060 430-017E,	)430-
Run ID :Run Order	: SUB-C212944: 8	(	SampType:	Laboratory C	Control Sample		Lab I	D: LCS-894	46	Method	: A5310 C	
Analysis Date: 06/	28/16 02:15	Units: m	g/L			Prep Info:	Prep Da	te:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, D	issolved (DOC)	5.57	0.50	5	0.4321	103	90	110	0			
Associated samples	s: H16060430-001E, 009E, H16060430- H16060430-018E	H16060430-002E,   010E, H16060430-(	H16060430 D11E, H160	-003E, H1606 60430-012E,	0430-004E, H16 H16060430-013I	060430-005E, E, H16060430-	H16060430 014E, H16	D-006E, H10 060430-015	6060430-007E, 5E, H16060430-	H16060430-00 016E, H16060	98E, H16060 430-017E,	0430-

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Federal H16060430	Superfund			<b>ICAL QC S</b> Prepared by He	UMMARY	REPO	RT		Date	<b>e:</b> 20-Jul-1	6
Project:	CFR Monitoring-4	74374		В	atchID: C	_R212944						
Run ID :Run Order	SUB-C212944: 12		SampType:	Continuing C	Calibration Verif	ication Standa	r Lab	ID: CCV-89	48	Metho	d: <b>A5310 C</b>	
Analysis Date: 06/2	7/16 21:34	Units:	mg/L			Prep Info:	: Prep Da	te:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, D	ssolved (DOC)	5.42	0.50	5	0	108	90	110	0			
Associated samples	: H16060430-001E, H1 009E, H16060430-01 H16060430-018E	16060430-0028 0E, H1606043	E, H16060430 0-011E, H160	0-003E, H1606 060430-012E,	0430-004E, H16 H16060430-013	060430-005E, E, H16060430-	H1606043 014E, H16	0-006E, H1 060430-015	6060430-007E, 5E, H16060430	H16060430-00 016E, H16060	08E, H16060 0430-017E,	430-
Run ID :Run Order	SUB-C212944: 24		SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16060</b>	430-008E	Metho	d: <b>A5310 C</b>	
Analysis Date: 06/2	8/16 03:35	Units:	mg/L			Prep Info:	: Prep Da	te:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, D	ssolved (DOC)	24.4	0.50	20	3.011	107	85	115	0			
	009E, H16060430-01 H16060430-018E	0E, H1606043	0-011E, H160	060430-012E,	H16060430-013	E, H16060430-	014E, H16	060430-01	5E, H16060430	-016E, H16060	430-017E,	430-
Run ID Run Orden	SUB-C212944: 25		Samp Type:	Sample Matr	ix Spike Duplica	ne	Lab	D: H16060	430-008E	Method	U. A5310 C	
Analysia Datas 00%	0/40 00 50					Dura la fa		4		Duen Matha		
Analysis Date: 06/2	8/16 03:50	Units:	mg/L			Prep Info:	: Prep Da	te:		Prep Metho	d:	Qual
Analysis Date: <b>06/2</b> Analytes <u>1</u>	8/16 03:50	Result	mg/L PQL	SPK value	SPK Ref Val	Prep Info: %REC	: Prep Da LowLimit	te: HighLimit	RPD Ref Val	Prep Methoo %RPD	d: RPDLimit	Qual
Analysis Date: <b>06/2</b> Analytes <u>1</u> Organic Carbon, D	ssolved (DOC)	Units: Result 24.0	mg/L PQL 0.50	SPK value 20	SPK Ref Val 3.011	Prep Info: %REC 105	Prep Da LowLimit 85	te: HighLimit 115	RPD Ref Val 24.43	Prep Method %RPD 1.9	d: RPDLimit 10	Qual
Analysis Date: <b>06/2</b> Analytes <u>1</u> Organic Carbon, D Associated samples	8/16 03:50 ssolved (DOC) : H16060430-001E, H1 009E, H16060430-01 H16060430-018E	Units: Result 24.0 16060430-002E 0E, H1606043	mg/L PQL 0.50 E, H16060430 0-011E, H160	SPK value 20 1-003E, H1606 060430-012E,	SPK Ref Val 3.011 0430-004E, H16 H16060430-013	Prep Info: %REC 105 060430-005E, E, H16060430-	Prep Da LowLimit 85 H1606043 014E, H16	te: HighLimit 115 0-006E, H10 060430-015	RPD Ref Val 24.43 6060430-007E, 5E, H16060430	Prep Method %RPD 1.9 H16060430-00 016E, H16060	d: RPDLimit 10 08E, H16060 0430-017E,	Qual 9 <b>430-</b>
Analysis Date: <b>06/2</b> Analytes <u>1</u> Organic Carbon, D Associated samples Run ID :Run Order	8/16 03:50 ssolved (DOC) : H16060430-001E, H1 009E, H16060430-01 H16060430-018E SUB-C212944: 36	Units: Result 24.0 16060430-0028 0E, H1606043	mg/L PQL 0.50 E, H16060430 0-011E, H160 SampType:	SPK value 20 0-003E, H1606 060430-012E, Sample Matr	SPK Ref Val 3.011 0430-004E, H16 H16060430-013 ix Spike	Prep Info: %REC 105 060430-005E, E, H16060430-	: Prep Da LowLimit 85 H1606043 014E, H16 Lab	te: HighLimit 115 0-006E, H10 060430-015 ID: H16060	RPD Ref Val 24.43 6060430-007E, 5E, H16060430 430-018E	Prep Method %RPD 1.9 H16060430-00 016E, H16060 Method	d: <u>RPDLimit</u> 10 08E, H16060 0430-017E, d: A5310 C	Qual <b>430-</b>
Analysis Date: 06/2 Analytes <u>1</u> Organic Carbon, D Associated samples Run ID :Run Order Analysis Date: 06/2	8/16 03:50 ssolved (DOC) H16060430-001E, H2 009E, H16060430-01 H16060430-018E SUB-C212944: 36 8/16 07:34	Units: Result 24.0 16060430-0021 0E, H1606043	mg/L PQL 0.50 E, H16060430 0-011E, H160 SampType: mg/L	SPK value 20 -003E, H1606 060430-012E, Sample Matr	SPK Ref Val 3.011 0430-004E, H16 H16060430-013 ix Spike	Prep Info: %REC 105 060430-005E, E, H16060430- Prep Info:	: Prep Da LowLimit 85 H1606043 014E, H16 Lab : Prep Da	te: HighLimit 115 0-006E, H1 060430-01 ID: H16060 te:	RPD Ref Val 24.43 6060430-007E, 5E, H16060430 430-018E	Prep Method %RPD 1.9 H16060430-00 -016E, H16060 Method Prep Method	d: RPDLimit 10 08E, H16060 0430-017E, d: A5310 C d:	Qual 1430-
Analysis Date: 06/2 Analytes <u>1</u> Organic Carbon, D Associated samples Run ID :Run Order Analysis Date: 06/2 Analytes <u>1</u>	28/16 03:50 ssolved (DOC) : H16060430-001E, H1 009E, H16060430-01 H16060430-018E SUB-C212944: 36 28/16 07:34	Units: Result 24.0 16060430-002E 0E, H1606043 Units: Result	mg/L PQL 0.50 5, H16060430 0-011E, H160 SampType: mg/L PQL	SPK value 20 0-003E, H1606 060430-012E, Sample Matr SPK value	SPK Ref Val 3.011 0430-004E, H16 H16060430-013 ix Spike SPK Ref Val	Prep Info: %REC 105 060430-005E, E, H16060430- Prep Info: %REC	Prep Da LowLimit 85 H1606043 014E, H16 Lab Prep Da LowLimit	te: HighLimit 115 0-006E, H1 060430-01! ID: H16060 te: HighLimit	RPD Ref Val 24.43 6060430-007E, 5E, H16060430- 430-018E RPD Ref Val	Prep Method %RPD 1.9 H16060430-00 016E, H16060 O16E, H16060 Method Prep Method %RPD	d: <u>RPDLimit</u> 10 <b>08E, H16060</b> <b>430-017E,</b> d: <b>A5310 C</b> d: <u>RPDLimit</u>	Qual 430-
Analysis Date: 06/2 Analytes <u>1</u> Organic Carbon, D Associated samples Run ID :Run Order Analysis Date: 06/2 Analytes <u>1</u> Organic Carbon, D	8/16 03:50 ssolved (DOC) H16060430-001E, H1 009E, H16060430-01 H16060430-018E SUB-C212944: 36 8/16 07:34 ssolved (DOC)	Units: Result 24.0 16060430-002E 10E, H1606043 Units: Result 25.5	mg/L PQL 0.50 E, H16060430 :0-011E, H160 SampType: mg/L PQL 0.50	SPK value 20 1-003E, H1606 060430-012E, Sample Matr SPK value 20	SPK Ref Val 3.011 0430-004E, H16 H16060430-013 ix Spike SPK Ref Val 4.496	Prep Info: %REC 105 060430-005E, E, H16060430- Prep Info: %REC 105	Prep Da LowLimit 85 H1606043 014E, H16 Lab Prep Da LowLimit 85	te: HighLimit 115 0-006E, H1 060430-01 ID: H16060 te: HighLimit 115	RPD Ref Val 24.43 6060430-007E, 5E, H16060430 430-018E RPD Ref Val 0	Prep Method %RPD 1.9 H16060430-00 016E, H16060 Method Prep Method %RPD	d: RPDLimit 10 08E, H16060 0430-017E, d: A5310 C d: RPDLimit	Qual

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEC H16060	Q-Federal Superfund 430		ANALYT	ICAL QC SU Prepared by Hel	JMMARY ena, MT Brai	<b>REPO</b> I	RT		Date	: 20-Jul-1	6
Project:	oject: CFR Monitoring-474374			В	atchID: C_	R212944						
Run ID :Run Order:	SUB-C21	2944: 37	SampType:	Sample Matri	x Spike Duplicat	e	Lab	D: H160604	430-018E	Method	: A5310 C	
Analysis Date: 06/2	8/16 07:49	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Di	ssolved (D	OC) 25.3	0.50	20	4.496	104	85	115	25.46	0.6	10	
Associated samples	H160604	30-001E, H16060430-002E	, H16060430 0-011E, H160	-003E, H1606 60430-012E, I	0430-004E, H160 H16060430-013E	)60430-005E, , H16060430-	H16060430 014E, H16	0-006E, H10 060430-015	6060430-007E, 5E, H16060430-	H16060430-00 016E, H16060	8E, H16060 430-017E,	430-

H16060430-018E

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ- H1606043	Federal Supe 30	erfund			ICAL QC	<b>SUN</b> Helen	<b>MMARY</b> a, MT Bra	REPO	RT		Date	<b>e:</b> 20-Jul-1	16
Project:	CFR Mon	itoring-47437	74		В	atchID:	R11(	6238						
Run ID :Run Order	PHSC_101	H_160623A: 7		SampType	Method Blan	k			Lab	ID: <b>MB</b>		Metho	d: A2320 B	
Analysis Date: 06/2	23/16 09:24		Units:	mg/L				Prep Info	: Prep Da	ite:		Prep Method	d:	
Analytes 1			Result	PQL	SPK value	SPK Ref V	al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
A kalinity, Total as	CaCO3		2	0.2										
Associated samples	E H16060430 009A, H160 H16060430	0-001A, H16060 060430-010A, H 0-018A	)430-002/ 11606043	A, H16060430 0-011A, H16	0-003A, H1606 060430-012A,	0430-004A, H16060430-	H16060 013A, H	430-005A, I16060430	H1606043 014A, H16	0-006A, H1 060430-015	6060430-007A, 5A, H16060430-	H16060430-00 -016A, H16060	08A, H16060 430-017A,	)430-
Run ID :Run Order	PHSC_101	H_160623A: 9		SampType	Laboratory C	ontrol Sam	ple		Lab	ID: LCS		Metho	d: A2320 B	
Analysis Date: 06/2	23/16 09:29		Units:	mg/L				Prep Info	: Prep Da	ite:		Prep Method	d:	
Analytes 1			Result	PQL	SPK value	SPK Ref V	al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
	009A, H160 H16060430	060430-010A, H 0-018A	11606043	0-011A, H16	060430-012A,	H16060430-	013A, H	116060430	014A, H16	060430-01	5A, H16060430-	-016A, H16060	430-017A,	
Run ID :Run Order	PHSC_101	H_160623A: 16	6	SampType:	Sample Dupl	licate			Lab	ID: <b>H16060</b>	430-003ADUP	Metho	d: A2320 B	
Analysis Date: 06/2	23/16 09:59		Units:	mg/L				Prep Info	: Prep Da	ite:		Prep Metho	d:	
Analytes 2			Result	PQL	SPK value	SPK Ref V	al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
A kalinity, Total as	CaCO3		200	4.0			0				200.4	0.4	10	
Bicarbonate as HC	03		240	4.0			0				235.8	0.6	10	
Associated samples	<ul> <li>H16060430</li> <li>009A, H160</li> <li>H16060430</li> </ul>	0-001A, H16060 060430-010A, H 0-018A	)430-002 <i> </i> 11606043	A, H16060430 0-011A, H160	0-003A, H1606 060430-012A,	0430-004A, H16060430-	H16060 013A, H	430-005A, I16060430	H1606043 014A, H16	0-006A, H1 060430-015	6060430-007A, 5A, H16060430-	H16060430-00 -016A, H16060	08A, H16060 430-017A,	)430-
Run ID :Run Order	PHSC_101	H_160623A: 46	6	SampType	Sample Dupl	licate			Lab	ID: <b>H16060</b>	430-017ADUP	Metho	d: A2320 B	
Analysis Date: 06/2	23/16 11:30		Units:	mg/L				Prep Info	: Prep Da	ite:		Prep Method	d:	
Analytes 2			Result	PQL	SPK value	SPK Ref V	al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
A kalinity, Total as	CaCO3		72	4.0			0				71.15	0.5	10	
Bicarbonate as HC	O3		87	4.0			0				86.19	0.5	10	
Associated samples	E H16060430 009A, H160	)-001A, H16060 )60430-010A. H	)430-002/ 11606043	A, H16060430 0-011A, H16	0-003A, H1606 060430-012A.	0430-004A, H16060430-	H16060 013A, F	430-005A, 116060430	H1606043 014A, H16	0-006A, H1 060430-01	6060430-007A, 5A, H16060430-	H16060430-00	)8A, H1606( 430-017A.	0430-

H16060430-018A

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Federal S H16060430	uperfund			ICAL QC	<b>SUMMARY</b> Helena, MT Bra	<b>REPO</b>	RT		Date	: 20-Jul-1	16
Project:	CFR Monitoring-47	4374		В	atchID:	R116262						
Run ID :Run Order:	: FIA203-HE_160623B: 7	70	SampType:	Column Effic	iency Check	sample	Lab	ID: <b>NO2</b>		Method	: E353.2	
Analysis Date: 06/2	23/16 13:17	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	J:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	1.04	0.010	1		0 <b>104</b>	80	120				
Associated samples	E H16060430-001D, H16 009D, H16060430-010 H16060430-018D	060430-002E D, H1606043	D, H16060430 0-011D, H160	0-003D, H1606 060430-012D,	60430-004D,   H16060430-(	H16060430-005D 013D, H16060430	, H1606043 )-014D, H10	30-006D, H1 6060430-01	6060430-007D, 5D, H16060430	, H16060430-00 -016D, H16060	08D, H1606 )430-017D,	0430-
Run ID :Run Order:	FIA203-HE_160623B: 7	71	SampType:	Initial Calibra	ation Verifica	tion Standard	Lab	ID: ICV		Method	: E353.2	
Analysis Date: 06/2	23/16 13:18	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	1:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
	009D, H16060430-010 H16060430-018D	D, H1606043	0-011D, H160	060430-012D,	H16060430-(	013D, H16060430	)-014D, H10	6060430-01	5D, H16060430	-016D, H16060	0430-017D,	
Analysis Date: 000	FIA203-HE_160623B:	1Z	Samp i ype:	Initial Calibra	ation Blank, I	Instrument Blank	Lab			Niethoo	1: E353.2	
Analysis Date: 06/2	23/16 13:19	Result	mg/∟ PQI	SPK value	SPK Ref Va	erep into	l owl imit	Highl imit	RPD Ref Val	%RPD	RPDI imit	Qual
Nitrogen Nitrate+N	litrite as N	-0.000788	0.010	0		0	0	0		,		
Associated samples	<ul> <li>H16060430-001D, H16</li> <li>009D, H16060430-010</li> <li>H16060430-018D</li> </ul>	060430-002E D, H1606043	0.010 0, H16060430 0-011D, H160	0-003D, H1606 060430-012D,	0430-004D, I H16060430-0	0 H16060430-005D 013D, H16060430	, H1606043 )-014D, H10	30-006D, H1 6060430-01	6060430-007D, 5D, H16060430	, H16060430-00 I-016D, H16060	08D, H1606 )430-017D,	0430-
Run ID :Run Order:	FIA203-HE_160623B: 7	73	SampType:	Laboratory F	ortified Blan	k	Lab	ID: LFB		Method	: E353.2	
Analysis Date: 06/2	23/16 13:21	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	0.981	0.011	1		0 98	90	110				
Associated samples	H16060430-001D, H16 009D, H16060430-010 H16060430-018D	060430-002D D, H1606043	D, H16060430 0-011D, H160	0-003D, H1606 060430-012D,	0430-004D, l H16060430-(	H16060430-005D 013D, H16060430	, H1606043 )-014D, H10	30-006D, H1 6060430-01	6060430-007D, 5D, H16060430	, H16060430-00 -016D, H16060	08D, H1606 )430-017D,	0430-

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Federal Sup H16060430	erfund			ICAL QC Prepared by	SUMMARY Helena, MT Brai	REPO	RT		Date	: 20-Jul-1	16
Project:	CFR Monitoring-4743	74		В	atchID:	R116262						
Run ID :Run Order	FIA203-HE_160623B: 87		SampType:	Continuing C	Calibration Ve	erification Standa	<b>r</b> Lab	ID: CCV		Method	: E353.2	
Analysis Date: 06/2	23/16 13:37	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	0.500	0.010	0.5		0 <b>100</b>	90	110				
Associated samples	E H16060430-001D, H1606 009D, H16060430-010D, H16060430-018D	0430-002E H1606043	), H16060430 0-011D, H160	0-003D, H1606 060430-012D,	0430-004D, I H16060430-(	H16060430-005D, D13D, H16060430	H1606043 -014D, H16	0-006D, H1 5060430-01	6060430-007D, 5D, H16060430	, H16060430-00 -016D, H16060	08D, H1606 0430-017D,	0430-
Run ID :Run Order	FIA203-HE_160623B: 89		SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16060</b>	430-001DMS	Method	: E353.2	
Analysis Date: 06/2	23/16 13:40	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	0.988	0.011	1	0.004879	9 <b>98</b>	90	110				
Associated samples	E H16060430-001D, H1606 009D, H16060430-010D, H16060430-018D	0430-002L H1606043	0, H16060430 0-011D, H160	)-003D, H1606 060430-012D,	0430-004D, I H16060430-(	H16060430-005D, 013D, H16060430	H1606043 -014D, H16	0-006D, H1 5060430-01	6060430-007D, 5D, H16060430	, H16060430-00 -016D, H16060	08D, H1606 )430-017D,	0430-
Run ID :Run Order	FIA203-HE_160623B: 90		SampType:	Sample Matr	ix Spike Dup	licate	Lab	ID: <b>H16060</b>	430-001DMSD	Method	: E353.2	
Analysis Date: 06/2	23/16 13:41	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	0.969	0.011	1	0.004879	9 <b>96</b>	90	110	0.9876	1.9	20	
Associated samples	H16060430-001D, H1606 009D, H16060430-010D, H16060430-018D	0430-002E H1606043	), H16060430 0-011D, H160	0-003D, H1606 060430-012D,	0430-004D, I H16060430-(	H16060430-005D, D13D, H16060430	H1606043 -014D, H16	0-006D, H1 5060430-01	6060430-007D, 5D, H16060430	, H16060430-00 I-016D, H16060	08D, H1606 )430-017D,	0430-
Run ID :Run Order	FIA203-HE_160623B: 101		SampType:	Continuing C	Calibration Ve	erification Standa	r Lab	ID: CCV		Method	E353.2	
Analysis Date: 06/2	23/16 13:54	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	ł:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	0.502	0.010	0.5		0 <b>100</b>	90	110				
Associated samples	E H16060430-001D, H1606 009D, H16060430-010D, H16060430-018D	0430-002E H1606043	0, H16060430 0-011D, H160	0-003D, H1606 060430-012D,	0430-004D, I H16060430-(	H16060430-005D, D13D, H16060430	H1606043 -014D, H16	0-006D, H1 5060430-01	6060430-007D, 5D, H16060430	, H16060430-00 -016D, H16060	08D, H1606 0430-017D,	0430-

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

LABORATORIES	Trust our People. www.energylab.c	. <b>Trust our Data.</b> om	Col	lege Station, TX <b>8</b>	B8.690.2218 •	Billings, MT <b>800.735.</b> Gillette, WY <b>866.686.</b>	<b>4489 •</b> Caspe <b>7175 •</b> Helen	er, WY <b>888.235</b> ia, MT <b>877.472</b>	5.0515 2.0711			
Client: Work Order:	MT DEQ-Federal St H16060430	uperfund			ICAL QC Prepared by	<b>SUMMARY</b> Helena, MT Bra	<b>REPO</b>	RT		Date	e: 20-Jul-	16
Project:	CFR Monitoring-474	374		В	atchID:	R116262						
Run ID :Run Order:	FIA203-HE_160623B: 1	03	SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16060</b>	430-011DMS	Metho	d: <b>E353.2</b>	
Analysis Date: 06/2	23/16 13:56	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Metho	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	itrite as N	0.986	0.011	1	0.010	5 <b>98</b>	90	110				
Associated samples	E H16060430-001D, H16 009D, H16060430-010I H16060430-018D	060430-002I D, H1606043	D, H16060430 30-011D, H160	-003D, H1606 060430-012D,	0430-004D, H H16060430-(	H16060430-005D D13D, H16060430	, H1606043 0-014D, H10	30-006D, H1 6060430-01	6060430-007D 5D, H16060430	, H16060430-0 )-016D, H1606	08D, H1606 0430-017D,	60430-
Run ID :Run Order:	FIA203-HE_160623B: 1	04	SampType:	Sample Matr	ix Spike Dup	licate	Lab	ID: <b>H16060</b>	430-011DMSD	Metho	d: <b>E353.2</b>	
Analysis Date: 06/2	3/16 13:58	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Metho	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	itrite as N	0.980	0.011	1	0.010	5 <b>97</b>	90	110	0.9857	0.6	20	
	009D, H16060430-010I H16060430-018D	D, H1606043	SomeTupo:	060430-012D,	H16060430-(	013D, H16060430	)-014D, H10	6060430-01	5D, H16060430	)-016D, H1606	0430-017D,	
Analysia Data: 00/0	FIA203-RE_100023B: 1	17	Samp Type.	Sample wat	іх эріке	Dren Infe	Lau - Dron Da		431-00301013	Dran Matha	u. <b>E333.2</b>	
Analysis Date: 06/2	3/16 14:13	Units:	mg/L				: Prep Da	ILIablimit				Qual
	Metter - N	Result	FQL	SFK value	SFK KEI Va		LOWLINI		KFD Kei vai	%RFD	KFDLIIIII	Quai
Nitrogen, Nitrate+N Associated samples	: H16060430-001D, H16 009D, H16060430-010I H16060430-018D	0.986 060430-0021 D, H1606043	0.011 D, H16060430 80-011D, H160	1 0-003D, H1606 060430-012D,	0430-004D, H H16060430-(	99 H16060430-005D D13D, H16060430	90 , H1606043 )-014D, H10	30-006D, H1 6060430-01	6060430-007D 5D, H16060430	, H16060430-0 )-016D, H1606	08D, H1606 0430-017D,	60430-
Run ID :Run Order:	FIA203-HE_160623B: 1	18	SampType:	Sample Matr	ix Spike Dup	licate	Lab	ID: <b>H16060</b>	431-003BMSD	Metho	d: <b>E353.2</b>	
Analysis Date: 06/2	23/16 14:14	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Metho	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	itrite as N	0.973	0.011	1	(	0 <b>97</b>	90	110	0.9857	1.3	20	
Associated samples	: H16060430-001D, H16 009D, H16060430-010I H16060430-018D	060430-002I D, H1606043	D, H16060430 30-011D, H160	-003D, H1606 060430-012D,	0430-004D, H H16060430-0	H16060430-005D D13D, H16060430	, H1606043 9-014D, H10	30-006D, H1 6060430-01	6060430-007D 5D, H16060430	, H16060430-0 )-016D, H1606	08D, H1606 0430-017D,	60430-

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits
<b>ENERGY</b> LABORATORIES	Trust our People. www.energylab.co	. <b>Trust our Data.</b> om	Col	lege Station, TX 8	88.690.2218 •	Billings, MT 800.735.4 Gillette, WY 866.686.	4489 • Caspe 7175 • Helen	er, WY <b>888.235</b> a, MT <b>877.472</b>	5.0515 2.0711			
Client: Work Order:	MT DEQ-Federal St H16060430	uperfund			ICAL QC	SUMMARY	REPO	RT		Date	: 20-Jul-1	16
Project:	CFR Monitoring-474	374		В	atchID:	R116271						
Run ID :Run Order:	FIA202-HE_160623B: 9		SampType:	Initial Calibra	ation Verifica	ation Standard	Lab	ID: ICV		Method	E365.1	
Analysis Date: 06/2	23/16 15:42	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref V	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.250	0.010	0.25		0 <b>100</b>	90	110				
Associated samples	E H16060430-001D, H160 009D, H16060430-010I H16060430-018D	060430-002I D, H1606043	D, H16060430 0-011D, H160	-003D, H1606 060430-012D,	0430-004D, H16060430-	H16060430-005D, 013D, H16060430	, H1606043 -014D, H10	30-006D, H1 6060430-01	6060430-007D 5D, H16060430	, H16060430-00 -016D, H16060	08D, H1606 430-017D,	0430-
Run ID :Run Order:	FIA202-HE_160623B: 1	0	SampType:	Continuing C	Calibration V	erification Standa	n <b>r</b> Lab	ID: CCV		Method	: E365.1	
Analysis Date: 06/2	23/16 15:43	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref V	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Associated samples	E H16060430-001D, H160 009D, H16060430-010 H16060430-018D	060430-002I D, H1606043	D, H16060430 0-011D, H160	0-003D, H1606 060430-012D,	60430-004D, H16060430-	H16060430-005D, 013D, H16060430	, H1606043 -014D, H10	30-006D, H1 6060430-01	6060430-007D, 5D, H16060430	, H16060430-0( )-016D, H16060	)8D, H1606  430-017D,	0430-
Run ID :Run Order:	FIA202-HE_160623B: 1	1	SampType:	Initial Calibra	ation Blank,	Instrument Blank	Lab	ID: ICB		Method	: E365.1	
Analysis Date: 06/2	23/16 15:44	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref V	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	-0.00235	0.010			0	0	0				
Associated samples	E H16060430-001D, H160 009D, H16060430-010I H16060430-018D	060430-002I D, H1606043	D, H16060430 0-011D, H160	0-003D, H1606 060430-012D,	60430-004D, H16060430-	H16060430-005D, 013D, H16060430	, H1606043 -014D, H10	80-006D, H1 6060430-01	6060430-007D, 5D, H16060430	, H16060430-00 -016D, H16060	08D, H1606 430-017D,	0430-
Run ID :Run Order:	FIA202-HE_160623B: 2	7	SampType:	Continuing C	Calibration V	erification Standa	n <b>r</b> Lab	ID: CCV		Method	: E365.1	
Analysis Date: 06/2	23/16 16:00	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref V	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.0914	0.010	0.1		0 <b>91</b>	90	110				
Associated samples	<ul> <li>H16060430-001D, H160 009D, H16060430-010I H16060430-018D</li> </ul>	060430-0020 D, H1606043	D, H16060430 0-011D, H160	0-003D, H1606 060430-012D,	0430-004D, H16060430-	H16060430-005D, 013D, H16060430	, H1606043 -014D, H10	80-006D, H1 6060430-01	6060430-007D 5D, H16060430	, H16060430-00 -016D, H16060	08D, H1606 430-017D,	0430-

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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LABORATORIES	E	Trust our People. Tru www.energylab.com	st our Data.	Colle	ege Station, TX <b>88</b>	88.690.2218 •	Billings, MT <b>800.735.4</b> Gillette, WY <b>866.686.7</b>	489 • Caspe 175 • Helen	er, WY <b>888.235</b> a, MT <b>877.472</b>	.0515 .0711			
Client: Work Order:	MT DE0 H16060	Q-Federal Supe 430	erfund		ANALYTI F	ICAL QC Prepared by	<b>SUMMARY</b> Helena, MT Brai	REPO	RT		Date:	20-Jul-1	6
Project: CFR Monitoring-474374					В	atchID:	R116271						
Run ID :Run Order: FIA202-HE_160623B: 41				SampType:	Continuing C	alibration Ve	erification Standa	r Lab	ID: CCV		Method:	E365.1	
Analysis Date: 06/2	3/16 16:14		Units:	mg/L			Prep Info:	Prep Da	ite:		Prep Method:		
Analytes 1			Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual
Phosphorus, Total a	as P		0.0908	0.010	0.1	(	0 <b>91</b>	90	110				
Associated samples	: H160604 009D, H <sup>2</sup>	30-001D, H16060 16060430-010D, H	)430-002D 11606043(	, H16060430∙ 0-011D, H160	003D, H1606 60430-012D,	0430-004D, I H16060430-(	H16060430-005D, D13D, H16060430	H1606043 -014D, H10	0-006D, H1 6060430-01	6060430-007D, 5D, H16060430	H16060430-008 -016D, H160604	D, H16060 30-017D,	)430-

H16060430-018D

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Orde	MT DEQ-Federal S er: H16060430	Superfund		ANALYT	ICAL QC	SUMMARY Ielena, MT Brai	REPOI	RT		Date	: 20-Jul-1	6
Project:	CFR Monitoring-47	4374		В	atchID:	R116280						
Run ID :Run	Order: IC102-H_160623A: 12		SampType:	Method Blan	k		Lab I	D: ICB		Method	: E300.0	
Analysis Date	e: 06/23/16 10:18	Units:	mg/L			Prep Info:	Prep Dat	te:		Prep Method	:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride Sulfate		0.02 ND	0.006 0.05									
Associated sa	amples: H16060430-001A, H1 009A, H16060430-010 H16060430-018A	6060430-002A DA, H16060430	A, H16060430 D-011A, H160	-003A, H1606 60430-012A,	0430-004A, H1 H16060430-01	16060430-005A, 3A, H16060430-	H16060430 014A, H16	0-006A, H10 060430-015	6060430-007A, 5A, H16060430-	H16060430-00 016A, H160604	8A, H16060 I30-017A,	430-
Run ID :Run	Order: IC102-H_160623A: 13		SampType:	Initial Calibra	ation Verificati	on Standard	Lab I	D: <b>ICV</b>		Method	: E300.0	
Analysis Date	e: 06/23/16 10:29	Units:	mg/L			Prep Info:	Prep Dat	te:		Prep Method	:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		99.8	1.0	100	0	100	90	110				
Sulfate		402	1.0	400	0	101	90	110				
	009A, H16060430-00TA, H1 009A, H16060430-010 H16060430-018A	0060430-002A DA, H16060430	0-011A, H160	60430-012A,	H16060430-01	3A, H16060430-	014A, H16	060430-015	5A, H16060430-	016A, H160604	30-017A,	430-
Run ID :Run	Order: IC102-H_160623A: 14		SampType:	Laboratory F	ortified Blank		Lab I	D: <b>LFB</b>		Method	E300.0	
Analysis Date	e: 06/23/16 10:40	Units:	mg/L			Prep Info:	Prep Dat	te:		Prep Method	:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		46.7	1.0	50	0.024	93	90	110				
Sulfate		206	1.0	200	0	103	90	110				
Associated sa	amples: H16060430-001A, H1 009A, H16060430-010 H16060430-018A	6060430-002A DA, H16060430	A, H16060430 0-011A, H160	-003A, H1606 60430-012A,	0430-004A, H1 H16060430-01	16060430-005A, 3A, H16060430-	H16060430 014A, H160	0-006A, H10 060430-015	6060430-007A, 5A, H16060430-	H16060430-00 016A, H160604	3A, H16060 130-017A,	430-
Run ID :Run	Order: IC102-H_160623A: 15		SampType:	Continuing C	alibration Ver	ification Standa	r Labl	D: CCV062	316-1	Method	E300.0	
Analysis Date	e: 06/23/16 10:52	Units:	mg/L			Prep Info:	Prep Dat	te:		Prep Method	:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		99.4	1.0	100	0	99	90	110				
Sulfate		401	1.0	400	0	100	90	110				
Associated sa	amples: H16060430-001A, H1 009A, H16060430-01( H16060430-018A	6060430-002A DA, H1606043(	A, H16060430 D-011A, H160	-003A, H1606 60430-012A,	0430-004A, H1 H16060430-01	16060430-005A, 3A, H16060430-	H16060430 014A, H16	0-006A, H10 060430-015	6060430-007A, 5A, H16060430-	H16060430-00 016A, H160604	8A, H16060 I30-017A,	430-
Qualifiers:	ND - Not Detected at the Rep	porting Limit	S	S - Spike Reco	very outside ac	cepted recovery	limit N	- Analyte co	oncentration was	not sufficiently	high to calc	ulate RPD
	J - Analyte detected below qu	uantitation limit	s F	R - RPD outsid	e accepted rec	overy limits	A	- Analyte co	oncentration grea	ater than four tin	nes the spik	e amount

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Client: Work Order:	MT DEQ-Federal Su H16060430	perfund		ANALYT	ICAL QC S	UMMARY	REPOI	RT		Date:	20-Jul-1	6
Project:	CFR Monitoring-474	374		В	atchID: R1	16280						
Run ID :Run Order	: IC102-H_160623A: 28		SampType	Sample Matr	ix Spike		Lab I	D: <b>H16060</b>	430-010AMS	Method:	E300.0	
Analysis Date: 06/	23/16 13:16	Units	: mg/L			Prep Info:	: Prep Da	te:		Prep Method:		
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		51.5	1.0	50	3	97	90	110				
Sulfate		249	1.0	200	41.06	104	90	110				
	009A, H16060430-010A H16060430-018A	, H160604	30-011A, H16	060430-012A,	H16060430-013A	A, H16060430-	·014A, H16	060430-01:	5A, H16060430	.016A, H160604	5000 0	
Run ID :Run Ordei	: IC102-H_160623A: 29	11-20-	Samp i ype	Sample Matr	IX Spike Duplica		Lab I	D: H16060	430-010AMSD	Method:	E300.0	
Analysis Date: 06/	23/16 13:27	Units	: mg/L				: Prep Da	le: Lichlimit		Prep Method:		Qual
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLIMIt	Quai
Chloride		52.1 252	1.0	50 200	3	98 106	90	110	51.51	1.2	20	
Run ID :Run Order	: IC102-H_160623A: 30		SampType	Continuing C	Calibration Verific	cation Standa	<b>r</b> Labl	D: CCV062	2316-2	Method:	E300.0	
Analysis Date: 06/	23/16 13:38	Units	: mg/L			Prep Info:	Prep Da	te:		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	0	100	90	110				
Sulfate		403	1.0	400	0	101	90	110				
Associated sample:	s: H16060430-001A, H160 009A, H16060430-010A H16060430-018A	60430-002 , H160604	2A, H16060430 30-011A, H16	0-003A, H1606 060430-012A,	0430-004A, H160 H16060430-013A	060430-005A, A, H16060430-	H16060430 014A, H16	0-006A, H1 060430-015	6060430-007A, 5A, H16060430·	H16060430-008 016A, H160604	A, H16060 30-017A,	430-
Run ID :Run Order	: IC102-H_160623A: 43		SampType	Sample Matr	ix Spike		Lab I	D: <b>H16060</b>	430-018AMS	Method:	E300.0	
Analysis Date: 06/	23/16 16:03	Units	mg/L			Prep Info:	Prep Da	te:		Prep Method:		
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		71.8	1.0	50	20.91	102	90	110				
Sulfate		277	1.0	200	70.42	103	90	110				
Associated sample:	s: H16060430-001A, H160 009A, H16060430-010A H16060430-018A	60430-002 , H160604	2A, H16060430 30-011A, H16	0-003A, H1606 060430-012A,	0430-004A, H160 H16060430-013A	060430-005A, A, H16060430-	H16060430 014A, H16	0-006A, H1 060430-015	6060430-007A, 5A, H16060430·	H16060430-008 016A, H160604	A, H16060 30-017A,	430-
Qualifiers: ND	- Not Detected at the Report	rting Limit		S - Spike Reco	very outside acce	pted recovery	limit N	- Analyte co	oncentration was	not sufficiently h	nigh to calc	ulate RF

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

LABORATORIES Client: Work Order:	MT DEQ-Federal Su H16060430	uperfund	Coll	ege Station, TX 88 ANALYT	88.690.2218 • Gi ICAL QC Prepared by H	illette, WY <b>866.686.</b> SUMMARY Helena, MT Bra	7175 • Helena 7 <b>REPO</b> anch	r, wy 888.233 a, MT 877.472 RT	.0711	Date	:: 20-Jul-1	6
Project:	CFR Monitoring-474	374		В	atchID:	R116280						
Run ID :Run Order	un ID :Run Order: IC102-H_160623A: 44			Sample Matri	x Spike Dupli	cate	Lab	ID: <b>H16060</b> 4	430-018AMSD	Method	: E300.0	
Analysis Date: 06/	23/16 16:14	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	ł:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		72.0	1.0	50	20.91	102	90	110	71.81	0.3	20	
Sulfate		280	1.0	200	70.42	105	90	110	276.7	1.1	20	
Associated samples	E H16060430-001A, H160 009A, H16060430-010A	)60430-002/ A, H1606043	A, H16060430 0-011A, H160	-003A, H1606 60430-012A, I	0430-004A, H1 H16060430-01	16060430-005A, 3A, H16060430	H1606043 -014A, H16	0-006A, H10 060430-015	5060430-007A, 5A, H16060430-	H16060430-00 016A, H16060	8A, H16060 430-017A,	430-

H16060430-018A

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16060430	erfund		ANALYT	ICAL QC	SUMMARY Helena, MT Brar	REPO	RT		Date: 20-Jul-	16
Project:	CFR Monitoring-4743	74		В	atchID:	R116310					
Run ID :Run Order:	FIA203-HE_160623D: 10		SampType:	Initial Calibra	ition Blank, In	strument Blank	Lab	ID: ICB		Method: A4500 N-	С
Analysis Date: 06/2	3/16 16:26	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Nitrogen, Total	(	0.00257	0.10		0		0	0			
Associated samples	: H16060430-006A, H1606 014A, H16060430-015A	0430-007 <i>A</i>	A, H16060430	-008A, H1606	0430-009A, H <sup>^</sup>	16060430-010A, I	H1606043	0-011A, H10	6060430-012A,	H16060430-013A, H16060	0430-
Run ID :Run Order:	FIA203-HE_160623D: 29		SampType:	Continuing C	alibration Ver	rification Standa	r Lab	ID: CCV		Method: A4500 N-	с
Analysis Date: 06/2	3/16 16:49	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Nitrogen, Total		0.487	0.10	0.5	0	97	90	110			
Associated samples	: H16060430-006A, H1606 014A, H16060430-015A	0430-007 <i>A</i>	A, H16060430	-008A, H1606	0430-009A, H <sup>^</sup>	16060430-010A, I	H1606043	0-011A, H10	6060430-012A,	H16060430-013A, H16060	0430-
Run ID :Run Order:	FIA203-HE_160623D: 45		SampType:	Continuing C	alibration Ver	rification Standa	r Lab	ID: CCV		Method: A4500 N-	С
Analysis Date: 06/2	3/16 17:08	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Nitrogen, Total		0.498	0.10	0.5	0	100	90	110			
Associated samples	: H16060430-006A, H1606 014A, H16060430-015A	0430-007 <i>A</i>	A, H16060430	-008A, H1606	0430-009A, H <sup>^</sup>	16060430-010A, I	H1606043	0-011A, H10	6060430-012A,	H16060430-013A, H16060	0430-
Run ID :Run Order:	FIA203-HE_160623D: 59		SampType:	Continuing C	alibration Ver	rification Standa	r Lab	ID: CCV		Method: A4500 N-	С
Analysis Date: 06/2	3/16 17:25	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Nitrogen, Total		0.530	0.10	0.5	0	106	90	110			

Associated samples: H16060430-006A, H16060430-007A, H16060430-008A, H16060430-009A, H16060430-010A, H16060430-011A, H16060430-012A, H16060430-013A, H16060430-008A, H16060430-009A, H16060430-010A, H16060430-012A, H16060430-013A, H16060430-

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal St H16060430	perfund		ANALYT	ICAL QC S Prepared by He	UMMARY lena, MT Bra	REPO	RT		Date:	20-Jul-1	16
Project:	CFR Monitoring-474	374		В	atchID: R	116314						
Run ID :Run Order:	ICP2-HE_160624B: 6		SampType:	Initial Calibra	tion Verification	n Standard	Lab	ID: ICV		Method:	E200.7	
Analysis Date: 06/2	4/16 09:44	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		39.3	1.0	40	0	98	95	105				
Magnesium		38.8	1.0	40	0	97	95	105				
Potassium		40.7	1.0	40	0	102	95	105				
Sodium		40.7	1.0	40	0	102	95	105				
Run ID :Run Order:	ICP2-HE_160624B: 7		SampType:	Continuing C	alibration Verifi	cation Standa	nr Lab	ID: CCV-1		Method:	E200.7	
Analysis Date: 06/2	4/16 09:47	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes <u>4</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		24.5	1.0	25	0	98	95	105				
Magnesium		24.1	1.0	25	0	96	95	105				
Potassium		25.2	1.0	25	0	101	95	105				
Sodium		25.0	1.0	25	0	100	95	105				
Associated samples	H16060430-001C, H160 009C, H16060430-0100	060430-0020 C, H1606043	C, H16060430 0-012C, H160	-003C, H1606 060430-013C,	0430-004C, H16 H16060430-015	060430-005C, C, H16060430	, H1606043 -016C, H10	80-006C, H1 6060430-01	6060430-007C, 7C, H16060430	H16060430-008 -018C	8C, H1606	0430-
Run ID :Run Order:	ICP2-HE_160624B: 16		SampType:	Interference	Check Sample A	\	Lab	ID: ICSA		Method:	E200.7	
Analysis Date: 06/2	4/16 10:22	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		456	1.0	500	0	91	80	120				
Magnesium		482	1.0	500	0	96	80	120				

Associated samples: H16060430-001C, H16060430-002C, H16060430-003C, H16060430-004C, H16060430-005C, H16060430-006C, H16060430-007C, H16060430-008C, H16060430-018C, H16060430-

0

0

0

0

0 0

Run ID :Run Order:     ICP2-HE_160624B: 17     SampType:     Interference Check Sample AB						Lab	ID: ICSAB		Method: E200.7	
Analysis Date: 06/24/16 10:26	Units: I	mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimi	t Qual
Calcium	451	1.0	500	0	90	80	120			
Magnesium	483	1.0	500	0	97	80	120			

Qualifiers: ND - Not Detected at the Reporting Limit

Potassium

Sodium

J - Analyte detected below quantitation limits

0.0489

0.0202

1.0

1.0

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEC H16060	Q-Federal Sup 430	perfund		ANALYT	ICAL QC Prepared by H	SUMMAF Helena, MT E	RY REPO Branch	RT		Date	: 20-Jul-1	6
Project:	oject: CFR Monitoring-474374				В	atchID:	R116314						
Run ID :Run Order	un ID :Run Order: ICP2-HE_160624B: 17			SampType	Interference	Check Sample	e AB	Lab	ID: ICSAB		Method	E200.7	
Analysis Date: 06/	nalysis Date: 06/24/16 10:26 Units:		Units:	mg/L			Prep Ir	fo: Prep D	ate:		Prep Method	:	
Analytes <u>4</u>			Result	PQL	SPK value	SPK Ref Val	%REC	C LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium			19.7	1.0	20	0	9	9 80	120				
Sodium			19.6	1.0	20	0	9	<b>3</b> 80	120				
Associated samples	s: H160604 009C. H1	30-001C, H1600	60430-0020 H1606043	C, H1606043 0-012C. H16	0-003C, H1606 060430-013C.	0430-004C, H H16060430-0	16060430-00 15C. H160604	5C, H160604 30-016C, H1	30-006C, H1 6060430-01	6060430-007C, 7C. H16060430	, H16060430-00 -018C	)8C, H1606	0430-

Dillingo MT 000 725 4400 - Cooper WV 000 225 0515

Run ID :Run Order: ICP2-HE_160624B: 84		SampType:	Continuing C	alibration Verifica	ation Standa	r Lab	D: CCV		Method: E20	00.7	
Analysis Date: 06/24/16 14:45	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:		
Analytes <u>4</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPI	DLimit	Qual
Calcium	25.8	1.0	25	0	103	90	110				
Magnesium	25.2	1.0	25	0	101	90	110				
Potassium	25.4	1.0	25	0	101	90	110				
Sodium	25.1	1.0	25	0	100	90	110				

Associated samples: H16060430-001C, H16060430-002C, H16060430-003C, H16060430-004C, H16060430-005C, H16060430-006C, H16060430-007C, H16060430-008C, H16060430-008C, H16060430-012C, H16060430-013C, H16060430-015C, H16060430-016C, H16060430-017C, H16060430-018C

Run ID :Run Order: ICP2-HE_160624B: 96	Run ID :Run Order: ICP2-HE_160624B: 96 SampType: Continuing Calibration Ver						D: CCV		Method: E200.7	
Analysis Date: 06/24/16 15:30	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Calcium	26.6	1.0	25	0	106	90	110			
Magnesium	25.9	1.0	25	0	104	90	110			
Potassium	26.0	1.0	25	0	104	90	110			
Sodium	25.5	1.0	25	0	102	90	110			

Associated samples: H16060430-001C, H16060430-002C, H16060430-003C, H16060430-004C, H16060430-005C, H16060430-006C, H16060430-007C, H16060430-008C, H16060430-

Run ID :Run Order: ICP2-HE_160624B: 108	Run ID :Run Order: ICP2-HE_160624B: 108 SampType: Continuing Calibration Ve						D: <b>CCV</b>		Method	E200.7	
Analysis Date: 06/24/16 16:14	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	:	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	26.8	1.0	25	0	107	90	110				
Magnesium	26.2	1.0	25	0	105	90	110				
Potassium	24.9	1.0	25	0	100	90	110				
Sodium	24.4	1.0	25	0	97	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit

ENEDCV

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S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16060430	erfund		ANALYT	ICAL QC Prepared by	SUMMARY Helena, MT Bran	REPORT		Date: 20-Jul-1	6
Project:	CFR Monitoring-4743	74		В	atchID:	R116314				
Run ID :Run Order:	ICP2-HE_160624B: 108		SampType:	Continuing C	alibration Ve	rification Standar	Lab ID: CCV		Method: E200.7	
Analysis Date: 06/2	4/16 16:14	Units: r	ng/L			Prep Info:	Prep Date:		Prep Method:	
Analytes <u>4</u>		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit HighLimit	RPD Ref Val	%RPD RPDLimit	Qual

Associated samples: H16060430-001C, H16060430-002C, H16060430-003C, H16060430-004C, H16060430-005C, H16060430-006C, H16060430-007C, H16060430-008C, H16060430-

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ H160604	-Federal Superfund 30		ANALYTI	CAL QC SU repared by Hele	IMMARY ena, MT Brar	REPOF	RT		Date: 20-Jul-1	6
Project:       CFR Monitoring-474374         Run ID :Run Order:       ICPMS204-B_160624B: 9				B	atchID: R1	16327					
Run ID :Run Order:	-B_160624B: 9	SampType:	Initial Calibra	tion Verification	Standard	Lab I	D: ICV STD		Method: E200.8		
Run ID :Run Order:         ICPMS204-B_160624B: 9           Analysis Date:         06/24/16 20:45         U		Units:	mg/L			Prep Info:	Prep Dat	ie:		Prep Method:	
Analytes 8		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Arsenic		0.0582	0.0050	0.06	0	97	90	110			
Cadmium		0.0288	0.0010	0.03	0	96	90	110			
Calcium		3.05	0.50	3	0	102	90	110			
Copper		0.0599	0.010	0.06	0	100	90	110			
Lead		0.0572	0.010	0.06	0	95	90	110			
Magnesium		3.04	0.50	3	0	101	90	110			
Sodium		2.97	0.50	3	0	99	90	110			
Zinc		0.0591	0.010	0.06	0	98	90	110			

Associated samples: H16060430-001B, H16060430-001C, H16060430-002B, H16060430-002C, H16060430-003B, H16060430-003C, H16060430-004B, H16060430-004C, H16060430-005B, H16060430-005C, H16060430-006B, H16060430-006C, H16060430-007B, H16060430-007C, H16060430-008B, H16060430-008C, H16060430-009B, H16060430-009C, H16060430-010B, H16060430-010C, H16060430-011B, H16060430-011C, H16060430-012B, H16060430-012C, H16060430-013B, H16060430-013B, H16060430-013C, H16060430-014B, H16060430-015B, H16060430-015C, H16060430-016B, H16060430-016C, H16060430-017B, H16060430-017C, H16060430-018B, H16060430-018C

Run ID :Run Order: ICPMS204-B_1	I60624B: 10	SampType:	Interference	Check Sample A		Lab	ID: ICSA		Method	: <b>E200.8</b>	
Analysis Date: 06/24/16 20:48	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	-2.70E-05	0.0050		0							
Cadmium	0.000699	0.0010		0							
Calcium	152	0.50	120	0	126	70	130				
Copper	0.000184	0.010		0							
Lead	0.000225	0.010		0							
Magnesium	40.4	0.50	40	0	101	70	130				
Sodium	99.2	0.50	100	0	99	70	130				
Zinc	0.000540	0.010		0							

Associated samples: H16060430-001B, H16060430-001C, H16060430-002B, H16060430-002C, H16060430-003B, H16060430-003C, H16060430-004B, H16060430-004C, H16060430-005B, H16060430-005C, H16060430-006B, H16060430-006C, H16060430-007B, H16060430-007C, H16060430-008B, H16060430-008C, H16060430-009B, H16060430-009C, H16060430-010B, H16060430-010C, H16060430-011B, H16060430-011C, H16060430-012B, H16060430-012C, H16060430-013B, H16060430-013C, H16060430-014B, H16060430-014C, H16060430-015B, H16060430-015C, H16060430-016B, H16060430-016C, H16060430-017B, H16060430-017C, H16060430-018B, H16060430-018C

S - Spike Recovery outside accepted recovery limit

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

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Client: Work Order:	MT DEQ-Federa H16060430	I Superfund		ANALYT	ICAL QC Prepared by H	SUMMARY Helena, MT Bra	REPOI	RT		Date	: 20-Jul-1	16
Project:	CFR Monitoring-	474374		В	atchID:	R116327						
Run ID :Run Order	: ICPMS204-B_16062	24B: 15	SampType:	Method Blan	k		Lab	ID: LRB		Method	: <b>E200.8</b>	
Analysis Date: 06/	24/16 21:04	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		ND	6E-05									
Cadmium		ND	1E-05									
Copper		ND	6E-05									
Lead		ND	5E-06									
Zinc		0.0003	0.0002									
	009B, H16060430-0 H16060430-018B	)10B, H1606043(	0-011B, H160	060430-012B,	H16060430-01	13B, H16060430	-014B, H16	060430-015	5B, H16060430-	016B, H160604	430-017B,	
Run ID :Run Order	: ICPMS204-B_16062	24B: 16	SampType:	Laboratory F	ortified Blank	í.	Lab	ID: LFB		Method	: E200.8	
Analysis Date: 06/	24/16 21:07	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	1:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0482	0.0050	0.05	0	96	85	115				
Cadmium		0.0493	0.0010	0.05	0	99	85	115				
Copper		0.0492	0.010	0.05	0	99	85	115				
Lead		0.0469	0.010	0.05	0	94	85	115				
Zinc		0.0503	0.010	0.05	0.0002836	100	85	115				
Associated samples	<ul> <li>H16060430-001B, H</li> <li>009B, H16060430-0</li> <li>H16060430-018B</li> </ul>	116060430-002B )10B, H16060430	, H16060430 )-011B, H160	-003B, H1606 )60430-012B,	0430-004B, H H16060430-01	16060430-005B, 13B, H16060430-	H16060430 014B, H16	0-006B, H10 060430-015	6060430-007B,   5B, H16060430-(	H16060430-00 016B, H160604	8B, H16060 430-017B,	430-
Run ID :Run Order	: ICPMS204-B_16062	24B: 63	SampType:	Sample Matri	ix Spike		Lab I	ID: <b>H16060</b>	430-001BMS	Method	: <b>E200.8</b>	
Analysis Date: 06/	24/16 23:33	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	1:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0546	0.0010	0.05	0.006056	97	70	130				

Cadmium 0.0473 0.0010 0.05 0.0000323 95 70 130 Copper 0.0517 0.0050 0.05 0.004284 95 70 130 Lead 0.0465 0.0010 0.05 0.0000985 93 70 130 0.05 85 70 Zinc 0.0520 0.010 0.009777 130 

009B, H16060430-001B, H16060430-002B, H16060430-003B, H16060430-004B, H16060430-003B, H16060430-006B, H16060430-016B, H16060430-016B, H16060430-017B, H16060430-017B, H16060430-018B

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federa H16060430	al Superfund		ANALYT	ICAL QC SU Prepared by Heler	MMARY na, MT Bra	RT		Date	e: 20-Jul-1	16	
Project:	CFR Monitoring-	474374		В	atchID: R11	6327						
Run ID :Run Orde	r: ICPMS204-B_16062	24B: 64	SampType:	Sample Matri	ix Spike Duplicate		Lab	ID: <b>H16060</b> 4	430-001BMSD	Method	d: E200.8	
Analysis Date: 06/	24/16 23:36	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0574	0.0010	0.05	0.006056	103	70	130	0.05465	<u>4.9</u>	20	
Cadmium		0.0502	0.0010	0.05	0.0000323	100	70	130	0.04733	<u>5.9</u>	20	
Copper		0.0528	0.0050	0.05	0.004284	97	70	130	0.05172	2.0	20	
Lead		0.0488	0.0010	0.05	0.0000985	97	70	130	0.04654	<u>4.8</u>	20	
Zinc		0.0540	0.010	0.05	0.009777	88	70	130	0.05205	<u>3.6</u>	20	
	H16060430-018B					110000100	0112,1110		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Run ID :Run Orde	r: ICPMS204-B_1606	24B: 98	SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16060</b>	430-011BMS	Method	d: <b>E200.8</b>	
Run ID :Run Orde Analysis Date: <b>06</b> /	r: ICPMS204-B_16062 25/16 01:22	<b>24B: 98</b> Units:	SampType: <b>mg/L</b>	Sample Matri	ix Spike	Prep Info	Lab : Prep Da	ID: <b>H16060</b> 4 te:	430-011BMS	Methoo Prep Methoo	d: <b>E200.8</b> d:	
Run ID :Run Orde Analysis Date: <b>06/</b> Analytes <u>5</u>	r: ICPMS204-B_16062 25/16 01:22	<b>24B: 98</b> Units: Result	SampType: <b>mg/L</b> PQL	Sample Matri	<b>ix Spike</b> SPK Ref Val	Prep Info %REC	Lab : Prep Da LowLimit	ID: <b>H16060</b> te: HighLimit	<b>430-011BMS</b> RPD Ref Val	Methoo Prep Methoo %RPD	d: <b>E200.8</b> d: RPDLimit	Qual
Run ID :Run Orde Analysis Date: 06/ Analytes 5 Arsenic	r: ICPMS204-B_16062 25/16 01:22	24B: 98 Units: Result 0.0677	SampType: mg/L PQL 0.0010	Sample Matri SPK value 0.05	ix Spike SPK Ref Val 0.01668	Prep Info %REC 102	Lab : Prep Da LowLimit 70	ID: <b>H16060</b> te: HighLimit 130	430-011BMS RPD Ref Val	Methoo Prep Methoo %RPD	d: <b>E200.8</b> d: RPDLimit	Qual
Run ID :Run Orde Analysis Date: <b>06</b> / Analytes <u>5</u> Arsenic Cadmium	r: ICPMS204-B_1606; 25/16 01:22	24B: 98 Units: Result 0.0677 0.0498	SampType: mg/L PQL 0.0010 0.0010	Sample Matri SPK value 0.05 0.05	ix Spike SPK Ref Val 0.01668 0.0000282	Prep Info %REC 102 100	Lab : Prep Da LowLimit 70 70	ID: <b>H16060</b> te: HighLimit 130 130	430-011BMS RPD Ref Val	Methoo Prep Methoo %RPD	d: <b>E200.8</b> d: RPDLimit	Qual
Run ID :Run Orde Analysis Date: <b>06</b> / Analytes <u>5</u> Arsenic Cadmium Copper	r: ICPMS204-B_1606; 25/16 01:22	24B: 98 Units: Result 0.0677 0.0498 0.0536	SampType: mg/L PQL 0.0010 0.0010 0.0050	Sample Matri SPK value 0.05 0.05 0.05	ix Spike SPK Ref Val 0.01668 0.0000282 0.003606	Prep Info %REC 102 100 100	Lab : Prep Da LowLimit 70 70 70	ID: <b>H16060</b> te: HighLimit 130 130 130	430-011BMS RPD Ref Val	Methoo Prep Methoo %RPD	d: <b>E200.8</b> d: RPDLimit	Qual
Run ID :Run Orde Analysis Date: <b>06</b> / Analytes <u>5</u> Arsenic Cadmium Copper Lead	r: ICPMS204-B_1606; 25/16 01:22	24B: 98 Units: Result 0.0677 0.0498 0.0536 0.0481	SampType: mg/L PQL 0.0010 0.0010 0.0050 0.0010	Sample Matri SPK value 0.05 0.05 0.05 0.05	ix Spike SPK Ref Val 0.01668 0.0000282 0.003606 0.0001306	Prep Info %REC 102 100 100 96	Lab : Prep Da LowLimit 70 70 70 70 70	ID: <b>H16060</b> te: HighLimit 130 130 130 130	<b>430-011BMS</b> RPD Ref Val	Methoo Prep Methoo %RPD	d: <b>E200.8</b> d: RPDLimit	Qual
Run ID :Run Orde Analysis Date: 06/ Analytes 5 Arsenic Cadmium Copper Lead Zinc	r: ICPMS204-B_1606; 25/16 01:22	24B: 98 Units: Result 0.0677 0.0498 0.0536 0.0481 0.0546	SampType: mg/L PQL 0.0010 0.0050 0.0010 0.0010 0.010	Sample Matri SPK value 0.05 0.05 0.05 0.05 0.05	ix Spike SPK Ref Val 0.01668 0.0000282 0.003606 0.0001306 0.0005744	Prep Info %REC 102 100 100 96 98	Lab : Prep Da LowLimit 70 70 70 70 70 70	ID: <b>H16060</b> te: HighLimit 130 130 130 130 130	430-011BMS	Methoo Prep Methoo %RPD	d: <b>E200.8</b> d: RPDLimit	Qual
Run ID :Run Orde Analysis Date: 06/ Analytes 5 Arsenic Cadmium Copper Lead Zinc Associated sample	r: ICPMS204-B_1606 25/16 01:22 s: H16060430-001B, I 009B, H16060430-0 H16060430-018B	24B: 98 Units: Result 0.0677 0.0498 0.0536 0.0481 0.0546 H16060430-002E 010B, H1606043	SampType: mg/L PQL 0.0010 0.0010 0.0050 0.0010 0.010 3, H160604300 0-011B, H160	Sample Matri SPK value 0.05 0.05 0.05 0.05 0.05 003B, H1606 60430-012B,	ix Spike SPK Ref Val 0.01668 0.0000282 0.003606 0.0001306 0.005744 0430-004B, H16060 H16060430-013B, I	Prep Info %REC 102 100 96 98 9430-005B, 116060430	Lab : Prep Da LowLimit 70 70 70 70 70 116060433 -014B, H16	ID: H16060 te: HighLimit 130 130 130 130 130 0-006B, H10 060430-015	430-011BMS RPD Ref Val 6060430-007B, 6B, H16060430-	Method Prep Method %RPD H16060430-00 016B, H160604	d: E200.8 d: RPDLimit 88B, H16060 430-017B,	Qual 9430-
Run ID :Run Orde Analysis Date: 06/ Analytes 5 Arsenic Cadmium Copper Lead Zinc Associated sample Run ID :Run Orde	<ul> <li>r: ICPMS204-B_1606;</li> <li>25/16 01:22</li> <li>s: H16060430-001B, 1 009B, H16060430- H16060430-018B</li> <li>r: ICPMS204-B_1606;</li> </ul>	24B: 98 Units: Result 0.0677 0.0498 0.0536 0.0481 0.0546 H16060430-002E 010B, H1606043	SampType: mg/L PQL 0.0010 0.0010 0.0010 0.010 0.010 3, H160604300 0-011B, H160 SampType:	Sample Matri SPK value 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.0	ix Spike SPK Ref Val 0.01668 0.0000282 0.003606 0.0001306 0.005744 0430-004B, H16060 H16060430-013B, I	Prep Info %REC 102 100 100 96 98 9430-005B, 116060430	Lab : Prep Da LowLimit 70 70 70 70 116060433 -014B, H16 Lab	ID: H160604 te: HighLimit 130 130 130 130 0-006B, H10 060430-015	430-011BMS RPD Ref Val 5060430-007B, 5B, H16060430- 430-011BMSD	Method Prep Method %RPD H16060430-00 016B, H160604 Method	d: E200.8 d: RPDLimit 88B, H16060 430-017B, d: E200.8	Qual 9430-
Run ID :Run Orde Analysis Date: 06/ Analytes 5 Arsenic Cadmium Copper Lead Zinc Associated sample Run ID :Run Orde Analysis Date: 06/	<ul> <li>r: ICPMS204-B_16062</li> <li>25/16 01:22</li> <li>s: H16060430-001B, I 009B, H16060430-018B</li> <li>r: ICPMS204-B_16062</li> <li>25/16 01:26</li> </ul>	24B: 98 Units: Result 0.0677 0.0498 0.0536 0.0481 0.0546 H16060430-002E 010B, H1606043 24B: 99 Units:	SampType: mg/L PQL 0.0010 0.0050 0.0010 0.010 3, H160604300 0-011B, H160 SampType: mg/L	Sample Matri SPK value 0.05 0.05 0.05 0.05 0.05 0.03B, H1606 60430-012B, I Sample Matri	ix Spike SPK Ref Val 0.01668 0.0000282 0.003606 0.0001306 0.005744 0430-004B, H16060 H16060430-013B, I ix Spike Duplicate	Prep Info %REC 102 100 96 98 0430-005B, 116060430 Prep Info	Lab : Prep Da LowLimit 70 70 70 70 <b>H1606043</b> -014B, H16 Lab : Prep Da	ID: H16060 te: HighLimit 130 130 130 130 0006B, H10 060430-015 ID: H160604 te:	430-011BMS RPD Ref Val 5060430-007B, 5B, H16060430- 430-011BMSD	Method Prep Method %RPD H16060430-00 016B, H160604 Method Prep Method	d: E200.8 d: RPDLimit 08B, H16060 430-017B, d: E200.8 d:	Qual 0430-
Run ID :Run Orde Analysis Date: 06/ Analytes 5 Arsenic Cadmium Copper Lead Zinc Associated sample Run ID :Run Orde Analysis Date: 06/ Analytes 5	<ul> <li>ICPMS204-B_16062</li> <li>25/16 01:22</li> <li>H16060430-001B, 1 009B, H16060430- H16060430-018B</li> <li>ICPMS204-B_16062</li> <li>25/16 01:26</li> </ul>	24B: 98 Units: Result 0.0677 0.0498 0.0536 0.0481 0.0546 H16060430-002E 010B, H1606043 24B: 99 Units: Result	SampType: mg/L PQL 0.0010 0.0010 0.0050 0.0010 0.010 3, H160604300 0-011B, H160 SampType: mg/L PQL	Sample Matri SPK value 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.0	ix Spike SPK Ref Val 0.01668 0.0000282 0.003606 0.0001306 0.005744 0430-004B, H16060 H16060430-013B, I ix Spike Duplicate SPK Ref Val	Prep Info %REC 102 100 96 98 98 9430-005B, 116060430 Prep Info %REC	Lab : Prep Da 1000 70 70 70 70 <b>H1606043</b> -014B, H16 Lab : Prep Da LowLimit	ID: <b>H16060</b> te: HighLimit 130 130 130 130 0-006B, H10 060430-015 ID: <b>H16060</b> te: HighLimit	430-011BMS RPD Ref Val 5060430-007B, 5B, H16060430- 430-011BMSD RPD Ref Val	Method Prep Method %RPD H16060430-00 016B, H160604 Method Prep Method %RPD	d: E200.8 d: RPDLimit 88B, H16060 430-017B, d: E200.8 d: RPDLimit	Qual 0430-

Billings, MT 800.735.4489 • Casper, WY 888.235.0515

Analysis Date: 06/25/16 01:26 Units: mg/L					Prep Info	: Prep Da	te:		Prep Method	1:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0658	0.0010	0.05	0.01668	98	70	130	0.06768	2.8	20	
Cadmium	0.0472	0.0010	0.05	0.0000282	94	70	130	0.04984	<u>5.4</u>	20	
Copper	0.0512	0.0050	0.05	0.003606	95	70	130	0.05358	<u>4.6</u>	20	
Lead	0.0466	0.0010	0.05	0.0001306	93	70	130	0.04809	<u>3.1</u>	20	
Zinc	0.0532	0.010	0.05	0.005744	95	70	130	0.05456	2.4	20	

Associated samples: H16060430-001B, H16060430-002B, H16060430-003B, H16060430-004B, H16060430-005B, H16060430-006B, H16060430-007B, H16060430-008B, H16060430-008B, H16060430-018B, H16060430-013B, H16060430-013B, H16060430-014B, H16060430-015B, H16060430-016B, H16060430-017B, H16060430-018B

Qualifiers: ND - Not Detected at the Reporting Limit

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S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

<b>ENERGY</b> LABORATORIES	Trust our Po www.energ	eople. Trust our Data. ylab.com	Coll	ege Station, TX <b>8</b>	Billin 88.690.2218 • Gillet	gs, MT <b>800.735.4</b> te, WY <b>866.686.7</b>	<b>1489 •</b> Caspe 7 <b>175 •</b> Helen	er, WY <b>888.23</b> a, MT <b>877.47</b> 2	5.0515 2.0711			
Client: Work Order:	MT DEQ-Federa H16060430	al Superfund			ICAL QC S	UMMARY	REPO	RT		Date	: 20-Jul-1	6
Project:	CFR Monitoring	-474374		В	atchID: R1	16327						
Run ID :Run Orde	r: ICPMS204-B_1606	24B: 125	SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16060</b>	434-002BMS	Method	E200.8	
Analysis Date: 06/	25/16 02:47	Units:	mg/L			Prep Info:	Prep Da	ite:		Prep Method	l:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0538	0.0010	0.05	0.002432	103	70	130				
Cadmium		0.0511	0.0010	0.05	0	102	70	130				
Copper		0.0539	0.0050	0.05	0.002171	103	70	130				
Lead		0.0500	0.0010	0.05	0.0000601	100	70	130				
Zinc		0.0691	0.010	0.05	0.01797	102	70	130				
Associated sample	s: H16060430-001B, 009B, H16060430- H16060430-018B	H16060430-002B 010B, H16060430	, H16060430 )-011B, H160	-003B, H1606 60430-012B,	0430-004B, H160 H16060430-013E	)60430-005B, 3, H16060430-	H1606043 014B, H16	0-006B, H1 060430-01	6060430-007B, 5B, H16060430-	H16060430-00 -016B, H160604	8B, H16060 430-017B,	430-
Run ID :Run Orde	r: ICPMS204-B_1606	24B: 126	SampType:	Sample Matr	ix Spike Duplica	te	Lab	ID: <b>H16060</b>	434-002BMSD	Method	E200.8	
Analysis Date: 06/	25/16 02:50	Units:	mg/L			Prep Info:	Prep Da	ite:		Prep Method	l:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0530	0.0010	0.05	0.002432	101	70	130	0.05378	1.5	20	
Cadmium	dmium 0.0503		0.0010	0.05	0	101	70	130	0.05108	1.5	20	
Copper		0.0532	0.0050	0.05	0.002171	102	70	130	0.05386	1.3	20	

Associated samples: H16060430-001B, H16060430-002B, H16060430-003B, H16060430-004B, H16060430-005B, H16060430-006B, H16060430-007B, H16060430-008B, H16060430-009B, H16060430-010B, H16060430-011B, H16060430-012B, H16060430-013B, H16060430-014B, H16060430-015B, H16060430-016B, H16060430-017B, H16060430-018B

0.0000601

0.01797

99

103

70

70

130

130

0.05004

0.06909

1.0

0.7

20

20

0.05

0.05

Lead

Zinc

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD
- J Analyte detected below quantitation limits R RPD outside accepted recovery limits

0.0496

0.0696

0.0010

0.010

<b>ENERGY</b> LABORATORIES	Trust our www.ene	People. Trust our Data. rgylab.com	Col	lege Station, TX <b>8</b>	B 88.690.2218 • 0	illings, MT <b>800.735.</b> 4 Aillette, WY <b>866.686.</b>	<b>1489 •</b> Caspe <b>7175 •</b> Helena	r, WY <b>888.235</b> a, MT <b>877.472</b>	i.0515 2.0711			
Client: Work Order:	MT DEQ-Fede H16060430	ral Superfund		ANALYT	ICAL QC	SUMMARY Helena, MT Bra	REPO	RT		Date	: 20-Jul-1	6
Project:	CFR Monitoring	g-474374		В	atchID:	R116337						
Run ID :Run Order:	ICPMS204-B_160	627A: 10	SampType:	Initial Calibra	ation Verificat	ion Standard	Lab	ID: ICV ST	)	Method	E200.8	
Analysis Date: 06/2	27/16 12:00	Units:	mg/L			Prep Info	Prep Da	te:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		0.0594	0.010	0.06	C	) 99	90	110				
Associated samples	: H16060430-001C 009C, H16060430 H16060430-018C	;, H16060430-002C 0-010C, H1606043 ;	:, H16060430 D-011C, H160	-003C, H1606 060430-012C,	0430-004C, H H16060430-0	l16060430-005C, 13C, H16060430	H1606043 -014C, H16	0-006C, H1 060430-01	6060430-007C, 5C, H16060430	H16060430-00 -016C, H16060	08C, H1606 430-017C,	0430-
Run ID :Run Order:	ICPMS204-B_160	627A: 11	SampType:	Interference	Check Sampl	e A	Lab	D: ICSA		Method	E200.8	
Analysis Date: 06/2	27/16 12:03	Units:	mg/L			Prep Info	Prep Da	te:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
	H16060430-018C	0-010C, H1606043	CompTunoi	J60430-012C,	H16060430-0	- A	-014C, H1t	0060430-01	5C, H16060430	-016C, H1606C	430-017C,	
Run ID :Run Order:	CPMS204-B_160	1627A: 99	Samp i ype:	Interference	Спеск Sampi	e A Dava la fa	Lab I			Nethod	E200.8	
Analysis Date: 06/2 Analytes 1	28/16 09:29	Result	PQL	SPK value	SPK Ref Va	Prep Into:	LowLimit	HiahLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		0.000251	0.010		0	)						
Associated samples	: H16060430-001C 009C, H16060430 H16060430-018C	;, H16060430-002C 0-010C, H16060430	c, H16060430 D-011C, H160	0-003C, H1606 060430-012C,	0430-004C, H H16060430-0	116060430-005C, 13C, H16060430	H1606043 -014C, H16	0-006C, H1 060430-01	6060430-007C, 5C, H16060430	H16060430-00 -016C, H16060	08C, H1606 0430-017C,	0430-
Run ID :Run Order:	ICPMS204-B_160	627A: 101	SampType:	Initial Calibra	ation Verificat	ion Standard	Lab	ID: ICV ST	)	Method	E200.8	
Analysis Date: 06/2	28/16 09:36	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		0.0606	0.010	0.06	C	) 101	90	110				
Associated samples	<ul> <li>H16060430-001C</li> <li>009C, H16060430</li> <li>H16060430-018C</li> </ul>	;, H16060430-002C 0-010C, H1606043⊍ ;	с, H16060430 0-011С, H160	0-003C, H1606 060430-012C,	0430-004C, H H16060430-0	116060430-005C, 13C, H16060430	H1606043 -014C, H16	0-006C, H1 060430-01	6060430-007C, 5C, H16060430	H16060430-00 -016C, H16060	08C, H1606 0430-017C,	0430-

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

<b>ENERGY</b> LABORATORIES	Trust of www.er	ur People. Trust our Data. nergylab.com	Col	lege Station, TX <b>8</b> 8	.0515 .0711						
Client: Work Order:	MT DEQ-Fed H16060430	eral Superfund		ANALYT	ICAL QC S Prepared by He	<b>SUMMARY</b> elena, MT Bra	<b>REPO</b>	RT		Date: 20-Jul-	16
Project:	CFR Monitori	ng-474374		В	atchID: R	116337					
Run ID :Run Order:	ICPMS204-B_1	60627A: 260	SampType:	Initial Calibra	tion Verificatio	on Standard	Lab	ID: ICV STC	)	Method: E200.8	
Analysis Date: 06/2	8/16 20:41	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Lead		0.0570	0.010	0.06	0	95	90	110			
Associated samples	H16060430-001 009C, H160604 H16060430-018	C, H16060430-002C 30-010C, H1606043 3C	;, H16060430 D-011C, H160	0-003C, H1606 060430-012C,	0430-004C, H1 H16060430-013	6060430-005C, 3C, H16060430	, H1606043 -014C, H16	0-006C, H1 060430-01	6060430-007C, 5C, H16060430	H16060430-008C, H1606 -016C, H16060430-017C,	60430-
Run ID :Run Order:	ICPMS204-B_1	60627A: 261	SampType:	Interference	Check Sample	A	Lab	D: ICSA		Method: E200.8	
Analysis Date: 06/2	8/16 20:44	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Lead		0.000235	0.010		0						
Associated samples	H16060430-001 009C, H160604 H16060430-018	C, H16060430-002C 30-010C, H16060430 3C	, H16060430 D-011C, H16	0-003C, H1606 060430-012C,	0430-004C, H1 H16060430-01:	6060430-005C 3C, H16060430	, H1606043 -014C, H16	0-006C, H1 060430-01	6060430-007C, 5C, H16060430	H16060430-008C, H1606 -016C, H16060430-017C,	60430-

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

Run ID :Run Order Analysis Date: <b>06</b> / Analytes <u>1</u> Nitrogen, Total Associated samples Run ID :Run Order Analysis Date: <b>06</b> / Analytes <u>1</u>	<ul> <li>□ FIA203-HE_1606.</li> <li>27/16 15:13</li> <li>s: H16060430-001A</li> <li>□ FIA203-HE_1606.</li> <li>27/16 15:30</li> </ul>	27B: 26 Units: 1 Result 0.485 A, H16060430-002A 27B: 40 Units: 1 Result	SampType: mg/L PQL 0.10 , H16060430 SampType: mg/L PQL	Continuing C SPK value 0.5 -003A, H1606 Continuing C SPK value	SPK Ref Val 0 0430-004A, H160 Calibration Verific SPK Ref Val	eation Standa Prep Info: %REC 97 60430-005A, eation Standa Prep Info: %REC	r Lab Prep Da LowLimit 90 H16060430 r Lab Prep Da LowLimit	ID: CCV te: HighLimit 110 D-016A, H10 ID: CCV te: HighLimit	RPD Ref Val 6060430-017A, RPD Ref Val	Method: A4500 N-4 Prep Method: %RPD RPDLimit H16060430-018A Method: A4500 N-4 Prep Method: %RPD RPDLimit	C Qual C Qual
Run ID :Run Order Analysis Date: <b>06</b> /. Analytes <u>1</u> Nitrogen, Total Associated samples Run ID :Run Order Analysis Date: <b>06</b> /.	<ul> <li>FIA203-HE_1606</li> <li>27/16 15:13</li> <li>s: H16060430-001A</li> <li>FIA203-HE_1606</li> <li>27/16 15:30</li> </ul>	27B: 26 Units: 1 Result 0.485 A, H16060430-002A 27B: 40 Units: 1	SampType: mg/L PQL 0.10 , H16060430 SampType: mg/L	Continuing C SPK value 0.5 P-003A, H1606 Continuing C	SPK Ref Val 0 0430-004A, H160 Calibration Verific	ation Standa Prep Info: %REC 97 60430-005A, ation Standa Prep Info:	r Lab ∷ Prep Da LowLimit 90 H16060430 r Lab ∷ Prep Da	ID: CCV te: HighLimit 110 D-016A, H10 ID: CCV te:	RPD Ref Val 6060430-017A,	Method: A4500 N- Prep Method: %RPD RPDLimit H16060430-018A Method: A4500 N- Prep Method:	C Qual
Run ID :Run Order Analysis Date: <b>06/</b> Analytes <u>1</u> Nitrogen, Total Associated samples Run ID :Run Order	<ul> <li>FIA203-HE_1606</li> <li>27/16 15:13</li> <li>s: H16060430-001A</li> <li>FIA203-HE_1606</li> </ul>	27B: 26 Units: 1 Result 0.485 A, H16060430-002A 27B: 40	SampType: mg/L PQL 0.10 , H16060430 SampType:	Continuing C SPK value 0.5 -003A, H1606 Continuing C	SPK Ref Val 0 0430-004A, H160 Calibration Verific	eation Standa Prep Info: %REC 97 60430-005A, eation Standa	r Lab Prep Da LowLimit 90 H16060430 r Lab	D: CCV te: HighLimit 110 D-016A, H10	RPD Ref Val 6060430-017A,	Method: A4500 N-4 Prep Method: %RPD RPDLimit H16060430-018A Method: A4500 N-4	C Qual
Run ID :Run Order Analysis Date: <b>06/</b> Analytes <u>1</u> Nitrogen, Total Associated samples	<ul> <li>FIA203-HE_1606</li> <li>27/16 15:13</li> <li>s: H16060430-001A</li> </ul>	27B: 26 Units: n Result 0.485 A, H16060430-002A	SampType: mg/L PQL 0.10 , H16060430	Continuing C SPK value 0.5 -003A, H1606	SPK Ref Val 0 0430-004A, H160	ation Standa Prep Info: %REC 97 60430-005A,	r Lab Prep Da LowLimit 90 H1606043	ID: CCV te: HighLimit 110 D-016A, H10	RPD Ref Val 6060430-017A,	Method: A4500 N-6 Prep Method: %RPD RPDLimit H16060430-018A	C Qual
Run ID :Run Order Analysis Date: <b>06/</b> Analytes <u>1</u> Nitrogen, Total	∵ FIA203-HE_1606 27/16 15:13	27B: 26 Units: 1 Result 0.485	SampType: mg/L PQL 0.10	Continuing C SPK value 0.5	SPK Ref Val	ation Standa Prep Info: %REC 97	r Lab Prep Da LowLimit 90	ID: <b>CCV</b> te: HighLimit 110	RPD Ref Val	Method: <b>A4500 N-</b> Prep Method: %RPD RPDLimit	C Qual
Run ID :Run Order Analysis Date: <b>06/</b> Analytes <u>1</u>	∷ FIA203-HE_1606 27/16 15:13	27B: 26 Units: 1 Result	SampType: <b>mg/L</b> PQL	Continuing C	Calibration Verific	cation Standa Prep Info: %REC	r Lab Prep Da LowLimit	ID: <b>CCV</b> te: HighLimit	RPD Ref Val	Method: <b>A4500 N-</b> Prep Method: %RPD RPDLimit	C Qual
Run ID :Run Order Analysis Date: <b>06</b> /2	□ FIA203-HE_1606 27/16 15:13	27B: 26 Units: 1	SampType: <b>mg/L</b>	Continuing C	Calibration Verific	ation Standa Prep Info:	r Lab Prep Da	ID: <b>CCV</b> te:		Method: A4500 N-0 Prep Method:	C
Run ID :Run Order	: FIA203-HE_1606	27B: 26	SampType:	Continuing C	alibration Verific	ation Standa	r Lab	D: CCV		Method: A4500 N-	C
Nitrogen, Total Associated samples	s: H16060430-001A	0.00642 <b>A, H16060430-002A</b>	0.10 , <b>H16060430</b>	-003A, H1606	0 <b>0430-004A, H160</b>	60430-005A,	0 H1606043	0 <b>D-016A, H1</b> 0	6060430-017A,	H16060430-018A	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Analysis Date: 06/	27/16 14:54	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Run ID :Run Order	FIA203-HE_1606	27B: 10	SampType:	Initial Calibra	ation Blank, Instr	ument Blank	Lab	D: ICB		Method: A4500 N-	C
Project:	CFR Monitorin	g-474374		В	atchID: R1	16339					
Client: Work Order:	MT DEQ-Fede H16060430	eral Superfund		ANALYT	ICAL QC SU Prepared by Hel	JMMARY ena, MT Bra	REPO	RT		Date: 20-Jul-1	16
			Col	lege Station, TX 8	88.690.2218 • Gillet	te, WY <b>866.686.</b> 7	175 • Helena	r, WY 888.235 a, MT <b>877.472</b>	2.0711		

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Su H16060430	perfund		ANALYT	ICAL QC S	UMMARY	REPO	RT		Date: 20-Jul-1	6
Project:	CFR Monitoring-474	374		В	atchID: R	116345					
Run ID :Run Orde	r: ICP2-HE_160627B: 6		SampType:	Initial Calibra	ation Verification	n Standard	Lab	ID: ICV		Method: E200.7	
Analysis Date: 06/	/27/16 11:00	Units:	mg/L			Prep Info	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Potassium		39.2	1.0	40	0	98	95	105			
Associated sample	s: H16060430-011C, H160	60430-0140	;								
Run ID :Run Orde	r: ICP2-HE_160627B: 7		SampType:	Continuing C	alibration Verif	ication Standa	<b>r</b> Lab	ID: CCV-1		Method: E200.7	
Analysis Date: 06/	/27/16 11:04	Units:	mg/L			Prep Info	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Potassium		24.8	1.0	25	0	99	95	105			
Associated sample	s: H16060430-011C, H160	60430-014C	;								
Run ID :Run Orde	r: ICP2-HE_160627B: 16		SampType:	Interference	Check Sample /	4	Lab	ID: ICSA		Method: E200.7	
Analysis Date: 06/	/27/16 11:39	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Potassium		0.0207	1.0		0		0	0			
Associated sample	s: H16060430-011C, H160	60430-0140	;								
Run ID :Run Orde	r: ICP2-HE_160627B: 17		SampType:	Interference	Check Sample /	AB	Lab	ID: ICSAB		Method: E200.7	
Analysis Date: 06/	/27/16 11:43	Units:	mg/L			Prep Info	Prep Da	te:		Prep Method:	
A maketaa d				0014			Laura tanta	Highl imit	RPD Ref Val	%RPD RPDLimit	Qual
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LOWLIMIT	riigiieiniit			
Potassium		Result 19.1	PQL 1.0	SPK value 20	SPK Ref Val	%REC 95	LOWLIMIT 80	120			
Potassium Associated sample	s: H16060430-011C, H160	Result 19.1 60430-0140	PQL 1.0	20	O	%REC 95	LowLimit 80	120			
Analytes 1 Potassium Associated sample Run ID :Run Orde	s: H16060430-011C, H160 r: ICP2-HE_160627B: 23	Result 19.1 60430-0140	PQL 1.0 ; SampType:	20 Continuing C	0 Calibration Verif	%REC 95 ication Standa	r Lab	120 ID: <b>CCV</b>		Method: <b>E200.7</b>	
Analytes 1 Potassium Associated sample Run ID :Run Orde Analysis Date: 06/	s: H16060430-011C, H160 r: ICP2-HE_160627B: 23 /27/16 12:34	Result 19.1 60430-014C Units:	PQL 1.0 ; SampType: mg/L	20 Continuing C	Calibration Verif	%REC 95 ication Standa Prep Info	r Lab Prep Da	120 ID: <b>CCV</b> te:		Method: <b>E200.7</b> Prep Method:	
Analytes 1 Potassium Associated sample Run ID :Run Orde Analysis Date: 06/ Analytes 1	s: H16060430-011C, H160 r: ICP2-HE_160627B: 23 /27/16 12:34	Result 19.1 60430-0140 Units: Result	PQL 1.0 SampType: mg/L PQL	20 Continuing C	Calibration Verif	%REC 95 ication Standa Prep Info %REC	r Lab Prep Da LowLimit	120 ID: CCV te: HighLimit	RPD Ref Val	Method: <b>E200.7</b> Prep Method: %RPD RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

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Client: Work Order:	MT DEQ-Federal Sup H16060430	erfund			ICAL QC Prepared by	SUMMARY	<b>REPO</b>	RT		Date	: 20-Jul-1	16
Project:	CFR Monitoring-4743	74		В	atchID:	R116353						
Run ID :Run Order:	FIA203-HE_160628A: 7		SampType:	Initial Calibra	ation Verifica	ation Standard	Lab	ID: ICV		Method	: E350.1	
Analysis Date: 06/2	8/16 09:16	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	14.1	0.50	14.2		0 <b>100</b>	90	110				
Associated samples	: H16060430-001D, H1606 009D, H16060430-010D, H16060430-018D	0430-002E H1606043	D, H16060430 0-011D, H160	0-003D, H1606 060430-012D,	0430-004D, H16060430-	H16060430-005D 013D, H16060430	, H1606043 -014D, H16	80-006D, H1 6060430-01	6060430-007D, 5D, H16060430	H16060430-00 -016D, H16060	08D, H1606 )430-017D,	0430-
Run ID :Run Order:	FIA203-HE_160628A: 8		SampType:	Laboratory F	ortified Blan	ik	Lab	ID: LFB		Method	: E350.1	
Analysis Date: 06/2	8/16 09:17	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	1:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.973	0.055	1		0 <b>97</b>	90	110				
Associated samples	<ul> <li>H16060430-001D, H1606</li> <li>009D, H16060430-010D,</li> <li>H16060430-018D</li> </ul>	0430-0020 H1606043	D, H16060430 0-011D, H160	)-003D, H1606 060430-012D,	0430-004D, H16060430-	H16060430-005D 013D, H16060430	, H1606043 -014D, H16	80-006D, H1 6060430-01	6060430-007D, 5D, H16060430	H16060430-00 -016D, H16060	08D, H1606 )430-017D,	0430-
Run ID :Run Order:	FIA203-HE_160628A: 9		SampType:	Continuing C	Calibration V	erification Standa	n <b>r</b> Lab	ID: CCV		Method	: E350.1	
Analysis Date: 06/2	8/16 09:18	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	1:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.542	0.050	0.5		0 <b>108</b>	90	110				
Associated samples	: H16060430-001D, H1606 009D, H16060430-010D, H16060430-018D	0430-002E H1606043	D, H16060430 0-011D, H160	)-003D, H1606 060430-012D,	0430-004D, H16060430-	H16060430-005D, 013D, H16060430	, H1606043 -014D, H16	80-006D, H1 6060430-01	6060430-007D, 5D, H16060430	H16060430-00 -016D, H16060	08D, H1606 )430-017D,	0430-
Run ID :Run Order:	FIA203-HE_160628A: 10		SampType:	Initial Calibra	ation Blank,	Instrument Blank	Lab	ID: ICB		Method	: E350.1	
Analysis Date: 06/2	8/16 09:20	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	-0.0530	0.050			0	0	0				
Associated samples	: H16060430-001D, H1606 009D, H16060430-010D, H16060430-018D	0430-002E H1606043	D, H16060430 0-011D, H160	0-003D, H1606 060430-012D,	0430-004D, H16060430-	H16060430-005D, 013D, H16060430	, H1606043 -014D, H16	80-006D, H1 6060430-01	6060430-007D, 5D, H16060430	H16060430-00 -016D, H16060	08D, H1606 )430-017D,	0430-

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16060430	erfund		ANALYT	ICAL Q	C SUI y Heler	<b>MMARY</b> Na, MT Brai	REPO	RT		Date	e: 20-Jul-1	16
Project:	CFR Monitoring-4743	74		В	atchID:	 R11	6353						
Run ID :Run Order:	FIA203-HE_160628A: 15		SampType:	Sample Matri	ix Spike			Lab	ID: <b>H16060</b> 4	430-002DMS	Metho	d: <b>E350.1</b>	
Analysis Date: 06/2	8/16 09:26	Units:	mg/L				Prep Info:	Prep Da	ate:		Prep Metho	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref V	/al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.934	0.055	1		0	93	80	120				
Associated samples	E H16060430-001D, H1606 009D, H16060430-010D, H16060430-018D	0430-0021 H1606043	D, H16060430 0-011D, H160	)-003D, H1606 060430-012D,	0430-004D, H16060430	H1606 -013D,	0430-005D, H16060430	H1606043 -014D, H10	80-006D, H1 6060430-01	6060430-007D 5D, H16060430	, H16060430-0 )-016D, H1606	08D, H1606 0430-017D,	0430-
Run ID :Run Order:	FIA203-HE_160628A: 16		SampType:	Sample Matri	ix Spike Du	plicate		Lab	ID: <b>H16060</b> 4	430-002DMSD	Metho	d: <b>E350.1</b>	
Analysis Date: 06/2	8/16 09:27	Units:	mg/L				Prep Info:	Prep Da	ate:		Prep Metho	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref V	/al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.951	0.055	1		0	95	80	120	0.9336	1.9	10	
Run ID :Run Order:	H16060430-018D	H 1000043	SampType:	Continuing C	Calibration \	-013D, /erificat	ion Standa	<b>r</b> Lab	ID: CCV	5D, H16060430	Metho	d: E350.1	
Analysis Date: 06/2		Units:	ma/L				Prep Info:	Prep Da	ate:		Prep Metho	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref V	/al	%REC	LowLimit	HighLimit	RPD Ref Val	' %RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.531	0.050	0.5		0	106	90	110				
Associated samples	: H16060430-001D, H1606 009D, H16060430-010D, H16060430-018D	0430-0021 H1606043	D, H16060430 80-011D, H166	0-003D, H1606 060430-012D,	0430-004D, H16060430	H1606 -013D,	0430-005D, H16060430	H1606043 -014D, H10	80-006D, H1 6060430-01	6060430-007D 5D, H16060430	, H16060430-0 )-016D, H1606	08D, H1606 0430-017D,	0430-
Run ID :Run Order:	FIA203-HE_160628A: 26		SampType:	Sample Matri	ix Spike			Lab	ID: <b>H16060</b>	430-009DMS	Metho	d: <b>E350.1</b>	
Analysis Date: 06/2	8/16 09:39	Units:	mg/L				Prep Info:	Prep Da	ate:		Prep Metho	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref V	/al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.888	0.055	1		0	89	80	120				
Associated samples	E H16060430-001D, H1606 009D, H16060430-010D, H16060430-018D	0430-0021 H1606043	D, H16060430 0-011D, H160	0-003D, H1606 060430-012D,	0430-004D, H16060430	H1606 -013D,	0430-005D, H16060430	H1606043 -014D, H10	80-006D, H1 6060430-01	6060430-007D 5D, H16060430	, H16060430-0 )-016D, H1606	08D, H1606 0430-017D,	0430-

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16060430	perfund		ANALYT	ICAL QC S Prepared by He	<b>UMMARY</b> lena, MT Bra	REPO	RT		Date	: 20-Jul-1	16
Project:	CFR Monitoring-4743	74		В	atchID: R	116353						
Run ID :Run Order:	FIA203-HE_160628A: 27		SampType:	Sample Matri	ix Spike Duplica	te	Lab	ID: <b>H16060</b>	430-009DMSD	Method	: E350.1	
Analysis Date: 06/2	8/16 09:40	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.919	0.055	1	0	92	80	120	0.8876	<u>3.4</u>	10	
Associated samples	: H16060430-001D, H1606 009D, H16060430-010D, H16060430-018D	0430-002E H1606043	D, H16060430 0-011D, H160	0-003D, H1606 060430-012D,	0430-004D, H16 H16060430-013	060430-005D, D, H16060430	, H1606043 -014D, H10	30-006D, H1 6060430-01	6060430-007D 5D, H16060430	, H16060430-00 D-016D, H16060	08D, H1606 )430-017D,	0430-
Run ID :Run Order:	FIA203-HE_160628A: 40		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16060</b>	446-001DMS	Method	: E350.1	
Analysis Date: 06/2	8/16 09:55	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	1:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.878	0.055	1	0	88	80	120				
Associated samples	H16060430-001D, H1606 009D, H16060430-010D, H16060430-018D	0430-002D H1606043	D, H16060430 0-011D, H160	-003D, H1606 060430-012D,	0430-004D, H16 H16060430-013	060430-005D, D, H16060430	, H1606043 -014D, H10	30-006D, H1 6060430-01	6060430-007D 5D, H16060430	, H16060430-00 0-016D, H16060	08D, H1606 )430-017D,	0430-
Run ID :Run Order:	FIA203-HE_160628A: 41		SampType:	Sample Matri	ix Spike Duplica	te	Lab	ID: <b>H16060</b>	446-001DMSD	Method	: E350.1	
Analysis Date: 06/2	8/16 09:57	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.914	0.055	1	0	91	80	120	0.8784	<u>3.9</u>	10	
Associated samples	: H16060430-001D, H1606 009D, H16060430-010D,	0430-002D H1606043	D, H16060430 0-011D, H160	-003D, H1606 060430-012D,	0430-004D, H16 H16060430-013	060430-005D, D, H16060430	, H1606043 -014D, H10	30-006D, H1 6060430-01	6060430-007D 5D, H16060430	, H16060430-00 )-016D, H16060	08D, H1606 )430-017D,	0430-

H16060430-018D

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

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Client: Work Order:	MT DEQ-F0 H16060430	ederal Superfund		ANALYT	ICAL QC SU Prepared by Hele	<b>JMMARY</b> ena, MT Brai	REPOI	RT		Date: 20-Jul-1	6
Project:	CFR Monito	oring-474374		В	atchID: R1	16409					
Run ID :Run Order	r: IC102-H_160	629A: 12	SampType:	Method Blan	k		Lab I	D: <b>ICB</b>		Method: E300.0	
Analysis Date: 06/	29/16 11:37	Units:	mg/L			Prep Info:	Prep Dat	e:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Sulfate		ND	0.05								
Associated samples	s: H16060430-0	08A									
Run ID :Run Order	r: IC102-H_160	629A: 13	SampType:	Initial Calibra	tion Verification	Standard	Lab I	D: ICV		Method: E300.0	
Analysis Date: 06/	29/16 11:48	Units:	mg/L			Prep Info:	Prep Dat	e:		Prep Method:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Sulfate		406	1.0	400	0	101	90	110			
Associated samples	s: <b>H16060430-(</b>	08A									
Run ID :Run Order	r: IC102-H_160	629A: 14	SampType:	Laboratory F	ortified Blank		Lab I	D: LFB		Method: E300.0	
Analysis Date: 06/	29/16 11:59	Units:	mg/L			Prep Info:	Prep Dat	e:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Sulfate		208	1.0	200	0	104	90	110			
Associated samples	s: <b>H16060430-0</b>	08A									
Run ID .Run Older	r: IC102-H_160	629A: 33	SampType:	Continuing C	alibration Verific	ation Standa	r Labl	D: CCV062	916-2	Method: E300.0	
Analysis Date: 06/	∷ IC102-H_160 29/16 15:30	629A: 33 Units:	SampType: <b>mg/L</b>	Continuing C	alibration Verific	ation Standa Prep Info:	r Lab I Prep Dat	D: <b>CCV062</b> :e:	916-2	Method: E300.0 Prep Method:	
Analysis Date: 06/ Analytes 1	r: IC102-H_160 29/16 15:30	629A: 33 Units: Result	SampType: <b>mg/L</b> PQL	Continuing C	Calibration Verific	ation Standa Prep Info: %REC	r Lab I Prep Dat LowLimit	D: <b>CCV062</b> e: HighLimit	916-2 RPD Ref Val	Method: <b>E300.0</b> Prep Method: %RPD RPDLimit	Qual
Analysis Date: 06/ Analytes 1 Sulfate	r: IC102-H_160 29/16 15:30	629A: 33 Units: Result 405	SampType: m <b>g/L</b> PQL 1.0	Continuing C SPK value 400	Calibration Verific	ation Standa Prep Info: %REC 101	r Lab I Prep Dai LowLimit 90	D: <b>CCV062</b> æ: HighLimit 110	916-2 RPD Ref Val	Method: <b>E300.0</b> Prep Method: %RPD RPDLimit	Qual
Analysis Date: 06/ Analytes 1 Sulfate Associated samples	<ul> <li>IC102-H_160</li> <li>29/16 15:30</li> <li>s: H16060430-0</li> </ul>	629A: 33 Units: Result 405 008A	SampType: mg/L PQL 1.0	Continuing C SPK value 400	Calibration Verific	ation Standa Prep Info: %REC 101	r Lab I Prep Dat LowLimit 90	D: <b>CCV062</b> e: HighLimit 110	916-2 RPD Ref Val	Method: <b>E300.0</b> Prep Method: %RPD RPDLimit	Qual
Analysis Date: 06/ Analytes <u>1</u> Sulfate Associated sample: Run ID :Run Order	<ul> <li>IC102-H_160</li> <li>29/16 15:30</li> <li>8: H16060430-0</li> <li>7: IC102-H_160</li> </ul>	629A: 33 Units: Result 405 008A 629A: 46	SampType: mg/L PQL 1.0 SampType:	Continuing C SPK value 400 Sample Matri	SPK Ref Val	ation Standa Prep Info: %REC 101	r Lab I Prep Dat LowLimit 90 Lab I	D: CCV062 e: HighLimit 110 D: H160605	916-2 RPD Ref Val	Method: E300.0 Prep Method: %RPD RPDLimit Method: E300.0	Qual
Analysis Date: 06/ Analytes 1 Sulfate Associated sample: Run ID :Run Order Analysis Date: 06/	<ul> <li>IC102-H_160</li> <li>29/16 15:30</li> <li>s: H16060430-0</li> <li>r: IC102-H_160</li> <li>29/16 17:55</li> </ul>	629A: 33 Units: Result 405 008A 629A: 46 Units:	SampType: mg/L PQL 1.0 SampType: mg/L	Continuing C SPK value 400 Sample Matri	SPK Ref Val 0 x Spike	ation Standa Prep Info: %REC 101 Prep Info:	r Lab I Prep Dai LowLimit 90 Lab I Prep Dai	D: <b>CCV062</b> e: HighLimit 110 D: <b>H160605</b> e:	916-2 RPD Ref Val	Method: E300.0 Prep Method: %RPD RPDLimit Method: E300.0 Prep Method:	Qual
Analysis Date: 06/ Analytes <u>1</u> Sulfate Associated sample: Run ID :Run Order Analysis Date: 06/ Analytes <u>1</u>	<ul> <li>IC102-H_160</li> <li>29/16 15:30</li> <li>8: H16060430-0</li> <li>IC102-H_160</li> <li>29/16 17:55</li> </ul>	629A: 33 Units: Result 405 008A 629A: 46 Units: Result	SampType: mg/L PQL 1.0 SampType: mg/L PQL	Continuing C SPK value 400 Sample Matri SPK value	SPK Ref Val 0 <b>x Spike</b> SPK Ref Val	ation Standa Prep Info: %REC 101 Prep Info: %REC	r Lab I Prep Dai LowLimit 90 Lab I Prep Dai LowLimit	D: CCV062 e: HighLimit 110 D: H160605 e: HighLimit	916-2 RPD Ref Val 523-003EMS RPD Ref Val	Method: E300.0 Prep Method: %RPD RPDLimit Method: E300.0 Prep Method: %RPD RPDLimit	Qual
Analysis Date: 06/ Analysis Date: 06/ Analytes <u>1</u> Sulfate Associated sample: Run ID :Run Order Analysis Date: 06/ Analytes <u>1</u> Sulfate	<ul> <li>IC102-H_160</li> <li>29/16 15:30</li> <li>s: H16060430-0</li> <li>r: IC102-H_160</li> <li>29/16 17:55</li> </ul>	629A: 33 Units: Result 405 008A 629A: 46 Units: Result 251	SampType: mg/L PQL 1.0 SampType: mg/L PQL 1.0	Continuing C SPK value 400 Sample Matri SPK value 200	Calibration Verific SPK Ref Val 0 x Spike SPK Ref Val 40.95	ation Standa Prep Info: %REC 101 Prep Info: %REC 105	r Lab I Prep Dai LowLimit 90 Lab I Prep Dai LowLimit 90	D: <b>CCV062</b> e: <u>HighLimit</u> 110 D: <b>H160605</b> e: HighLimit 110	916-2 RPD Ref Val 523-003EMS RPD Ref Val	Method: E300.0 Prep Method: %RPD RPDLimit Method: E300.0 Prep Method: %RPD RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DE0 H16060	Q-Federal Superfund 1430		ANALYT	ICAL QC S Prepared by He	UMMARY Ilena, MT Bra	REPO	RT		Date	: 20-Jul-1	6
Project:	CFR M	onitoring-474374		В	atchID: R	116409						
Run ID :Run Order	IC102-H	_160629A: 47	SampType:	Sample Matri	ix Spike Duplica	ite	Lab	ID: H16060	523-003EMSD	Method	: E300.0	
Analysis Date: 06/2	29/16 18:06	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		254	1.0	200	40.95	107	90	110	250.9	1.3	20	
Associated samples	: H160604	130-008A										

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Su H16060430	perfund		ANALYT	ICAL QC S Prepared by He	UMMARY lena, MT Bra	REPO	RT		Date	e: 20-Jul-1	6
Project:	CFR Monitoring-474	374		В	atchID: T	SS160622/	4					
Run ID :Run Order:	ACCU-124 (14410200)_1	60622A: 1	SampType:	Method Blan	ĸ		Lab	ID: <b>MB-1_1</b>	60622A	Method	: <b>A2540 D</b>	
Analysis Date: 06/2	2/16 09:43	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	nded TSS @ 105 C	ND	0.1									
Associated samples	: H16060430-001A, H160	60430-002/	A									
Run ID :Run Order:	ACCU-124 (14410200)_1	60622A: 2	SampType:	Laboratory C	ontrol Sample		Lab	ID: <b>LCS-2</b> _^	160622A	Method	: <b>A2540 D</b>	
Analysis Date: 06/2	2/16 09:44	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	nded TSS @ 105 C	106	10	100	0	106	80	120				
Associated samples	: H16060430-001A, H160	60430-002/	A									
Run ID :Run Order:	ACCU-124 (14410200)_1	60622A: 4	SampType:	Sample Dupli	cate		Lab	ID: <b>H16060</b> 4	400-001ADUP	Method	: <b>A2540 D</b>	
Analysis Date: 06/2	2/16 09:45	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	nded TSS @ 105 C	4.80	10		0				6.8		5	
Associated samples - Since the difference	: H16060430-001A, H160 between he analytical result for	60430-002/ or the sample	A and its duplicate	is less than he r	eporting limit, the R	PD variance is no	ot considered	significant.				
Run ID :Run Order:	ACCU-124 (14410200)_1	60622A: 1	SampType:	Sample Dupli	cate		Lab	ID: <b>H16060</b>	413-001ADUP	Method	: A2540 D	
Analysis Date: 06/2	2/16 09:49	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	nded TSS @ 105 C	ND	10		0				0		5	

Associated samples: H16060430-001A, H16060430-002A

- Since the difference between he analytical result for the sample and its duplicate is less than he reporting limit, the RPD variance is not considered significant.

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal St H16060430	uperfund			ICAL QC	SUMMARY Ielena. MT Bra	REPO	RT		<b>Date:</b> 20-Ju	ul-16
Project:	CFR Monitoring-474	1374		В	atchID:	TSS160623/	4				
Run ID :Run Order	: ACCU-124 (14410200)_	160623B: 1	SampType:	Method Blan	k		Lab	ID: <b>MB-1_1</b>	60623A	Method: A2540	D
Analysis Date: 06/2	23/16 08:45	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLir	mit Qual
Solids, Total Suspe	ended TSS @ 105 C	ND	0.1								
Associated samples	<ul> <li>H16060430-003A, H160</li> <li>011A, H16060430-012A</li> </ul>	060430-004 <i>4</i> A, H1606043	A, H16060430 0-013A, H160	-005A, H1606 060430-014A,	0430-006A, H1 H16060430-01	16060430-007A, 5A, H16060430	H1606043 -016A, H16	0-008A, H1 060430-017	6060430-009A, 7A, H16060430∙	H16060430-010A, H16 -018A	060430-
Run ID :Run Order	: ACCU-124 (14410200)_	160623B: 2	SampType:	Laboratory C	ontrol Sample	)	Lab	ID: LCS-2_	160623A	Method: A2540	) D
Analysis Date: 06/2	23/16 08:52	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLir	mit Qual
Solids, Total Suspe	ended TSS @ 105 C	102	10	100	0	102	80	120			
Associated samples	<ul> <li>H16060430-003A, H160</li> <li>011A, H16060430-012A</li> </ul>	060430-004 <i>4</i> A, H1606043	A, H16060430 0-013A, H160	-005A, H1606 060430-014A,	0430-006A, H1 H16060430-01	16060430-007A, 5A, H16060430	H1606043 -016A, H16	0-008A, H1 060430-017	6060430-009A, 7A, H16060430∙	H16060430-010A, H16 -018A	060430-
Run ID :Run Order	: ACCU-124 (14410200)_	160623B: 1	SampType:	Sample Dupl	icate		Lab	ID: <b>H16060</b>	430-013ADUP	Method: A2540	D
Analysis Date: 06/2	23/16 08:58	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLir	mit Qual
Solids, Total Suspe	ended TSS @ 105 C	7.80	10		0				6.2		5
- Since the difference	<ul> <li>H16060430-003A, H160 011A, H16060430-012A</li> <li>between he analytical result</li> </ul>	060430-004 A, H1606043 for the sample	A, H16060430 0-013A, H160 and its duplicate	-005A, H1606 60430-014A,	0430-006A, H1 H16060430-01	<b>16060430-007A,</b> <b>5A, H16060430</b> RPD variance is no	H1606043 -016A, H16 ot considered	0-008A, H1 060430-017	6060430-009A, 7A, H16060430∙	H16060430-010A, H16 -018A	060430-
Run ID ·Run Order	ACCU-124 (14410200)	160623B· 2	SampType	Method Blan	k		Lab	ID: MB-25	1606234	Method: A2540	
Analysis Date: 06/2	23/16 09·02	Units	ma/l	Method Blan	n	Pren Info	· Prep Da	ite: 110-23_	100023A	Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLir	mit Qual
Solids, Total Suspe	ended TSS @ 105 C	ND	0.1					0			
Associated samples	E H16060430-003A, H16 011A, H16060430-012	060430-004 <i>4</i> A, H1606043	A, H16060430 0-013A, H160	-005A, H1606 060430-014A,	0430-006A, H1 H16060430-01	16060430-007A, 5A, H16060430	H1606043 -016A, H16	0-008A, H1 060430-01	6060430-009A, 7A, H16060430·	H16060430-010A, H16 -018A	060430-
Run ID :Run Order	ACCU-124 (14410200)_	160623B: 2	SampType:	Laboratory C	ontrol Sample	)	Lab	ID: LCS-26	_160623A	Method: A2540	) D
Analysis Date: 06/2	23/16 09:02	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLir	mit Qual
Solids, Total Suspe	ended TSS @ 105 C	90.0	10	100	0	90	80	120			
Qualifiers: ND J - A	- Not Detected at the Repo	orting Limit antitation limit	ts F	S - Spike Reco R - RPD outsid	very outside ac	ccepted recovery overy limits	limit N A	- Analyte co - Analyte co	oncentration was	anot sufficiently high to a ater than four times the s	calculate RPD spike amount Page 89 of 102

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Client: Work Order:	MT DEQ-Federal S H16060430	uperfund		ANALYTI	CAL QC SU Prepared by Hele	<b>JMMARY</b> ena, MT Brai	REPOI	RT		Date	: 20-Jul-1	6
Project:	CFR Monitoring-47	4374		B	atchID: TS	S160623A	1					
Run ID :Run Order:	ACCU-124 (14410200)	_160623B: 2	SampType:	Laboratory C	ontrol Sample		Lab I	D: LCS-26_	_160623A	Method	: A2540 D	
Analysis Date: 06/2	3/16 09:02	Units:	mg/L			Prep Info:	Prep Dat	te:		Prep Method	l:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Associated samples	H16060430-003A, H16 011A, H16060430-012	060430-004A A, H16060430	, H16060430- )-013A, H1600	005A, H16060 60430-014A, H	0430-006A, H160 H16060430-015A,	60430-007A, H16060430-	H16060430 016A, H16	0-008A, H10 060430-017	6060430-009A,   7A, H16060430-(	H16060430-01 018A	0A, H16060	430-
Run ID :Run Order:	ACCU-124 (14410200)	_160623B: 2	SampType:	Sample Dupli	cate		Lab I	D: <b>H16060</b>	431-005ADUP	Method	: A2540 D	
Analysis Date: 06/2	3/16 09:03	Units:	mg/L			Prep Info:	Prep Dat	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	nded TSS @ 105 C	2.80	10		0				3.2		5	
Associated samples	H16060430-003A, H16 011A, H16060430-012 between he analytical result	060430-004A A, H16060430 for the sample a	, H16060430- D-013A, H1600 and its duplicate i	005A, H16060 50430-014A, H is less than he re	0430-006A, H160 116060430-015A eporting limit, the RP	60430-007A, H16060430- D variance is no	H16060430 016A, H16 ot considered	0-008A, H10 060430-017 significant.	6060430-009A,   /A, H16060430-(	H16060430-01 018A	0A, H16060	430-
Run ID :Run Order:	ACCU-124 (14410200)	_160623B: 5	SampType:	Sample Dupli	cate		Lab I	D: <b>H16060</b>	430-003ADUP	Method	: A2540 D	
Analysis Date: 06/2	3/16 13:37	Units:	mg/L			Prep Info:	Prep Dat	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	nded TSS @ 105 C	6.00	10		0				6.4		5	

Associated samples: H16060430-003A, H16060430-004A, H16060430-005A, H16060430-006A, H16060430-007A, H16060430-008A, H16060430-009A, H16060430-010A, H16060430-011A, H16060430-012A, H16060430-013A, H16060430-014A, H16060430-015A, H16060430-016A, H16060430-017A, H16060430-018A

- Since the difference between he analytical result for the sample and its duplicate is less than he reporting limit, the RPD variance is not considered significant.

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

- J Analyte detected below quantitation limits R
- R RPD outside accepted recovery limits



July 15, 2016

Energy Laboratories, Inc. ATTN: Jonathan Dee Hager PO Box 5688 Helena MT 59604 jhager@energylab.com

RE: Project ENL-HL1201

Client Project: H16060430

Dear Jonathan Dee Hager,

This report contains results for the 5 samples received by Brooks Applied Labs (BAL) on June 23, 2016. The samples were logged-in for the contracted analyses according to the chain-of-custody form(s). The samples were received, prepared, analyzed, and stored according to BAL SOPs and EPA methodology.

The results were method blank corrected as described in the calculations section of the relevant BAL SOP(s) and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details. All data was reported without qualification (with the exception of concentration qualifiers), and all associated quality control sample results meet the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more details, please see the *Report Information* page in your report. Please feel free to contact me if you have any questions regarding this report.

Sincerely,

Lydia Dreoves

Lydia Greaves Project Manager Lydia@brooksapplied.com



# **Report Information**

### **Laboratory Accreditation**

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <a href="http://www.brooksapplied.com/resources/certificates-permits/">http://www.brooksapplied.com/resources/certificates-permits/</a>. Results reported relate only to the samples listed in the report.

### **Field Quality Control Samples**

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

### **Common Abbreviations**

BAL BLK BS CAL CCB CCV COC D DUP IBL ICV	Brooks Applied Labs method blank laboratory fortified blank calibration standard continuing calibration blank continuing calibration verification chain of custody record dissolved fraction duplicate instrument blank initial calibration verification	MS MSD NR N/C PS REC RPD SCV SOP SRM	matrix spike matrix spike duplicate non-detect non-reportable not calculated post preparation spike percent recovery relative percent difference secondary calibration verification standard operating procedure standard reference material
IBL	instrument blank	SOP	standard operating procedure
ICV	initial calibration verification	SRM	standard reference material
MDL	method detection limit	T	total fraction
MRL	method reporting limit	TR	total recoverable fraction

### **Definition of Data Qualifiers**

(Effective 9/23/09)

- **B** Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
- **E** An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
- **H** Holding time and/or preservation requirements not met. Result is estimated.
- J Estimated value. A full explanation is presented in the narrative.
- J-M Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
- J-N Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
- **M** Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
- **N** Spike recovery was not within acceptance criteria. Result is estimated.
- **R** Rejected, unusable value. A full explanation is presented in the narrative.
- U Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
- **X** Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA <u>SOW ILM03.0</u>, Exhibit B, Section III, pg. B-18, and the <u>USEPA Contract Laboratory Program National Functional Guidelines for Inorganic</u> <u>Superfund Data Review; USEPA; January 2010</u>. These supersede all previous gualifiers ever employed by BAL. **Project ID:** ENL-HL1201 **PM:** Lydia Greaves



# Sample Information

Sample	Lab ID	<b>Report Matrix</b>	Туре	Sampled	Received
H16060430-002F	1626044-01	Water	Sample	06/20/2016	06/23/2016
H16060430-003F	1626044-02	Water	Sample	06/20/2016	06/23/2016
H16060430-004F	1626044-03	Water	Sample	06/20/2016	06/23/2016
H16060430-019B	1626044-04	Water	Sample	06/20/2016	06/23/2016
H16060430-020A	1626044-05	Water	Trip Blank	06/20/2016	06/23/2016

## **Batch Summary**

Analyte MeHg Lab Matrix Water Method EPA 1630 
 Prepared
 Analyzed
 I

 07/06/2016
 07/08/2016
 B

ed Batch 016 B161646 Sequence 1600810



# Sample Results

Sample	Analyte	<b>Report Matrix</b>	Basis	Result	Qualifie	er MDL	MRL	Unit	Batch	Sequence
H16060430-0	02F									
1626044-01	MeHg	Water	TR	≤ 0.021	U	0.021	0.053	ng/L	B161646	1600810
H16060430-0	03F									
1626044-02	MeHg	Water	TR	0.997		0.021	0.054	ng/L	B161646	1600810
H16060430-0	04F									
1626044-03	MeHg	Water	TR	0.882		0.022	0.054	ng/L	B161646	1600810
H16060430-0	19B									
1626044-04	MeHg	Water	TR	0.180		0.023	0.057	ng/L	B161646	1600810
H16060430-02	20A									
1626044-05	MeHg	Water	TR	≤ 0.022	U	0.022	0.055	ng/L	B161646	1600810



# Accuracy & Precision Summary

Batch: B161646 Lab Matrix: Water Method: EPA 1630

Sample B161646-BS1	Analyte Laboratory Fortified B	Native lank, (162	<mark>Spike</mark> 27005)	Result	Units	<b>REC &amp; Limits</b>	<b>RPD &amp; Limits</b>
	MeHg		1.000	0.950	ng/L	95% 67-133	
B161646-BS2	Laboratory Fortified B MeHg	lank, (162	2 <b>7005)</b> 1.000	0.702	ng/L	70% 67-133	
B161646-MS1	Matrix Spike, (162404 MeHg	<b>5-53)</b> 2.078	4.000	5.526	ng/L	86% 65-135	
B161646-MSD1	Matrix Spike Duplicate MeHg	<b>e, (162404</b> 2.078	<b>5-53)</b> 4.000	5.635	ng/L	89% 65-135	2% 35

# Method Blanks & Reporting Limits

Batch: B161646 Matrix: Water Method: EPA 1630 Analyte: MeHg			
Sample	Result	Units	
B161646-BLK1	0.004	ng/L	
B161646-BLK2	0.004	ng/L	
B161646-BLK3	0.001	ng/L	
B161646-BLK4	0.002	ng/L	
	Average: 0.003	Standard Deviation: 0.002	MDL: 0.021
	Limit: 0.045	Limit: 0.015	MRL: 0.053

**Project ID:** ENL-HL1201 **PM:** Lydia Greaves



BAL Report 1626044 Client PM: Jonathan Dee Hager Client PO: H13203

# Sample Containers

Lab ID: 1626044-01 Sample: H16060430-002F			Report Matrix: Water Sample Type: Sample			Collected: 06/20/2016 Received: 06/23/2016			
Des A	Container Bottle FLPE Hg-SP	Size 250ml	Lot 15-0278	Preservation 2ml 6N HCl (PP)	<b>P-Lot</b> 1609109	<b>рН</b> <2	Ship. Cont. Cooler		
Lab Sam Des A	ID: 1626044-02 ple: H16060430-003F Container Bottle FLPE Hg-SP	<mark>Size</mark> 250ml	Rep Sar Lot 15-0278	oort Matrix: Water nple Type: Sample Preservation 2ml 6N HCI (PP)	<b>P-Lot</b> 1609109	Collect Receiv pH <2	ed: 06/20/2016 ed: 06/23/2016 Ship. Cont. Cooler		
Lab Sam Des A	ID: 1626044-03 ple: H16060430-004F Container Bottle FLPE Hg-SP	Size 250ml	Rep Sar Lot 15-0278	oort Matrix: Water nple Type: Sample Preservation 2ml 6N HCI (PP)	<b>P-Lot</b> 1609109	Collect Receiv pH <2	ed: 06/20/2016 ed: 06/23/2016 Ship. Cont. Cooler		
Lab Sarr Des A	ID: 1626044-04 ple: H16060430-019B Container Bottle FLPE Hg-SP	Size 250ml	Rep Sar Lot 15-0278	oort Matrix: Water nple Type: Sample Preservation 2ml 6N HCI (PP)	<b>P-Lot</b> 1609109	Collect Receiv pH <2	ed: 06/20/2016 ed: 06/23/2016 Ship. Cont. Cooler		
Lab Sam Des A	ID: 1626044-05 pple: H16060430-020A Container Bottle FLPE Hg-SP	Size 250ml	Rep Sar Lot 15-0278	oort Matrix: Water nple Type: Trip Blank Preservation 0.4% HCl (BAL)	<b>P-Lot</b> 1609106	Collect Receiv pH <2	ed: 06/20/2016 ed: 06/23/2016 Ship. Cont. Cooler		

**Project ID:** ENL-HL1201 **PM:** Lydia Greaves



BAL Report 1626044 Client PM: Jonathan Dee Hager Client PO: H13203

# **Shipping Containers**

Cooler

Received: June 23, 2016 12:35 Tracking No: 1Z37EW970156723834 via UPS Coolant Type: Ice Temperature: 1.0 °C

**Description:** Cooler **Damaged in transit?** No **Returned to client?** No **Comments:** IR#6 Custody seals present? Yes Custody seals intact? Yes COC present? Yes

Energy Laboratories Inc 3161 East Lyndale Avenue Helena, MT 59601	H16060430	CHAIN-OF-CUSTODY RECOR					DRI	BAL Report 1626044 Page 1 of 1 22-Jun-16					
(406) 442-0711		Custody Seal: Intact: Signature Match:	Y Y Y	N N N		Shipped Receipt	By: _ Temp:				_		
Brooks Applied Labs			-										
TEL: (206) 632-6206 FAX: (206) 4 Acct #: Subcontractor's Client:	632-6017	SUB-BROOKSRAND			Redi		ests						
H16060430-002F Surface Water 0	06/20/16 11:15 A 1-CLIENT-SLD												
H16060430-003F Surface Water 0	06/20/16 11:30 A 1-CLIENT-SLD	1											
H16060430-004F Surface Water 0	06/20/16 11:30 A 1-CLIENT-SLD	1											
H16060430-019B Surface Water 0	06/20/16 10:30 A 1-CLIENT-SLD	1											
H16060430-020A Trip Blank O	6/20/16 09:00 A 1-TRIP BLANK	$\eta \square \square \square \square$					1						

Earliest Due Date	e: 7/1/2016		
Comments:	<u>PO# H13203</u>		
QC Level:			
STD	7		
	-//	Date/Time	
Relinquished by:		Received by:	
Relinquished by:	( I acip wash	6/22/16/16!14 Received by:	6/23/16 10:58



## Work Order Receipt Checklist

### MT DEQ-Federal Superfund

### H16060430

Login completed by: T	racy L. Lorash		Date F	Received: 6/22/2016
Reviewed by: B	L2000\sdull		Rec	eived by: bjs
Reviewed Date: 7/	/1/2016		Carri	ier name: Hand Del
Shipping container/cooler in goo	od condition?	Yes 🖌	No 🗌	Not Present
Custody seals intact on all shipp	ping container(s)/cooler(s)?	Yes	No 🗌	Not Present 🗹
Custody seals intact on all samp	ple bottles?	Yes	No 🗌	Not Present 🗹
Chain of custody present?		Yes 🗹	No 🗌	
Chain of custody signed when r	elinquished and received?	Yes 🗹	No 🗌	
Chain of custody agrees with sa	ample labels?	Yes	No 🗹	
Samples in proper container/bot	ttle?	Yes 🗹	No 🗌	
Sample containers intact?		Yes	No 🗹	
Sufficient sample volume for inc	dicated test?	Yes 🗹	No 🗌	
All samples received within hold (Exclude analyses that are cons such as pH, DO, Res CI, Sulfite	ling time? sidered field parameters e, Ferrous Iron, etc.)	Yes 🗹	No 🗌	
Temp Blank received in all shipp	ping container(s)/cooler(s)?	Yes 🗹	No 🗌	Not Applicable
Container/Temp Blank temperat	ture:	°C See comments		
Water - VOA vials have zero he	adspace?	Yes	No 🗌	Not Applicable
Water - pH acceptable upon rec	ceipt?	Yes 🗹	No 🗌	Not Applicable

#### **Standard Reporting Procedures:**

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

### **Contact and Corrective Action Comments:**

Sample ID on COC includes parenthesis -ID on bottles does not. Logged in with ID from COC. Sample ID on COC is FC-CFR Duplicate -ID on bottles is FC-CFR Field Duplicate. Logged in with ID from COC. Sample ID on COC is Field Blank #2 (WSC-SBC) -ID on bottles is Field Blank #2. Logged in with ID from COC. Received Field Blank #2 (WSC-SBC) filtered metals bottle with the lid off and some contents spilled. Per Erich, we are to analyze.

Cooler 1 was received at 1.7°C, Cooler 2 at 1.5°C, Cooler 3 at 0.6°C, Cooler 4 at 2.0°C. Samples were received on wet ice. tl 6/22/16
# APPENDIX B3 ANALYTICAL LABORATORY RESULTS 3<sup>RD</sup> QUARTER MONITORING



# ANALYTICAL SUMMARY REPORT

December 28, 2016

MT DEQ-Federal Superfund PO Box 200901 Helena, MT 59620-0901

Work Order: H16090340 Quote ID: H1085

Project Name: CFR Monitoring-474374

Energy Laboratories Inc Helena MT received the following 34 samples for MT DEQ-Federal Superfund on 9/16/2016 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H16090340-001	CFR-116A	09/12/16 8:4	5 09/16/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Total P Water Nitrogen, Total P Water Nitrogen, Total Persulfate Phosphorus, Total Solids, Total Suspended
H16090340-002	Field Blank #1 FC-CFR	09/12/16 10:4	45 09/16/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Mercury, Total Recoverable Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Mercury by CVAA Digestion, Total P Water Nitrogen, Total Persulfate Phosphorus, Total Solids, Total Suspended Subcontracted, Analytics
H16090340-003	FC-CFR	09/12/16 11:	15 09/16/16	Surface Water	Same As Above
H16090340-004	FC-CFR Duplicate	09/12/16 11:	15 09/16/16	Surface Water	Same As Above



# ANALYTICAL SUMMARY REPORT

H16090340-005	LBR-CFR-02	09/12/16 12:45	09/16/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Total P Water Nitrogen, Total Persulfate Phosphorus, Total Solids, Total Suspended
H16090340-006	CFR-34	09/12/16 14:00	09/16/16	Surface Water	Same As Above
H16090340-007	CFR-27H	09/12/16 15:00	09/16/16	Surface Water	Same As Above
H16090340-008	CFR-11F	09/13/16 8:45	09/16/16	Surface Water	Same As Above
H16090340-009	CFR-07D	09/13/16 10:00	09/16/16	Surface Water	Same As Above
H16090340-010	CFR-03A	09/13/16 11:00	09/16/16	Surface Water	Same As Above
H16090340-011	CFR-11F Duplicate	09/13/16 8:45	09/16/16	Surface Water	Same As Above
H16090340-012	Field Blank #2 CFR-11F	09/13/16 8:30	09/16/16	Surface Water	Same As Above
H16090340-013	WSC-SBC	09/13/16 12:00	09/16/16	Surface Water	Same As Above
H16090340-014	SS-25	09/13/16 13:00	09/16/16	Surface Water	Same As Above
H16090340-015	MWB-SBC	09/13/16 13:30	09/16/16	Surface Water	Same As Above
H16090340-016	SBC-P2	09/13/16 13:45	09/16/16	Surface Water	Same As Above
H16090340-017	MCWC-MWB	09/13/16 14:45	09/16/16	Surface Water	Same As Above
H16090340-018	CFR-84F	09/12/16 10:00	09/16/16	Surface Water	Mercury, Total Recoverable Digestion, Mercury by CVAA Subcontracted, Analytics
H16090340-019	Trip Blank	09/12/16 8:45	09/16/16	Surface Water	Subcontracted, Analytics
H16090340-020	CFR-116A Sediment Sieve <0.065mm	09/12/16 8:45	09/16/16	Sediment	Metals by ICP/ICPMS, Total Percent Moisture Digestion, Total Metals Sieve Analysis, Wet
H16090340-021	LBR-CFR-02 Sediment Sieve <0.065mm	09/12/16 12:45	09/16/16	Sediment	Same As Above
H16090340-022	CFR-34 Sediment Sieve <0.065mm	09/12/16 14:00	09/16/16	Sediment	Same As Above
H16090340-023	CFR-27H Sediment Sieve <0.065mm	09/12/16 15:00	09/16/16	Sediment	Same As Above
H16090340-024	CFR-11F Sediment Sieve <0.065mm	09/13/16 8:45	09/16/16	Sediment	Same As Above
H16090340-025	CFR-07D Sediment Sieve <0.065mm	09/13/16 10:00	09/16/16	Sediment	Same As Above
H16090340-026	CFR-03A Sediment Sieve <0.065mm	09/13/16 11:00	09/16/16	Sediment	Same As Above



College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

# ANALYTICAL SUMMARY REPORT

H16090340-027	WSC-SBC Sediment Sieve <0.065mm	09/13/16 12:00 09/16/16	6 Sediment	Same As Above
H16090340-028	SS-25 Sediment Sieve <0.065mm	09/13/16 13:00 09/16/16	6 Sediment	Same As Above
H16090340-029	MWB-SBC Sediment Sieve <0.065mm	09/13/16 13:30 09/16/16	6 Sediment	Same As Above
H16090340-030	MCWC-MWB Sediment Sieve <0.065mm	09/13/16 14:45 09/16/16	6 Sediment	Same As Above
H16090340-031	CFR-27H Duplicate Sediment Sieve <0.065mm	09/12/16 15:00 09/16/16	6 Sediment	Same As Above
H16090340-032	SS-25 Duplicate Sediment Sieve <0.065mm	09/13/16 13:00 09/16/16	6 Sediment	Same As Above
H16090340-033	LC-7.5 Sediment Sieve <0.065mm	09/12/16 16:30 09/16/16	6 Sediment	Same As Above
H16090340-034	RTC-1.5 Sediment Sieve <0.065mm	09/12/16 17:00 09/16/16	6 Sediment	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. 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:

Work Order:	H16090340	CASE NARRATIVE
Project:	CFR Monitoring-474374	Report Date: 10/25/16
CLIENT:	MT DEQ-Federal Superfund	
		Povined Date: 12/28/16
LABORATORIES	www.energylab.com	College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711
ENERGY	Trust our People. Trust our Data.	Billings, MT 800.735.4489 • Casper, WY 888.235.0515

Tests associated with analyst identified as ELI-CA were subcontracted to Energy Laboratories, 2393 Salt Creek Hwy., Casper, WY, EPA Number WY00002 and WY00937.

Sample H16090340-009 (CFR-07D), Dissolved Arsenic, Copper and Zinc was higher than the corresponding Total Recoverable metal. These results were confirmed by duplicate analysis. abc 10/24/16

The report was revised due to an error in the (Total/Ortho)phosphorous result(s). Review of the method indicated there was an error in the preparation of the standards used for the analysis. The standard was prepared at 2x the concentration resulting in sample results half of the true value. The report was revised with the concentration re-calculated according to the concentrations used in the calibration curve. A corrective action has been initiated with preventative actions implemented. The revised report replaces your original report as phosphorous was revised. Abc 12/28/16



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-116ALab ID:H16090340-001Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 09/12/16 08:45 Report Date: 10/25/16

DateReceived: 09/16/16 Revised Date: 12/28/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	10	mg/L		1		A2540 D	09/16/16 13:50 / SR		124 (14410200)_160916	B : 37	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	140	mg/L		4		A2320 B	09/19/16 10:12 / SR		PHSC_101-H_160919	9A : 17	R118760
Bicarbonate as HCO3	170	mg/L		4		A2320 B	09/19/16 10:12 / SR		PHSC_101-H_160919	9A:17	R118760
Chloride	4	mg/L		1		E300.0	09/19/16 11:56 / SR		IC102-H_160918	3A : 37	R118786
Sulfate	54	mg/L		1		E300.0	09/19/16 11:56 / SR		IC102-H_160918	3A : 37	R118786
Hardness as CaCO3	171	mg/L		1		A2340 B	09/21/16 10:38 / sld		WATERCALC_16092	21B : 1	R118852
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.6	mg/L		0.5		A5310 C	09/25/16 23:37 / eli-c		SUB-C215	617 : 8	C_R215617
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:10 / cm		FIA203-HE_160919	9A : 63	R118775
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	09/20/16 14:50 / cm		FIA203-HE_160920	)C : 22	R118834
Nitrogen, Total	0.17	mg/L		0.05		A4500 N-C	09/20/16 10:46 / cm 0	9/20/16 08:34	FIA203-HE_160920	)A : 38	34490
Phosphorus, Total as P	0.017	mg/L		0.003		E365.1	09/21/16 14:00 / cm 0	9/21/16 13:27	FIA202-HE_16092	IA : 25	34525
METALS, DISSOLVED											
Arsenic	0.006	mg/L		0.001		E200.8	09/20/16 17:36 / dck		ICPMS204-B_160920/	A : 125	R118827
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 17:36 / dck		ICPMS204-B_160920/	A : 125	R118827
Copper	0.002	mg/L		0.001		E200.8	09/20/16 17:36 / dck		ICPMS204-B_160920/	A : 125	R118827
Lead	ND	mg/L		0.0003		E200.8	09/20/16 17:36 / dck		ICPMS204-B_160920/	A : 125	R118827
Zinc	ND	mg/L		0.008		E200.8	09/20/16 17:36 / dck		ICPMS204-B_160920/	A : 125	R118827
METALS, TOTAL RECOVERABLE											
Arsenic	0.006	mg/L		0.001		E200.8	09/20/16 17:40 / dck 0	9/19/16 08:30	ICPMS204-B_160920/	A:126	34474
Cadmium	0.00003	mg/L		0.00003		E200.8	09/20/16 17:40 / dck 0	9/19/16 08:30	ICPMS204-B_160920/	A:126	34474
Calcium	48	mg/L		1		E200.7	09/20/16 09:55 / sld 0	9/19/16 08:30	ICP2-HE_160919	OC:35	34474
Copper	0.004	mg/L		0.001		E200.8	09/20/16 17:40 / dck 0	9/19/16 08:30	ICPMS204-B_160920/	A : 126	34474
Lead	0.0006	mg/L		0.0003		E200.8	09/20/16 17:40 / dck 0	9/19/16 08:30	ICPMS204-B_160920/	A : 126	34474

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4	74374		
Client Sample ID:	CFR-116A	Collection Date	: 09/12/16 08:45	DateReceived:	09/16/16	
Lab ID:	H16090340-001	Report Date	10/25/16	Revised Date:	12/28/16	
Matrix:	Surface Water					
					Run	

Analyses	Resu	lt Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID (	Order	BatchID	
METALS, TOTAL RECOVERABLE												
Magnesium	13	mg/L		1		E200.7	09/20/16 09:55 / sld	09/19/16 08:30	ICP2-HE_160919C :	: 35	34474	
Potassium	3	mg/L		1		E200.7	09/20/16 09:55 / sld	09/19/16 08:30	ICP2-HE_160919C :	: 35	34474	
Sodium	10	mg/L		1		E200.7	09/20/16 09:55 / sld	09/19/16 08:30	ICP2-HE_160919C :	: 35	34474	
Zinc	ND	mg/L		0.008		E200.8	09/20/16 17:40 / dck	09/19/16 08:30	ICPMS204-B_160920A :	126	34474	



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:Field Blank #1 FC-CFRLab ID:H16090340-002Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 09/12/16 10:45 Report Date: 10/25/16 **DateReceived:** 09/16/16 **Revised Date:** 12/28/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	ND	mg/L	D	2		A2540 D	09/16/16 13:50 / SR		124 (14410200)_16091	6B : 38	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	09/19/16 10:18 / SR		PHSC_101-H_16091	9A : 19	R118760
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	09/19/16 10:18 / SR		PHSC_101-H_16091	9A : 19	R118760
Chloride	ND	mg/L		1		E300.0	09/19/16 12:07 / SR		IC102-H_16091	8A : 38	R118786
Sulfate	ND	mg/L		1		E300.0	09/19/16 12:07 / SR		IC102-H_16091	8A : 38	R118786
Hardness as CaCO3	ND	mg/L		1		A2340 B	09/21/16 10:38 / sld		WATERCALC_1609	921B : 2	R118852
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	ND	mg/L		0.5		A5310 C	09/25/16 23:58 / eli-c		SUB-C21	5617 : 9	C_R215617
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:11 / cm		FIA203-HE_16091	9A : 64	R118775
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	09/20/16 14:51 / cm		FIA203-HE_16092	0C : 23	R118834
Nitrogen, Total	ND	mg/L		0.05		A4500 N-C	09/20/16 10:52 / cm	09/20/16 08:36	FIA203-HE_16092	20A : 43	34491
Phosphorus, Total as P	0.004	mg/L		0.003		E365.1	09/21/16 14:03 / cm	09/21/16 13:27	FIA202-HE_16092	21A : 28	34525
METALS, DISSOLVED											
Arsenic	ND	mg/L		0.001		E200.8	09/20/16 17:43 / dck		ICPMS204-B_160920	A : 127	R118827
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 17:43 / dck		ICPMS204-B_160920	A : 127	R118827
Copper	ND	mg/L		0.001		E200.8	09/20/16 17:43 / dck		ICPMS204-B_160920	A : 127	R118827
Lead	ND	mg/L		0.0003		E200.8	09/20/16 17:43 / dck		ICPMS204-B_160920	A : 127	R118827
Zinc	ND	mg/L		0.008		E200.8	09/20/16 17:43 / dck		ICPMS204-B_160920	A : 127	R118827
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.001		E200.8	09/20/16 17:56 / dck	09/19/16 08:30	ICPMS204-B_160920	A : 131	34474
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 17:56 / dck	09/19/16 08:30	ICPMS204-B_160920	A : 131	34474
Calcium	ND	mg/L		1		E200.7	09/20/16 09:59 / sld	09/19/16 08:30	ICP2-HE_16091	9C : 36	34474
Copper	ND	mg/L		0.001		E200.8	09/20/16 17:56 / dck	09/19/16 08:30	ICPMS204-B_160920	A : 131	34474
Lead	ND	mg/L		0.0003		E200.8	09/20/16 17:56 / dck	09/19/16 08:30	ICPMS204-B_160920	A : 131	34474

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-474	4374		
Client Sample ID:	Field Blank #1 FC-CFR	Collection Date	: 09/12/16 10:45	DateReceived: 0	9/16/16	
Lab ID:	H16090340-002	Report Date	: 10/25/16	Revised Date: 1	2/28/16	
Matrix:	Surface Water					

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	ND	mg/L		1		E200.7	09/20/16 09:59 / sld	09/19/16 08:30	ICP2-HE_160919	9C:36	34474
Mercury	ND	mg/L		5E-06		E245.1	09/22/16 19:51 / rgk	09/21/16 13:19	HGCV202-H_16092	2A : 62	34512
Potassium	ND	mg/L		1		E200.7	09/20/16 09:59 / sld	09/19/16 08:30	ICP2-HE_160919	9C:36	34474
Sodium	ND	mg/L		1		E200.7	09/20/16 09:59 / sld	09/19/16 08:30	ICP2-HE_160919	9C:36	34474
Zinc	ND	mg/L		800.0		E200.8	09/20/16 17:56 / dck	09/19/16 08:30	ICPMS204-B_160920	A : 131	34474



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:FC-CFRLab ID:H16090340-003Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 09/12/16 11:15 Report Date: 10/25/16 DateReceived: 09/16/16 Revised Date: 12/28/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	3	mg/L		1		A2540 D	09/16/16 13:51 / SR		124 (14410200)_1609	16B : 40	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	230	mg/L		4		A2320 B	09/19/16 10:24 / SR		PHSC_101-H_1609	919A : 21	R118760
Bicarbonate as HCO3	270	mg/L		4		A2320 B	09/19/16 10:24 / SR		PHSC_101-H_1609	19A : 21	R118760
Chloride	5	mg/L		1		E300.0	09/19/16 12:18 / SR		IC102-H_1609	18A : 39	R118786
Sulfate	33	mg/L		1		E300.0	09/19/16 12:18 / SR		IC102-H_1609	18A : 39	R118786
Hardness as CaCO3	229	mg/L		1		A2340 B	09/21/16 10:38 / sld		WATERCALC_160	921B : 3	R118852
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.3	mg/L		0.5		A5310 C	09/26/16 00:17 / eli-c		SUB-C215	5617 : 10	C_R215617
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:12 / cm		FIA203-HE_1609	919A : 65	R118775
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	09/20/16 14:52 / cm		FIA203-HE_1609	20C : 24	R118834
Nitrogen, Total	0.21	mg/L		0.05		A4500 N-C	09/20/16 10:55 / cm	09/20/16 08:36	FIA203-HE_1609	20A : 46	34491
Phosphorus, Total as P	0.056	mg/L		0.003		E365.1	09/21/16 14:06 / cm	09/21/16 13:27	FIA202-HE_1609	21A : 31	34525
METALS, DISSOLVED											
Arsenic	0.008	mg/L		0.001		E200.8	09/20/16 17:59 / dck		ICPMS204-B_16092	20A : 132	R118827
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 17:59 / dck		ICPMS204-B_16092	20A : 132	R118827
Copper	ND	mg/L		0.001		E200.8	09/20/16 17:59 / dck		ICPMS204-B_16092	20A : 132	R118827
Lead	ND	mg/L		0.0003		E200.8	09/20/16 17:59 / dck		ICPMS204-B_16092	20A : 132	R118827
Zinc	ND	mg/L		0.008		E200.8	09/20/16 17:59 / dck		ICPMS204-B_16092	20A : 132	R118827
METALS, TOTAL RECOVERABLE											
Arsenic	0.008	mg/L		0.001		E200.8	09/20/16 18:03 / dck	09/19/16 08:30	ICPMS204-B_16092	20A : 133	34474
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 18:03 / dck	09/19/16 08:30	ICPMS204-B_16092	20A : 133	34474
Calcium	62	mg/L		1		E200.7	09/20/16 10:02 / sld	09/19/16 08:30	ICP2-HE_1609	19C : 37	34474
Copper	ND	mg/L		0.001		E200.8	09/20/16 18:03 / dck	09/19/16 08:30	ICPMS204-B_16092	20A : 133	34474
Lead	0.0004	mg/L		0.0003		E200.8	09/20/16 18:03 / dck	09/19/16 08:30	ICPMS204-B_16092	20A : 133	34474

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project: CFR Monitor	ing-474374
Client Sample ID:	FC-CFR	Collection Date: 09/12/16 11	:15 DateReceived: 09/16/16
Lab ID:	H16090340-003	Report Date: 10/25/16	Revised Date: 12/28/16
Matrix:	Surface Water		
			Bun

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVER	ABLE											
Magnesium	18	mg/L		1		E200.7	09/20/16 10:02 / sld	09/19/16 08:30	ICP2-HE_160919	9C : 37	34474	
Mercury	0.000012	mg/L	5	5E-06		E245.1	09/22/16 19:53 / rgk	09/21/16 13:19	HGCV202-H_160922	2A : 63	34512	
Potassium	5	mg/L		1		E200.7	09/20/16 10:02 / sld	09/19/16 08:30	ICP2-HE_160919	9C:37	34474	
Sodium	15	mg/L		1		E200.7	09/20/16 10:02 / sld	09/19/16 08:30	ICP2-HE_160919	9C : 37	34474	
Zinc	ND	mg/L	(	0.008		E200.8	09/20/16 18:03 / dck	09/19/16 08:30	ICPMS204-B_160920/	A : 133	34474	



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:FC-CFR DuplicateLab ID:H16090340-004Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 09/12/16 11:15 Report Date: 10/25/16 DateReceived: 09/16/16 Revised Date: 12/28/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	2	mg/L		1		A2540 D	09/16/16 13:51 / SR		124 (14410200)_1609	16B : 41	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	230	mg/L		4		A2320 B	09/19/16 10:31 / SR		PHSC_101-H_1609	19A : 23	R118760
Bicarbonate as HCO3	270	mg/L		4		A2320 B	09/19/16 10:31 / SR		PHSC_101-H_1609	19A : 23	R118760
Chloride	5	mg/L		1		E300.0	09/19/16 12:29 / SR		IC102-H_1609	18A : 40	R118786
Sulfate	33	mg/L		1		E300.0	09/19/16 12:29 / SR		IC102-H_1609	18A : 40	R118786
Hardness as CaCO3	231	mg/L		1		A2340 B	09/21/16 10:38 / sld		WATERCALC_160	921B : 4	R118852
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.9	mg/L		0.5		A5310 C	09/26/16 00:33 / eli-c		SUB-C215	5617 : 11	C_R215617
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:13 / cm		FIA203-HE_1609	19A : 66	R118775
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	09/20/16 14:56 / cm		FIA203-HE_1609	20C : 27	R118834
Nitrogen, Total	0.22	mg/L		0.05		A4500 N-C	09/20/16 10:57 / cm	09/20/16 08:36	FIA203-HE_1609	20A : 47	34491
Phosphorus, Total as P	0.056	mg/L		0.003		E365.1	09/21/16 14:07 / cm	09/21/16 13:27	FIA202-HE_1609	21A : 32	34525
METALS, DISSOLVED											
Arsenic	0.009	mg/L		0.001		E200.8	09/21/16 17:09 / dck		ICPMS204-B_1609	21C : 71	R118878
Cadmium	ND	mg/L		0.00003		E200.8	09/21/16 17:09 / dck		ICPMS204-B_1609	21C : 71	R118878
Copper	ND	mg/L		0.001		E200.8	09/21/16 17:09 / dck		ICPMS204-B_1609	21C : 71	R118878
Lead	ND	mg/L		0.0003		E200.8	09/21/16 17:09 / dck		ICPMS204-B_1609	21C : 71	R118878
Zinc	ND	mg/L		0.008		E200.8	09/21/16 17:09 / dck		ICPMS204-B_1609	21C : 71	R118878
METALS, TOTAL RECOVERABLE											
Arsenic	0.008	mg/L		0.001		E200.8	09/20/16 18:09 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 135	34474
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 18:09 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 135	34474
Calcium	63	mg/L		1		E200.7	09/20/16 10:06 / sld	09/19/16 08:30	ICP2-HE_1609	19C : 38	34474
Copper	0.001	mg/L		0.001		E200.8	09/20/16 18:09 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 135	34474
Lead	0.0004	mg/L		0.0003		E200.8	09/20/16 18:09 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 135	34474

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client Sample ID: EC.CER Duplicate Date 20/16/16	
Conection Date. 03/12/10 11:10 Date. 03/12/10 Date. 03/10 Date. 03/12/10 Date. 03/12/10 Date. 03/12/10	
Lab ID: H16090340-004 Report Date: 10/25/16 Revised Date: 12/28/16	
Matrix: Surface Water	

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	18	mg/L		1		E200.7	09/20/16 10:06 / sld	09/19/16 08:30	ICP2-HE_160919	C:38	34474
Mercury	0.000014	mg/L	:	5E-06		E245.1	09/22/16 19:56 / rgk	09/21/16 13:19	HGCV202-H_160922	A:64	34512
Potassium	6	mg/L		1		E200.7	09/20/16 10:06 / sld	09/19/16 08:30	ICP2-HE_160919	C:38	34474
Sodium	15	mg/L		1		E200.7	09/20/16 10:06 / sld	09/19/16 08:30	ICP2-HE_160919	C:38	34474
Zinc	ND	mg/L		0.008		E200.8	09/20/16 18:09 / dck	09/19/16 08:30	ICPMS204-B 160920A	: 135	34474



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:LBR-CFR-02Lab ID:H16090340-005Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 09/12/16 12:45 Report Date: 10/25/16 DateReceived: 09/16/16 Revised Date: 12/28/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	2	mg/L		1		A2540 D	09/16/16 13:51 / SR		124 (14410200)_16091	6B : 42	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	140	mg/L		4		A2320 B	09/19/16 10:39 / SR		PHSC_101-H_16091	9A : 25	R118760
Bicarbonate as HCO3	170	mg/L		4		A2320 B	09/19/16 10:39 / SR		PHSC_101-H_16091	9A : 25	R118760
Chloride	2	mg/L		1		E300.0	09/19/16 12:40 / SR		IC102-H_16091	8A : 41	R118786
Sulfate	13	mg/L		1		E300.0	09/19/16 12:40 / SR		IC102-H_16091	8A : 41	R118786
Hardness as CaCO3	135	mg/L		1		A2340 B	09/21/16 10:38 / sld		WATERCALC_1609	21B : 5	R118852
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.6	mg/L		0.5		A5310 C	09/26/16 02:04 / eli-c		SUB-C2156	17 : 15	C_R215617
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:17 / cm		FIA203-HE_16091	9A : 69	R118775
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	09/20/16 15:00 / cm		FIA203-HE_16092	0C : 30	R118834
Nitrogen, Total	0.09	mg/L		0.05		A4500 N-C	09/20/16 10:58 / cm	09/20/16 08:36	FIA203-HE_16092	0A : 48	34491
Phosphorus, Total as P	0.023	mg/L		0.003		E365.1	09/21/16 14:08 / cm	09/21/16 13:27	FIA202-HE_16092	1A : 33	34525
METALS, DISSOLVED											
Arsenic	0.005	mg/L		0.001		E200.8	09/20/16 18:23 / dck		ICPMS204-B_160920	A : 139	R118827
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 18:23 / dck		ICPMS204-B_160920	A : 139	R118827
Copper	ND	mg/L		0.001		E200.8	09/20/16 18:23 / dck		ICPMS204-B_160920	A : 139	R118827
Lead	ND	mg/L		0.0003		E200.8	09/20/16 18:23 / dck		ICPMS204-B_160920	A : 139	R118827
Zinc	ND	mg/L		0.008		E200.8	09/20/16 18:23 / dck		ICPMS204-B_160920	A : 139	R118827
METALS, TOTAL RECOVERABLE											
Arsenic	0.005	mg/L		0.001		E200.8	09/20/16 18:26 / dck	09/19/16 08:30	ICPMS204-B_160920	A : 140	34474
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 18:26 / dck	09/19/16 08:30	ICPMS204-B_160920	A : 140	34474
Calcium	39	mg/L		1		E200.7	09/20/16 10:10 / sld	09/19/16 08:30	ICP2-HE_16091	9C : 39	34474
Copper	ND	mg/L		0.001		E200.8	09/20/16 18:26 / dck	09/19/16 08:30	ICPMS204-B_160920	A : 140	34474
Lead	ND	mg/L		0.0003		E200.8	09/20/16 18:26 / dck	09/19/16 08:30	ICPMS204-B_160920	A : 140	34474

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Proje	ct: CFR Monitoring-	-474374		
Client Sample ID:	LBR-CFR-02	Collection Da	ate: 09/12/16 12:45	DateReceived:	09/16/16	
Lab ID:	H16090340-005	Report Da	ate: 10/25/16	Revised Date:	12/28/16	
Matrix:	Surface Water					
					Run	

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVERABLE												
Magnesium	9	mg/L		1		E200.7	09/20/16 10:10 / sld (	09/19/16 08:30	ICP2-HE_160919C	: 39	34474	
Potassium	2	mg/L		1		E200.7	09/20/16 10:10 / sld (	09/19/16 08:30	ICP2-HE_160919C	: 39	34474	
Sodium	7	mg/L		1		E200.7	09/20/16 10:10 / sld (	09/19/16 08:30	ICP2-HE_160919C	: 39	34474	
Zinc	ND	mg/L		0.008		E200.8	09/20/16 18:26 / dck (	09/19/16 08:30	ICPMS204-B 160920A:	140	34474	



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

MT DEQ-Federal Superfund **Client:** Client Sample ID: CFR-34 Collection Date: 09/12/16 14:00 Lab ID: H16090340-006 Report Date: 10/25/16 Surface Water Matrix:

Project: CFR Monitoring-474374

DateReceived: 09/16/16

**Revised Date: 12/28/16** 

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	1	mg/L		1		A2540 D	09/16/16 13:52 / SR		124 (14410200)_1609	16B : 43	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	180	mg/L		4		A2320 B	09/19/16 10:45 / SR		PHSC_101-H_1609	19A : 27	R118760
Bicarbonate as HCO3	200	mg/L		4		A2320 B	09/19/16 10:45 / SR		PHSC_101-H_1609	19A : 27	R118760
Chloride	11	mg/L		1		E300.0	09/20/16 09:31 / SR		IC102-H_1609	20A : 17	R118837
Sulfate	74	mg/L		1		E300.0	09/26/16 15:31 / SR		IC103-H_1609	26A : 24	R118991
Hardness as CaCO3	194	mg/L		1		A2340 B	09/21/16 10:38 / sld		WATERCALC_160	921B : 6	R118852
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.5	mg/L		0.5		A5310 C	09/26/16 02:20 / eli-c		SUB-C215	5617 : 16	C_R215617
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:20 / cm		FIA203-HE_1609	19A : 72	R118775
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	09/20/16 15:01 / cm		FIA203-HE_1609	20C : 31	R118834
Nitrogen, Total	0.21	mg/L		0.05		A4500 N-C	09/20/16 10:59 / cm	09/20/16 08:36	FIA203-HE_1609	20A : 49	34491
Phosphorus, Total as P	0.026	mg/L		0.003		E365.1	09/21/16 14:09 / cm	09/21/16 13:27	FIA202-HE_1609	21A : 34	34525
METALS, DISSOLVED											
Arsenic	0.016	mg/L		0.001		E200.8	09/20/16 18:29 / dck		ICPMS204-B_16092	0A : 141	R118827
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 18:29 / dck		ICPMS204-B_16092	0A : 141	R118827
Copper	0.007	mg/L		0.001		E200.8	09/20/16 18:29 / dck		ICPMS204-B_16092	0A : 141	R118827
Lead	ND	mg/L		0.0003		E200.8	09/20/16 18:29 / dck		ICPMS204-B_16092	0A : 141	R118827
Zinc	ND	mg/L		0.008		E200.8	09/20/16 18:29 / dck		ICPMS204-B_16092	0A : 141	R118827
METALS, TOTAL RECOVERABLE											
Arsenic	0.012	mg/L		0.001		E200.8	09/20/16 18:32 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 142	34474
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 18:32 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 142	34474
Calcium	56	mg/L		1		E200.7	09/20/16 10:14 / sld	09/19/16 08:30	ICP2-HE_1609	19C : 40	34474
Copper	0.007	mg/L		0.001		E200.8	09/20/16 18:32 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 142	34474
Lead	ND	mg/L		0.0003		E200.8	09/20/16 18:32 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 142	34474

Report RL - Analyte reporting limit. Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-47	4374		
Client Sample ID:	CFR-34	Collection Date	: 09/12/16 14:00	DateReceived:	09/16/16	
Lab ID:	H16090340-006	Report Date	: 10/25/16	Revised Date:	12/28/16	
Matrix:	Surface Water					
					Run	

Analyses	Resu	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID Or	der BatchID
METALS, TOTAL RECOVERABLE										
Magnesium	13	mg/L		1		E200.7	09/20/16 10:14 / sld	09/19/16 08:30	ICP2-HE_160919C : 4	0 34474
Potassium	4	mg/L		1		E200.7	09/20/16 10:14 / sld	09/19/16 08:30	ICP2-HE_160919C : 4	0 34474
Sodium	18	mg/L		1		E200.7	09/20/16 10:14 / sld	09/19/16 08:30	ICP2-HE_160919C : 4	0 34474
Zinc	ND	mg/L		0.008		E200.8	09/20/16 18:32 / dck	09/19/16 08:30	ICPMS204-B 160920A:14	2 34474



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-27HLab ID:H16090340-007Matrix:Surface Water

**Project:** CFR Monitoring-474374

Collection Date: 09/12/16 15:00 Report Date: 10/25/16 DateReceived: 09/16/16 Revised Date: 12/28/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	2	mg/L		1		A2540 D	09/16/16 13:52 / SR		124 (14410200)_1609	916B : 44	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	170	mg/L		4		A2320 B	09/19/16 10:52 / SR		PHSC_101-H_1609	919A : 29	R118760
Bicarbonate as HCO3	200	mg/L		4		A2320 B	09/19/16 10:52 / SR		PHSC_101-H_1609	919A : 29	R118760
Chloride	10	mg/L		1		E300.0	09/20/16 09:42 / SR		IC102-H_1609	920A : 18	R118837
Sulfate	85	mg/L		1		E300.0	09/20/16 09:42 / SR		IC102-H_1609	920A : 18	R118837
Hardness as CaCO3	224	mg/L		1		A2340 B	09/21/16 10:38 / sld		WATERCALC_160	)921B : 7	R118852
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.3	mg/L		0.5		A5310 C	09/26/16 02:36 / eli-c	;	SUB-C21	5617 : 17	C_R215617
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:22 / cm		FIA203-HE_1609	919A : 73	R118775
Nitrogen, Nitrate+Nitrite as N	0.16	mg/L		0.02		E353.2	09/20/16 15:02 / cm		FIA203-HE_1609	920C : 32	R118834
Nitrogen, Total	0.35	mg/L		0.05		A4500 N-C	09/20/16 11:00 / cm	09/20/16 08:36	FIA203-HE_1609	920A : 50	34491
Phosphorus, Total as P	0.013	mg/L		0.003		E365.1	09/21/16 14:10 / cm	09/21/16 13:27	FIA202-HE_1609	921A : 35	34525
METALS, DISSOLVED											
Arsenic	0.015	mg/L		0.001		E200.8	09/20/16 18:36 / dck		ICPMS204-B_16092	20A : 143	R118827
Cadmium	0.00004	mg/L		0.00003		E200.8	09/20/16 18:36 / dck		ICPMS204-B_16092	20A : 143	R118827
Copper	0.008	mg/L		0.001		E200.8	09/20/16 18:36 / dck		ICPMS204-B_16092	20A : 143	R118827
Lead	ND	mg/L		0.0003		E200.8	09/20/16 18:36 / dck		ICPMS204-B_16092	20A : 143	R118827
Zinc	ND	mg/L		0.008		E200.8	09/20/16 18:36 / dck		ICPMS204-B_16092	20A : 143	R118827
METALS, TOTAL RECOVERABLE											
Arsenic	0.013	mg/L		0.001		E200.8	09/20/16 18:39 / dck	09/19/16 08:30	ICPMS204-B_16092	20A : 144	34474
Cadmium	0.00004	mg/L		0.00003		E200.8	09/20/16 18:39 / dck	09/19/16 08:30	ICPMS204-B_16092	20A : 144	34474
Calcium	66	mg/L		1		E200.7	09/20/16 10:18 / sld	09/19/16 08:30	ICP2-HE_1609	919C : 41	34474
Copper	0.010	mg/L		0.001		E200.8	09/20/16 18:39 / dck	09/19/16 08:30	ICPMS204-B_16092	20A : 144	34474
Lead	0.0004	mg/L		0.0003		E200.8	09/20/16 18:39 / dck	09/19/16 08:30	ICPMS204-B_16092	20A : 144	34474

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-47	4374		
Client Sample ID:	CFR-27H	Collection Date	: 09/12/16 15:00	DateReceived:	09/16/16	
Lab ID:	H16090340-007	Report Date	: 10/25/16	Revised Date:	12/28/16	
Matrix:	Surface Water					
					Run	

Analyses	Resu	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID (	Order	BatchID	
METALS, TOTAL RECOVERABLE												
Magnesium	14	mg/L		1		E200.7	09/20/16 10:18 / sld (	09/19/16 08:30	ICP2-HE_160919C	41	34474	
Potassium	4	mg/L		1		E200.7	09/20/16 10:18 / sld (	09/19/16 08:30	ICP2-HE_160919C	41	34474	
Sodium	19	mg/L		1		E200.7	09/20/16 10:18 / sld (	09/19/16 08:30	ICP2-HE_160919C	41	34474	
Zinc	ND	mg/L		0.008		E200.8	09/20/16 18:39 / dck (	09/19/16 08:30	ICPMS204-B 160920A :	144	34474	



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

MT DEQ-Federal Superfund Project: CFR Monitoring-474374 **Client:** Client Sample ID: CFR-11F Collection Date: 09/13/16 08:45 Lab ID: H16090340-008 Report Date: 10/25/16 Surface Water Matrix:

DateReceived: 09/16/16 **Revised Date: 12/28/16** 

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	1	mg/L		1		A2540 D	09/16/16 13:52 / SR		124 (14410200)_16091	I6B : 45	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	160	mg/L		4		A2320 B	09/19/16 10:59 / SR		PHSC_101-H_16091	I9A : 31	R118760
Bicarbonate as HCO3	200	mg/L		4		A2320 B	09/19/16 10:59 / SR		PHSC_101-H_16091	I9A : 31	R118760
Chloride	8	mg/L		1		E300.0	09/20/16 09:54 / SR		IC102-H_16092	20A : 19	R118837
Sulfate	116	mg/L		1		E300.0	09/20/16 09:54 / SR		IC102-H_16092	20A : 19	R118837
Hardness as CaCO3	253	mg/L		1		A2340 B	09/21/16 10:38 / sld		WATERCALC_1609	921B : 8	R118852
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.7	mg/L		0.5		A5310 C	09/26/16 02:52 / eli-c	;	SUB-C2156	617 : 18	C_R215617
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:23 / cm		FIA203-HE_16091	I9A : 74	R118775
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	09/20/16 15:03 / cm		FIA203-HE_16092	20C : 33	R118834
Nitrogen, Total	0.19	mg/L		0.05		A4500 N-C	09/20/16 11:01 / cm	09/20/16 08:36	FIA203-HE_16092	20A : 51	34491
Phosphorus, Total as P	0.018	mg/L		0.003		E365.1	09/21/16 14:11 / cm	09/21/16 13:27	FIA202-HE_16092	21A : 36	34525
METALS, DISSOLVED											
Arsenic	0.017	mg/L		0.001		E200.8	09/20/16 18:42 / dck		ICPMS204-B_160920	)A : 145	R118827
Cadmium	ND	mg/L	(	0.00003		E200.8	09/20/16 18:42 / dck		ICPMS204-B_160920	)A : 145	R118827
Copper	0.005	mg/L		0.001		E200.8	09/20/16 18:42 / dck		ICPMS204-B_160920	)A : 145	R118827
Lead	ND	mg/L		0.0003		E200.8	09/20/16 18:42 / dck		ICPMS204-B_160920	)A : 145	R118827
Zinc	ND	mg/L		0.008		E200.8	09/20/16 18:42 / dck		ICPMS204-B_160920	)A : 145	R118827
METALS, TOTAL RECOVERABLE											
Arsenic	0.016	mg/L		0.001		E200.8	09/20/16 18:45 / dck	09/19/16 08:30	ICPMS204-B_160920	)A : 146	34474
Cadmium	ND	mg/L	(	0.00003		E200.8	09/20/16 18:45 / dck	09/19/16 08:30	ICPMS204-B_160920	)A : 146	34474
Calcium	72	mg/L		1		E200.7	09/20/16 10:21 / sld	09/19/16 08:30	ICP2-HE_16091	9C : 42	34474
Copper	0.007	mg/L		0.001		E200.8	09/20/16 18:45 / dck	09/19/16 08:30	ICPMS204-B_160920	)A : 146	34474
Lead	ND	mg/L		0.0003		E200.8	09/20/16 18:45 / dck	09/19/16 08:30	ICPMS204-B_160920	)A : 146	34474

Report RL - Analyte reporting limit. Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-47	4374	
Client Sample ID:	CFR-11F	Collection Date:	09/13/16 08:45	DateReceived: 09/16	6/16
Lab ID:	H16090340-008	Report Date:	10/25/16	Revised Date: 12/28	8/16
Matrix:	Surface Water				
					Run

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID Or	der	BatchID	
METALS, TOTAL RECOVERABLE												
Magnesium	18	mg/L		1		E200.7	09/20/16 10:21 / sld	09/19/16 08:30	ICP2-HE_160919C : 4	12	34474	
Potassium	3	mg/L		1		E200.7	09/20/16 10:21 / sld	09/19/16 08:30	ICP2-HE_160919C : 4	42	34474	
Sodium	15	mg/L		1		E200.7	09/20/16 10:21 / sld	09/19/16 08:30	ICP2-HE_160919C : 4	42	34474	
Zinc	ND	mg/L		800.0		E200.8	09/20/16 18:45 / dck	09/19/16 08:30	ICPMS204-B 160920A:14	46	34474	



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-07DLab ID:H16090340-009Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 09/13/16 10:00 Report Date: 10/25/16 DateReceived: 09/16/16 Revised Date: 12/28/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	ND	mg/L		1		A2540 D	09/16/16 13:52 / SR		124 (14410200)_1609	16B : 46	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	140	mg/L		4		A2320 B	09/19/16 11:04 / SR		PHSC_101-H_1609	19A : 33	R118760
Bicarbonate as HCO3	170	mg/L		4		A2320 B	09/19/16 11:04 / SR		PHSC_101-H_1609	19A : 33	R118760
Chloride	8	mg/L		1		E300.0	09/20/16 10:05 / SR		IC102-H_1609	20A : 20	R118837
Sulfate	112	mg/L		1		E300.0	09/20/16 10:05 / SR		IC102-H_1609	20A : 20	R118837
Hardness as CaCO3	225	mg/L		1		A2340 B	09/21/16 10:38 / sld		WATERCALC_160	921B : 9	R118852
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.4	mg/L		0.5		A5310 C	09/26/16 03:07 / eli-c		SUB-C215	617 : 19	C_R215617
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:24 / cm		FIA203-HE_1609	19A : 75	R118775
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	09/20/16 15:04 / cm		FIA203-HE_1609	20C : 34	R118834
Nitrogen, Total	0.18	mg/L		0.05		A4500 N-C	09/20/16 11:03 / cm	09/20/16 08:36	FIA203-HE_1609	20A : 52	34491
Phosphorus, Total as P	0.019	mg/L		0.003		E365.1	09/21/16 14:12 / cm	09/21/16 13:27	FIA202-HE_1609	21A : 37	34525
METALS, DISSOLVED											
Arsenic	0.015	mg/L		0.001		E200.8	10/19/16 19:18 / dck		ICPMS204-B_16101	9B : 105	R119631
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 18:49 / dck		ICPMS204-B_16092	0A:147	R118827
Copper	0.014	mg/L		0.001		E200.8	09/20/16 18:49 / dck		ICPMS204-B_16092	0A : 147	R118827
Lead	ND	mg/L		0.0003		E200.8	09/20/16 18:49 / dck		ICPMS204-B_16092	0A : 147	R118827
Zinc	0.011	mg/L		0.008		E200.8	09/20/16 18:49 / dck		ICPMS204-B_16092	0A : 147	R118827
METALS, TOTAL RECOVERABLE											
Arsenic	0.014	mg/L		0.001		E200.8	09/20/16 18:52 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 148	34474
Cadmium	0.00004	mg/L		0.00003		E200.8	09/20/16 18:52 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 148	34474
Calcium	65	mg/L		1		E200.7	09/20/16 10:32 / sld	09/19/16 08:30	ICP2-HE_1609	19C:45	34474
Copper	0.006	mg/L		0.001		E200.8	09/20/16 18:52 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 148	34474
Lead	ND	mg/L		0.0003		E200.8	09/20/16 18:52 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 148	34474

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-47	4374		
Client Sample ID:	CFR-07D	Collection Date:	09/13/16 10:00	DateReceived:	09/16/16	
Lab ID:	H16090340-009	Report Date:	10/25/16	Revised Date:	12/28/16	
Matrix:	Surface Water					
					Run	

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVERABLE												
Magnesium	15	mg/L		1		E200.7	09/20/16 10:32 / sld 0	09/19/16 08:30	ICP2-HE_1609190	: 45	34474	
Potassium	3	mg/L		1		E200.7	09/20/16 10:32 / sld 0	09/19/16 08:30	ICP2-HE_1609190	: 45	34474	
Sodium	14	mg/L		1		E200.7	09/20/16 10:32 / sld 0	09/19/16 08:30	ICP2-HE_1609190	: 45	34474	
Zinc	ND	mg/L		0.008		E200.8	09/20/16 18:52 / dck 0	09/19/16 08:30	ICPMS204-B_160920A	: 148	34474	



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-03ALab ID:H16090340-010Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 09/13/16 11:00 Report Date: 10/25/16 DateReceived: 09/16/16 Revised Date: 12/28/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	ND	mg/L		1		A2540 D	09/16/16 13:53 / SR		124 (14410200)_16091	6B : 47	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	09/19/16 11:10 / SR		PHSC_101-H_16091	9A : 35	R118760
Bicarbonate as HCO3	140	mg/L		4		A2320 B	09/19/16 11:10 / SR		PHSC_101-H_16091	9A : 35	R118760
Chloride	10	mg/L		1		E300.0	09/20/16 10:16 / SR		IC102-H_16092	0A : 21	R118837
Sulfate	91	mg/L		1		E300.0	09/20/16 10:16 / SR		IC102-H_16092	0A : 21	R118837
Hardness as CaCO3	193	mg/L		1		A2340 B	09/21/16 12:14 / sld		WATERCALC_16092	21C : 1	R118859
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.7	mg/L		0.5		A5310 C	09/26/16 03:23 / eli-c		SUB-C2156	17 : 20	C_R215617
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:25 / cm		FIA203-HE_16091	9A : 76	R118775
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	09/20/16 15:06 / cm		FIA203-HE_160920	DC : 35	R118834
Nitrogen, Total	0.20	mg/L		0.05		A4500 N-C	09/20/16 11:04 / cm	09/20/16 08:36	FIA203-HE_16092	0A : 53	34491
Phosphorus, Total as P	0.038	mg/L		0.003		E365.1	09/21/16 14:13 / cm	09/21/16 13:27	FIA202-HE_16092	1A : 38	34525
METALS, DISSOLVED											
Arsenic	0.017	mg/L		0.001		E200.8	09/20/16 19:05 / dck		ICPMS204-B_160920	A : 152	R118827
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 19:05 / dck		ICPMS204-B_160920	A : 152	R118827
Copper	0.003	mg/L		0.001		E200.8	09/20/16 19:05 / dck		ICPMS204-B_160920	A : 152	R118827
Lead	ND	mg/L		0.0003		E200.8	09/20/16 19:05 / dck		ICPMS204-B_160920	A : 152	R118827
Zinc	ND	mg/L		0.008		E200.8	09/20/16 19:05 / dck		ICPMS204-B_160920	A : 152	R118827
METALS, TOTAL RECOVERABLE											
Arsenic	0.016	mg/L		0.001		E200.8	09/20/16 19:08 / dck	09/19/16 08:30	ICPMS204-B_160920	A : 153	34474
Cadmium	0.00004	mg/L		0.00003		E200.8	09/20/16 19:08 / dck	09/19/16 08:30	ICPMS204-B_160920	A : 153	34474
Calcium	56	mg/L		1		E200.7	09/21/16 09:45 / sld	09/19/16 08:30	ICP2-HE_16092	1A : 26	34474
Copper	0.004	mg/L		0.001		E200.8	09/20/16 19:08 / dck	09/19/16 08:30	ICPMS204-B_160920	A : 153	34474
Lead	ND	mg/L		0.0003		E200.8	09/20/16 19:08 / dck	09/19/16 08:30	ICPMS204-B_160920	A : 153	34474

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Projec	t: CFR Monitoring-4	474374		
Client Sample ID:	CFR-03A	Collection Da	te: 09/13/16 11:00	DateReceived:	09/16/16	
Lab ID:	H16090340-010	Report Da	<b>te:</b> 10/25/16	Revised Date:	12/28/16	
Matrix:	Surface Water					
					Bun	

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	13	mg/L		1		E200.8	09/20/16 19:08 / dck (	09/19/16 08:30	ICPMS204-B_160920A	: 153	34474
Potassium	2	mg/L		1		E200.8	09/20/16 19:08 / dck (	09/19/16 08:30	ICPMS204-B_160920A	: 153	34474
Sodium	13	mg/L		1		E200.8	09/20/16 19:08 / dck (	09/19/16 08:30	ICPMS204-B_160920A	: 153	34474
Zinc	ND	mg/L		0.008		E200.8	09/20/16 19:08 / dck (	09/19/16 08:30	ICPMS204-B_160920A	: 153	34474



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## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

MT DEQ-Federal Superfund **Client:** Client Sample ID: CFR-11F Duplicate Lab ID: H16090340-011 Surface Water Matrix:

Project: CFR Monitoring-474374

Collection Date: 09/13/16 08:45 Report Date: 10/25/16

DateReceived: 09/16/16 **Revised Date: 12/28/16** 

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	1	mg/L		1		A2540 D	09/16/16 13:53 / SR		124 (14410200)_1609	16B : 48	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	160	mg/L		4		A2320 B	09/19/16 11:16 / SR		PHSC_101-H_1609	19A : 37	R118760
Bicarbonate as HCO3	200	mg/L		4		A2320 B	09/19/16 11:16 / SR		PHSC_101-H_1609	19A : 37	R118760
Chloride	7	mg/L		1		E300.0	09/20/16 10:27 / SR		IC102-H_16092	20A : 22	R118837
Sulfate	116	mg/L		1		E300.0	09/20/16 10:27 / SR		IC102-H_16092	20A : 22	R118837
Hardness as CaCO3	243	mg/L		1		A2340 B	09/21/16 10:38 / sld		WATERCALC_16092	21B : 10	R118852
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.6	mg/L		0.5		A5310 C	09/26/16 03:39 / eli-c		SUB-C215	617 : 21	C_R215617
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:26 / cm		FIA203-HE_1609	19A : 77	R118775
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	09/20/16 15:07 / cm		FIA203-HE_16092	20C : 36	R118834
Nitrogen, Total	0.18	mg/L		0.05		A4500 N-C	09/20/16 11:05 / cm	09/20/16 08:36	FIA203-HE_16092	20A : 54	34491
Phosphorus, Total as P	0.033	mg/L		0.003		E365.1	09/21/16 14:14 / cm	09/21/16 13:27	FIA202-HE_16092	21A : 39	34525
METALS, DISSOLVED											
Arsenic	0.017	mg/L		0.001		E200.8	09/20/16 19:25 / dck		ICPMS204-B_160920	DA : 158	R118827
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 19:25 / dck		ICPMS204-B_160920	DA : 158	R118827
Copper	0.005	mg/L		0.001		E200.8	09/20/16 19:25 / dck		ICPMS204-B_160920	DA : 158	R118827
Lead	ND	mg/L		0.0003		E200.8	09/20/16 19:25 / dck		ICPMS204-B_160920	DA : 158	R118827
Zinc	ND	mg/L		0.008		E200.8	09/20/16 19:25 / dck		ICPMS204-B_160920	DA : 158	R118827
METALS, TOTAL RECOVERABLE											
Arsenic	0.015	mg/L		0.001		E200.8	09/20/16 19:28 / dck	09/19/16 08:30	ICPMS204-B_160920	DA : 159	34474
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 19:28 / dck	09/19/16 08:30	ICPMS204-B_160920	DA : 159	34474
Calcium	69	mg/L		1		E200.7	09/20/16 10:55 / sld	09/19/16 08:30	ICP2-HE_1609 <sup>-</sup>	19C : 51	34474
Copper	0.007	mg/L		0.001		E200.8	09/20/16 19:28 / dck	09/19/16 08:30	ICPMS204-B_160920	DA : 159	34474
Lead	ND	mg/L		0.0003		E200.8	09/20/16 19:28 / dck	09/19/16 08:30	ICPMS204-B_160920	DA : 159	34474

RL - Analyte reporting limit. Report Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project: CFR Monitoring-474374	
Client Sample ID:	CFR-11F Duplicate	Collection Date: 09/13/16 08:45 DateReceived: 09	)/16/16
Lab ID:	H16090340-011	Report Date: 10/25/16 Revised Date: 12	2/28/16
Matrix:	Surface Water		
			Run

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	17	mg/L		1		E200.7	09/20/16 10:55 / sld	09/19/16 08:30	ICP2-HE_160919C	: 51	34474
Potassium	3	mg/L		1		E200.7	09/20/16 10:55 / sld	09/19/16 08:30	ICP2-HE_160919C	: 51	34474
Sodium	15	mg/L		1		E200.7	09/20/16 10:55 / sld	09/19/16 08:30	ICP2-HE_160919C	: 51	34474
Zinc	ND	mg/L		0.008		E200.8	09/20/16 19:28 / dck	09/19/16 08:30	ICPMS204-B_160920A	159	34474



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

MT DEQ-Federal Superfund **Client:** Client Sample ID: Field Blank #2 CFR-11F Lab ID: H16090340-012 Surface Water Matrix:

Project: CFR Monitoring-474374

Collection Date: 09/13/16 08:30 Report Date: 10/25/16

DateReceived: 09/16/16 **Revised Date: 12/28/16** 

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	ND	mg/L	D	2		A2540 D	09/16/16 13:54 / SR		124 (14410200)_1609	16B : 51	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	09/19/16 11:22 / SR		PHSC_101-H_1609	19A : 39	R118760
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	09/19/16 11:22 / SR		PHSC_101-H_1609	19A : 39	R118760
Chloride	ND	mg/L		1		E300.0	09/20/16 10:38 / SR		IC102-H_1609	20A : 23	R118837
Sulfate	ND	mg/L		1		E300.0	09/20/16 10:38 / SR		IC102-H_1609	20A : 23	R118837
Hardness as CaCO3	ND	mg/L		1		A2340 B	09/21/16 10:38 / sld		WATERCALC_1609	21B : 11	R118852
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	ND	mg/L		0.5		A5310 C	09/26/16 03:54 / eli-c		SUB-C215	617 : 22	C_R215617
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:28 / cm		FIA203-HE_1609	19A : 78	R118775
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	09/20/16 15:08 / cm		FIA203-HE_1609	20C : 37	R118834
Nitrogen, Total	ND	mg/L		0.05		A4500 N-C	09/20/16 11:09 / cm	09/20/16 08:36	FIA203-HE_1609	20A : 57	34491
Phosphorus, Total as P	ND	mg/L		0.003		E365.1	09/22/16 13:14 / cm	09/22/16 09:01	FIA202-HE_1609	22A : 18	34531
METALS, DISSOLVED											
Arsenic	ND	mg/L		0.001		E200.8	09/20/16 19:31 / dck		ICPMS204-B_16092	0A : 160	R118827
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 19:31 / dck		ICPMS204-B_16092	0A : 160	R118827
Copper	ND	mg/L		0.001		E200.8	09/20/16 19:31 / dck		ICPMS204-B_16092	0A : 160	R118827
Lead	ND	mg/L		0.0003		E200.8	09/20/16 19:31 / dck		ICPMS204-B_16092	0A : 160	R118827
Zinc	ND	mg/L		0.008		E200.8	09/20/16 19:31 / dck		ICPMS204-B_16092	0A : 160	R118827
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.001		E200.8	09/20/16 19:44 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 164	34474
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 19:44 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 164	34474
Calcium	ND	mg/L		1		E200.7	09/20/16 10:58 / sld	09/19/16 08:30	ICP2-HE_1609	19C : 52	34474
Copper	ND	mg/L		0.001		E200.8	09/20/16 19:44 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 164	34474
Lead	ND	mg/L		0.0003		E200.8	09/20/16 19:44 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 164	34474

Report RL - Analyte reporting limit. MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project: CFR Monitoring-474374		
Client Sample ID:	Field Blank #2 CFR-11F	Collection Date: 09/13/16 08:30 DateReceived:	09/16/16	
Lab ID:	H16090340-012	Report Date: 10/25/16 Revised Date:	12/28/16	
Matrix:	Surface Water			
			Pup	

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	ND	mg/L		1		E200.7	09/20/16 10:58 / sld	09/19/16 08:30	ICP2-HE_160919	C : 52	34474
Potassium	ND	mg/L		1		E200.7	09/20/16 10:58 / sld	09/19/16 08:30	ICP2-HE_160919	C : 52	34474
Sodium	ND	mg/L		1		E200.7	09/20/16 10:58 / sld	09/19/16 08:30	ICP2-HE_160919	C : 52	34474
Zinc	ND	mg/L		0.008		E200.8	09/20/16 19:44 / dck	09/19/16 08:30	ICPMS204-B_160920A	: 164	34474



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:WSC-SBCLab ID:H16090340-013Matrix:Surface Water

**Project:** CFR Monitoring-474374

Collection Date: 09/13/16 12:00 Report Date: 10/25/16

Revised D

**DateReceived:** 09/16/16 **Revised Date:** 12/28/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	ND	mg/L		1		A2540 D	09/16/16 13:54 / SR		124 (14410200)_1609	16B : 53	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	140	mg/L		4		A2320 B	09/19/16 11:28 / SR		PHSC_101-H_1609	19A : 41	R118760
Bicarbonate as HCO3	170	mg/L		4		A2320 B	09/19/16 11:28 / SR		PHSC_101-H_16097	19A : 41	R118760
Chloride	1	mg/L		1		E300.0	09/20/16 10:49 / SR		IC102-H_16092	20A : 24	R118837
Sulfate	46	mg/L		1		E300.0	09/20/16 10:49 / SR		IC102-H_16092	20A : 24	R118837
Hardness as CaCO3	176	mg/L		1		A2340 B	09/21/16 10:38 / sld		WATERCALC_16092	21B : 12	R118852
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	0.9	mg/L		0.5		A5310 C	09/26/16 04:09 / eli-c		SUB-C215	617 : 23	C_R215617
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:29 / cm		FIA203-HE_1609 <sup>2</sup>	19A : 79	R118775
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	09/20/16 15:09 / cm		FIA203-HE_16092	20C : 38	R118834
Nitrogen, Total	ND	mg/L		0.05		A4500 N-C	09/20/16 11:12 / cm (	09/20/16 08:36	FIA203-HE_16092	20A : 60	34491
Phosphorus, Total as P	ND	mg/L		0.003		E365.1	09/22/16 13:17 / cm (	09/22/16 09:01	FIA202-HE_16092	22A : 21	34531
METALS, DISSOLVED											
Arsenic	0.006	mg/L		0.001		E200.8	09/20/16 19:58 / dck		ICPMS204-B_160920	DA : 168	R118827
Cadmium	ND	mg/L	(	0.00003		E200.8	09/20/16 19:58 / dck		ICPMS204-B_160920	DA : 168	R118827
Copper	0.002	mg/L		0.001		E200.8	09/20/16 19:58 / dck		ICPMS204-B_160920	DA : 168	R118827
Lead	ND	mg/L		0.0003		E200.8	09/20/16 19:58 / dck		ICPMS204-B_160920	DA : 168	R118827
Zinc	ND	mg/L		0.008		E200.8	09/20/16 19:58 / dck		ICPMS204-B_160920	DA : 168	R118827
METALS, TOTAL RECOVERABLE											
Arsenic	0.006	mg/L		0.001		E200.8	09/20/16 20:01 / dck (	09/19/16 08:30	ICPMS204-B_160920	DA : 169	34474
Cadmium	0.00027	mg/L		0.00003		E200.8	09/20/16 20:01 / dck (	09/19/16 08:30	ICPMS204-B_160920	DA : 169	34474
Calcium	53	mg/L		1		E200.7	09/20/16 11:02 / sld (	09/19/16 08:30	ICP2-HE_16092	19C : 53	34474
Copper	0.004	mg/L		0.001		E200.8	09/20/16 20:01 / dck (	09/19/16 08:30	ICPMS204-B_160920	DA : 169	34474
Lead	ND	mg/L		0.0003		E200.8	09/20/16 20:01 / dck (	09/19/16 08:30	ICPMS204-B_160920	DA : 169	34474

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project	CFR Monitoring-47	4374		
Client Sample ID:	WSC-SBC	Collection Date	: 09/13/16 12:00	DateReceived:	09/16/16	
Lab ID:	H16090340-013	Report Date	: 10/25/16	Revised Date:	12/28/16	
Matrix:	Surface Water					
					Run	

Analyses	Resu	lt Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVERABLE												
Magnesium	10	mg/L		1		E200.7	09/20/16 11:02 / sld	09/19/16 08:30	ICP2-HE_160919C	: 53	34474	
Potassium	2	mg/L		1		E200.7	09/20/16 11:02 / sld	09/19/16 08:30	ICP2-HE_160919C	: 53	34474	
Sodium	4	mg/L		1		E200.7	09/20/16 11:02 / sld	09/19/16 08:30	ICP2-HE_160919C	: 53	34474	
Zinc	ND	mg/L		0.008		E200.8	09/20/16 20:01 / dck	09/19/16 08:30	ICPMS204-B 160920A :	169	34474	



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:SS-25Lab ID:H16090340-014Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 09/13/16 13:00 Report Date: 10/25/16 DateReceived: 09/16/16 Revised Date: 12/28/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	2	mg/L		1		A2540 D	09/16/16 13:55 / SR		124 (14410200)_1609	16B : 54	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	09/19/16 11:34 / SR		PHSC_101-H_1609	19A : 43	R118760
Bicarbonate as HCO3	91	mg/L		4		A2320 B	09/19/16 11:34 / SR		PHSC_101-H_1609	19A : 43	R118760
Chloride	15	mg/L		1		E300.0	09/20/16 11:00 / SR		IC102-H_1609	20A : 25	R118837
Sulfate	114	mg/L		1		E300.0	09/20/16 11:00 / SR		IC102-H_1609	20A : 25	R118837
Hardness as CaCO3	189	mg/L		1		A2340 B	09/21/16 10:38 / sld		WATERCALC_1609	21B : 13	R118852
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	4.3	mg/L		0.5		A5310 C	09/27/16 00:54 / eli-c	:	SUB-C21	5648 : 6	C_R215648
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:30 / cm		FIA203-HE_1609	19A : 80	R118775
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	09/20/16 15:13 / cm		FIA203-HE_1609	20C : 41	R118834
Nitrogen, Total	0.35	mg/L		0.05		A4500 N-C	09/20/16 11:13 / cm	09/20/16 08:36	FIA203-HE_1609	20A : 61	34491
Phosphorus, Total as P	0.076	mg/L		0.003		E365.1	09/22/16 13:18 / cm	09/22/16 09:01	FIA202-HE_1609	22A : 22	34531
METALS, DISSOLVED											
Arsenic	0.027	mg/L		0.001		E200.8	09/20/16 20:04 / dck		ICPMS204-B_16092	0A : 170	R118827
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 20:04 / dck		ICPMS204-B_16092	0A : 170	R118827
Copper	0.003	mg/L		0.001		E200.8	09/20/16 20:04 / dck		ICPMS204-B_16092	0A : 170	R118827
Lead	ND	mg/L		0.0003		E200.8	09/20/16 20:04 / dck		ICPMS204-B_16092	0A : 170	R118827
Zinc	ND	mg/L		0.008		E200.8	09/20/16 20:04 / dck		ICPMS204-B_16092	0A : 170	R118827
METALS, TOTAL RECOVERABLE											
Arsenic	0.026	mg/L		0.001		E200.8	09/20/16 20:08 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 171	34474
Cadmium	0.00003	mg/L		0.00003		E200.8	09/20/16 20:08 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 171	34474
Calcium	53	mg/L		1		E200.7	09/20/16 11:06 / sld	09/19/16 08:30	ICP2-HE_1609	19C : 54	34474
Copper	0.003	mg/L		0.001		E200.8	09/20/16 20:08 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 171	34474
Lead	ND	mg/L		0.0003		E200.8	09/20/16 20:08 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 171	34474

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-47	4374	
Client Sample ID:	SS-25	Collection Date:	: 09/13/16 13:00	DateReceived:	09/16/16
Lab ID:	H16090340-014	Report Date:	10/25/16	Revised Date:	12/28/16
Matrix:	Surface Water				
					Run

Analyses	Resu	lt Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVERABLE												
Magnesium	14	mg/L		1		E200.7	09/20/16 11:06 / sld 0	09/19/16 08:30	ICP2-HE_160919C	: 54	34474	
Potassium	3	mg/L		1		E200.7	09/20/16 11:06 / sld 0	09/19/16 08:30	ICP2-HE_160919C	: 54	34474	
Sodium	19	mg/L		1		E200.7	09/20/16 11:06 / sld 0	09/19/16 08:30	ICP2-HE_160919C	: 54	34474	
Zinc	ND	mg/L		800.0		E200.8	09/20/16 20:08 / dck (	09/19/16 08:30	ICPMS204-B 160920A :	171	34474	



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:MWB-SBCLab ID:H16090340-015Matrix:Surface Water

**Project:** CFR Monitoring-474374

Collection Date: 09/13/16 13:30 Report Date: 10/25/16 DateReceived: 09/16/16 Revised Date: 12/28/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	1	mg/L		1		A2540 D	09/16/16 13:55 / SR		124 (14410200)_1609	16B : 55	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	09/19/16 11:40 / SR		PHSC_101-H_1609	19A : 45	R118760
Bicarbonate as HCO3	140	mg/L		4		A2320 B	09/19/16 11:40 / SR		PHSC_101-H_1609	19A : 45	R118760
Chloride	5	mg/L		1		E300.0	09/20/16 11:11 / SR		IC102-H_1609	20A : 26	R118837
Sulfate	133	mg/L		1		E300.0	09/20/16 11:11 / SR		IC102-H_1609	20A : 26	R118837
Hardness as CaCO3	223	mg/L		1		A2340 B	09/20/16 11:17 / abc		CALC_16092	1B : 421	R118880
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.0	mg/L		0.5		A5310 C	09/27/16 01:10 / eli-c		SUB-C21	5648 : 7	C_R215648
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:34 / cm		FIA203-HE_1609	19A : 83	R118775
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	09/20/16 15:16 / cm		FIA203-HE_1609	20C : 44	R118834
Nitrogen, Total	0.13	mg/L		0.05		A4500 N-C	09/20/16 11:14 / cm	09/20/16 08:36	FIA203-HE_1609	20A : 62	34491
Phosphorus, Total as P	0.017	mg/L		0.003		E365.1	09/22/16 13:19 / cm	09/22/16 09:01	FIA202-HE_1609	22A : 23	34531
METALS, DISSOLVED											
Arsenic	0.018	mg/L		0.001		E200.8	09/20/16 20:11 / dck		ICPMS204-B_16092	0A : 172	R118827
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 20:11 / dck		ICPMS204-B_16092	0A : 172	R118827
Copper	0.001	mg/L		0.001		E200.8	09/20/16 20:11 / dck		ICPMS204-B_16092	0A : 172	R118827
Lead	ND	mg/L		0.0003		E200.8	09/20/16 20:11 / dck		ICPMS204-B_16092	0A : 172	R118827
Zinc	ND	mg/L		0.008		E200.8	09/20/16 20:11 / dck		ICPMS204-B_16092	0A : 172	R118827
METALS, TOTAL RECOVERABLE											
Arsenic	0.018	mg/L		0.001		E200.8	09/20/16 20:14 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 173	34474
Cadmium	ND	mg/L		0.00003		E200.8	09/21/16 17:22 / dck	09/19/16 08:30	ICPMS204-B_1609	21C : 75	34474
Calcium	65	mg/L		1		E200.7	09/20/16 11:17 / sld	09/19/16 08:30	ICP2-HE_1609	19C : 57	34474
Copper	0.002	mg/L		0.001		E200.8	09/20/16 20:14 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 173	34474
Lead	0.0004	mg/L		0.0003		E200.8	09/20/16 20:14 / dck	09/19/16 08:30	ICPMS204-B_16092	0A : 173	34474

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-47	74374		
Client Sample ID:	MWB-SBC	Collection Date	: 09/13/16 13:30	DateReceived:	09/16/16	
Lab ID:	H16090340-015	Report Date	10/25/16	Revised Date:	12/28/16	
Matrix:	Surface Water					
					Run	

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID O	rder	BatchID	
METALS, TOTAL RECOVERABLE												
Magnesium	15	mg/L		1		E200.7	09/20/16 11:17 / sld	09/19/16 08:30	ICP2-HE_160919C :	57	34474	
Potassium	3	mg/L		1		E200.7	09/20/16 11:17 / sld	09/19/16 08:30	ICP2-HE_160919C :	57	34474	
Sodium	12	mg/L		1		E200.7	09/20/16 11:17 / sld	09/19/16 08:30	ICP2-HE_160919C :	57	34474	
Zinc	0.008	mg/L		800.0		E200.8	09/20/16 20:14 / dck	09/19/16 08:30	ICPMS204-B_160920A:1	73	34474	


## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:SBC-P2Lab ID:H16090340-016Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 09/13/16 13:45 Report Date: 10/25/16 DateReceived: 09/16/16 Revised Date: 12/28/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	2	mg/L		1		A2540 D	09/16/16 13:55 / SR		124 (14410200)_16091	6B : 56	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	80	mg/L		4		A2320 B	09/19/16 11:46 / SR		PHSC_101-H_16091	9A : 47	R118760
Bicarbonate as HCO3	47	mg/L		4		A2320 B	09/19/16 11:46 / SR		PHSC_101-H_16091	9A : 47	R118760
Chloride	26	mg/L		1		E300.0	09/20/16 12:18 / SR		IC102-H_16092	0A : 32	R118837
Sulfate	95	mg/L		1		E300.0	09/20/16 12:18 / SR		IC102-H_16092	0A : 32	R118837
Hardness as CaCO3	152	mg/L		1		A2340 B	09/20/16 11:21 / abc		CALC_160921	B : 432	R118880
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	6.0	mg/L		0.5		A5310 C	09/27/16 01:25 / eli-c	:	SUB-C215	648 : 8	C_R215648
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:37 / cm		FIA203-HE_16091	9A : 86	R118775
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	09/20/16 15:17 / cm		FIA203-HE_16092	0C : 45	R118834
Nitrogen, Total	0.61	mg/L		0.05		A4500 N-C	09/20/16 11:16 / cm	09/20/16 08:36	FIA203-HE_16092	0A : 63	34491
Phosphorus, Total as P	0.129	mg/L		0.003		E365.1	09/22/16 13:20 / cm	09/22/16 09:01	FIA202-HE_16092	2A : 24	34531
METALS, DISSOLVED											
Arsenic	0.037	mg/L		0.001		E200.8	09/20/16 20:17 / dck		ICPMS204-B_160920	A : 174	R118827
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 20:17 / dck		ICPMS204-B_160920	A : 174	R118827
Copper	0.003	mg/L		0.001		E200.8	09/20/16 20:17 / dck		ICPMS204-B_160920	A : 174	R118827
Lead	ND	mg/L		0.0003		E200.8	09/20/16 20:17 / dck		ICPMS204-B_160920	A : 174	R118827
Zinc	ND	mg/L		0.008		E200.8	09/20/16 20:17 / dck		ICPMS204-B_160920	A : 174	R118827
METALS, TOTAL RECOVERABLE											
Arsenic	0.035	mg/L		0.001		E200.8	09/20/16 20:21 / dck	09/19/16 08:30	ICPMS204-B_160920	A : 175	34474
Cadmium	0.00004	mg/L		0.00003		E200.8	09/21/16 17:25 / dck	09/19/16 08:30	ICPMS204-B_16092	1C : 76	34474
Calcium	41	mg/L		1		E200.7	09/20/16 11:21 / sld	09/19/16 08:30	ICP2-HE_16091	9C : 58	34474
Copper	0.004	mg/L		0.001		E200.8	09/20/16 20:21 / dck	09/19/16 08:30	ICPMS204-B_160920	A : 175	34474
Lead	0.0004	mg/L		0.0003		E200.8	09/20/16 20:21 / dck	09/19/16 08:30	ICPMS204-B_160920	A : 175	34474

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4	74374		
Client Sample ID:	SBC-P2	Collection Date	: 09/13/16 13:45	DateReceived:	09/16/16	
Lab ID:	H16090340-016	Report Date	10/25/16	Revised Date:	12/28/16	
Matrix:	Surface Water					
					Run	

Analyses	Resu	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID	
METALS, TOTAL RECOVERABLE												
Magnesium	12	mg/L		1		E200.7	09/20/16 11:21 / sld (	09/19/16 08:30	ICP2-HE_160919C	: 58	34474	
Potassium	4	mg/L		1		E200.7	09/20/16 11:21 / sld (	09/19/16 08:30	ICP2-HE_160919C	: 58	34474	
Sodium	25	mg/L		1		E200.7	09/20/16 11:21 / sld (	09/19/16 08:30	ICP2-HE_160919C	: 58	34474	
Zinc	ND	mg/L		0.008		E200.8	09/20/16 20:21 / dck (	09/19/16 08:30	ICPMS204-B 160920A:	175	34474	



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:MCWC-MWBLab ID:H16090340-017Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 09/13/16 14:45 Report Date: 10/25/16 DateReceived: 09/16/16 Revised Date: 12/28/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	4	mg/L		1		A2540 D	09/16/16 13:55 / SR		124 (14410200)_16091	6B : 57	TSS160916A
INORGANICS											
Alkalinity, Total as CaCO3	110	mg/L		4		A2320 B	09/19/16 11:59 / SR		PHSC_101-H_16091	9A : 51	R118760
Bicarbonate as HCO3	130	mg/L		4		A2320 B	09/19/16 11:59 / SR		PHSC_101-H_16091	9A : 51	R118760
Chloride	2	mg/L		1		E300.0	09/20/16 12:29 / SR		IC102-H_16092	20A : 33	R118837
Sulfate	24	mg/L		1		E300.0	09/20/16 12:29 / SR		IC102-H_16092	20A : 33	R118837
Hardness as CaCO3	111	mg/L		1		A2340 B	09/21/16 10:38 / sld		WATERCALC_16092	21B : 14	R118852
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.7	mg/L		0.5		A5310 C	09/27/16 02:25 / eli-c		SUB-C2156	648 : 10	C_R215648
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	09/19/16 11:38 / cm		FIA203-HE_16091	9A : 87	R118775
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	09/20/16 15:19 / cm		FIA203-HE_16092	0C : 46	R118834
Nitrogen, Total	0.14	mg/L		0.05		A4500 N-C	09/20/16 11:17 / cm	09/20/16 08:36	FIA203-HE_16092	20A : 64	34491
Phosphorus, Total as P	0.014	mg/L		0.003		E365.1	09/22/16 13:21 / cm	09/22/16 09:01	FIA202-HE_16092	2A : 25	34531
METALS, DISSOLVED											
Arsenic	0.016	mg/L		0.001		E200.8	09/20/16 20:24 / dck		ICPMS204-B_160920	A : 176	R118827
Cadmium	ND	mg/L		0.00003		E200.8	09/20/16 20:24 / dck		ICPMS204-B_160920	A : 176	R118827
Copper	0.002	mg/L		0.001		E200.8	09/20/16 20:24 / dck		ICPMS204-B_160920	A : 176	R118827
Lead	ND	mg/L		0.0003		E200.8	09/20/16 20:24 / dck		ICPMS204-B_160920	A : 176	R118827
Zinc	ND	mg/L		0.008		E200.8	09/20/16 20:24 / dck		ICPMS204-B_160920	A : 176	R118827
METALS, TOTAL RECOVERABLE											
Arsenic	0.016	mg/L		0.001		E200.8	09/20/16 20:50 / dck	09/19/16 09:14	ICPMS204-B_160920	A : 184	34478
Cadmium	0.00004	mg/L		0.00003		E200.8	09/20/16 20:50 / dck	09/19/16 09:14	ICPMS204-B_160920	A : 184	34478
Calcium	31	mg/L		1		E200.7	09/20/16 11:32 / sld	09/19/16 09:14	ICP2-HE_16091	9C : 61	34478
Copper	0.004	mg/L		0.001		E200.8	09/20/16 20:50 / dck	09/19/16 09:14	ICPMS204-B_160920	A : 184	34478
Lead	0.0013	mg/L		0.0003		E200.8	09/20/16 20:50 / dck	09/19/16 09:14	ICPMS204-B_160920	)A : 184	34478

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project	CFR Monitoring-47	74374		
Client Sample ID:	MCWC-MWB	Collection Date	: 09/13/16 14:45	DateReceived:	09/16/16	
Lab ID:	H16090340-017	Report Date	: 10/25/16	Revised Date:	12/28/16	
Matrix:	Surface Water					
					Run	

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID C	Order	BatchID	
METALS, TOTAL RECOVERABLE												_
Magnesium	8	mg/L		1		E200.7	09/20/16 11:32 / sld	09/19/16 09:14	ICP2-HE_160919C :	61	34478	
Potassium	1	mg/L		1		E200.7	09/20/16 11:32 / sld	09/19/16 09:14	ICP2-HE_160919C :	61	34478	
Sodium	9	mg/L		1		E200.7	09/20/16 11:32 / sld	09/19/16 09:14	ICP2-HE_160919C :	61	34478	
Zinc	ND	mg/L		0.008		E200.8	09/20/16 20:50 / dck	09/19/16 09:14	ICPMS204-B 160920A: 1	184	34478	



#### LABORATORY ANALYTICAL REPORT

Client: MT DEQ-Federal Superfund Proje								Project: (	ct: CFR Monitoring-474374				
<b>Client Sample ID:</b>	CFR-84F						Colle	ction Date:	09/12/16	5 10:00 D	ateReceived:	09/16/16	
Lab ID:	H16090340-018						Re	eport Date:	10/25/16	; F	Revised Date:	12/28/16	
Matrix:	Surface Water												
Analyses		Result	Units	Qualifiers	RL	MDL	Method	Analysis I	Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL	RECOVERABLE												
Mercury		0.000023	mg/L		5E-06		E245.1	09/22/16 19	9:59 / rgk	09/21/16 13:19	HGCV202-H_1	160922A : 65	34512





## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	CFR-116A Sediment Sieve <0.065mm	Collection Date:	09/12/16 08:45	DateReceived:	09/16/16
Lab ID:	H16090340-020	Report Date:	10/25/16	<b>Revised Date:</b>	12/28/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	79.4	wt%		0.2		D2974	09/28/16 10:37 / cbt		RYING OVEN 2_1	60927B : 1	R119039
SIEVE ANALYSIS No. 230 (63 um), Passed	5.3	wt%-wet		0.1		SSSA 15-2	09/29/16 12:26 / swj		MISC SOILS_1	60929A : 1	R119082
3050 EXTRACTABLE METALS											
Arsenic	37	mg/kg-dry		1		SW6020	09/28/16 13:55 / dck 0	9/26/16 15:16	ICPMS204-B_16	0928B : 22	34561
Cadmium	3.7	mg/kg-dry		0.8		SW6020	09/28/16 13:55 / dck 0	9/26/16 15:16	ICPMS204-B_16	0928B : 22	34561
Copper	412	mg/kg-dry		5		SW6010B	09/28/16 14:26 / sld 0	9/26/16 15:16	ICP2-HE_16	0928C : 68	34561
Lead	139	mg/kg-dry		5		SW6020	09/28/16 13:55 / dck 0	9/26/16 15:16	ICPMS204-B_16	0928B : 22	34561
Zinc	932	mg/kg-dry		8		SW6010B	09/28/16 14:26 / sld 0	9/26/16 15:16	ICP2-HE_16	0928C : 68	34561



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	LBR-CFR-02 Sediment Sieve <0.065mm	Collection Date:	09/12/16 12:45	DateReceived:	09/16/16
Lab ID:	H16090340-021	Report Date:	10/25/16	<b>Revised Date:</b>	12/28/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	60.9	wt%		0.2		D2974	09/28/16 10:37 / cbt		RYING OVEN 2_16	0927B : 2	R119039
SIEVE ANALYSIS No. 230 (63 um), Passed	1.2	wt%-wet		0.1		SSSA 15-2	09/29/16 12:26 / swj		MISC SOILS_16	0929A : 2	R119082
3050 EXTRACTABLE METALS											
Arsenic	26	mg/kg-dry		1		SW6020	09/28/16 14:12 / dck 0	9/26/16 15:29	ICPMS204-B_160	928B : 27	34561
Cadmium	2.4	mg/kg-dry		0.4		SW6020	09/28/16 14:12 / dck 0	9/26/16 15:29	ICPMS204-B_160	928B : 27	34561
Copper	71	mg/kg-dry		5		SW6010B	09/28/16 14:45 / sld 0	9/26/16 15:29	ICP2-HE_160	928C : 73	34561
Lead	137	mg/kg-dry		5		SW6020	09/28/16 14:12 / dck 0	9/26/16 15:29	ICPMS204-B_160	928B : 27	34561
Zinc	161	mg/kg-dry		5		SW6010B	09/28/16 14:45 / sld 0	9/26/16 15:29	ICP2-HE_160	928C : 73	34561



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-474	374	
Client Sample ID:	CFR-34 Sediment Sieve <0.065mm	Collection Date:	09/12/16 14:00	DateReceived:	09/16/16
Lab ID:	H16090340-022	Report Date:	10/25/16	Revised Date:	12/28/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	68.6	wt%		0.2		D2974	09/28/16 10:37 / cbt		RYING OVEN 2_16	0927B : 3	R119039
SIEVE ANALYSIS No. 230 (63 um), Passed	2.3	wt%-wet		0.1		SSSA 15-2	09/29/16 12:26 / swj		MISC SOILS_16	0929A : 3	R119082
3050 EXTRACTABLE METALS											
Arsenic	127	mg/kg-dry		1		SW6020	09/28/16 14:15 / dck 0	9/26/16 15:29	ICPMS204-B_160	928B : 28	34561
Cadmium	12.6	mg/kg-dry		0.5		SW6020	09/28/16 14:15 / dck 0	9/26/16 15:29	ICPMS204-B_160	928B : 28	34561
Copper	1760	mg/kg-dry		5		SW6010B	09/28/16 14:56 / sld 0	9/26/16 15:29	ICP2-HE_160	928C : 76	34561
Lead	313	mg/kg-dry		5		SW6020	09/28/16 14:15 / dck 0	9/26/16 15:29	ICPMS204-B_160	928B : 28	34561
Zinc	1600	mg/kg-dry		5		SW6010B	09/28/16 14:56 / sld 0	9/26/16 15:29	ICP2-HE_160	928C : 76	34561



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	574	
Client Sample ID:	CFR-27H Sediment Sieve <0.065mm	Collection Date:	09/12/16 15:00	DateReceived:	09/16/16
Lab ID:	H16090340-023	Report Date:	10/25/16	Revised Date:	12/28/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	60.9	wt%		0.2		D2974	09/28/16 10:37 / cbt		RYING OVEN 2_1	60927B : 4	R119039
SIEVE ANALYSIS No. 230 (63 um), Passed	1.3	wt%-wet		0.1		SSSA 15-2	09/29/16 12:26 / swj		MISC SOILS_1	60929A : 4	R119082
3050 EXTRACTABLE METALS											
Arsenic	169	mg/kg-dry		1		SW6020	09/28/16 14:18 / dck (	09/26/16 15:29	ICPMS204-B_16	0928B : 29	34561
Cadmium	5.9	mg/kg-dry		0.4		SW6020	09/28/16 14:18 / dck (	09/26/16 15:29	ICPMS204-B_16	0928B : 29	34561
Copper	1270	mg/kg-dry		5		SW6010B	09/28/16 14:59 / sld 0	09/26/16 15:29	ICP2-HE_16	0928C : 77	34561
Lead	345	mg/kg-dry		5		SW6020	09/28/16 14:18 / dck 0	09/26/16 15:29	ICPMS204-B_16	0928B : 29	34561
Zinc	1260	mg/kg-dry		5		SW6010B	09/28/16 14:59 / sld 0	09/26/16 15:29	ICP2-HE_16	0928C : 77	34561



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	CFR-11F Sediment Sieve <0.065mm	Collection Date:	09/13/16 08:45	DateReceived:	09/16/16
Lab ID:	H16090340-024	Report Date:	10/25/16	Revised Date:	12/28/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	64.4	wt%		0.2		D2974	09/28/16 10:37 / cbt		RYING OVEN 2_160	927B : 5	R119039
SIEVE ANALYSIS No. 230 (63 um), Passed	2.0	wt%-wet		0.1		SSSA 15-2	09/29/16 12:26 / swj		MISC SOILS_160	929A : 5	R119082
3050 EXTRACTABLE METALS											
Arsenic	191	mg/kg-dry		1		SW6020	09/28/16 14:21 / dck (	9/26/16 15:29	ICPMS204-B_1609	28B : 30	34561
Cadmium	9.1	mg/kg-dry		0.5		SW6020	09/28/16 14:21 / dck (	9/26/16 15:29	ICPMS204-B_1609	28B : 30	34561
Copper	1450	mg/kg-dry		5		SW6010B	09/28/16 15:03 / sld 0	9/26/16 15:29	ICP2-HE_1609	28C : 78	34561
Lead	312	mg/kg-dry		5		SW6020	09/28/16 14:21 / dck 0	9/26/16 15:29	ICPMS204-B_1609	28B : 30	34561
Zinc	1670	mg/kg-dry		5		SW6010B	09/28/16 15:03 / sld 0	9/26/16 15:29	ICP2-HE_1609	28C : 78	34561



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	CFR-07D Sediment Sieve <0.065mm	Collection Date:	09/13/16 10:00	DateReceived:	09/16/16
Lab ID:	H16090340-025	Report Date:	10/25/16	Revised Date:	12/28/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	59.1	wt%		0.2		D2974	09/28/16 10:37 / cbt		RYING OVEN 2_1	60927B : 6	R119039
SIEVE ANALYSIS No. 230 (63 um), Passed	2.4	wt%-wet		0.1		SSSA 15-2	09/29/16 12:26 / swj		MISC SOILS_1	60929A : 6	R119082
3050 EXTRACTABLE METALS											
Arsenic	218	mg/kg-dry		1		SW6020	09/28/16 14:35 / dck 0	9/26/16 15:29	ICPMS204-B_16	0928B : 34	34561
Cadmium	7.3	mg/kg-dry		0.4		SW6020	09/28/16 14:35 / dck 0	9/26/16 15:29	ICPMS204-B_16	0928B : 34	34561
Copper	1950	mg/kg-dry		5		SW6010B	09/28/16 15:07 / sld 0	9/26/16 15:29	ICP2-HE_16	0928C : 79	34561
Lead	323	mg/kg-dry		5		SW6020	09/28/16 14:35 / dck 0	9/26/16 15:29	ICPMS204-B_16	0928B : 34	34561
Zinc	1530	mg/kg-dry		5		SW6010B	09/28/16 15:07 / sld 0	9/26/16 15:29	ICP2-HE_16	0928C : 79	34561



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	CFR-03A Sediment Sieve <0.065mm	Collection Date:	09/13/16 11:00	DateReceived:	09/16/16
Lab ID:	H16090340-026	Report Date:	10/25/16	<b>Revised Date:</b>	12/28/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	61.8	wt%		0.2		D2974	09/28/16 10:37 / cbt		RYING OVEN 2_1	60927B : 7	R119039
SIEVE ANALYSIS No. 230 (63 um), Passed	2.6	wt%-wet		0.1		SSSA 15-2	09/29/16 12:26 / swj		MISC SOILS_1	60929A : 7	R119082
3050 EXTRACTABLE METALS											
Arsenic	302	mg/kg-dry		1		SW6020	09/28/16 14:38 / dck (	09/26/16 15:29	ICPMS204-B_16	0928B : 35	34561
Cadmium	8.5	mg/kg-dry		0.4		SW6020	09/28/16 14:38 / dck (	09/26/16 15:29	ICPMS204-B_16	0928B : 35	34561
Copper	2330	mg/kg-dry		5		SW6010B	09/28/16 15:10 / sld (	09/26/16 15:29	ICP2-HE_16	0928C : 80	34561
Lead	335	mg/kg-dry		5		SW6020	09/28/16 14:38 / dck (	09/26/16 15:29	ICPMS204-B_16	0928B : 35	34561
Zinc	1900	mg/kg-dry		5		SW6010B	09/28/16 15:10 / sld (	09/26/16 15:29	ICP2-HE_16	0928C : 80	34561



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	374	
Client Sample ID:	WSC-SBC Sediment Sieve < 0.065mm	Collection Date:	09/13/16 12:00	DateReceived:	09/16/16
Lab ID:	H16090340-027	Report Date:	10/25/16	Revised Date:	12/28/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	75.6	wt%		0.2		D2974	09/28/16 10:37 / cbt		RYING OVEN 2_16	0927B : 8	R119039
SIEVE ANALYSIS No. 230 (63 um), Passed	29.4	wt%-wet		0.1		SSSA 15-2	09/29/16 12:26 / swj		MISC SOILS_16	0929A : 8	R119082
3050 EXTRACTABLE METALS											
Arsenic	115	mg/kg-dry		1		SW6020	09/28/16 14:41 / dck 0	9/26/16 15:29	ICPMS204-B_160	928B : 36	34561
Cadmium	6.8	mg/kg-dry		0.7		SW6020	09/28/16 14:41 / dck 0	9/26/16 15:29	ICPMS204-B_160	928B : 36	34561
Copper	1320	mg/kg-dry		5		SW6010B	09/28/16 15:14 / sld 0	9/26/16 15:29	ICP2-HE_160	928C : 81	34561
Lead	175	mg/kg-dry		5		SW6020	09/28/16 14:41 / dck 0	9/26/16 15:29	ICPMS204-B_160	928B : 36	34561
Zinc	789	mg/kg-dry		7		SW6010B	09/28/16 15:14 / sld 0	9/26/16 15:29	ICP2-HE_160	928C : 81	34561



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-474	374	
Client Sample ID:	SS-25 Sediment Sieve <0.065mm	Collection Date:	09/13/16 13:00	DateReceived:	09/16/16
Lab ID:	H16090340-028	Report Date:	10/25/16	Revised Date:	12/28/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	77.3	wt%		0.2		D2974	09/28/16 10:37 / cbt		RYING OVEN 2_16	60927B : 10	R119039
SIEVE ANALYSIS No. 230 (63 um), Passed	3.0	wt%-wet		0.1		SSSA 15-2	09/29/16 12:26 / swj		MISC SOILS_1	60929A : 9	R119082
3050 EXTRACTABLE METALS											
Arsenic	153	mg/kg-dry		1		SW6020	09/28/16 14:44 / dck 09	9/26/16 15:29	ICPMS204-B_16	60928B : 37	34561
Cadmium	10.6	mg/kg-dry		0.7		SW6020	09/28/16 14:44 / dck 09	9/26/16 15:29	ICPMS204-B_16	60928B : 37	34561
Copper	892	mg/kg-dry		5		SW6010B	09/28/16 15:18 / sld 09	9/26/16 15:29	ICP2-HE_16	0928C : 82	34561
Lead	376	mg/kg-dry		5		SW6020	09/28/16 14:44 / dck 09	9/26/16 15:29	ICPMS204-B_16	60928B : 37	34561
Zinc	2020	mg/kg-dry		7		SW6010B	09/28/16 15:18 / sld 09	9/26/16 15:29	ICP2-HE_16	60928C : 82	34561



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project: CFR Monitoring-474374					
Client Sample ID:	MWB-SBC Sediment Sieve <0.065mm	Collection Date:	09/13/16 13:30	DateReceived:	09/16/16		
Lab ID:	H16090340-029	Report Date:	10/25/16	Revised Date:	12/28/16		
Matrix:	Sediment						

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	71.3	wt%		0.2		D2974	09/28/16 10:37 / cbt		₹YING OVEN 2_1609	27B : 11	R119039
SIEVE ANALYSIS No. 230 (63 um), Passed	2.3	wt%-wet		0.1		SSSA 15-2	09/29/16 12:26 / swj		MISC SOILS_1609	29A : 10	R119082
3050 EXTRACTABLE METALS											
Arsenic	285	mg/kg-dry		1		SW6020	09/28/16 14:48 / dck (	09/26/16 15:29	ICPMS204-B_1609	28B : 38	34561
Cadmium	6.9	mg/kg-dry		0.6		SW6020	09/28/16 14:48 / dck (	09/26/16 15:29	ICPMS204-B_1609	28B : 38	34561
Copper	285	mg/kg-dry		5		SW6010B	09/28/16 15:21 / sld (	09/26/16 15:29	ICP2-HE_1609	28C : 83	34561
Lead	241	mg/kg-dry		5		SW6020	09/28/16 14:48 / dck (	09/26/16 15:29	ICPMS204-B_1609	28B : 38	34561
Zinc	1030	mg/kg-dry		6		SW6010B	09/28/16 15:21 / sld (	09/26/16 15:29	ICP2-HE_1609	28C : 83	34561



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project: CFR Monitoring-474374					
Client Sample ID:	MCWC-MWB Sediment Sieve <0.065mm	Collection Date:	09/13/16 14:45	DateReceived:	09/16/16		
Lab ID:	H16090340-030	Report Date:	10/25/16	<b>Revised Date:</b>	12/28/16		
Matrix:	Sediment						

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	84.1	wt%		0.2		D2974	09/28/16 10:37 / cbt		₹YING OVEN 2_160	927B : 12	R119039
SIEVE ANALYSIS No. 230 (63 um), Passed	13.4	wt%-wet		0.1		SSSA 15-2	09/29/16 12:26 / swj		MISC SOILS_1609	929A : 11	R119082
3050 EXTRACTABLE METALS											
Arsenic	135	mg/kg-dry		1		SW6020	09/28/16 14:51 / dck (	09/26/16 15:29	ICPMS204-B_1609	928B : 39	34561
Cadmium	8	mg/kg-dry		1		SW6020	09/28/16 14:51 / dck (	09/26/16 15:29	ICPMS204-B_1609	928B : 39	34561
Copper	554	mg/kg-dry		5		SW6010B	09/28/16 15:25 / sld (	09/26/16 15:29	ICP2-HE_1609	928C : 84	34561
Lead	268	mg/kg-dry		5		SW6020	09/28/16 14:51 / dck (	09/26/16 15:29	ICPMS204-B_1609	928B : 39	34561
Zinc	830	mg/kg-dry		10		SW6010B	09/28/16 15:25 / sld (	09/26/16 15:29	ICP2-HE_1609	928C : 84	34561



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	CFR-27H Duplicate Sediment Sieve <0.065mm	<b>Collection Date:</b>	09/12/16 15:00	DateReceived:	09/16/16
Lab ID:	H16090340-031	Report Date:	10/25/16	<b>Revised Date:</b>	12/28/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	61.4	wt%		0.2		D2974	09/28/16 10:37 / cbt		₹YING OVEN 2 160	927B : 13	R119039
									_		
SIEVE ANALYSIS											
No. 230 (63 um), Passed	1.5	wt%-wet		0.1		SSSA 15-2	09/29/16 12:26 / swj		MISC SOILS_160	929A : 12	R119082
3050 EXTRACTABLE METALS											
Arsenic	165	mg/kg-dry		1		SW6020	09/28/16 14:54 / dck 0	9/26/16 15:29	ICPMS204-B_160	928B : 40	34561
Cadmium	8.2	mg/kg-dry		0.4		SW6020	09/28/16 14:54 / dck 0	9/26/16 15:29	ICPMS204-B_160	928B : 40	34561
Copper	1390	mg/kg-dry		5		SW6010B	09/28/16 15:29 / sld 0	9/26/16 15:29	ICP2-HE_160	928C : 85	34561
Lead	397	mg/kg-dry		5		SW6020	09/28/16 14:54 / dck 0	9/26/16 15:29	ICPMS204-B_160	928B : 40	34561
Zinc	1570	mg/kg-dry		5		SW6010B	09/28/16 15:29 / sld 0	9/26/16 15:29	ICP2-HE_160	928C : 85	34561



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	SS-25 Duplicate Sediment Sieve <0.065mm	Collection Date:	09/13/16 13:00	DateReceived:	09/16/16
Lab ID:	H16090340-032	Report Date:	10/25/16	<b>Revised Date:</b>	12/28/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	74.0	wt%		0.2		D2974	09/28/16 10:37 / cbt		₹YING OVEN 2_1609	27B : 14	R119039
SIEVE ANALYSIS No. 230 (63 um), Passed	2.8	wt%-wet		0.1		SSSA 15-2	09/29/16 12:26 / swj		MISC SOILS_1609	29A : 13	R119082
3050 EXTRACTABLE METALS											
Arsenic	108	mg/kg-dry		1		SW6020	09/28/16 14:58 / dck (	09/26/16 15:29	ICPMS204-B_1609	28B : 41	34561
Cadmium	8.5	mg/kg-dry		0.6		SW6020	09/28/16 14:58 / dck (	09/26/16 15:29	ICPMS204-B_1609	28B : 41	34561
Copper	642	mg/kg-dry		5		SW6010B	09/28/16 15:40 / sld (	09/26/16 15:29	ICP2-HE_1609	28C : 88	34561
Lead	354	mg/kg-dry		5		SW6020	09/28/16 14:58 / dck (	09/26/16 15:29	ICPMS204-B_1609	28B : 41	34561
Zinc	1620	mg/kg-dry		6		SW6010B	09/28/16 15:40 / sld (	09/26/16 15:29	ICP2-HE_16092	28C : 88	34561



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	74	
Client Sample ID:	LC-7.5 Sediment Sieve <0.065mm	Collection Date:	09/12/16 16:30	DateReceived:	09/16/16
Lab ID:	H16090340-033	Report Date:	10/25/16	<b>Revised Date:</b>	12/28/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	75.9	wt%		0.2		D2974	09/28/16 10:37 / cbt		₹YING OVEN 2_160927	B : 15	R119039
SIEVE ANALYSIS No. 230 (63 um), Passed	8.2	wt%-wet		0.1		SSSA 15-2	09/29/16 12:26 / swj		MISC SOILS_160929	A : 14	R119082
3050 EXTRACTABLE METALS											
Arsenic	88	mg/kg-dry		1		SW6020	09/28/16 15:01 / dck 0	9/26/16 15:29	ICPMS204-B_160928	B : 42	34561
Cadmium	2.6	mg/kg-dry		0.7		SW6020	09/28/16 15:01 / dck 0	9/26/16 15:29	ICPMS204-B_160928	B : 42	34561
Copper	551	mg/kg-dry		5		SW6010B	09/28/16 15:43 / sld 0	9/26/16 15:29	ICP2-HE_160928	C : 89	34561
Lead	152	mg/kg-dry		5		SW6020	09/28/16 15:01 / dck 0	9/26/16 15:29	ICPMS204-B_160928	B : 42	34561
Zinc	375	mg/kg-dry		7		SW6010B	09/28/16 15:43 / sld 0	9/26/16 15:29	ICP2-HE_160928	C : 89	34561



## LABORATORY ANALYTICAL REPORT

Client:	MT DEQ-Federal Superfund	Project:	CFR Monitoring-4743	374	
Client Sample ID:	RTC-1.5 Sediment Sieve <0.065mm	Collection Date:	09/12/16 17:00	DateReceived:	09/16/16
Lab ID:	H16090340-034	Report Date:	10/25/16	Revised Date:	12/28/16
Matrix:	Sediment				

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL CHARACTERISTICS Moisture	71.4	wt%		0.2		D2974	09/28/16 10:37 / cbt		₹YING OVEN 2_160	927B : 16	R119039
SIEVE ANALYSIS No. 230 (63 um), Passed	2.7	wt%-wet		0.1		SSSA 15-2	09/29/16 12:26 / swj		MISC SOILS_160	929A : 15	R119082
3050 EXTRACTABLE METALS											
Arsenic	34	mg/kg-dry		1		SW6020	09/28/16 15:04 / dck 0	9/26/16 15:29	ICPMS204-B_1609	928B : 43	34561
Cadmium	1.8	mg/kg-dry		0.6		SW6020	09/28/16 15:04 / dck 0	9/26/16 15:29	ICPMS204-B_1609	928B : 43	34561
Copper	72	mg/kg-dry		5		SW6010B	09/28/16 15:47 / sld 0	9/26/16 15:29	ICP2-HE_1609	928C : 90	34561
Lead	136	mg/kg-dry		5		SW6020	09/28/16 15:04 / dck 0	9/26/16 15:29	ICPMS204-B_1609	928B : 43	34561
Zinc	174	mg/kg-dry		6		SW6010B	09/28/16 15:47 / sld 0	9/26/16 15:29	ICP2-HE_1609	928C : 90	34561

<b>ENERGY</b> LABORATORIES	Trust our www.ene	People. Trust our Data. rgylab.com	Coll	er, WY <b>888.235</b> a, MT <b>877.472</b>	.0515 .0711						
Client: Work Order:	MT DEQ-Fede H16090340	ral Superfund		ANALYT	ICAL QC SPrepared by H	SUMMARY elena, MT Bra	REPO	RT		Date: 28-Dec-	16
Project:	CFR Monitorin	g-474374		В	atchID: 1	60922wa-h	gcv202				
Run ID :Run Order	: HGCV202-H_160	922A: 8	SampType:	Initial Calibra	tion Verificatio	on Standard	Lab	ID: <b>ICV</b>		Method: E245.1	
Analysis Date: 09/	22/16 17:27	Units:	mg/L			Prep Info:	Prep Da	ite:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Mercury		0.000204	0.00010	0.0002	0	102	90	110			
Associated samples	s: H16090340-0020	C, H16090340-003C	, H16090340	-004C, H1609	0340-018A						
Run ID :Run Order	: HGCV202-H_160	922A: 55	SampType:	Continuing C	alibration Veri	fication Standa	<b>r</b> Lab	ID: CCV		Method: E245.1	
Analysis Date: 09/	22/16 19:32	Units:	mg/L			Prep Info:	Prep Da	ite:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Mercury		0.000202	0.00010	0.0002	0	101	90	110			
Associated samples	s: H16090340-0020	C, H16090340-003C	, H16090340	-004C, H1609	0340-018A						

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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LABORATORIES	Ē	Trust our People. Trust our Data. www.energylab.com	Coll	ege Station, TX 88	Bil 38.690.2218 • Gi	.0515 .0711						
Client: Work Order:	MT DEC H160903	0-Federal Superfund 340		ANALYT	ICAL QC	SUMMARY Ielena, MT Brar	REPO	RT		Date	: 28-Dec-	-16
Project:	oject: CFR Monitoring-474374 BatchID: 34474											
Run ID :Run Order:	ICP2-HE_	160919C: 23	SampType:	Method Blan	k		Lab	ID: <b>MB-344</b>	74	Method	: E200.7	
Analysis Date: 09/2	20/16 09:10	Units:	mg/L			Prep Info:	Prep Da	ite: 9/19/201	6	Prep Method	: E200.2	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		ND	0.04									
Magnesium		ND	0.01									
Potassium		ND	0.04									
Sodium		ND	0.02									
Associated samples	E H1609034 009C, H1	40-001C, H16090340-002C 6090340-010C, H1609034	с, H16090340 0-011С, H160	-003C, H1609 990340-012C,	0340-004C, H <sup>⁄</sup> H16090340-01	16090340-005C, I3C, H16090340-	H1609034 -014C, H16	0-006C, H1 5090340-01	6090340-007C, 5C, H16090340	H16090340-00 -016C	)8C, H1609	0340-
		1600100.24	SampType	Laboratory C	ontrol Somple		Lob		174	Mothod	- E200 7	

Run ID :Run Order: ICP2-HE_160919C: 24		Sampi ype: Laboratory Control Sample			e Lab ID. LCS-34474				wethod	E200.7		
Analysis Date: 09/20/16 09:14	Units:	mg/L			Prep Info	: Prep Da	te: <b>9/19/201</b>	6	Prep Method	E200.2		
Analytes <u>4</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Calcium	25.8	1.0	25	0	103	85	115					
Magnesium	25.6	1.0	25	0	102	85	115					
Potassium	26.8	1.0	25	0	107	85	115					
Sodium	26.7	1.0	25	0	107	85	115					

Associated samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H16090340-009C, H16090340-010C, H16090340-011C, H16090340-012C, H16090340-013C, H16090340-014C, H16090340-015C, H16090340-016C

Run ID :Run Order: ICP2-HE_160919C: 28	er: ICP2-HE_160919C: 28 SampType: Serial Dilution						D: H160903	335-001CDIL	Method	: <b>E200.7</b>	
Analysis Date: 09/20/16 09:29	Units:	mg/L			Prep Info	: Prep Dat	te: <b>9/19/201</b>	6	Prep Method	l:	
Analytes 4	Result	PQL	SPK value SP	K Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	93.7	1.0		0		0	0	106.7	<u>13</u>	10	R
Magnesium	15.3	1.0		0		0	0	17.29	<u>12</u>	10	R
Potassium	1.16	1.0		0		0	0	1.296		10	Ν
Sodium	6.27	1.0		0		0	0	7.099	12	10	R

Associated samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H160908C, H160908C, H160908C, H160908C, H160908C, H1608C, H160908C, H1608C

Run ID :Run Order: ICP2-HE_160919C: 30		SampType:	Sample Matri	x Spike		Lab	D: H160903	335-001CMS3	Method	E200.7	
Analysis Date: 09/20/16 09:37	Units: <b>r</b>	ng/L			Prep Info	: Prep Da	te: <b>9/19/201</b>	6	Prep Method	E200.2	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	133	1.0	25	106.7		70	130				А
Magnesium	43.1	1.0	25	17.29	103	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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LABORATORIES	www.energy	lab.com	Colle	ege Station, TX <b>88</b>	88.690.2218 • Gillet	.0711						
Client: Work Order:	MT DEQ-Federa H16090340	I Superfund		ANALYT	ICAL QC SU Prepared by Hel	<b>JMMARY</b> ena, MT Bra	<b>REPO</b>	RT		Date:	28-Dec-	16
Project:	CFR Monitoring-	474374		В	atchID: 34							
Run ID :Run Orde	un ID :Run Order: ICP2-HE_160919C: 30			Sample Matri	x Spike		Lab	ID: <b>H16090</b> :	335-001CMS3	Method:	E200.7	
Analysis Date: 09/	/20/16 09:37	Units:	mg/L			Prep Info	: Prep Da	te: <b>9/19/20</b> 1	6	Prep Method:	E200.2	
Analytes <u>4</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual
Potassium		27.2	1.0	25	1.296	104	70	130				
Sodium		33.0	1.0	25	7.099	104	70	130				
Associated sample	- H16000340-001C H	-116000340-0020	H16000340_	003C H1600	0340-004C H160	100340-0050	H1600034	0-006C H1	6000340-0070	H16000340-008	C H1600	0340-

Billings MT 800 735 4489 • Casper WY 888 235 0515

ed samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H16090340-009C, H16090340-010C, H16090340-011C, H16090340-012C, H16090340-013C, H16090340-014C, H16090340-015C, H16090340-016C

Run ID :Run Order: ICP2-HE_160919C: 33		SampType:	Sample Matri	x Spike Duplicate	Lab ID: H16090335-001CMSD				Method	E200.7	
Analysis Date: 09/20/16 09:48	Units:	mg/L			Prep Info:	Prep Dat	te: <b>9/19/201</b>	6	Prep Method	E200.2	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	130	1.0	25	106.7		70	130	132.6	1.9	20	А
Magnesium	42.6	1.0	25	17.29	101	70	130	43.12	1.2	20	
Potassium	27.4	1.0	25	1.296	104	70	130	27.21	0.5	20	
Sodium	33.2	1.0	25	7.099	104	70	130	33.03	0.6	20	

Associated samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H16090340-009C, H16090340-010C, H16090340-011C, H16090340-012C, H16090340-013C, H16090340-014C, H16090340-015C, H16090340-016C

Run ID :Run Order: ICP2-HE_160921A: 25		SampType: Method Blank				Lab	ID: <b>MB-344</b>	74	Method	E200.7	
Analysis Date: 09/21/16 09:42	Units: r	Units: mg/L			Prep Info	: Prep Da	ite: <b>9/19/20</b>	16	Prep Method	: <b>E200.2</b>	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.04									
Magnesium	0.01	0.01									
Potassium	ND	0.04									
Sodium	ND	0.02									

Associated samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H16090340-009C, H16090340-010C, H16090340-011C, H16090340-012C, H16090340-013C, H16090340-014C, H16090340-015C, H16090340-016C

Run ID :Run Order: ICP2-HE_160921A: 27		SampType:	Serial Dilution	n	Lab ID: H16090340-010CDIL				Method	E200.7	
Analysis Date: 09/21/16 09:49	Units:	mg/L			Prep Info	: Prep Dat	e: <b>9/19/201</b>	6	Prep Method	l:	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	56.1	1.0		0		0	0	55.86	0.4	10	
Magnesium	13.7	1.0		0		0	0	13.04	<u>4.7</u>	10	
Potassium	2.80	1.0		0		0	0	2.782	0.5	10	
Sodium	13.8	1.0		0		0	0	13.79	0.4	10	

Qualifiers: ND - Not Detected at the Reporting Limit

ENEDCV

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.imit S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit F	RPD Ref Val	%RPD RPDLimit	Qual	
Analysis Date: 09/	21/16 09:49	Units: r	ng/L			Prep Info:	Prep Date: 9/19/2016		Prep Method:	
Run ID :Run Order	: ICP2-HE_160921A: 27		SampType: \$	Serial Dilutio	n		Lab ID: <b>H1609034</b>	0-010CDIL	Method: E200.7	
Project:	CFR Monitoring-4743	74		В						
Client: Work Order:	MT DEQ-Federal Sup H16090340	erfund		ANALYTI F	ICAL QC S Prepared by He		Date: 28-Dec-	16		
LABORATORIES	515 711									

Associated samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H16090340-009C, H16090340-010C, H16090340-011C, H16090340-012C, H16090340-013C, H16090340-014C, H16090340-015C, H16090340-016C

Run ID :Run Order: ICP2-HE_160921A: 29		SampType:	Sample Matri	x Spike	Lab ID: H16090340-010CMS				Method	E200.7	
Analysis Date: 09/21/16 09:56	Units:	mg/L			Prep Info	: Prep Da	te: 9/19/201	16	Prep Method	E200.2	
Analytes <u>4</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	82.5	1.0	25	55.86	106	70	130				
Magnesium	39.4	1.0	25	13.04	105	70	130				
Potassium	30.1	1.0	25	2.782	109	70	130				
Sodium	41.4	1.0	25	13.79	110	70	130				

Associated samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H16090340-009C, H16090340-010C, H16090340-011C, H16090340-012C, H16090340-013C, H16090340-014C, H16090340-015C, H16090340-016C

Run ID :Run Order: ICP2-HE_160921A: 30		SampType:	Sample Matri	x Spike Duplicate	•	Lab I	D: H160903	340-010CMSD3	Method	E200.7	
Analysis Date: 09/21/16 10:00	Units:	mg/L			Prep Info	Prep Da	te: 9/19/201	6	Prep Method	E200.2	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	82.9	1.0	25	55.86	108	70	130	82.46	0.5	20	
Magnesium	39.8	1.0	25	13.04	107	70	130	39.36	1.1	20	
Potassium	29.7	1.0	25	2.782	108	70	130	30.14	1.4	20	
Sodium	40.7	1.0	25	13.79	108	70	130	41.35	1.6	20	

Associated samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H16090340-009C, H16090340-010C, H16090340-011C, H16090340-012C, H16090340-013C, H16090340-014C, H16090340-015C, H16090340-016C

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits



Work Order:

Project:

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MT DEQ-Federal Superfund Client: H16090340

CFR Monitoring-474374

# ANALYTICAL QC SUMMARY REPORT

College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

Billings, MT 800.735.4489 • Casper, WY 888.235.0515

Date: 28-Dec-16

#### Prepared by Helena, MT Branch

#### BatchID: 34474

Run ID :Run Order: ICPMS204-B 160920A: 25 SampType: Method Blank Lab ID: MB-34474 Method: E200.8 Prep Method: E200.2 Analysis Date: 09/20/16 11:38 Units: ma/L Prep Info: Prep Date: 9/19/2016 PQL %RPD RPDLimit Result SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val Qual Analytes 9 ND Arsenic 7E-05 Cadmium 2E-05 1E-05 Calcium 0.02 0.009 7E-05 Copper 5E-05 ND 2E-05 Lead ND 0.002 Magnesium Potassium 0.02 0.01 Sodium 0.02 0.005 Zinc 0.0008 0.0003

Associated samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H16090340-009C, H16090340-010C, H16090340-011C, H16090340-012C, H16090340-013C, H16090340-014C, H16090340-015C, H16090340-016C

Run ID :Run Order: ICPMS204-B_1	60920A: 26	SampType:	Laboratory C	ontrol Sample		Lab	D: LCS-34	474	Method:	E200.8	
Analysis Date: 09/20/16 11:41	Units:	mg/L			Prep Info:	Prep Da	te: <b>9/19/20</b> 1	6	Prep Method:	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.519	0.0010	0.5	0	104	85	115				
Cadmium	0.258	0.0010	0.25	0.0000151	103	85	115				
Calcium	27.6	1.0	25	0.01923	111	85	115				
Copper	0.509	0.0050	0.5	0.000067	102	85	115				
Lead	0.524	0.0010	0.5	0	105	85	115				
Magnesium	25.9	1.0	25	0	104	85	115				
Potassium	25.6	1.0	25	0.01826	102	85	115				
Sodium	26.0	1.0	25	0.02312	104	85	115				
Zinc	0.507	0.010	0.5	0.0007992	101	85	115				

Associated samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H16090340-008C 009C, H16090340-010C, H16090340-011C, H16090340-012C, H16090340-013C, H16090340-014C, H16090340-015C, H16090340-016C

Run ID :Run Order: ICPMS204-B_160	920A: 154	SampType:	Sample Matri	x Spike		Lab I	D: H160903	40-010CMS3	Method	: <b>E200.8</b>	
Analysis Date: 09/20/16 19:12	Units:	mg/L			Prep Info	Prep Da	te: <b>9/19/201</b>	6	Prep Method	: <b>E200.2</b>	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.533	0.0010	0.5	0.01615	103	70	130				
Cadmium	0.256	0.0010	0.25	0.000042	103	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits



Work Order:

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MT DEQ-Federal Superfund Client:

## ANALYTICAL QC SUMMARY REPORT

College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

Billings, MT 800.735.4489 • Casper, WY 888.235.0515

Date: 28-Dec-16

H16090340 CFR Monitoring-474374 Project:

Prepared by Helena, MT Branch

#### BatchID: 34474

Run ID :Run Order: ICPMS204-B_160920A: 154		SampType: Sample Matrix Spike			Lab ID: H16090340-010CMS3			340-010CMS3	Method: E200.8		
Analysis Date: 09/20/16 19:12	Units:	mg/L			Prep Info	: Prep Da	te: <b>9/19/201</b>	6	Prep Method	: <b>E200.2</b>	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	83.5	1.0	25	54.05	118	70	130				
Copper	0.515	0.0050	0.5	0.003746	102	70	130				
Lead	0.526	0.0010	0.5	0.000211	105	70	130				
Magnesium	38.1	1.0	25	12.94	101	70	130				
Potassium	28.2	1.0	25	2.479	103	70	130				
Sodium	39.3	1.0	25	13.29	104	70	130				
Zinc	0.489	0.010	0.5	0.003028	97	70	130				

Associated samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H1608C, H1 009C, H16090340-010C, H16090340-011C, H16090340-012C, H16090340-013C, H16090340-014C, H16090340-015C, H16090340-016C

Run ID :Run Order: ICPMS204-B_160	920A: 155	SampType:	Sample Matri	x Spike Duplicate		Lab I	D: <b>H16090</b> 3	340-010CMSD3	Method	: <b>E200.8</b>	
Analysis Date: 09/20/16 19:15	Units:	mg/L			Prep Info:	Prep Da	te: 9/19/201	6	Prep Method	: E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.535	0.0010	0.5	0.01615	104	70	130	0.5332	0.4	20	
Cadmium	0.255	0.0010	0.25	0.000042	102	70	130	0.2564	0.7	20	
Calcium	83.7	1.0	25	54.05	118	70	130	83.53	0.2	20	
Copper	0.513	0.0050	0.5	0.003746	102	70	130	0.5151	0.3	20	
Lead	0.528	0.0010	0.5	0.000211	106	70	130	0.5265	0.3	20	
Magnesium	37.9	1.0	25	12.94	100	70	130	38.14	0.5	20	
Potassium	28.4	1.0	25	2.479	104	70	130	28.15	0.7	20	
Sodium	39.3	1.0	25	13.29	104	70	130	39.26	0.1	20	
Zinc	0.480	0.010	0.5	0.003028	95	70	130	0.4886	1.7	20	

Associated samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H1608C, H1 009C, H16090340-010C, H16090340-011C, H16090340-012C, H16090340-013C, H16090340-014C, H16090340-015C, H16090340-016C

Run ID :Run Order: ICPMS204-B_1609	921C: 73	SampType:	Method Blank	c		Lab	ID: <b>MB-344</b>	74	Method	E200.8	
Analysis Date: 09/21/16 17:15	Units:	mg/L			Prep Info	: Prep Da	te: <b>9/19/20</b> 1	6	Prep Method	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0001	7E-05									
Cadmium	ND	1E-05									
Calcium	ND	0.009									
Copper	ND	5E-05									

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

<b>ENERGY</b> LABORATORIES	Trust our www.ene	People. Trust our Data. rgylab.com	Billings, MT 800.735.4489 • Casper, WY 888.235.0515 College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711									
Client: Work Order:	MT DEQ-Fede H16090340	ral Superfund		ANALYTICAL QC SUMMARY REPORT Prepared by Helena, MT Branch							28-Dec-	16
Project:	CFR Monitorin	g-474374		В	atchID: 34	474						
Run ID :Run Order	ICPMS204-B_160	)921C: 73	SampType:	Method Blan	k		Lab	ID: <b>MB-34474</b>		Method:	E200.8	
Analysis Date: 09/2	21/16 17:15	Units:	mg/L			Prep Info	: Prep Da	ite: 9/19/2016		Prep Method:	E200.2	
Analytes 9		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RP	D Ref Val	%RPD	RPDLimit	Qual
Lead		ND	2E-05									
Magnesium		ND	0.002									
Potassium		0.02	0.01									
Sodium		0.04	0.005									
Zinc		ND	0.0003									

Associated samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H160908C, H160908C, H160908C, H160908C, H1

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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<b>ENERGY</b> LABORATORIES	Trust our People. www.energylab.co	<b>Trust our Data</b> .	Col	lege Station, TX <b>8</b> 8	Billing 88.690.2218 • Gillet	gs, MT <b>800.735.</b> 4 te, WY <b>866.686.</b>	<b>1489 •</b> Caspe <b>7175 •</b> Helen	er, WY <b>888.235</b> a, MT <b>877.472</b>	.0515 .0711			
Client: Work Order:	MT DEQ-Federal Su H16090340	iperfund		ANALYT	ICAL QC SU Prepared by Hel	<b>JMMARY</b> ena, MT Bra	<b>REPO</b>	RT		Date	: 28-Dec-	-16
Project:	CFR Monitoring-474	374		В	atchID: 34	478						
Run ID :Run Orde	r: ICP2-HE_160919C: 59		SampType:	Method Blan	k		Lab	ID: <b>MB-344</b>	78	Method	E200.7	
Analysis Date: 09	/20/16 11:25	Units:	mg/L			Prep Info	: Prep Da	ate: <b>9/19/20</b> 1	6	Prep Method	E200.2	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		0.06	0.04									
Magnesium		ND	0.01									
Potassium		0.04	0.04									
Sodium		ND	0.02									
Associated sample	s: H16090340-017C											
Run ID :Run Orde	r: ICP2-HE_160919C: 60		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-34	178	Method	E200.7	
Analysis Date: 09	/20/16 11:28	Units:	mg/L			Prep Info	: Prep Da	nte: <b>9/19/20</b> 1	6	Prep Method	E200.2	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		24.8	1.0	25	0.05569	99	85	115				
Magnesium		24.8	1.0	25	0	99	85	115				
Potassium		26.0	1.0	25	0.0416	104	85	115				
Sodium		26.1	1.0	25	0	105	85	115				
Associated sample	es: H16090340-017C											
Run ID :Run Orde	r: ICP2-HE_160919C: 62		SampType:	Serial Dilutio	n		Lab	ID: <b>H16090</b>	340-017CDIL	Method	: <b>E200.7</b>	
Analysis Date: 09	/20/16 11:36	Units:	mg/L			Prep Info	: Prep Da	nte: <b>9/19/20</b> 1	6	Prep Method	l:	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		27.8	1.0		0		0	0	31.32	<u>12</u>	10	R
Magnesium		7.33	1.0		0		0	0	7.945	<u>8.1</u>	10	
Potassium		1.41	1.0		0		0	0	1.312		10	Ν
Sodium		7.50	1.0		0		0	0	8.678	<u>15</u>	10	R
Associated sample	s: H16090340-017C											
Run ID :Run Orde	r: ICP2-HE_160919C: 64		SampType:	Sample Matri	x Spike		Lab	ID: <b>H16090</b>	340-017CMS3	Method	E200.7	
Analysia Datas 00	100/40 44.40	Linita								Bron Mathad: E200 2		

Analysis Date: 09/20/16 11:43	Units: mg/L				Prep Info	: Prep Dat	te: 9/19/201	6	Prep Method: E200.2	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Calcium	54.3	1.0	25	31.32	92	70	130			
Magnesium	31.9	1.0	25	7.945	96	70	130			
Potassium	25.9	1.0	25	1.312	98	70	130			
Sodium	33.3	1.0	25	8.678	98	70	130			

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

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 four times the spike amount

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Client: Work Order:	MT DE H16090	Q-Federal Supe )340	erfund		ANALYT	CAL QC SL Prepared by Hele	IMMARY ena, MT Brai	REPO	RT		Date	: 28-Dec-	16
Project:	CFR M	onitoring-47437	<b>'</b> 4		В	atchID: 344	478						
Run ID :Run Order:	ICP2-HE	_160919C: 64		SampType:	Sample Matri	x Spike		Lab	ID: <b>H160903</b>	340-017CMS3	Method	E200.7	
Analysis Date: 09/2	0/16 11:4	3	Units: n	ng/L			Prep Info:	Prep Da	te: 9/19/201	6	Prep Method	E200.2	
Analytes 4			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Associated samples	: H16090	340-017C											
Run ID :Run Order:	ICP2-HE	_160919C: 65		SampType:	Sample Matri	x Spike Duplicate	9	Lab	ID: H160903	40-017CMSD3	Method	: <b>E200.7</b>	
Analysis Date: 09/2	0/16 11:4	7	Units: n	ng/L			Prep Info:	Prep Da	te: <b>9/19/201</b>	6	Prep Method	E200.2	
Analytes <u>4</u>			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium			55.7	1.0	25	31.32	97	70	130	54.26	2.6	20	
Magnesium			32.8	1.0	25	7.945	100	70	130	31.95	2.7	20	
Magnesium Potassium			32.8 27.4	1.0 1.0	25 25	7.945 1.312	100 104	70 70	130 130	31.95 25.9	2.7 <u>5.5</u>	20 20	

Associated samples: H16090340-017C

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits



Work Order:

Project:

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Client: MT DEQ-Federal Superfund

H16090340

CFR Monitoring-474374

# ANALYTICAL QC SUMMARY REPORT

College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

Billings, MT 800.735.4489 • Casper, WY 888.235.0515

Date: 28-Dec-16

#### Prepared by Helena, MT Branch

#### BatchID: 34478

Run ID :Run Order: ICPMS204-B\_160920A: 180 Method: E200.8 SampType: Method Blank Lab ID: MB-34478 Analysis Date: 09/20/16 20:37 Units: mg/L Prep Info: Prep Date: 9/19/2016 Prep Method: E200.2 Result PQL SPK value SPK Ref Val %RPD RPDLimit %REC LowLimit HighLimit RPD Ref Val Qual Analytes 9 0.0001 7E-05 Arsenic Cadmium 2E-05 1E-05 Calcium 0.02 0.009 ND Copper 5E-05 ND Lead 2E-05 ND 0.002 Magnesium Potassium ND 0.01 Sodium ND 0.005 Zinc 0.0006 0.0003 Associated samples: H16090340-017C

Run ID :Run Order: ICPMS204-B 160920A: 181 SampType: Laboratory Control Sample Lab ID: LCS-34478 Method: E200.8 Prep Date: 9/19/2016 Prep Method: E200.2 Analysis Date: 09/20/16 20:40 Units: mg/L Prep Info: PQL Result SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual Analytes 9 Arsenic 0.515 0.0010 0.5 0.0001217 103 85 115 Cadmium 0.259 0.0010 0.25 0.0000217 104 85 115 Calcium 27.6 1.0 25 0.01616 110 85 115 Copper 0.516 0.0050 0.5 0 85 115 103 0.524 0.0010 0 85 Lead 0.5 105 115 Magnesium 25.8 1.0 25 0 103 85 115 Potassium 25.5 25 85 1.0 0 102 115 Sodium 26.1 1.0 25 0 104 85 115 **Zinc** 0.506 0.010 0.5 0.0005938 85 115 101

Associated samples: H16090340-017C

Run ID :Run Order: ICPMS204-B_160920	A: 185	SampType:	Sample Matri	x Spike		Lab I	D: H160903	340-017CMS3	Method	E200.8	
Analysis Date: 09/20/16 20:53	Units:	mg/L			Prep Info	: Prep Da	te: <b>9/19/201</b>	6	Prep Method	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.508	0.0010	0.5	0.01584	98	70	130				
Cadmium	0.244	0.0010	0.25	0.000044	98	70	130				
Calcium	58.2	1.0	25	32.26	104	70	130				
Copper	0.498	0.0050	0.5	0.004411	99	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit

I Limit S - Spike Recovery

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Superfund H16090340	ANALYTICAL QO Prepared by	Date: 28-Dec-16	
Project:	CFR Monitoring-474374	BatchID:	34478	
Run ID :Run Orde	r: ICPMS204-B_160920A: 185	SampType: Sample Matrix Spike	Lab ID: H16090340-017CMS3	Method: E200.8
Analysis Date: 09/	20/16 20:53 Units	s: <b>mg/L</b>	Prep Info: Prep Date: 9/19/2016	Prep Method: E200.2

Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Lead	0.508	0.0010	0.5	0.001263	101	70	130					
Magnesium	32.4	1.0	25	8.505	96	70	130					
Potassium	26.1	1.0	25	1.218	100	70	130					
Sodium	33.6	1.0	25	8.874	99	70	130					
Zinc	0.468	0.010	0.5	0.004467	93	70	130					_

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Associated samples: H16090340-017C

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Run ID :Run Order: ICPMS204-B_1609	SampType:		Lab I	D: <b>H16090</b> 3	Method: E200.8						
Analysis Date: 09/20/16 20:57	Units:	mg/L			Prep Info:	Prep Da	te: <b>9/19/201</b>	Prep Method: E200.2			
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.529	0.0010	0.5	0.01584	103	70	130	0.5083	<u>4.1</u>	20	
Cadmium	0.257	0.0010	0.25	0.000044	103	70	130	0.2444	<u>5.1</u>	20	
Calcium	60.4	1.0	25	32.26	113	70	130	58.18	<u>3.8</u>	20	
Copper	0.519	0.0050	0.5	0.004411	103	70	130	0.4978	<u>4.2</u>	20	
Lead	0.528	0.0010	0.5	0.001263	105	70	130	0.5079	<u>3.9</u>	20	
Magnesium	34.0	1.0	25	8.505	102	70	130	32.43	<u>4.6</u>	20	
Potassium	27.1	1.0	25	1.218	104	70	130	26.13	<u>3.7</u>	20	
Sodium	35.3	1.0	25	8.874	106	70	130	33.57	<u>5.0</u>	20	
Zinc	0.491	0.010	0.5	0.004467	97	70	130	0.4684	<u>4.6</u>	20	

Associated samples: H16090340-017C

Run ID :Run Order: ICPMS204-B_160	SampType:	Method Blan		Lab	ID: MB-344	Method: E200.8					
Analysis Date: 09/21/16 17:45	nalysis Date: 09/21/16 17:45 Units:			mg/L			ate: <b>9/19/20</b>	Prep Method: E200.2			
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0001	7E-05									
Cadmium	ND	1E-05									
Calcium	0.02	0.009									
Copper	ND	5E-05									
Lead	ND	2E-05									
Magnesium	ND	0.002									
Potassium	ND	0.01									
Sodium	ND	0.005									

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DE0 H16090	Q-Federal Superfund 340		ANALYT	ICAL QC	SUMMARY Ielena, MT Bra	REPORT	Date: 28-Dec-16					
Project:	CFR Mo	onitoring-474374		BatchID: 34478									
Run ID :Run Order: ICPMS204-B_160921C: 82			SampType:	Method Blan	k		Lab ID:	MB-34478	Method: E200.8				
Analysis Date: 09/2	1/16 17:45	Units:	mg/L			Prep Info	Prep Date:	9/19/2016	Prep Method:	E200.2			
Analytes 9		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Val	%RPD I	RPDLimit	Qual		
Zinc		ND	0.0003										
Associated samples	: H160903	40-017C											

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16090340	perfund		ANALYT	ICAL QC SU Prepared by Hele	<b>MMARY</b> na, MT Bra	REPO	RT		Date: 28-Dec-16		
Project:	CFR Monitoring-4743	74		В	atchID: 344	90						
Run ID :Run Order	FIA203-HE_160920A: 11		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-344	190	Method: A4500 N-C		
Analysis Date: 09/	20/16 10:14	Units:	mg/L			Prep Info	: Prep Da	te: <b>9/20/201</b>	6	Prep Method	: A4500 N-C	2
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		12.7	0.30	13.7	0.02403	92	90	110				
Associated sample	s: H16090340-001A											
Run ID :Run Order	FIA203-HE_160920A: 12		SampType:	Method Blan	k		Lab	ID: <b>MB-344</b>	Method: A4500 N-C			
Analysis Date: 09/	20/16 10:15	Units:	mg/L			Prep Info	fo: Prep Date: 9/20/2016			Prep Method: A4500 N-C		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total Associated sample	s: H16090340-001A	0.02	0.007									
Run ID :Run Order	FIA203-HE_160920A: 14		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16090</b> 3	330-001CMS	Method	: A4500 N-C	;
Analysis Date: 09/	20/16 10:17	Units:	mg/L			Prep Info	: Prep Da	te: <b>9/20/201</b>	6	Prep Method	: A4500 N-C	•
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		2.05	0.10	1	1.12	93	90	110				
Associated sample	s: H16090340-001A											
Run ID :Run Order	FIA203-HE_160920A: 15		SampType:	Sample Matri	ix Spike Duplicate		Lab	ID: <b>H16090</b> 3	330-001CMSD	Method	: A4500 N-C	;
Analysis Date: 09/	20/16 10:18	Units:	mg/L			Prep Info	: Prep Da	te: 9/20/201	6	Prep Method	: A4500 N-C	•
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		2.03	0.10	1	1.12	91	90	110	2.05	0.8	20	
Associated samples	s: H16090340-001A											
Run ID :Run Order	FIA203-HE_160920A: 28		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16090</b> 3	337-001CMS	Method	: A4500 N-C	)
Analysis Date: 09/	20/16 10:34	Units:	mg/L			Prep Info	: Prep Da	te: 9/20/201	6	Prep Method	: A4500 N-C	•
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		1.16	0.10	1	0.1962	97	90	110				
Associated sample	s: H16090340-001A											

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DE0 H16090	Q-Federal Superfund 340		ANALYT	Date: 28-Dec-16									
Project:	CFR Mo	onitoring-474374		В										
Run ID :Run Order:	FIA203-H	E_160920A: 29	SampType:	Sample Matr	ix Spike Duplicat	9	Lab	ID: <b>H16090</b> ;	337-001CMSD	Method	: A4500 N-0	;		
Analysis Date: 09/20/16 10:35 Units:		mg/L			Prep Info	: Prep Da	ate: <b>9/20/201</b>	6	Prep Method	: A4500 N-0	3			
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrogen, Total		1.16	0.10	1	0.1962	96	90	110	1.165	0.7	20			
Associated samples	H160903	40-001A												

- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

- N Analyte concentration was not sufficiently high to calculate RPD
- A Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Federal Sup H16090340	erfund		ANALYT	ICAL QC	<b>SUMMA</b> Helena, MT	<b>RY</b> Bra	REPO	RT		Date	28-Dec-	-16
Project:	CFR Monitoring-4743	74		B	atchID:	34491							
Run ID :Run Order	: FIA203-HE_160920A: 41		SampType:	Laboratory C	ontrol Sam	ole		Lab	ID: LCS-34	491	Method	A4500 N-0	C
Analysis Date: 09/	20/16 10:49	Units:	mg/L			Prep	Info	: Prep Da	te: <b>9/20/20</b> 1	16	Prep Method	A4500 N-C	C
Analytes 1		Result	PQL	SPK value	SPK Ref V	al %RE	C	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		12.7	0.30	13.7	0.0263	39	93	90	110				
Associated sample	s: H16090340-002A, H1609 010A, H16090340-011A,	0340-003/ H1609034	A, H16090340 I0-012A, H160	-004A, H1609 90340-013A,	0340-005A, H16090340-	H16090340-00 014A, H16090	)6A, 340∙	H1609034 -015A, H16	0-007A, H10 090340-016	6090340-008A, SA, H16090340-	H16090340-009 017A	}A, H16090	340-
Run ID :Run Order	: FIA203-HE_160920A: 42		SampType:	Method Blan	k			Lab	ID: <b>MB-344</b>	91	Method	A4500 N-0	2
Analysis Date: 09/	20/16 10:51	Units:	mg/L			Prep	Info	: Prep Da	te: <b>9/20/20</b> 1	16	Prep Method	A4500 N-0	c
Analytes 1		Result	PQL	SPK value	SPK Ref V	al %RE	С	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		0.03	0.007										
Associated sample	E H16090340-002A, H1609 010A, H16090340-011A,	0340-003 H1609034	A, H16090340 I0-012A, H160	-004A, H1609 90340-013A,	0340-005A, H16090340-	H16090340-00 014A, H16090	06A, 340∙	H1609034 -015A, H16	0-007A, H1 090340-016	6090340-008A, SA, H16090340-	H16090340-009 017A	}A, H16090	340-
Run ID :Run Order	: FIA203-HE_160920A: 44		SampType:	Sample Matr	ix Spike			Lab	ID: <b>H16090</b> :	340-002AMS	Method	A4500 N-0	C
Analysis Date: 09/	20/16 10:53	Units:	mg/L				Prep Info: Prep Date: 9/20/2016					A4500 N-0	<b>c</b>
Analytes 1		Result	PQL	SPK value	SPK Ref V	al %RE	C	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		0.954	0.10	1		0	95	90	110				
Associated samples	s: H16090340-002A, H1609 010A, H16090340-011A,	0340-003/ H1609034	A, H16090340 I0-012A, H160	-004A, H1609 90340-013A,	0340-005A, H16090340-	H16090340-00 014A, H16090	)6A, 340∙	H1609034 -015A, H16	0-007A, H10 090340-016	6090340-008A, SA, H16090340-	H16090340-009 017A	}A, H16090	340-
Run ID :Run Order	: FIA203-HE_160920A: 45		SampType:	Sample Matr	ix Spike Du	olicate		Lab	ID: <b>H16090</b>	340-002AMSD	Method	A4500 N-0	0
Analysis Date: 09/	20/16 10:54	Units:	mg/L			Prep	Info	: Prep Da	te: <b>9/20/20</b> 1	16	Prep Method	A4500 N-0	c
Analytes 1		Result	PQL	SPK value	SPK Ref V	al %RE	С	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		0.956	0.10	1		0	96	90	110	0.9538	0.2	20	
Associated sample	5: H16090340-002A, H1609 010A, H16090340-011A,	0340-003 H1609034	A, H16090340 I0-012A, H160	-004A, H1609 90340-013A,	0340-005A, H16090340-	H16090340-00 014A, H16090	)6A, 340∙	H1609034 -015A, H16	0-007A, H10 090340-016	6090340-008A, SA, H16090340-	H16090340-009 017A	€A, H16090	340-
Run ID :Run Order	: FIA203-HE_160920A: 58		SampType:	Sample Matr	ix Spike			Lab	ID: <b>H16090</b>	340-012AMS	Method	A4500 N-0	C
Analysis Date: 09/	20/16 11:10	Units:	mg/L			Prep	Info	: Prep Da	te: <b>9/20/20</b> 1	16	Prep Method	A4500 N-C	C
Analytes 1		Result	PQL	SPK value	SPK Ref V	al %RE	C	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		0.953	0.10	1		0	95	90	110				
Qualifiers: ND J - /	- Not Detected at the Reporti Analyte detected below quant	ng Limit itation limi	s its F	S - Spike Reco R - RPD outsid	very outside e accepted r	accepted reco	very	limit N A	- Analyte co - Analyte co	oncentration was	not sufficiently ater than four tin	high to calco nes the spik Pag	ulate RPD e amount je 70 of 13(
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Client: Work Order:	MT DEQ-Federal Supe H16090340	erfund		ANALYT	ICAL QC S		Date:	28-Dec-1	16				
Project:	CFR Monitoring-47437	74		В	atchID: 34								
Run ID :Run Order:	FIA203-HE_160920A: 58		SampType:	Sample Matri	x Spike		Lab I	ID: H160903	340-012AMS	Method:	A4500 N-C		
Analysis Date: 09/2	0/16 11:10	Units: <b>r</b>	ng/L			Prep Info	: Prep Da	te: 9/20/201	6	Prep Method:	A4500 N-C		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Associated samples	: H16090340-002A, H16090	0340-003A,	H16090340-	004A, H1609	0340-005A, H160	)90340-006A,	H16090340	0-007A, H16	6090340-008A, I	H16090340-009	A, H160903	340-	

010A, H16090340-011A, H16090340-012A, H16090340-013A, H16090340-014A, H16090340-015A, H16090340-016A, H16090340-017A

Run ID :Run Order: FIA203-HE_160920A: 59 SampType: Sample Matrix Spike Duplicate						Lab I	ID: <b>H16090</b> ;	Method	l: A4500 N-C	;	
Analysis Date: 09/20/16 11:11	Units: mg/l	-			Prep Info:	Prep Da	te: <b>9/20/20</b> 1	6	Prep Method	: A4500 N-C	;
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total	0.930	0.10	1	0	93	90	110	0.9527	2.4	20	

Associated samples: H16090340-002A, H16090340-003A, H16090340-004A, H16090340-005A, H16090340-006A, H16090340-007A, H16090340-008A, H16090340-009A, H16090340-009A, H16090340-012A, H16090340-012A, H16090340-013A, H16090340-015A, H16090340-016A, H16090340-017A

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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<b>ENERGY</b> LABORATORIES	Trust our Peop www.energylab	le. Trust our Data. b.com	Coll	lege Station, TX <b>88</b>	Billings, 38.690.2218 • Gillette,	MT 800.735.4 WY 866.686.	<b>4489 •</b> Caspe <b>7175 •</b> Helena	r, WY <b>888.235</b> a, MT <b>877.472</b>	.0515 .0711			
Client: Work Order:	MT DEQ-Federal S H16090340	Superfund		ANALYT	ICAL QC SU	MMARY na, MT Bra	REPO	RT		Date	: 28-Dec-	16
Project:	CFR Monitoring-47	74374		В	atchID: 345	12						
Run ID :Run Order:	HGCV202-H_1609224	A: 41	SampType:	Method Blan	k		Lab	ID: <b>MB-345</b>	12	Method	E245.1	
Analysis Date: 09/2	2/16 18:55	Units:	mg/L			Prep Info	: Prep Da	te: <b>9/21/20</b> 1	6	Prep Method	: E245.1	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		ND	1E-06									
Associated samples	H16090340-002C, H1	6090340-0030	C, H16090340	-004C, H1609	0340-018A							
Run ID :Run Order:	HGCV202-H_1609224	A: 42	SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-34	512	Method	: E245.1	
Analysis Date: 09/2	nalysis Date: 09/22/16 18:58 Unit			is: <b>mg/L</b>			: Prep Da	te: <b>9/21/20</b> 1	6	Prep Method	E245.1	
Analytes <u>1</u>	nalytes <u>1</u> Resul			SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.000143	0.00010	0.00015	0	96	90	110				
Associated samples	H16090340-002C, H1	6090340-0030	C, H16090340	-004C, H1609	0340-018A							
Run ID :Run Order:	HGCV202-H_1609224	A: 58	SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16090</b> 3	322-005CMS	Method	: E245.1	
Analysis Date: 09/2	2/16 19:40	Units:	mg/L			Prep Info	: Prep Da	te: <b>9/22/20</b> 1	6	Prep Method	: E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.000159	0.00010	0.00015	0	106	70	130				
Associated samples	H16090340-002C, H1	6090340-0030	C, H16090340	-004C, H1609	0340-018A							
Run ID :Run Order: HGCV202-H_160922A: 59			SampType:	Sample Matri	ix Spike Duplicate		Lab	ID: <b>H16090</b>	322-005CMSD	Method	E245.1	
Analysis Date: 09/2	Analysis Date: 09/22/16 19:43 Units:		s: <b>mg/L</b>		Prep Info	: Prep Da	te: <b>9/22/20</b> 1	6	Prep Method	: E245.1		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury 0.000160			0.00010	0.00015	0	107	70	130	0.000159	0.5	20	

Associated samples: H16090340-002C, H16090340-003C, H16090340-004C, H16090340-018A

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16090340	perfund		ANALYT	ICAL QC S Prepared by He	UMMARY elena, MT Bra	REPO	RT		Date	: 28-Dec-	16
Project:	CFR Monitoring-4743	74		В	atchID: 34	4525						
Run ID :Run Order:	FIA202-HE_160921A: 12		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-34	525	Method	: E365.1	
Analysis Date: 09/2	21/16 13:47	Units:	mg/L			Prep Info:	Prep Da	te: <b>9/21/20</b> 1	16	Prep Method	: E365.1	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.820	0.010	0.8	0	102	90	110				
Associated samples	: H16090340-001D, H1609 009D, H16090340-010D,	0340-002D H1609034(	9, H16090340 0-011D	0-003D, H1609	0340-004D, H16	090340-005D,	H1609034	0-006D, H1	6090340-007D,	H16090340-0	08D, H1609	0340-
Run ID :Run Order:	FIA202-HE_160921A: 13		SampType:	Method Blan	k		Lab	ID: <b>MB-345</b>	25	Method	: E365.1	
Analysis Date: 09/2	21/16 13:48	Units:	mg/L			Prep Info:	Prep Da	te: <b>9/21/20</b> 1	16	Prep Method	: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	ND	0.002									
Associated samples	: H16090340-001D, H1609 009D, H16090340-010D,	0340-002D H16090340	9, H16090340 0-011D	0-003D, H1609	0340-004D, H16	090340-005D,	H1609034	0-006D, H1	6090340-007D,	H16090340-0	08D, H1609	0340-
Run ID :Run Order:	FIA202-HE_160921A: 29		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16090</b>	340-002DMS	Method	: E365.1	
Analysis Date: 09/2	21/16 14:04	Units:	mg/L			Prep Info:	Prep Da	te: <b>9/21/20</b> 1	16	Prep Method	: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.431	0.010	0.4	0.00408	107	90	110				
Associated samples	: H16090340-001D, H1609 009D, H16090340-010D,	0340-002D H16090340	), H16090340 0-011D	0-003D, H1609	0340-004D, H16	090340-005D,	H1609034	0-006D, H1	6090340-007D,	H16090340-0	08D, H1609	0340-
Run ID :Run Order:	FIA202-HE_160921A: 30		SampType:	Sample Matri	ix Spike Duplica	ate	Lab	ID: <b>H16090</b>	340-002DMSD	Method	: E365.1	
Analysis Date: 09/2	21/16 14:05	Units:	mg/L			Prep Info:	Prep Da	te: 9/21/201	16	Prep Method	: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.448	0.010	0.4	0.00408	<u>111</u>	90	110	0.4306	<u>4.0</u>	20	S

Associated samples: H16090340-001D, H16090340-002D, H16090340-003D, H16090340-004D, H16090340-005D, H16090340-006D, H16090340-007D, H16090340-008D, H1609080, H1609080, H1609080, H1609080, H16080, H16080, H160800, H16080, H16080, H16080, H16080, H16080, H

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16090340	perfund		ANALYT	ICAL QC SU Prepared by Helei	<b>MMARY</b> na, MT Bra	<b>REPO</b>	RT		Date	: 28-Dec-	-16
Project:	CFR Monitoring-4743	374		В	atchID: 345	31						
Run ID :Run Order	FIA202-HE_160922A: 12		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-34	531	Method	d: E365.1	
Analysis Date: 09/	22/16 13:08	Units:	mg/L			Prep Info	: Prep Da	ate: <b>9/22/20</b> 1	6	Prep Method	d: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.837	0.010	0.8	0	105	90	110				
Associated samples	s: H16090340-012D, H1609	0340-013[	D, H16090340	)-014D, H1609	0340-015D, H1609	0340-016D	, H1609034	10-017D				
Run ID :Run Order	FIA202-HE_160922A: 13		SampType:	Method Blan	k		Lab	ID: <b>MB-345</b>	31	Method	: <b>E365.1</b>	
Analysis Date: 09/	alysis Date: 09/22/16 13:09 Ur					Prep Info	: Prep Da	ate: <b>9/22/20</b> 1	6	Prep Method	d: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	ND	0.002									
Associated samples	s: H16090340-012D, H1609	00340-013[	D, H16090340	)-014D, H1609	0340-015D, H1609	0340-016D	, H1609034	10-017D				
Run ID :Run Order	FIA202-HE_160922A: 19		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16090</b>	340-012DMS	Method	: <b>E365.1</b>	
Analysis Date: 09/	22/16 13:15	Units:	mg/L			Prep Info	: Prep Da	ate: <b>9/22/20</b> 1	6	Prep Method	d: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.447	0.010	0.4	0	<u>112</u>	90	110				S
Associated samples	s: H16090340-012D, H1609	0340-0130	D, H16090340	0-014D, H1609	0340-015D, H1609	0340-016D	, H1609034	10-017D				
Run ID :Run Order	: FIA202-HE_160922A: 20		SampType:	Sample Matri	ix Spike Duplicate		Lab	ID: <b>H16090</b>	340-012DMSD	Method	d: <b>E365.1</b>	
Analysis Date: 09/	22/16 13:16	Units:	mg/L			Prep Info	: Prep Da	ate: <b>9/22/20</b> 1	6	Prep Method	d: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total	as P	0.441	0.010	0.4	0	110	90	110	0.4467	1.3	20	
Associated samples	S H16090340-012D H1609	0340-0130	H16090340	-014D H1600	0340-015D H1609	0340-016D	H1609034	10-017D				

116090340-013D, H16090340-014D, H16090340-015D, H16090340-016D, H16090340-017L

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Su H16090340	perfund		ANALYT	ICAL QC Prepared by	<b>C SUMMARY</b> / Helena, MT Bra	REPO	RT	<b>Date:</b> 28-Dec	c-16
Project:	CFR Monitoring-474	374		В	atchID:	34561				
Run ID :Run Order	: ICP2-HE_160928C: 65		SampType:	Method Blan	k		Lab	ID: <b>MB-34561</b>	Method: SW6010	В
Analysis Date: 09/	28/16 14:15	Units:	mg/kg			Prep Info	: Prep Da	te: 9/26/2016	Prep Method: SW3050	В
Analytes 2		Result	PQL	SPK value	SPK Ref V	al %REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Copper		ND	0.2							
Zinc		ND	0.3							
Associated samples	s: H16090340-020A, H160 028A, H16090340-029A	90340-021A , H16090340	, H16090340- )-030A, H1609	022A, H1609 90340-031A,	0340-023A, H16090340-	H16090340-024A, 032A, H16090340	H1609034 •033A, H16	0-025A, H16090340-026A 090340-034A	A, H16090340-027A, H1609	90340-
Run ID :Run Order	: ICP2-HE_160928C: 66		SampType:	Laboratory F	ortified Blar	ık	Lab	ID: LFB-34561	Method: SW6010	В
Analysis Date: 09/	28/16 14:19	Units:	mg/kg			Prep Info	: Prep Da	te: 9/26/2016	Prep Method: SW3050	в
Analytes 2		Result	PQL	SPK value	SPK Ref V	al %REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Copper		52.2	1.0	50		0 <b>104</b>	80	120		
Zinc		52.8	1.0	50		0 <b>106</b>	80	120		
Associated samples	s: H16090340-020A, H160 028A, H16090340-029A	90340-021A , H16090340	, H16090340- )-030A, H1609	022A, H1609 90340-031A,	0340-023A, H16090340-	H16090340-024A, 032A, H16090340	H1609034 -033A, H16	0-025A, H16090340-026A 090340-034A	A, H16090340-027A, H1609	90340-
Run ID :Run Order	: ICP2-HE_160928C: 67		SampType:	Laboratory C	ontrol Sam	ple	Lab	ID: LCS-34561	Method: SW6010	В
Analysis Date: 09/	28/16 14:23	Units:	mg/kg			Prep Info	: Prep Da	te: 9/26/2016	Prep Method: SW3050	В
Analytes 2		Result	PQL	SPK value	SPK Ref V	al %REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Copper		114	1.0	137		0 83	76.6	108.8		
Zinc		221	1.7	231		0 <b>96</b>	75.3	111.7		
Associated samples	<ul> <li>H16090340-020A, H160</li> <li>028A, H16090340-029A</li> </ul>	90340-021A , H16090340	, H16090340- )-030A, H1609	022A, H1609 90340-031A,	0340-023A, H16090340-	H16090340-024A, 032A, H16090340	H1609034 -033A, H16	0-025A, H16090340-026A 090340-034A	A, H16090340-027A, H1609	90340-
Run ID :Run Order	: ICP2-HE_160928C: 70		SampType:	Post Digestic	on/Distillatio	on Spike	Lab	ID: H16090340-020APDS	Method: SW6010	В
Analysis Date: 09/	28/16 14:34	Units:	mg/kg-dry			Prep Info	: Prep Da	te: 9/26/2016	Prep Method:	
Analytes 2		Result	PQL	SPK value	SPK Ref V	al %REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLimit	Qual
Copper		1640	4.4	1250	411	.7 98	75	125		
Zinc		2190	8.4	1250	932	.1 <b>100</b>	75	125		

Associated samples: H16090340-020A, H16090340-021A, H16090340-022A, H16090340-023A, H16090340-024A, H16090340-025A, H16090340-026A, H16090340-027A, H16090340-

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Su H16090340	perfund		ANALYT	ICAL QC SU Prepared by Heler		Date: 28-Dec	-16			
Project:	CFR Monitoring-4743	374		В	atchID: 345						
Run ID :Run Order	: ICP2-HE_160928C: 71		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16090</b> 3	340-020AMS	Method: SW6010E	3
Analysis Date: 09/	28/16 14:37	Units:	mg/kg-dry			Prep Info:	Prep Da	te: 9/26/201	6	Prep Method: SW3050	В
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Copper		658	4.3	242.8	411.7	101	75	125			
Zinc		1200	8.2	242.8	932.1	109	75	125			
Associated samples	s: H16090340-020A, H1609 028A, H16090340-029A,	90340-021 <i>/</i> H1609034	A, H16090340 0-030A, H160	0-022A, H1609 090340-031A, ∣	0340-023A, H1609 H16090340-032A,	0340-024A, H16090340-	H16090340 033A, H16	0-025A, H16 090340-034	6090340-026A, A	H16090340-027A, H1609	0340-
Run ID :Run Order	CICP2-HE_160928C: 72		SampType:	Sample Matri	ix Spike Duplicate		Lab	ID: <b>H16090</b> 3	840-020AMSD	Method: SW6010E	3
Analysis Date: 09/	nalysis Date: 09/28/16 14:41 Units:		mg/kg-dry			Prep Info:	Prep Da	te: 9/26/201	6	Prep Method: SW3050	В
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual

Copper 658 4.3 242.8 411.7 102 75 125 657.9 0.1 20 75 Zinc 8.2 932.1 125 1197 20 1180 242.8 103 1.3 Associated samples: H16090340-020A, H16090340-021A, H16090340-022A, H16090340-023A, H16090340-024A, H16090340-025A, H16090340-026A, H16090340-027A, H16090340-027A

028A, H16090340-029A, H16090340-030A, H16090340-031A, H16090340-032A, H16090340-033A, H16090340-034A

S - Spike Recovery outside accepted recovery limit

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Fed H16090340	eral Superfund		ANALYT	ICAL QC S Prepared by He	UMMARY lena, MT Brai	REPO	RT		Date	: 28-Dec-	16
Project:	CFR Monitorin	ng-474374		В	atchID: 34	4561						
Run ID :Run Order	ICPMS204-B_16	60928B: 19	SampType:	Method Blan	k		Lab	ID: <b>MB-3456</b>	1	Method	: SW6020	
Analysis Date: 09/2	28/16 13:46	Units:	mg/kg			Prep Info:	Prep Da	te: 9/26/201	6	Prep Method	: SW3050 E	3
Analytes 3		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.08	0.05									
Cadmium		ND	0.2									
Lead		ND	0.10									
Associated samples	5: H16090340-020 028A, H1609034	A, H16090340-021A, 40-029A, H16090340	, H16090340 -030A, H160	-022A, H1609 90340-031A, I	0340-023A, H160 H16090340-032A	090340-024A, A, H16090340-	H1609034 033A, H16	0-025A, H16 090340-034	090340-026A, A	H16090340-02	7A, H16090	340-
Run ID :Run Order	ICPMS204-B_16	60928B: 20	SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-345	61	Method	: SW6020	
Analysis Date: 09/2	28/16 13:49	Units: I	mg/kg			Prep Info:	Prep Da	te: 9/26/201	6	Prep Method	: SW3050 E	3
Analytes 3		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		150	1.0	196	0.07645	76	71.4	105.1				
Cadmium		85.0	1.0	99	0	86	73.9	106.1				
Lead		94.7	1.0	105	0	90	74.4	108.6				
Associated samples	E H16090340-020 028A, H160903	A, H16090340-021A, 40-029A, H16090340	, H16090340 -030A, H160	-022A, H1609 90340-031A, I	0340-023A, H160 H16090340-032/	090340-024A, A, H16090340-	H1609034 033A, H16	0-025A, H16 090340-034	090340-026A, A	H16090340-02	7A, H16090	340-
Run ID :Run Order	ICPMS204-B_16	60928B: 21	SampType:	Laboratory F	ortified Blank		Lab	ID: <b>LFB-345</b>	61	Method	SW6020	
Analysis Date: 09/2	28/16 13:52	Units: I	mg/kg			Prep Info:	Prep Da	te: 9/26/201	6	Prep Method	: SW3050 E	3
Analytes 3		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		49.7	1.0	50	0.07645	99	80	120				
Cadmium		24.7	1.0	25	0	99	80	120				
Lead		51.4	1.0	50	0	103	80	120				
Associated samples	3: H16090340-020 028A, H1609034	A, H16090340-021A, 40-029A, H16090340	, H16090340 -030A, H160	-022A, H1609 90340-031A, I	0340-023A, H160 H16090340-032A	090340-024A, A, H16090340-	H1609034 033A, H16	0-025A, H16 090340-034	090340-026A, A	H16090340-02	7A, H16090	340-
Run ID :Run Order	ICPMS204-B_16	60928B: 24	SampType:	Post Digestic	on/Distillation Sp	pike	Lab	ID: H160903	40-020APDS	Method	SW6020	
Analysis Date: 09/2	28/16 14:02	Units:	mg/kg-dry			Prep Info:	Prep Da	te: 9/26/201	6	Prep Method	:	
Analytes 3		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		2210	1.0	2428	36.8	89	75	125				
Cadmium		1050	1.0	1214	3.729	87	75	125				
Lead		2410	1.0	2428	139.4	93	75	125				

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Supe H16090340	erfund	ANALY	Date: 28-Dec-	16							
Project:	CFR Monitoring-47437	4	BatchID: 34561									
Run ID :Run Order:	ICPMS204-B_160928B: 24	Sa	ampType: Post Digest	ion/Distillation Spil	æ	Lab ID: H16090340-020APDS	Method: SW6020					
Analysis Date: 09/2	28/16 14:02	Units: <b>mg/</b>	/kg-dry		Prep Info:	Prep Date: 9/26/2016	Prep Method:					
Analytes <u>3</u>		Result	PQL SPK value	e SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val	%RPD RPDLimit	Qual				

Associated samples: H16090340-020A, H16090340-021A, H16090340-022A, H16090340-023A, H16090340-024A, H16090340-025A, H16090340-026A, H16090340-027A, H16090340-028A, H16090340-029A, H16090340-030A, H16090340-031A, H16090340-032A, H16090340-033A, H16090340-034A

Run ID :Run Order: ICPMS204-B_160928B	un ID :Run Order: ICPMS204-B_160928B: 25					Lab I	D: H160903	340-020AMS	Method	: SW6020	
Inalysis Date: 09/28/16 14:05 Units		mg/kg-dry			Prep Info:	Prep Dat	te: 9/26/201	6	Prep Method	: SW3050 E	5
Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	280	1.0	242.8	36.8	100	75	125				
Cadmium	119	1.0	121.4	3.729	95	75	125				
Lead	390	1.0	242.8	139.4	103	75	125				

Associated samples: H16090340-020A, H16090340-021A, H16090340-022A, H16090340-023A, H16090340-024A, H16090340-025A, H16090340-026A, H16090340-027A, H16090340-0340-027A, H16090340-034A, H16090340-034A, H16090340-034A, H16090340-034A, H16090340-034A

Run ID :Run Order: ICPMS204-B_160928B	SampType:		Lab I	D: H160903	40-020AMSD	Method	SW6020				
Analysis Date: 09/28/16 14:08 Units		mg/kg-dry			Prep Info:	Prep Dat	te: <b>9/26/201</b>	6	Prep Method	: SW3050 E	5
Analytes 3	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	281	1.0	242.8	36.8	101	75	125	280	0.3	20	
Cadmium	124	1.0	121.4	3.729	99	75	125	119.5	<u>3.6</u>	20	
Lead	395	1.0	242.8	139.4	105	75	125	389.9	1.3	20	

Associated samples: H16090340-020A, H16090340-021A, H16090340-022A, H16090340-023A, H16090340-024A, H16090340-025A, H16090340-026A, H16090340-027A, H16090340-

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

<b>ENERGY</b> LABORATORIES	Trust our People www.energylab.c	. <b>Trust our Data.</b> om	Colle	ege Station, TX <b>8</b> 1	88.690.2218	.0515 .0711						
Client: Work Order:	MT DEQ-Federal So H16090340	uperfund		ANALYT	ICAL QO	C SUN	<b>IMARY</b> a, MT Bra	REPO	RT		<b>Date:</b> 28-De	ec-16
Project:	CFR Monitoring-474	374		В	atchID:	C_R	215617					
Run ID :Run Orde	: SUB-C215617: 1		SampType:	Initial Calibra	ation Verific	ation Sta	andard	Lab	ID: ICV-926	9	Method: A5310	С
Analysis Date: 09/	25/16 12:51	Units: <b>n</b>	ng/L				Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref V	al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLim	nit Qual
Organic Carbon, I	bissolved (DOC)	4.96	0.50	5		0	99	90	110	0		
Associated sample	s: H16090340-001E, H16 009E, H16090340-010	090340-002E, E, H16090340-	H16090340- 011E, H160	·003E, H1609 90340-012E,	0340-004E, H16090340-	H160903 013E	340-005E,	H1609034	0-006E, H10	6090340-007E,	H16090340-008E, H160	090340-
Run ID :Run Orde	: SUB-C215617: 2		SampType:	Method Blan	k			Lab	ID: MBLK		Method: A5310	С
Analysis Date: 09/	25/16 13:06	Units: <b>n</b>	ng/L				Prep Info:	: Prep Da	te:		Prep Method:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref V	al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLim	nit Qual
Organic Carbon, D	vissolved (DOC)	ND	0.04									
Associated sample	s: H16090340-001E, H16 009E, H16090340-010I	090340-002E, E, H16090340-	H16090340- 011E, H160	003E, H1609 90340-012E,	0340-004E, H16090340-	H160903 013E	340-005E,	H1609034	0-006E, H10	6090340-007E,	H16090340-008E, H160	090340-
Run ID :Run Orde	: SUB-C215617: 3		SampType:	Continuing C	alibration V	/erificati	on Standa	<b>r</b> Lab	ID: CCV		Method: A5310	С
Analysis Date: 09/	25/16 13:21	Units: <b>n</b>	ng/L				Prep Info:	: Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref V	al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLim	nit Qual
Organic Carbon, D	vissolved (DOC)	4.92	0.50	5		0	98	90	110	0		
Associated sample	s: H16090340-001E, H16 009E, H16090340-010	090340-002E, E, H16090340-	H16090340- 011E, H160	003E, H1609 90340-012E,	0340-004E, H16090340-	H16090 013E	340-005E,	H1609034	0-006E, H10	6090340-007E,	H16090340-008E, H160	090340-
Run ID :Run Orde	: SUB-C215617: 4		SampType:	Method Blan	k			Lab	ID: <b>MB-102</b>	744	Method: A5310	С
Analysis Date: 09/	25/16 13:35	Units: <b>n</b>	ng/L				Prep Info:	: Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref V	al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLim	nit Qual
Organic Carbon, E	vissolved (DOC)	0.1	0.04									
Associated sample	s: H16090340-001E, H16 009E, H16090340-010	090340-002E, E, H16090340-	H16090340- 011E, H160	-003E, H1609 90340-012E,	0340-004E, H16090340-	H160903 013E	340-005E,	H1609034	0-006E, H10	6090340-007E,	H16090340-008E, H160	090340-
Run ID :Run Orde	: SUB-C215617: 5		SampType:	Laboratory C	ontrol Sam	ple		Lab	ID: LCS-92	69	Method: A5310	C
Analysis Date: 09/	25/16 20:44	Units: <b>n</b>	ng/L				Prep Info:	: Prep Da	te:		Prep Method:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref V	al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLim	nit Qual
Organic Carbon, E	issolved (DOC)	4.93	0.50	5		0	99	90	110	0		
Qualifiers: ND J	- Not Detected at the Repo Analyte detected below qua	orting Limit antitation limits	S	- Spike Reco R - RPD outsid	very outside e accepted r	accepte ecovery	d recovery limits	limit N A	- Analyte co - Analyte co	ncentration was	not sufficiently high to c ater than four times the s F	alculate RPD pike amount Page 79 of 130

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Client: Work Order	MT DEQ-Federal S r: H16090340	uperfund	Coll	ANALYT	ICAL QC S	UMMARY	REPO	a, mi 877.472 RT	2.0711	Date	: 28-Dec-	-16
Project:	CFR Monitoring-47	4374		B	atchID: C	_R215617						
Run ID :Run C	Order: SUB-C215617: 5	S	ampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-92	69	Method	: A5310 C	
Analysis Date:	: 09/25/16 20:44	Units: mg	g/L			Prep Info	: Prep Da	ate:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Associated sar	nples: H16090340-001E, H16 009E, H16090340-010	090340-002E, H E, H16090340-0	116090340 11E, H160	-003E, H1609 90340-012E,	0340-004E, H16 H16090340-013	090340-005E, E	H1609034	0-006E, H1	6090340-007E,	H16090340-00	8E, H16090	)340-
Run ID :Run C	Order: SUB-C215617: 6	S	ampType:	Sample Matr	ix Spike		Lab	ID: <b>H16090</b>	353-013E	Method	: A5310 C	
Analysis Date:	: 09/25/16 21:48	Units: mg	g/L			Prep Info	: Prep Da	ate:		Prep Method		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbo	on, Dissolved (DOC)	23.0	0.50	20	2.79	101	85	115	0			
Associated sar	nples: H16090340-001E, H16 009E, H16090340-010	090340-002E, H E, H16090340-0	116090340 11E, H160	-003E, H1609 90340-012E,	0340-004E, H16 H16090340-013	090340-005E, E	H1609034	0-006E, H1	6090340-007E,	H16090340-00	8E, H16090	)340-
Run ID :Run C	Order: SUB-C215617: 7	S	ampType:	Sample Matr	ix Spike Duplica	ate	Lab	ID: <b>H16090</b>	353-013E	Method	: A5310 C	
Analysis Date:	: 09/25/16 22:04	Units: <b>m</b> g	g/L			Prep Info	: Prep Da	ate:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbo	on, Dissolved (DOC)	23.2	0.50	20	2.79	102	85	115	23	0.7	20	
Associated sar	nples: H16090340-001E, H16 009E, H16090340-010	090340-002E, H E, H16090340-0	116090340 11E, H160	-003E, H1609 90340-012E,	0340-004E, H16 H16090340-013	090340-005E, E	H1609034	0-006E, H1	6090340-007E,	H16090340-00	8E, H16090	)340-
Run ID :Run C	Order: SUB-C215617: 13	S	ampType:	Sample Matr	ix Spike		Lab	ID: <b>H16090</b>	340-005E	Method	: A5310 C	
Analysis Date:	: 09/26/16 01:33	Units: mg	g/L			Prep Info	: Prep Da	ate:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbo	on, Dissolved (DOC)	21.4	0.50	20	1.4	100	85	115	0			
Associated san	nples: H16090340-001E, H16 009E, H16090340-010	090340-002E, H E, H16090340-0	116090340 11E, H160	-003E, H1609 90340-012E,	0340-004E, H16 H16090340-013	090340-005E, E	H1609034	0-006E, H1	6090340-007E,	H16090340-00	8E, H16090	)340-
Run ID :Run C	Order: SUB-C215617: 14	S	ampType:	Sample Matr	ix Spike Duplica	ate	Lab	ID: <b>H16090</b>	340-005E	Method	: A5310 C	
Analysis Date:	: 09/26/16 01:49	Units: mg	g/L			Prep Info	: Prep Da	ate:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbo	on, Dissolved (DOC)	21.6	0.50	20	1.4	101	85	115	21.43	0.9	20	
Associated san	nples: H16090340-001E, H16 009E, H16090340-010	090340-002E, H E, H16090340-0	116090340 11E, H160	-003E, H1609 90340-012E,	0340-004E, H16 H16090340-013	090340-005E, E	H1609034	0-006E, H1	6090340-007E,	H16090340-00	8E, H16090	)340-
Qualifiers:	ND - Not Detected at the Rep	orting Limit	S	S - Spike Reco	very outside acc	epted recovery	limit N	- Analyte co	oncentration was	s not sufficiently	high to calc	ulate RP[
	J - Analyte detected below qu	antitation limits	F	R - RPD outsid	e accepted reco	very limits	А	- Analyte co	oncentration grea	ater than four tin	nes the spik	ce amount

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Client: Work Order:	MT DEQ-Federal H16090340	Superfund		ANALYT	ICAL QC SU Prepared by Hele	<b>JMMARY</b> ena, MT Bra	REPO	RT		Date	: 28-Dec-	-16
Project:	CFR Monitoring-4	74374		В	atchID: C_	R215617						
Run ID :Run Order:	SUB-C215617: 24		SampType:	Sample Matri	ix Spike		Lab	ID: C16090	604-002EMS	Method	: A5310 C	
Analysis Date: 09/2	25/16 14:06	Units: I	mg/L			Prep Info	: Prep Da	ate:		Prep Method	<b>1</b> :	
Analytes 1		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Organic Carbon, Di	ssolved (DOC)	33.7	0.50	20	13.68	100	85	115	0			
Associated samples	: H16090340-001E, H1 009E, H16090340-01	16090340-002E, 0E, H16090340	, H16090340 -011E, H160	-003E, H1609 90340-012E, I	0340-004E, H160 H16090340-013E	90340-005E,	H1609034	0-006E, H1	6090340-007E	, H16090340-00	8E, H16090	1340-
Run ID :Run Order:		SampType:	Sample Matri	x Spike Duplicate	e	Lab	ID: C16090	604-002EMSD	Method	1: A5310 C		
Analysis Date: 09/25/16 14:21 Units:		Units: I	mg/L			Prep Info	: Prep Da	ate:		Prep Method	J:	
Analytes 1	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Organic Carbon, Di	ssolved (DOC)	34.5	0.50	20	13.68	104	85	115	33.66	2.4	20	
Associated samples	· H16000340-001E H	16000340-002E	H16000340.	003E H1600	0340-004E H160	00340-005E	H1600034	0-006E H1	6000340-007E	H16000340-00	NE H16000	13/0-

Associated samples: H16090340-001E, H16090340-002E, H16090340-003E, H16090340-004E, H16090340-005E, H16090340-006E, H16090340-007E, H16090340-008E, H16090340-009E, H16090340-010E, H16090340-011E, H16090340-012E, H16090340-013E

S - Spike Recovery outside accepted recovery limit

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

LABORATORIES	Trust our Pe www.energy	ople. Trust our Data. lab.com	Coll	lege Station, TX <b>8</b>	Bil 88.690.2218 • Gi	llings, MT <b>800.735.</b> Ilette, WY <b>866.686.</b>	4489 • Caspe 7175 • Helen	er, WY 888.235 a, MT <b>877.472</b>	2.0711			
Client: Work Order:	MT DEQ-Federa H16090340	I Superfund			ICAL QC	SUMMARY Ielena, MT Bra	<b>REPO</b>	RT		Date: 2	28-Dec-	16
Project:	CFR Monitoring-	474374		В	atchID: 0	C_R215648						
Run ID :Run Orde	er: SUB-C215648: 1		SampType:	Initial Calibra	ation Verification	on Standard	Lab	ID: ICV-926	9	Method: A	5310 C	
Analysis Date: 09	/26/16 17:49	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RF	PDLimit	Qual
Organic Carbon,	Dissolved (DOC)	4.99	0.50	5	0	100	90	110	0			
Associated sample	es: H16090340-014E, H	116090340-015E	, H16090340	-016E, H1609	0340-017E							
Run ID :Run Orde	er: SUB-C215648: 2		SampType:	Method Blan	k		Lab	ID: MBLK		Method: A	5310 C	
Analysis Date: 09	/26/16 18:04	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RF	PDLimit	Qual
Organic Carbon, Associated sample	Dissolved (DOC) es: H16090340-014E, H	ND 116090340-015E	0.04 , <b>H16090340</b>	-016E, H1609	0340-017E							
Organic Carbon, Associated sample Run ID :Run Orde	Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 3	ND 116090340-015E	0.04 , <b>H16090340</b> SampType:	-016E, H1609 Continuing C	0340-017E Calibration Ver	ification Standa	a <b>r</b> Lab	ID: CCV		Method: A	45310 C	
Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: <b>09</b>	Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 3 //26/16 18:19	ND 116090340-015E Units:	0.04 , <b>H16090340</b> SampType: <b>mg/L</b>	-016E, H1609 Continuing C	0340-017E Calibration Ver	ification Standa Prep Info	<b>ar</b> Lab : Prep Da	ID: CCV te:		Method: <b>A</b> Prep Method:	A5310 C	
Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: <b>09</b> Analytes <u>1</u>	Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 3 0/26/16 18:19	ND 116090340-015E Units: Result	0.04 , <b>H16090340</b> SampType: <b>mg/L</b> PQL	-016E, H1609 Continuing C SPK value	0340-017E Calibration Ver SPK Ref Val	ification Standa Prep Info %REC	<b>ar</b> Lab : Prep Da LowLimit	ID: <b>CCV</b> te: HighLimit	RPD Ref Val	Method: <b>A</b> Prep Method: %RPD RF	<b>45310 C</b> PDLimit	Qual
Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: <b>09</b> Analytes <u>1</u> Organic Carbon,	Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 3 //26/16 18:19 Dissolved (DOC)	ND 116090340-015E Units: Result 4.96	0.04 , H16090340 SampType: mg/L PQL 0.50	-016E, H1609 Continuing C SPK value 5	0340-017E Calibration Ver SPK Ref Val 0	ification Standa Prep Info %REC 99	ar Lab : Prep Da LowLimit 90	ID: <b>CCV</b> ite: HighLimit 110	RPD Ref Val 0	Method: <b>A</b> Prep Method: %RPD RF	<b>15310 C</b> PDLimit	Qual
Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: <b>09</b> Analytes <u>1</u> Organic Carbon, Associated sample	Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 3 //26/16 18:19 Dissolved (DOC) es: H16090340-014E, H	ND 116090340-015E Units: Result 4.96 116090340-015E	0.04 , H16090340 SampType: mg/L PQL 0.50 , H16090340	-016E, H1609 Continuing C SPK value 5 -016E, H1609	0340-017E Calibration Ver SPK Ref Val 0 0340-017E	ification Standa Prep Info %REC 99	ar Lab : Prep Da LowLimit 90	ID: CCV te: HighLimit 110	RPD Ref Val	Method: <b>A</b> Prep Method: %RPD RF	<b>\5310 C</b> PDLimit	Qual
Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: 09 Analytes <u>1</u> Organic Carbon, Associated sample Run ID :Run Orde	Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 3 //26/16 18:19 Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 4	ND 116090340-015E Units: Result 4.96 116090340-015E	0.04 , H16090340 SampType: mg/L PQL 0.50 , H16090340 SampType:	-016E, H1609 Continuing C SPK value 5 -016E, H1609 Sample Matr	0340-017E Calibration Ver SPK Ref Val 0 0340-017E ix Spike	ification Standa Prep Info %REC 99	ar Lab : Prep Da LowLimit 90 Lab	ID: CCV te: HighLimit 110 ID: H16090	RPD Ref Val 0 389-001C	Method: A Prep Method: %RPD RF	<b>5310 C</b> PDLimit	Qual
Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: <b>09</b> Analytes <u>1</u> Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: <b>09</b>	Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 3 0/26/16 18:19 Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 4 0/26/16 22:32	ND 116090340-015E Units: Result 4.96 116090340-015E Units:	0.04 , H16090340 SampType: mg/L 0.50 , H16090340 SampType: mg/L	-016E, H1609 Continuing C SPK value 5 -016E, H1609 Sample Matr	0340-017E Calibration Ver SPK Ref Val 0 0340-017E ix Spike	ification Standa Prep Info %REC 99 Prep Info	ar Lab : Prep Da LowLimit 90 Lab : Prep Da	ID: CCV ite: HighLimit 110 ID: H16090	RPD Ref Val 0 389-001C	Method: A Prep Method: %RPD RF Method: A Prep Method:	<b>15310 C</b> PDLimit	Qual
Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: 09 Analytes <u>1</u> Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: 09 Analytes <u>1</u>	Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 3 0/26/16 18:19 Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 4 0/26/16 22:32	ND 116090340-015E Units: Result 4.96 116090340-015E Units: Result	0.04 , H16090340 SampType: mg/L 0.50 , H16090340 SampType: mg/L PQL	-016E, H1609 Continuing C SPK value 5 -016E, H1609 Sample Matr SPK value	0340-017E Calibration Veri SPK Ref Val 0 0340-017E ix Spike SPK Ref Val	ification Standa Prep Info %REC 99 Prep Info %REC	ar Lab : Prep Da LowLimit 90 Lab : Prep Da LowLimit	ID: CCV tte: HighLimit 110 ID: H16090 tte: HighLimit	RPD Ref Val 0 389-001C RPD Ref Val	Method: A Prep Method: %RPD RF Method: A Prep Method: %RPD RF	A5310 C PDLimit A5310 C	Qual
Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: 09 Analytes 1 Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: 09 Analytes 1 Organic Carbon,	Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 3 0/26/16 18:19 Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 4 0/26/16 22:32 Dissolved (DOC)	ND 116090340-015E Units: Result 4.96 116090340-015E Units: Result 21.4	0.04 , H16090340 SampType: mg/L 0.50 , H16090340 SampType: mg/L PQL 0.50	-016E, H1609 Continuing C SPK value 5 -016E, H1609 Sample Matr SPK value 20	0340-017E Calibration Ver SPK Ref Val 0 0340-017E ix Spike SPK Ref Val 0	ification Standa Prep Info %REC 99 Prep Info %REC 107	ar Lab : Prep Da LowLimit 90 Lab : Prep Da LowLimit 85	ID: CCV tte: HighLimit 110 ID: H16090 tte: HighLimit 115	RPD Ref Val 0 389-001C RPD Ref Val 0	Method: A Prep Method: %RPD RF Method: A Prep Method: %RPD RF	A5310 C PDLimit A5310 C PDLimit	Qual
Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: 09 Analytes 1 Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: 09 Analytes 1 Organic Carbon, Associated sample	Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 3 0/26/16 18:19 Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 4 0/26/16 22:32 Dissolved (DOC) es: H16090340-014E, H	ND 116090340-015E Units: Result 4.96 116090340-015E Units: Result 21.4 116090340-015E	0.04 , H16090340 SampType: mg/L 0.50 , H16090340 SampType: mg/L PQL 0.50 , H16090340	-016E, H1609 Continuing C SPK value 5 -016E, H1609 Sample Matr SPK value 20 -016E, H1609	0340-017E Calibration Ver SPK Ref Val 0 0340-017E ix Spike SPK Ref Val 0 0340-017E	ification Standa Prep Info %REC 99 Prep Info %REC 107	ar Lab : Prep Da LowLimit 90 Lab : Prep Da LowLimit 85	ID: CCV tte: HighLimit 110 ID: H16090 tte: HighLimit 115	RPD Ref Val           0           389-001C           RPD Ref Val           0	Method: A Prep Method: %RPD RF Method: A Prep Method: %RPD RF	A5310 C PDLimit A5310 C PDLimit	Qual
Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: 09 Analytes 1 Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: 09 Analytes 1 Organic Carbon, Associated sample Run ID :Run Orde	Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 3 //26/16 18:19 Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 4 //26/16 22:32 Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 5	ND 116090340-015E Units: Result 4.96 116090340-015E Units: Result 21.4 116090340-015E	0.04 , H16090340 SampType: mg/L 0.50 , H16090340 SampType: mg/L 0.50 , H16090340 SampType:	-016E, H1609 Continuing C SPK value 5 -016E, H1609 Sample Matr 20 -016E, H1609 Sample Matr	0340-017E Calibration Veri SPK Ref Val 0 0340-017E ix Spike SPK Ref Val 0 0340-017E ix Spike Duplic	ification Standa Prep Info %REC 99 Prep Info %REC 107 cate	ar Lab : Prep Da LowLimit 90 Lab : Prep Da LowLimit 85 Lab	ID: CCV tte: HighLimit 110 ID: H16090 tte: HighLimit 115 ID: H16090	RPD Ref Val 0 389-001C RPD Ref Val 0 389-001C	Method: A Prep Method: %RPD RF Method: A Prep Method: %RPD RF	<b>A5310 C</b> PDLimit <b>A5310 C</b> PDLimit	Qual
Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: 09 Analytes 1 Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: 09 Analytes 1 Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: 09	Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 3 0/26/16 18:19 Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 4 0/26/16 22:32 Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 5 0/26/16 22:48	ND 116090340-015E Units: Result 4.96 116090340-015E Units: Result 21.4 116090340-015E Units:	0.04 , H16090340 SampType: mg/L 0.50 , H16090340 SampType: mg/L 0.50 , H16090340 SampType: mg/L	-016E, H1609 Continuing C SPK value 5 -016E, H1609 Sample Matr 20 -016E, H1609 Sample Matr	0340-017E Calibration Verion SPK Ref Val 0 0340-017E ix Spike SPK Ref Val 0 0340-017E ix Spike Duplic	ification Standa Prep Info %REC 99 Prep Info %REC 107 cate Prep Info	ar Lab : Prep Da LowLimit 90 Lab : Prep Da LowLimit 85 Lab : Prep Da	ID: CCV tte: HighLimit 110 ID: H16090 tte: HighLimit 115 ID: H16090 tte:	RPD Ref Val 0 389-001C RPD Ref Val 0 389-001C	Method: A Prep Method: %RPD RF Method: A Prep Method: A %RPD RF Method: A Prep Method: A	<b>A5310 C</b> PDLimit <b>A5310 C</b> PDLimit	Qual
Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: 09 Analytes 1 Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: 09 Analytes 1 Organic Carbon, Associated sample Run ID :Run Orde Analysis Date: 09 Analysis Date: 09 Analysis Date: 09 Analysis Date: 09	Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 3 //26/16 18:19 Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 4 //26/16 22:32 Dissolved (DOC) es: H16090340-014E, H er: SUB-C215648: 5 //26/16 22:48	ND 116090340-015E Units: Result 4.96 116090340-015E Units: Result 21.4 116090340-015E Units: Result	0.04 , H16090340 SampType: mg/L 0.50 , H16090340 SampType: mg/L 0.50 , H16090340 SampType: mg/L PQL	-016E, H1609 Continuing C SPK value 5 -016E, H1609 Sample Matr 20 -016E, H1609 Sample Matr SPK value	0340-017E Calibration Ver SPK Ref Val 0 0340-017E ix Spike SPK Ref Val 0 0340-017E ix Spike Duplic SPK Ref Val	ification Standa Prep Info %REC 99 Prep Info %REC 107 cate Prep Info %REC	ar Lab : Prep Da LowLimit 90 Lab : Prep Da LowLimit 85 Lab : Prep Da Lab	ID: CCV tte: HighLimit 110 ID: H16090 tte: HighLimit ID: H16090 tte: HighLimit	RPD Ref Val 0 389-001C RPD Ref Val 0 389-001C RPD Ref Val	Method: A Prep Method: %RPD RF Method: A Prep Method: %RPD RF Method: A Prep Method: RF	A5310 C PDLimit A5310 C PDLimit A5310 C PDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

Run ID :Run Order Analysis Date: 09/2 Analytes <u>1</u> Organic Carbon, D Associated samples Run ID :Run Order Analysis Date: 09/2 Analytes <u>1</u>	SUB-C215648: 11 27/16 02:56 issolved (DOC) :: H16090340-014E, H10 :: SUB-C215648: 12 27/16 03:11	Units: Result 5.90 6090340-015E Units: Result	SampType: mg/L 0.50 , H16090340 SampType: mg/L PQL	Sample Matri SPK value 5 -016E, H16090 Sample Matri SPK value	X Spike SPK Ref Val 0.8637 0340-017E X Spike Duplicate SPK Ref Val	Prep Info %REC 101	Lab Prep Da LowLimit 85 Lab Prep Da LowLimit	ID: C160907 te: HighLimit 115 ID: C160907 te: HighLimit	778-001DMS RPD Ref Val 0 778-001DMSD RPD Ref Val	Method Prep Method %RPD Method Prep Method %RPD	: <b>A5310 C</b> : RPDLimit : <b>A5310 C</b> : RPDLimit	Qual
Run ID :Run Order Analysis Date: 09/2 Analytes <u>1</u> Organic Carbon, D Associated samples Run ID :Run Order Analysis Date: 09/2	27/16 02:56 assolved (DOC) H16090340-014E, H1 SUB-C215648: 12 27/16 03:11	Units: Result 5.90 6090340-015E Units:	SampType: mg/L 0.50 , H16090340 SampType: mg/L	SPK value 5 016E, H1609 Sample Matri	X Spike SPK Ref Val 0.8637 0340-017E	Prep Info %REC 101	Lab : Prep Da LowLimit 85 Lab : Prep Da	ID: C160907 te: HighLimit 115 ID: C160907 te:	778-001 DMS RPD Ref Val 0 778-001 DMSD	Method Prep Method %RPD Method Prep Methoc	: A5310 C : RPDLimit : A5310 C :	Qual
Run ID :Run Order Analysis Date: 09/2 Analytes <u>1</u> Organic Carbon, D Associated samples Run ID :Run Order	SUB-C215648: 11 27/16 02:56 issolved (DOC) :: H16090340-014E, H10 :: SUB-C215648: 12	Units: Result 5.90 6090340-015E	SampType: mg/L PQL 0.50 , H16090340 SampType:	Sample Matri SPK value 5 -016E, H16090 Sample Matri	X Spike SPK Ref Val 0.8637 0340-017E X Spike Duplicate	Prep Info %REC 101	Lab : Prep Da LowLimit 85 Lab	ID: C160907 te: HighLimit 115 ID: C160907	RPD Ref Val 0 778-001DMSD	Method Prep Method %RPD	: A5310 C : RPDLimit : : A5310 C	Qual
Run ID :Run Order Analysis Date: 09/2 Analytes <u>1</u> Organic Carbon, D Associated samples	27/16 02:56	Units: Result 5.90 6090340-015E	SampType: mg/L PQL 0.50 , H16090340	SPK value SPK value 5 016E, H1609	X Spike SPK Ref Val 0.8637 0340-017E	Prep Info %REC 101	Lab : Prep Da LowLimit 85	ID: <b>C16090</b> 7 te: HighLimit 115	RPD Ref Val	Prep Method %RPD	: <b>A5310 C</b> : RPDLimit	Qual
Run ID :Run Order Analysis Date: 09/2 Analytes <u>1</u> Organic Carbon, D	27/16 02:56	Units: Result 5.90	mg/L PQL 0.50	Sample Matri SPK value 5	SPK Ref Val	Prep Info %REC 101	Lab : Prep Da LowLimit 85	ID: C160907 te: HighLimit 115	RPD Ref Val	Prep Method %RPD	: <b>A5310 C</b> : RPDLimit	Qual
Analysis Date: 09/2 Analytes 1	27/16 02:56	Units: Result	mg/L PQL	Sample Matri	SPK Ref Val	Prep Info %REC	Lab : Prep Da LowLimit	te: HighLimit	RPD Ref Val	Prep Method %RPD	: A5310 C : RPDLimit	Qual
Run ID :Run Order Analysis Date: 09/2	27/16 02:56	Units:	mg/L	Sample Matri	ix Spike	Prep Info	Lab : Prep Da	ID: <b>C16090</b> 7 te:	(78-001DMS	Prep Method	: <b>A5310 C</b> :	
Run ID :Run Order	SUB-C215648: 11		Samp Type:	Sample Matri	ix Spike		Lab	ID: C160907	(78-001DMS	Ivietnoa	: A5310 C	
	0110 0045040 44		Comm				1			Mathad		
Organic Carbon, D Associated samples	issolved (DOC) :: H16090340-014E, H1	5.00 6090340-015E	0.50 , <b>H16090340</b>	5 •016E, H1609	0 0340-017E	100	90	110	0			
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analysis Date: 09/2	27/16 01:40	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	:	
Run ID :Run Order	SUB-C215648: 9		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-926	<b>59</b>	Method	: A5310 C	
Project:	CFR Monitoring-47	74374		В	atchID: C_	R215648						
Client: Work Order:	MT DEQ-Federal S H16090340	Superfund		ANALYT	ICAL QC SU Prepared by Hele	<b>JMMARY</b> ena, MT Bra	REPO	RT		Date	: 28-Dec-	16

Associated samples: H16090340-014E, H16090340-015E, H16090340-016E, H16090340-017E

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal H16090340	I Superfund		ANALYT	ICAL QC Prepared by	<b>SUMMARY</b> Helena, MT Bra	REPO	RT		Date	: 28-Dec-	16
Project:	CFR Monitoring-	474374		В	atchID:	R118760						
Run ID :Run Orde	r: PHSC_101-H_16091	I9A: 6	SampType:	Method Blan	k		Lab	ID: <b>MB</b>		Method	: A2320 B	
Analysis Date: 09/	/19/16 09:30	Units: <b>n</b>	ng/L			Prep Info:	Prep Da	ite:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
A kalinity, Total as Associated sample	CaCO3 s: H16090340-001A, H 009A, H16090340-0	2 116090340-002A, 110A, H16090340-	0.2 H16090340 011A, H160	-003A, H1609 90340-012A, I	0340-004A, H H16090340-0	116090340-005A, 113A, H16090340-	H1609034 014A, H16	0-006A, H16 090340-015	6090340-007A, 6A, H16090340-	H16090340-00 016A, H160903	8A, H16090 340-017A	340-
Run ID :Run Orde	r: PHSC_101-H_16091	I9A: 8	SampType:	Laboratory C	ontrol Samp	le	Lab	ID: LCS		Method	: A2320 B	
Analysis Date: 09/	19/16 09:36	Units: <b>n</b>	ng/L			Prep Info:	Prep Da	ite:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
A kalinity, Total as	CaCO3	590	4.0	600	1.76	6 <b>98</b>	90	110				
Associated sample	s: H16090340-001A, H 009A, H16090340-0	116090340-002A, 110A, H16090340-	H16090340 011A, H160	-003A, H1609 90340-012A, I	0340-004A, H H16090340-0	116090340-005A, 113A, H16090340-	H1609034 014A, H16	0-006A, H10 090340-015	6090340-007A, 5A, H16090340-	H16090340-00 016A, H160903	8A, H16090 340-017A	340-
Run ID :Run Orde	r: PHSC_101-H_16091	I9A: 11	SampType:	Sample Dupl	icate		Lab	ID: <b>H16090</b> 4	181-013ADUP	Method	: A2320 B	
Analysis Date: 09/	19/16 09:54	Units: <b>n</b>	ng/L			Prep Info:	Prep Da	ite:		Prep Method	:	
Analytes 2		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
A kalinity, Total as	CaCO3	74	4.0		(	0			73.35	1.5	10	
Bicarbonate as HC	03	90	4.0		(	0			88.88	1.5	10	
Associated sample	s: H16090340-001A, H 009A, H16090340-0	116090340-002A, 110A, H16090340-	H16090340 011A, H160	-003A, H1609 90340-012A, I	0340-004A, H H16090340-0	116090340-005A, 113A, H16090340-	H1609034 014A, H16	0-006A, H16 090340-015	6090340-007A, 5A, H16090340-	H16090340-00 016A, H160903	8A, H16090 340-017A	340-
Run ID :Run Orde	r: PHSC_101-H_16091	I9A: 49	SampType:	Sample Dupl	icate		Lab	ID: <b>H16090</b>	340-016ADUP	Method	A2320 B	
Analysis Date: 09/	19/16 11:53	Units: <b>n</b>	ng/L			Prep Info:	Prep Da	ite:		Prep Method	:	
Analytes 2		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
A kalinity, Total as	CaCO3	81	4.0		(	C			80.4	0.2	10	
Bicarbonate as HC	03	47	4.0		(	D			46.97	1.0	10	
Associated sample	s: H16090340-001A, H	116090340-002A,	H16090340	-003A, H1609	0340-004A, H	116090340-005A,	H1609034	0-006A, H16	6090340-007A,	H16090340-00	8A, H16090	340-

009A, H1609034Ó-010A, H1609034Ó-011A, H1609034Ó-012A, H1609034Ó-013A, H1609034Ó-014A, H1609034Ó-015A, H1609034Ó-016A, H1609034Ó-017A

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16090340	perfund		ANALYT	ICAL Q	C SUMN v Helena, I	<b>IARY</b> MT Bra	REPO	RT		Date	: 28-Dec-	16
Project:	CFR Monitoring-4743	374		B	atchID:	R1187	75						
Run ID :Run Orde	: FIA203-HE_160919A: 7		SampType:	Initial Calibra	ation Verific	ation Stand	dard	Lab	ID: ICV		Method	: E350.1	
Analysis Date: 09/	19/16 10:03	Units:	mg/L			Pr	ep Info:	: Prep Da	te:		Prep Method	ł:	
Analytes 1		Result	PQL	SPK value	SPK Ref \	/al %	6REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammoni	a as N	14.8	0.50	14.2		0	104	90	110				
Associated sample	s: H16090340-001D, H1609 009D, H16090340-010D,	90340-002D H16090340	, H16090340 -011D, H160	-003D, H1609 90340-012D,	0340-004D H16090340	, H1609034 -013D, H16	0-005D, 090340	H1609034 -014D, H16	0-006D, H1 6090340-01	6090340-007D, 5D, H16090340	H16090340-0 -016D, H16090	08D, H16090 )340-017D	0340-
Run ID :Run Orde	: FIA203-HE_160919A: 8		SampType:	Laboratory F	ortified Bla	nk		Lab	ID: LFB		Method	: E350.1	
Analysis Date: 09/	19/16 10:04	Units:	mg/L			Pr	ep Info:	: Prep Da	te:		Prep Method	ł:	
Analytes 1		Result	PQL	SPK value	SPK Ref \	/al %	6REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammoni	a as N	1.04	0.055	1		0	104	90	110				
Associated sample	s: H16090340-001D, H1609 009D, H16090340-010D,	90340-002D H16090340	, H16090340∙ )-011D, H160	-003D, H1609 90340-012D,	0340-004D H16090340	, H1609034 -013D, H16	0-005D, 090340	H1609034 -014D, H16	0-006D, H1 6090340-01	6090340-007D, 5D, H16090340	H16090340-0 -016D, H16090	08D, H16090 )340-017D	0340-
Run ID :Run Orde	: FIA203-HE_160919A: 10		SampType:	Initial Calibra	ation Blank,	Instrumen	t Blank	Lab	ID: ICB		Method	E350.1	
Analysis Date: 09/	19/16 10:06	Units:	mg/L			Pr	ep Info:	Prep Da	te:		Prep Method	ł:	
Analytes 1		Result	PQL	SPK value	SPK Ref \	/al %	6REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammoni	a as N	0.107	0.050			0		0	0				
Associated sample	s: H16090340-001D, H1609 009D, H16090340-010D,	90340-002D H16090340	, H16090340∙ )-011D, H160	-003D, H1609 90340-012D,	0340-004D H16090340	, H1609034 -013D, H16	0-005D, 090340	H1609034 -014D, H16	0-006D, H1 6090340-01	6090340-007D, 5D, H16090340	H16090340-0 -016D, H16090	08D, H16090 )340-017D	0340-
Run ID :Run Orde	: FIA203-HE_160919A: 53		SampType:	Continuing C	Calibration	/erification	Standa	r Lab	ID: CCV		Method	E350.1	
Analysis Date: 09/	19/16 10:58	Units:	mg/L			Pr	ep Info:	: Prep Da	te:		Prep Method	ł:	
Analytes 1		Result	PQL	SPK value	SPK Ref \	/al %	6REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammoni	a as N	0.521	0.050	0.5		0	104	90	110				
Associated sample	s: H16090340-001D, H1609 009D, H16090340-010D,	90340-002D H16090340	, H16090340 )-011D, H160	-003D, H1609 90340-012D,	0340-004D H16090340	, H1609034( -013D, H16	0-005D, 090340	H1609034 -014D, H16	0-006D, H1 3090340-01	6090340-007D, 5D, H16090340	H16090340-0 -016D, H16090	08D, H16090 0340-017D	)340-
Run ID :Run Orde	:: FIA203-HE_160919A: 56		SampType:	Sample Matr	ix Spike			Lab	ID: <b>H16090</b>	338-002DMS	Method	: E350.1	
Analysis Date: 09/	19/16 11:01	Units: I	mg/L			Pr	ep Info:	: Prep Da	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref \	/al %	6REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammoni	a as N	0.977	0.055	1		0	98	80	120				
Qualifiers: ND	<ul> <li>Not Detected at the Report</li> <li>Analyte detected below quan</li> </ul>	ing Limit titation limits	S S R	6 - Spike Reco R - RPD outsid	very outside le accepted	accepted re	ecovery its	limit N A	- Analyte co - Analyte co	oncentration was	not sufficiently ater than four tin	high to calco nes the spik Pag	ulate RPD e amount e 85 of 130

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Client: Work Order:	MT DEQ-Federal Sup H16090340	perfund		ANALYT			Y REPO	RT	2.0711	Date:	28-Dec-	16
Project:	CER Monitoring-4743	74		+ P	Prepared by	Helena, MI Br	anch					
		1 -	0 7	B		R110//J	<u> </u>					
Run ID :Run Order	FIA203-HE_160919A: 56		Samp Type:	Sample Matri	ix Spike		Lab	ID: <b>H16090</b>	338-002DMS	Method:	E350.1	
Analysis Date: 09/	19/16 11:01	Units:	mg/L			Prep Infe	o: Prep Da	ate:		Prep Method:		<b>.</b> .
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual
Associated samples	8: H16090340-001D, H1609 009D, H16090340-010D,	0340-0020 H1609034	D, H16090340 0-011D, H160	-003D, H1609 90340-012D,	0340-004D, H H16090340-0	116090340-005E 113D, H1609034	D, H1609034 0-014D, H10	40-006D, H <sup>^</sup> 6090340-01	16090340-007D, 5D, H16090340	H16090340-008 -016D, H160903	D, H16090 40-017D	340-
Run ID :Run Order	FIA203-HE_160919A: 57		SampType:	Sample Matri	ix Spike Dupl	icate	Lab	ID: H16090	338-002DMSD	Method:	E350.1	
Analysis Date: 09/	19/16 11:03	Units:	mg/L			Prep Infe	o: Prep Da	ate:		Prep Method:		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual
Nitrogen, Ammonia	a as N	0.988	0.055	1	C	) 99	80	120	0.9774	1.1	10	
Associated samples	s: H16090340-001D, H1609 009D, H16090340-010D,	0340-002E H1609034	D, H16090340 0-011D, H160	-003D, H1609 90340-012D,	0340-004D, H H16090340-0	116090340-005E 13D, H1609034	D, H1609034 0-014D, H10	40-006D, H′ 6090340-01	16090340-007D, 5D, H16090340	H16090340-008 -016D, H160903	D, H16090 40-017D	340-
Run ID :Run Order	FIA203-HE_160919A: 67		SampType:	Continuing C	alibration Ve	rification Stand	l <b>ar</b> Lab	ID: CCV		Method:	E350.1	
Analysis Date: 09/	19/16 11:14	Units:	mg/L			Prep Infe	o: Prep Da	ate:		Prep Method:		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual
Nitrogen, Ammonia	a as N	0.523	0.050	0.5	C	) 105	90	110				
Associated samples	8: H16090340-001D, H1609 009D, H16090340-010D,	0340-002E H1609034	D, H16090340 0-011D, H160	-003D, H1609 90340-012D,	0340-004D, H H16090340-0	116090340-005E 13D, H1609034	D, H1609034 0-014D, H10	40-006D, H <sup>-</sup> 6090340-01	16090340-007D 5D, H16090340	H16090340-008 -016D, H160903	D, H16090 40-017D	340-
Run ID :Run Order	FIA203-HE_160919A: 70		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16090</b>	340-005DMS	Method:	E350.1	
Analysis Date: 09/	19/16 11:18	Units:	mg/L	-		Prep Infe	o: Prep Da	ate:		Prep Method:		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual
Nitrogen, Ammonia	a as N	0.974	0.055	1	C	) 97	80	120				
Associated samples	s: H16090340-001D, H1609 009D, H16090340-010D,	0340-0020 H1609034	D, H16090340 0-011D, H160	-003D, H1609 90340-012D,	0340-004D, H H16090340-0	116090340-005E 13D, H1609034	D, H1609034 0-014D, H10	40-006D, H <sup>^</sup> 6090340-01	16090340-007D 5D, H16090340	H16090340-008 -016D, H160903	D, H16090 40-017D	340-
Run ID :Run Order	FIA203-HE_160919A: 71		SampType:	Sample Matri	ix Spike Dupl	icate	Lab	ID: <b>H16090</b>	340-005DMSD	Method:	E350.1	
Analysis Date: 09/	19/16 11:19	Units:	mg/L			Prep Infe	o: Prep Da	ate:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual
Nitrogen, Ammonia	a as N	0.991	0.055	1	C	) 99	80	120	0.9744	1.7	10	
Associated samples	8: H16090340-001D, H1609 009D, H16090340-010D,	0340-002E H1609034	D, H16090340 0-011D, H160	-003D, H1609 90340-012D,	0340-004D, H H16090340-0	116090340-005E 13D, H1609034	D, H1609034 0-014D, H10	40-006D, H <sup>⁄</sup> 6090340-01	16090340-007D 5D, H16090340	H16090340-008 -016D, H160903	D, H16090 40-017D	340-
Qualifiers: ND	- Not Detected at the Report	ing Limit	S	- Spike Reco	very outside a	ccepted recover	y limit N	- Analyte c	oncentration was	not sufficiently h	igh to calcu	late RPE

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16090340	erfund		ANALYT	ICAL QC Prepared by	<b>SUMMARY</b> Helena, MT Bra	<b>REPO</b>	RT		Date	e: 28-Dec	-16
Project:	CFR Monitoring-4743	74		В	atchID:	R118775						
Run ID :Run Order:	FIA203-HE_160919A: 81		SampType:	Continuing C	alibration Ve	erification Standa	n <b>r</b> Lab	ID: CCV		Metho	d: <b>E350.1</b>	
Analysis Date: 09/1	9/16 11:31	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Metho	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	0.521	0.050	0.5		0 <b>104</b>	90	110				
Associated samples	: H16090340-001D, H1609 009D, H16090340-010D,	0340-002D H16090340	), H16090340 0-011D, H160	0-003D, H1609 090340-012D,	0340-004D,   H16090340-(	H16090340-005D, D13D, H16090340	H1609034 -014D, H1	40-006D, H1 6090340-01	6090340-007D 5D, H16090340	, H16090340-0 0-016D, H1609	08D, H1609 0340-017D	0340-
Run ID :Run Order:	FIA203-HE_160919A: 84		SampType:	Sample Matri	x Spike		Lab	ID: <b>H16090</b>	340-015DMS	Metho	d: <b>E350.1</b>	
Analysis Date: 09/1	9/16 11:35	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Metho	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	1.01	0.055	1		0 <b>101</b>	80	120				
Associated samples	H16090340-001D, H1609 009D, H16090340-010D,	0340-002D H16090340	), H16090340 0-011D, H16(	0-003D, H1609 090340-012D,	0340-004D,   H16090340-(	H16090340-005D 013D, H16090340	H1609034 -014D, H1	40-006D, H1 6090340-01	6090340-007D 5D, H16090340	, H16090340-0 -016D, H1609	08D, H1609 0340-017D	0340-
Run ID :Run Order:	FIA203-HE_160919A: 85		SampType:	Sample Matri	x Spike Dup	licate	Lab	ID: <b>H16090</b>	340-015DMSD	Metho	d: <b>E350.1</b>	
Analysis Date: 09/1	9/16 11:36	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Metho	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	as N	1.03	0.055	1		0 <b>103</b>	80	120	1.009	<u>2.5</u>	10	
Associated samples	: H16090340-001D, H1609 009D, H16090340-010D,	0340-002D H1609034(	), H16090340 0-011D, H160	-003D, H1609 090340-012D,	0340-004D,   H16090340-(	H16090340-005D 013D, H16090340	H1609034 -014D, H1	40-006D, H1 6090340-01	6090340-007D 5D, H16090340	, H16090340-0 -016D, H1609	08D, H1609 0340-017D	0340-

S - Spike Recovery outside accepted recovery limit

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order	MT DEQ-Fee H16090340	deral Superfund		ANALYT	ICAL QC S Prepared by He	UMMARY	REPO	RT		Date: 28-Dec	-16
Project:	CFR Monitor	ing-474374		В	atchID: R	118786					
Run ID :Run C	Order: IC102-H_16091	18A: 11	SampType:	Method Blan	k		Lab	ID: ICB		Method: E300.0	
Analysis Date:	09/18/16 12:02	Units: <b>m</b>	g/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Chloride Sulfate		0.02 ND	0.01 0.02								
Associated san	nples: <b>H16090340-00</b>	1A, H16090340-002A, I	116090340	-003A, H1609	0340-004A, H16	090340-005A					
Run ID :Run C	Order: IC102-H_16091	18A: 12	SampType:	Initial Calibra	ation Verification	n Standard	Lab	ID: ICV		Method: E300.0	
Analysis Date:	09/18/16 12:13	Units: <b>m</b>	g/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Chloride		99.1	1.0	100	0	99	90	110			
Sulfate		398	1.0	400	0	100	90	110			
Associated san	nples: <b>H16090340-00</b>	1A, H16090340-002A, I	116090340	-003A, H1609	0340-004A, H16	090340-005A					
Run ID :Run C	Order: IC102-H_16091	18A: 13	SampType:	Laboratory F	ortified Blank		Lab	ID: LFB		Method: E300.0	
Analysis Date:	09/18/16 12:24	Units: <b>m</b>	g/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Chloride		46.1	1.0	50	0.021	92	90	110			
Sulfate		203	1.0	200	0	102	90	110			
Associated san	nples: <b>H16090340-00</b>	1A, H16090340-002A, I	116090340	-003A, H1609	0340-004A, H16	090340-005A					
Run ID :Run C	Order: IC102-H_16091	18A: 29	SampType:	Continuing C	alibration Verif	ication Standa	ı <b>r</b> Lab	ID: CCV091	816-2	Method: E300.0	
Analysis Date:	09/19/16 10:27	Units: <b>m</b>	g/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Chloride		101	1.0	100	0	101	90	110			
Sulfate		401	1.0	400	0	100	90	110			
Associated san	nples: <b>H16090340-00</b>	1A, H16090340-002A, I	116090340	-003A, H1609	0340-004A, H16	090340-005A					
Run ID :Run C	Drder: IC102-H_16091	18A: 42 S	SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16090</b>	340-005AMS	Method: E300.0	
Analysis Date:	09/19/16 12:51	Units: <b>m</b>	g/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Chloride		50.6	1.0	50	2.283	97	90	110			
Sulfate		223	1.0	200	13.46	105	90	110			
Qualifiers:	ND - Not Detected at	the Reporting Limit	S	6 - Spike Reco	very outside acco	epted recovery	limit N	- Analyte co	oncentration was	not sufficiently high to cale	culate RPD
	J - Analyte detected b	pelow quantitation limits	F	R - RPD outsid	e accepted recov	very limits	A	- Analyte co	ncentration grea	ater than four times the spil	ke amount

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Client: Work Order:	MT DE0 H16090	Q-Federal Sup 340	erfund		ANALYTI	CAL QC SU Prepared by Hele	MMARY	REPOI	RT		Date	: 28-Dec-	16
Project:     CFR Monitoring-474374     BatchID:     R118786													
Run ID :Run Order:	IC102-H_	_160918A: 42		SampType:	Sample Matri	x Spike		Lab	ID: H160903	340-005AMS	Method	E300.0	
Analysis Date: 09/19/16 12:51				mg/L			Prep Info:	Prep Da	te:		Prep Method	l:	
Analytes 2			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Associated samples:	H160903	840-001A, H1609	0340-002A,	, H16090340-	003A, H16090	0340-004A, H1609	0340-005A						
Run ID :Run Order:	IC102-H	_160918A: 43		SampType:	Sample Matri	x Spike Duplicate	•	Lab	ID: H160903	340-005AMSD	Method	: <b>E300.0</b>	
Analysis Date: 09/1	Run ID :Run Order:         IC102-H_160918A: 43           Analysis Date:         09/19/16 13:02         Unit			mg/L			Prep Info:	Prep Da	te:		Prep Method	l:	
Analytes 2 Result			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride			51.2	1.0	50	2.283	98	90	110	50.61	1.2	20	
Sulfate			225	1.0	200	13.46	106	90	110	223.2	1.0	20	

Associated samples: H16090340-001A, H16090340-002A, H16090340-003A, H16090340-004A, H16090340-005A

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD
- J Analyte detected below quantitation limits R RPD outside accepted recovery limits
- $\ensuremath{\mathsf{A}}$  Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Federal Sup H16090340	erfund		ANALYT	ICAL QC Prepared by	<b>SUMMARY</b> Helena, MT Bra	REPOI	RT		Date: 28-Dec	c-16
Project:	CFR Monitoring-4743	74		B	atchID:	R118814					
Run ID :Run Order:	FIA203-HE_160920A: 10		SampType:	Initial Calibra	ation Blank,	Instrument Blank	Lab I	D: <b>ICB</b>		Method: A4500 N	-C
Analysis Date: 09/2	20/16 10:12	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimi	t Qual
Nitrogen, Total		0.0248	0.10			0	0	0			
Associated samples	E H16090340-001A, H1609 009A, H16090340-010A,	0340-002A H1609034	A, H16090340 0-011A, H160	-003A, H1609 90340-012A,	0340-004A, I H16090340-(	H16090340-005A, D13A, H16090340	H16090340 014A, H16	0-006A, H10 090340-015	6090340-007A, 5A, H16090340-	H16090340-008A, H1609 016A, H16090340-017A	90340-
Run ID :Run Order:	FIA203-HE_160920A: 26		SampType:	Continuing C	alibration V	erification Standa	n <b>r</b> Labl	D: CCV		Method: A4500 N	-C
Analysis Date: 09/2	20/16 10:32	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimi	t Qual
Nitrogen, Total		0.508	0.10	0.5		0 <b>102</b>	90	110			
Associated samples	: H16090340-001A, H1609 009A, H16090340-010A,	0340-002A H1609034	A, H16090340 0-011A, H160	-003A, H1609 90340-012A,	0340-004A, I H16090340-(	H16090340-005A, D13A, H16090340	H16090340 014A, H16	0-006A, H10 090340-015	6090340-007A, 5A, H16090340-	H16090340-008A, H1609 016A, H16090340-017A	90340-
Run ID :Run Order:	FIA203-HE_160920A: 40		SampType:	Continuing C	alibration V	erification Standa	ı <b>r</b> Labl	D: CCV		Method: A4500 N	-C
Analysis Date: 09/2	20/16 10:48	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimi	t Qual
Nitrogen, Total		0.503	0.10	0.5		0 <b>101</b>	90	110			
Associated samples	E H16090340-001A, H1609 009A, H16090340-010A,	0340-002A H1609034	A, H16090340 0-011A, H160	-003A, H1609 90340-012A,	0340-004A, I H16090340-(	H16090340-005A, D13A, H16090340	H16090340 014A, H16	0-006A, H10 090340-015	6090340-007A, 5A, H16090340-	H16090340-008A, H1609 016A, H16090340-017A	90340-
Run ID :Run Order:	FIA203-HE_160920A: 56		SampType:	Continuing C	alibration V	erification Standa	ı <b>r</b> Labl	D: CCV		Method: A4500 N	I-C
Analysis Date: 09/2	20/16 11:07	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimi	t Qual
Nitrogen, Total		0.500	0.10	0.5		0 <b>100</b>	90	110			
Associated samples	H16090340-001A, H1609 009A, H16090340-010A.	0340-002A H1609034	A, H16090340 0-011A. H160	-003A, H1609 90340-012A.	0340-004A, I H16090340-0	H16090340-005A, D13A, H16090340	H16090340 014A. H16	0-006A, H10 090340-015	6090340-007A, 5A, H16090340-	H16090340-008A, H1609 016A, H16090340-017A	90340-

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

 $\ensuremath{\mathsf{A}}$  - Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Federal Su H16090340	perfund			ICAL QC S Prepared by He	SUMMARY elena, MT Bra	<b>REPO</b>	RT		Date:	28-Dec-	-16
Project:	CFR Monitoring-474	374		В	atchID: R	118826						
Run ID :Run Orde	er: ICP2-HE_160919C: 6		SampType:	Initial Calibra	tion Verificatio	n Standard	Lab	ID: <b>ICV</b>		Method:	E200.7	
Analysis Date: 09	/20/16 08:05	Units:	mg/L			Prep Info:	: Prep Da	ite:		Prep Method:		
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		39.8	1.0	40	0	99	95	105				
Magnesium		39.6	1.0	40	0	99	95	105				
Potassium		40.9	1.0	40	0	102	95	105				
Sodium		40.9	1.0	40	0	102	95	105				
Run ID :Run Orde	009C, H16090340-011C	, H1609034	<b>10-012C, H160</b> SampType:	90340-013C,	H16090340-014	IC, H16090340	-015C, H10	5090340-01	6C, H16090340	-017C Method:	E200.7	
Analysis Date: 09	/20/16 08:09	Units:	ma/l			Prep Info	• Pren Da	ite.		Prep Method:		
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HiahLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		25.0	1.0	25	0	100	95	105				
Magnesium		24.6	1.0	25	0	99	95	105				
Potassium		25.0	1.0	25	0	100	95	105				
Sodium		25.0	1.0	25	0	100	95	105				
Associated sample	es: H16090340-001C, H160 009C, H16090340-011C	90340-0020 , H1609034	C, H16090340 10-012C, H160	-003C, H1609 90340-013C,	0340-004C, H16 H16090340-014	6090340-005C, IC, H16090340	H1609034 -015C, H10	10-006C, H1 6090340-01	6090340-007C, 6C, H16090340	H16090340-008 -017C	8C, H1609	0340-
Run ID :Run Orde	er: ICP2-HE_160919C: 16		SampType:	Interference	Check Sample	A	Lab	ID: ICSA		Method:	E200.7	
Analysis Date: 09	/20/16 08:44	Units:	mg/L			Prep Info:	: Prep Da	ite:		Prep Method:		
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		463	1.0	500	0	93	80	120				
Magnesium		496	1.0	500	0	99	80	120				
Potassium		0.0308	1.0		0		0	0				
Sodium		0.0215	1.0		0		0	0				

Associated samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H16090340-008C, H16090340-012C, H16090340-013C, H16090340-014C, H16090340-015C, H16090340-016C, H16090340-017C

Run ID :Run Order: ICP2-HE_160919C: 17	SampType: Interference Check Sample AB					Lab I	D: ICSAB		Method: E200.7	
Analysis Date: 09/20/16 08:48	Units: <b>r</b>	Units: <b>mg/L</b>			Prep Info	: Prep Dat	te:		Prep Method:	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Calcium	459	1.0	500	0	92	80	120			
Magnesium	494	1.0	500	0	99	80	120			

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

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Client: Work Order:	MT DEC H160903	Q-Federal Superfur 340	nd	ANALYTICAL QC SUMMARY REPORT Prepared by Helena, MT Branch						Date: 28-Dec	-16
Project:	CFR Mo	nitoring-474374		В	atchID: R11						
Run ID :Run Order:	ICP2-HE_	160919C: 17	SampType	Interference	Check Sample AB		Lab	ID: ICSAB		Method: E200.7	
Analysis Date: 09/2	alysis Date: 09/20/16 08:48 Ur		nits: <b>mg/L</b>			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 4		Resu	ult PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Potassium		19	.8 1.0	20	0	99	80	120			
Sodium		19	.8 1.0	20	0	99	80	120			
Associated samples:	H160903 009C, H1	40-001C, H16090340- 6090340-011C, H160	002C, H1609034 90340-012C, H16	0-003C, H1609 5090340-013C,	0340-004C, H1609 H16090340-014C,	0340-005C, H16090340	H1609034 -015C, H16	0-006C, H1 5090340-01	6090340-007C, 6C, H16090340	, H16090340-008C, H1609 )-017C	0340-
Run ID :Run Order:	ICP2-HE_	160919C: 31	SampType	Continuing C	Calibration Verificat	tion Standa	r Lab	ID: CCV		Method: E200.7	

Analysis Date: 09/20/16 09:40	Units: <b>mg/L</b>				Prep Info: Prep Date:		Prep Method:				
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual
Calcium	24.9	1.0	25	0	99	90	110				
Magnesium	24.6	1.0	25	0	99	90	110				
Potassium	24.9	1.0	25	0	100	90	110				
Sodium	24.8	1.0	25	0	99	90	110				

Associated samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H16090340-009C, H16090340-011C, H16090340-012C, H16090340-013C, H16090340-014C, H16090340-015C, H16090340-016C, H16090340-017C

Run ID :Run Order: ICP2-HE_160919C: 43		SampType:	alibration Verifica	cation Standar Lab ID: CCV				Method: E200.7			
Analysis Date: 09/20/16 10:25	Units:	Units: <b>mg/L</b> Result PQL			Prep Info:	Prep Da	te:		Prep Method	:	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	24.5	1.0	25	0	98	90	110				
Magnesium	24.5	1.0	25	0	98	90	110				
Potassium	25.2	1.0	25	0	101	90	110				
Sodium	25.1	1.0	25	0	101	90	110				

Associated samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H16090340-009C, H16090340-011C, H16090340-012C, H16090340-013C, H16090340-014C, H16090340-015C, H16090340-016C, H16090340-017C

Run ID :Run Order: ICP2-HE_160919C: 55		SampType: Continuing Calibration Verif				ication Standar Lab ID: CCV			Method: E200.7			
Analysis Date: 09/20/16 11:10	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	:		
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Calcium	24.1	1.0	25	0	97	90	110					
Magnesium	24.1	1.0	25	0	96	90	110					
Potassium	24.9	1.0	25	0	100	90	110					
Sodium	25.1	1.0	25	0	100	90	110					

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16090340	erfund		ANALYT	CAL QC		Date: 28-Dec-	16		
Project:	CFR Monitoring-4743	74		В	atchID: I					
Run ID :Run Order:	ICP2-HE_160919C: 55		SampType:	Continuing C	alibration Ver	ification Standar	Lab ID: CCV		Method: E200.7	
Analysis Date: 09/2	0/16 11:10	Units:	mg/L			Prep Info:	Prep Date:		Prep Method:	
Analytes <u>4</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit	RPD Ref Val	%RPD RPDLimit	Qual

Associated samples: H16090340-001C, H16090340-002C, H16090340-003C, H16090340-004C, H16090340-005C, H16090340-006C, H16090340-007C, H16090340-008C, H160908C, H160908C, H160908C, H160908C, H160908C, H1608C, H1608C, H1608C,

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Fede H16090340	ral Superfund		ANALYTICAL QC SUMMARY REPORT Prepared by Helena, MT Branch							: 28-Dec-	16
Project:	CFR Monitorin	g-474374		B	atchID: R1							
Run ID :Run Order:	ICPMS204-B_160	920A: 10	SampType:	Initial Calibra	tion Verification	Standard	Lab I	ID: ICV STD	)	Method	E200.8	
Analysis Date: 09/2	0/16 10:36	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	:	
Analytes 8		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0596	0.0050	0.06	0	99	90	110				
Cadmium		0.0301	0.0010	0.03	0	100	90	110				
Copper		0.0616	0.010	0.06	0	103	90	110				
Lead		0.0583	0.010	0.06	0	97	90	110				
Magnesium		2.96	0.50	3	0	99	90	110				
Potassium		2.82	0.50	3	0	94	90	110				
Sodium		3.11	0.50	3	0	104	90	110				
Zinc		0.0616	0.010	0.06	0	103	90	110				

Associated samples: H16090340-001B, H16090340-001C, H16090340-002B, H16090340-002C, H16090340-003B, H16090340-003C, H16090340-004C, H16090340-005B, H16090340-005C, H16090340-006B, H16090340-007B, H16090340-007C, H16090340-008B, H16090340-008C, H16090340-009B, H16090340-009C, H16090340-010B, H16090340-010C, H16090340-011B, H16090340-011C, H16090340-012B, H16090340-012C, H16090340-013B, H16090340-013C, H16090340-013C, H16090340-015C, H16090340-016B, H16090340-016C, H16090340-017C

Run ID :Run Order: ICPMS204-B_16	0920A: 11	SampType: Interference Check Sample A			A Lab ID: ICSA				Method	E200.8	
Analysis Date: 09/20/16 10:39	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	:	
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	6.80E-05	0.0050		0							
Cadmium	0.00108	0.0010		0							
Copper	0.000579	0.010		0							
Lead	0.000255	0.010		0							
Magnesium	42.5	0.50	40	0	106	70	130				
Potassium	42.4	0.50	40	0	106	70	130				
Sodium	108	0.50	100	0	108	70	130				
Zinc	0.00146	0.010		0							

Associated samples: H16090340-001B, H16090340-001C, H16090340-002B, H16090340-002C, H16090340-003B, H16090340-003C, H16090340-004C, H16090340-005B, H16090340-005B, H16090340-005C, H16090340-006B, H16090340-007B, H16090340-007C, H16090340-008B, H16090340-008C, H16090340-009B, H16090340-009C, H16090340-010B, H16090340-010C, H16090340-011B, H16090340-011C, H16090340-012B, H16090340-012C, H16090340-013B, H16090340-013C, H16090340-015C, H16090340-015C, H16090340-016B, H16090340-016C, H16090340-017B, H16090340-017C

Run ID :Run	Order: ICPMS204-B_160920A: 18	5	SampType	Method Blan	k		Lab	ID: LRB		Method:	E200.8	
Analysis Date	e: <b>09/20/16 11:15</b>	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:		
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD R	RPDLimit	Qual
Arsenic	Arsenic ND		6E-05									
Qualifiers:	ND - Not Detected at the Reportir	ng Limit	Limit S - Spike Recovery outside ac			epted recovery	pted recovery limit N - Analyte concer			ntration was not sufficiently high to calculate RPE		
	J - Analyte detected below quantitation limits R - RPD outside accepted re			e accepted reco	overy limits A - Analyte concentration			ncentration grea	greater than four times the spike amount			

<b>ENERGY</b> LABORATORIES		Trust our People. Trust our Data. www.energylab.com	Colle	ege Station, TX <b>88</b>	.0515 .0711							
Client: Work Order:	MT DEC H160903	Q-Federal Superfund 340		ANALYTI F	CAL QC SU Prepared by Hele	<b>MMARY</b> ma, MT Bra	REPO	RT		Date:	28-Dec-	16
Project: CFR Monitoring-474374 BatchID: R118827												
Run ID :Run Order:	ICPMS20	4-B_160920A: 18	SampType:	Method Blank	¢		Lab	D: LRB		Method:	E200.8	
Analysis Date: 09/2	nalysis Date: 09/20/16 11:15 Uni		mg/L			Prep Info	: Prep Da	te:		Prep Method:		
Analytes <u>5</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium		ND	1E-05									
Copper		ND	6E-05									
Lead		ND	5E-06									
Zinc		ND	0.0002									

Associated samples: H16090340-001B, H16090340-002B, H16090340-003B, H16090340-005B, H16090340-006B, H16090340-007B, H16090340-008B, H16090340-009B, H16090340-009B, H16090340-012B, H16090340-012B, H16090340-014B, H16090340-015B, H16090340-016B, H16090340-017B

Run ID :Run Order: ICPMS204-B_16092	0A: 19	SampType:	Laboratory F	Lab ID: LFB				Method	E200.8		
Analysis Date: 09/20/16 11:18	Units: mg/L				Prep Info	: Prep Da	te:		Prep Method	Prep Method:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0485	0.0050	0.05	0	97	85	115				
Cadmium	0.0494	0.0010	0.05	0	99	85	115				
Copper	0.0503	0.010	0.05	0	101	85	115				
Lead	0.0487	0.010	0.05	0	97	85	115				
Zinc	0.0485	0.010	0.05	0	97	85	115				

Associated samples: H16090340-001B, H16090340-002B, H16090340-003B, H16090340-005B, H16090340-006B, H16090340-007B, H16090340-008B, H16090340-009B, H16090340-010B, H16090340-011B, H16090340-012B, H16090340-013B, H16090340-014B, H16090340-015B, H16090340-016B, H16090340-017B

Run ID :Run Order: ICPMS204-B_1	60920A: 118	SampType: Initial Calibration Verification Standard					D: ICV STE	)	Method: I	E200.8	
Analysis Date: 09/20/16 17:13	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:		
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual
Arsenic	0.0611	0.0050	0.06	0	102	90	110				
Cadmium	0.0304	0.0010	0.03	0	101	90	110				
Copper	0.0614	0.010	0.06	0	102	90	110				
Lead	0.0587	0.010	0.06	0	98	90	110				
Magnesium	2.90	0.50	3	0	97	90	110				
Potassium	2.79	0.50	3	0	93	90	110				
Sodium	3.10	0.50	3	0	103	90	110				
Zinc	0.0606	0.010	0.06	0	101	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16090340	erfund	ANAL	YTICAL QC Prepared by	SUMMARY	REPORT nch		Date: 28-Dec-7	16
Project:	CFR Monitoring-4743	74		BatchID:	R118827				
Run ID :Run Order:	ICPMS204-B_160920A: 1	<b>18</b> Sa	mpType: Initial Ca	ibration Verification	ation Standard	Lab ID: ICV STD	)	Method: E200.8	
Analysis Date: 09/2	0/16 17:13	Units: <b>mg/</b>	L		Prep Info:	Prep Date:		Prep Method:	
Analytes 8		Result	PQL SPK va	lue SPK Ref V	al %REC	LowLimit HighLimit	RPD Ref Val	%RPD RPDLimit	Qual

Associated samples: H16090340-001B, H16090340-001C, H16090340-002B, H16090340-002C, H16090340-003B, H16090340-003C, H16090340-004C, H16090340-005B, H16090340-005B, H16090340-007B, H16090340-007C, H16090340-008B, H16090340-008C, H16090340-009B, H16090340-009C, H16090340-010B, H16090340-010C, H16090340-011B, H16090340-011C, H16090340-012B, H16090340-012C, H16090340-013B, H16090340-013C, H16090340-013C, H16090340-013C, H16090340-013C, H16090340-015B, H16090340-015C, H16090340-016B, H16090340-016C, H16090340-017B, H16090340-017C

Run ID :Run Order: ICPMS204-B_1	60920A: 119	SampType:	Interference	Check Sample A		Lab	ID: ICSA		Method	: E200.8	
Analysis Date: 09/20/16 17:17	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	1:	
Analytes 8	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.10E-05	0.0050		0							
Cadmium	0.000710	0.0010		0							
Copper	0.000546	0.010		0							
Lead	0.000239	0.010		0							
Magnesium	41.4	0.50	40	0	103	70	130				
Potassium	41.6	0.50	40	0	104	70	130				
Sodium	106	0.50	100	0	106	70	130				
Zinc	0.00157	0.010		0							

Associated samples: H16090340-001B, H16090340-001C, H16090340-002B, H16090340-002C, H16090340-003B, H16090340-003C, H16090340-004C, H16090340-005B, H16090340-002B, H16090340-007C, H16090340-008B, H16090340-008C, H16090340-009B, H16090340-009C, H16090340-010B, H16090340-010C, H16090340-011B, H16090340-011C, H16090340-012B, H16090340-012C, H16090340-013B, H16090340-013C, H16090340-015C, H16090340-016B, H16090340-016C, H16090340-017C

Run ID :Run Order: ICPMS204-B_16092	0A: 128	SampType:	Sample Matri	x Spike		Lab	D: H16090	340-002BMS	Method	E200.8	
Analysis Date: 09/20/16 17:46	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	l:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0499	0.0010	0.05	0	100	70	130				
Cadmium	0.0512	0.0010	0.05	0	102	70	130				
Copper	0.0510	0.0050	0.05	0	102	70	130				
Lead	0.0476	0.0010	0.05	0	95	70	130				
Zinc	0.0601	0.010	0.05	0.007656	105	70	130				

Associated samples: H16090340-001B, H16090340-002B, H16090340-003B, H16090340-005B, H16090340-006B, H16090340-007B, H16090340-008B, H16090340-009B, H16090340-013B, H16090340-014B, H16090340-015B, H16090340-016B, H16090340-017B

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal S H16090340	Superfund		ANALYTI	ICAL QC SUN Prepared by Helen	<b>/IMARY</b> a, MT Bra	REPOR	RT		Date	: 28-Dec-	16
Project:         CFR Monitoring-474374           Run ID :Run Order:         ICPMS204-B_160920A: 129           Analysis Date:         09/20/16 17:50		4374		B	atchID: R11	3827						
Run ID :Run Order:	ICPMS204-B_160920A	.: 129	SampType:	Sample Matri	x Spike Duplicate		Lab I	D: H160903	340-002BMSD	Method	E200.8	
Analysis Date: 09/2	0/16 17:50	Units:	mg/L			Prep Info	: Prep Dat	ie:		Prep Method	:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0492	0.0010	0.05	0	99	70	130	0.04992	1.4	20	
Cadmium		0.0518	0.0010	0.05	0	103	70	130	0.05125	1.0	20	
Copper		0.0511	0.0050	0.05	0	102	70	130	0.05098	0.2	20	
Lead		0.0481	0.0010	0.05	0	96	70	130	0.04756	1.2	20	
Zinc		0.0616	0.010	0.05	0.007656	108	70	130	0.06008	2.5	20	
Associated samples	H16090340-001B, H16 010B, H16090340-011	6090340-002B B, H16090340	8, H16090340- 0-012B, H1609	003B, H16090 90340-013B, H	0340-005B, H16090 H16090340-014B, H	340-006B, 16090340	H16090340 -015B, H160	0-007B, H16 090340-016	6090340-008B,   B, H16090340-(	H16090340-009 017B	9B, H16090	340-

Run ID :Run Order: ICPMS204-B_160920	A: 161	SampType:	Sample Matri	x Spike		Lab	ID: <b>H16090</b> 3	340-012BMS	Method:	E200.8	
Analysis Date: 09/20/16 19:35	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:		
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0499	0.0010	0.05	0	100	70	130				
Cadmium	0.0517	0.0010	0.05	0	103	70	130				
Copper	0.0510	0.0050	0.05	0	102	70	130				
Lead	0.0487	0.0010	0.05	0	97	70	130				
Zinc	0.0613	0.010	0.05	0.007702	107	70	130				

Associated samples: H16090340-001B, H16090340-002B, H16090340-003B, H16090340-005B, H16090340-006B, H16090340-007B, H16090340-008B, H16090340-009B, H16090340, H16090340, H16090340-009B, H16090340 010B, H16090340-011B, H16090340-012B, H16090340-013B, H16090340-014B, H16090340-015B, H16090340-016B, H16090340-017B

Run ID :Run Order: ICPMS204-B_16092	0A: 162	SampType:	Sample Matri	x Spike Duplicate		Lab	ID: <b>H16090</b> 3	340-012BMSD	Method	E200.8	
Analysis Date: 09/20/16 19:38	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	l:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0510	0.0010	0.05	0	102	70	130	0.04986	2.4	20	
Cadmium	0.0524	0.0010	0.05	0	105	70	130	0.05174	1.4	20	
Copper	0.0515	0.0050	0.05	0	103	70	130	0.05102	1.0	20	
Lead	0.0486	0.0010	0.05	0	97	70	130	0.0487	0.1	20	
Zinc	0.0612	0.010	0.05	0.007702	107	70	130	0.06131	0.1	20	

Associated samples: H16090340-001B, H16090340-002B, H16090340-003B, H16090340-005B, H16090340-006B, H16090340-007B, H16090340-008B, H16090340-009B, H16090B, H16 010B, H16090340-011B, H16090340-012B, H16090340-013B, H16090340-014B, H16090340-015B, H16090340-016B, H16090340-017B

Qualifiers: ND - Not Detected at the Reporting Limit

- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

R - RPD outside accepted recovery limits A - Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Fe H16090340	ederal Superfund		ANALYT	ICAL QC S	UMMARY lena, MT Brar	REPO	RT		Date	: 28-Dec-	-16
Project:	CFR Monito	oring-474374		В	atchID: R1	118827						
Run ID :Run Order	r: ICPMS204-B_	_160920A: 198	SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16090</b> ;	346-005DMS	Method	E200.8	
Analysis Date: 09/	20/16 21:36	Units:	mg/L			Prep Info:	Prep Da	ite:		Prep Method	l:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0531	0.0010	0.05	0.003067	100	70	130				
Cadmium		0.0470	0.0010	0.05	0.0000276	94	70	130				
Copper		0.0489	0.0050	0.05	0.0006575	96	70	130				
Lead		0.0495	0.0010	0.05	0.0000505	99	70	130				
Zinc		0.0459	0.010	0.05	0.0009491	90	70	130				
Associated sample	s: H16090340-0 010B, H16090	01B, H16090340-002B 0340-011B, H16090340	, H16090340 )-012B, H160	-003B, H1609 090340-013B,	0340-005B, H160 H16090340-014E	090340-006B, 3, H16090340-	H1609034 015B, H16	0-007B, H10 090340-016	6090340-008B, 6B, H16090340-	H16090340-00 017B	9B, H16090	1340-
Run ID :Run Order	r: ICPMS204-B_	_160920A: 199	SampType:	Sample Matri	ix Spike Duplica	te	Lab	ID: H16090	346-005DMSD	Method	E200.8	
Analysis Date: 09/	20/16 21:40	Units:	mg/L			Prep Info:	Prep Da	ite:		Prep Method	l:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0537	0.0010	0.05	0.003067	101	70	130	0.05312	1.1	20	
O - d - t		0.0475	0 0040	0.05	0 000070		70	100	0.04704			

Zinc	0.0467	0.010	0.05	0.0009491	91	70	130	0.04591	1.7	20	
Lead	0.0491	0.0010	0.05	0.0000505	98	70	130	0.04951	0.8	20	
Copper	0.0491	0.0050	0.05	0.0006575	97	70	130	0.04889	0.4	20	
Cadmium	0.0475	0.0010	0.05	0.0000276	95	70	130	0.04701	1.0	20	

Associated samples: H16090340-001B, H16090340-002B, H16090340-003B, H16090340-005B, H16090340-006B, H16090340-007B, H16090340-008B, H16090340-009B, H16090340-009B 010B, H16090340-011B, H16090340-012B, H16090340-013B, H16090340-014B, H16090340-015B, H16090340-016B, H16090340-017B

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16090340	erfund			ICAL QC	SUMMARY Helena, MT Bra	REPO	RT		Date:	28-Dec-	16
Project:	CFR Monitoring-4743	74		В	atchID:	R118834						
Run ID :Run Order	FIA203-HE_160920C: 9		SampType:	Initial Calibra	tion Verificat	ion Standard	Lab	ID: ICV		Method	E353.2	
Analysis Date: 09/	20/16 14:35	Units: <b>n</b>	ng/L			Prep Info	: Prep Da	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N Associated sample	Nitrite as N S: H16090340-001D, H1609 009D, H16090340-010D,	1.06 <b>0340-002D,</b> H16090340-	0.010 H16090340 011D, H160	1 -003D, H1609 990340-012D,	0 0340-004D, H H16090340-0	) 106 116090340-005D, 13D, H16090340	90 H1609034 -014D, H16	110 0-006D, H1 3090340-01	6090340-007D, 5D, H16090340	H16090340-00 -016D, H16090	8D, H16090 340-017D	)340-
Run ID :Run Order	FIA203-HE_160920C: 10		SampType:	Initial Calibra	tion Blank, Ir	nstrument Blank	Lab	ID: ICB		Method	E353.2	
Analysis Date: 09/	20/16 14:36	Units: <b>n</b>	ng/L			Prep Info	Prep Da	te:		Prep Method:		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+	Vitrite as N -(	).00695	0.010		C	)	0	0				
Associated sample	s: H16090340-001D, H1609 009D, H16090340-010D,	0340-002D, H16090340-	H16090340 -011D, H160	-003D, H1609 90340-012D,	0340-004D, H H16090340-0	116090340-005D, 13D, H16090340	H1609034 -014D, H16	0-006D, H1 6090340-01	6090340-007D, 5D, H16090340	H16090340-00 -016D, H16090	8D, H16090 340-017D	340-
Run ID :Run Order	: FIA203-HE_160920C: 11		SampType:	Laboratory F	ortified Blank	(	Lab	ID: LFB		Method	E353.2	
Analysis Date: 09/	20/16 14:37	Units: <b>n</b>	ng/L			Prep Info	: Prep Da	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	1.07	0.011	1	C	) 107	90	110				
Associated sample	s: H16090340-001D, H1609 009D, H16090340-010D,	0340-002D, H16090340-	H16090340 011D, H160	-003D, H1609 90340-012D,	0340-004D, H H16090340-0	116090340-005D, 13D, H16090340	H1609034 -014D, H16	0-006D, H1 090340-01	6090340-007D, 5D, H16090340	H16090340-00 -016D, H16090	8D, H16090 340-017D	340-
Run ID :Run Order	FIA203-HE_160920C: 16		SampType:	Sample Matri	x Spike		Lab	ID: <b>H16090</b> :	338-001DMS	Method	E353.2	
Analysis Date: 09/	20/16 14:43	Units: <b>n</b>	ng/L			Prep Info	: Prep Da	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	1.06	0.011	1	C	) 106	90	110				
Associated sample	<ul> <li>E: H16090340-001D, H1609</li> <li>009D, H16090340-010D,</li> </ul>	0340-002D, H16090340-	H16090340 -011D, H160	-003D, H1609 90340-012D,	0340-004D, H H16090340-0	116090340-005D, 13D, H16090340	H1609034 -014D, H16	0-006D, H1 6090340-01	6090340-007D, 5D, H16090340	H16090340-00 -016D, H16090	8D, H16090 340-017D	340-
Run ID :Run Order	: FIA203-HE_160920C: 26		SampType:	Continuing C	alibration Ve	rification Standa	r Lab	ID: CCV		Method	E353.2	
Analysis Date: 09/	20/16 14:55	Units: <b>n</b>	ng/L			Prep Info	: Prep Da	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	litrite as N	0.496	0.010	0.5	C	) 99	90	110				
Qualifiers: ND J - J	- Not Detected at the Reporti Analyte detected below quant	ng Limit itation limits	S	6 - Spike Reco R - RPD outsid	very outside a e accepted red	ccepted recovery covery limits	limit N A	- Analyte co - Analyte co	oncentration was	not sufficiently ater than four tim	high to calcunes the spike Page	ulate RPD e amount e 99 of 130

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Client: Work Order:	MT DEQ-Federal S H16090340	uperfund		ANALYT			REPO	RT		Date	: 28-Dec	:-16
Project:	CER Monitoring-47	4374					nch					
			Computing	O su tinuin a f						Matha	+ 5050.0	
Run ID :Run Ol	rder: FIA203-HE_160920C: 2	2 <b>0</b>	Samp i ype:	Continuing	alibration	verification Standa	r Lab			Method	J: E353.2	
Analysis Date:	09/20/16 14:55	Units:	mg/L			Prep Info	: Prep Da	te:				Qual
Analytes 1		Result	PQL	SPK value	SPK Ref	Val %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLIMIt	Quai
Associated sam	ples: H16090340-001D, H16 009D, H16090340-010	090340-002 D, H1609034	D, H16090340 40-011D, H16	0-003D, H1609 090340-012D,	0340-004D H16090340	, H16090340-005D, )-013D, H16090340	H1609034 -014D, H16	0-006D, H1 6090340-01	6090340-007D 5D, H16090340	, H16090340-0 -016D, H16090	08D, H1609 0340-017D	)0340-
Run ID :Run Oi	rder: FIA203-HE_160920C: 2	28	SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16090</b>	340-004DMS	Method	d: <b>E353.2</b>	
Analysis Date:	09/20/16 14:57	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref	Val %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrat	e+Nitrite as N	1.07	0.011	1		0 <b>107</b>	90	110				
Associated sam	ples: H16090340-001D, H16 009D, H16090340-010	090340-002 D, H1609034	D, H16090340 10-011D, H16	0-003D, H1609 090340-012D,	0340-004D H16090340	, H16090340-005D, )-013D, H16090340	H1609034 -014D, H16	0-006D, H1 5090340-01	6090340-007D 5D, H16090340	, H16090340-0 -016D, H16090	08D, H1609 0340-017D	)0340-
Run ID :Run Oi	rder: FIA203-HE_160920C: 2	29	SampType:	Sample Matr	ix Spike Du	ıplicate	Lab	ID: <b>H16090</b>	340-004DMSD	Method	d: <b>E353.2</b>	
Analysis Date:	09/20/16 14:58	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref	Val %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrat Associated sam	e+Nitrite as N ples: H16090340-001D, H16 009D, H16090340-010	1.05 090340-002 D, H1609034	0.011 D, H1609034( 40-011D, H16	1 D-003D, H1609 090340-012D,	0340-004D H16090340	0 105 , H16090340-005D, )-013D, H16090340	90 H1609034 -014D, H16	110 0-006D, H1 6090340-01	1.066 6090340-007D 5D, H16090340	1.2 , H16090340-0 )-016D, H16090	20 08D, H1609 0340-017D	<del>}</del> 0340-
Run ID :Run Oi	rder: FIA203-HE_160920C: 4	10	SampType:	Continuing C	Calibration	Verification Standa	n <b>r</b> Lab	ID: <b>CCV</b>		Method	d: <b>E353.2</b>	
Analysis Date:	09/20/16 15:12	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref	Val %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrat	e+Nitrite as N	0.495	0.010	0.5		0 99	90	110				
Associated sam	ples: H16090340-001D, H16 009D, H16090340-010	090340-002 D, H1609034	D, H16090340 40-011D, H16	0-003D, H1609 090340-012D,	0340-004D H16090340	, H16090340-005D, )-013D, H16090340	H1609034 -014D, H16	0-006D, H1 5090340-01	6090340-007D 5D, H16090340	, H16090340-0 -016D, H16090	08D, H1609 0340-017D	90340-
Run ID :Run Oi	rder: FIA203-HE_160920C: 4	2	SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16090</b>	340-014DMS	Method	d: <b>E353.2</b>	
Analysis Date:	09/20/16 15:14	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref	Val %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrat	e+Nitrite as N	1.07	0.011	1	0.012	298 <b>106</b>	90	110				
Associated sam	ples: H16090340-001D, H16 009D, H16090340-010	090340-002 D, H1609034	D, H16090340 10-011D, H16	0-003D, H1609 090340-012D,	0340-004D H16090340	, H16090340-005D, )-013D, H16090340	H1609034 -014D, H16	0-006D, H1 5090340-01	6090340-007D 5D, H16090340	, H16090340-0 9-016D, H16090	08D, H1609 0340-017D	90340-
Qualifiers:	ND - Not Detected at the Rep	orting Limit	;	S - Spike Reco	very outside	e accepted recovery	limit N	- Analyte co	oncentration was	s not sufficiently	/ high to calc	culate RF
	J - Analyte detected below qu	antitation limi	its	R - RPD outsid	e accepted	recovery limits	А	- Analyte co	oncentration greater	ater than four ti	mes the spil	ke amour

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Client: Work Order:	Client:         MT DEQ-Federal Superfunct           Nork Order:         H16090340           Project:         CFR Monitoring-474374			NALYT	ICAL QC S Prepared by He	UMMARY lena, MT Bra	<b>REPO</b>	RT		Date	: 28-Dec-	16
Project:	CFR Mo	nitoring-474374		В	atchID: R	18834						
Run ID :Run Order:	FIA203-HI	E_160920C: 53	SampType: Sa	mple Matri	ix Spike Duplica	te	Lab	ID: <b>H16090</b>	340-014DMSD	Method	: E353.2	
Analysis Date: 09/2	0/16 15:27	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	1:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	itrite as N	1.08	0.011	1	0.01298	107	90	110	1.073	0.9	20	
Associated samples	H1609034	0-001D H16090340-002D	H16090340-00	3D. H1609	0340-004D H16	090340-005D	H1609034	0-006D H1	6090340-007D	H16090340-0	08D H1609	0340-

sociated samples: H16090340-001D, H16090340-002D, H16090340-003D, H16090340-004D, H16090340-005D, H16090340-006D, H16090340-007D, H16090340-008D, H16090340-017D 009D, H16090340-010D, H16090340-011D, H16090340-012D, H16090340-013D, H16090340-014D, H16090340-015D, H16090340-016D, H16090340-017D

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Su H16090340	uperfund		ANALYT	ICAL QC	SUMMARY Helena, MT Bra	REPO	RT		Date:	28-Dec-	16
Project:	CFR Monitoring-474	374		В	atchID:	R118837						
Run ID :Run Orde	r: IC102-H_160920A: 11		SampType:	Method Blan	k		Lab	ID: ICB		Method:	E300.0	
Analysis Date: 09	/20/16 08:25	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method:		
Analytes 2		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual
Chloride		0.02	0.01									
Sulfate		ND	0.02									
Associated sample	s: H16090340-006A, H160 014A, H16090340-015A	090340-007 A, H1609034	A, H16090340 0-016A, H160	-008A, H1609 90340-017A	0340-009A, H	16090340-010A,	H1609034	0-011A, H1	6090340-012A,	H16090340-013A	A, H16090	340-
Run ID :Run Orde	r: IC102-H_160920A: 12		SampType:	Initial Calibra	ation Verificat	tion Standard	Lab	ID: <b>ICV</b>		Method:	E300.0	
Analysis Date: 09	/20/16 08:36	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method:		
Analytes 2		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual
Chloride		99.4	1.0	100	C	) 99	90	110				
Sulfate		398	1.0	400	C	) 100	90	110				
Associated sample	s: H16090340-006A, H160 014A, H16090340-015A r: IC102-H 160920A: 13	090340-007/ A, H1609034	A, H16090340 0-016A, H160 SampType:	-008A, H1609 990340-017A	0340-009A, H	16090340-010A,	H1609034	<b>0-011A, H1</b>	6090340-012A,	H16090340-0134	A, H16090	0340-
Analysis Date: 09	/20/16 08·47	L Inits:	ma/l	Laboratory		• Pren Info	• Pren Da	ite.		Pren Method:		
Analytes 2	20,10 00.41	Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual
Chloride		46.5	1.0	50	0.016	<b>93</b>	90	110				
Sulfate		206	1.0	200	C	) 103	90	110				
Associated sample	s: H16090340-006A, H160 014A, H16090340-015A	090340-007 A, H1609034	A, H16090340 0-016A, H160	-008A, H1609 90340-017A	0340-009A, H	16090340-010A,	H1609034	0-011A, H1	6090340-012A,	H16090340-013A	A, H16090	340-
	r: IC102-H_160920A: 14		SampType:	Continuing C	Calibration Ve	rification Standa	r Lab	ID: CCV091	1916-1	Method:	E300.0	
Run ID :Run Orde						Pren Info	: Prep Da	ate:		Prep Method:		
Run ID :Run Orde Analysis Date: <b>09</b>	/20/16 08:58	Units:	mg/L			i rep inte						
Run ID :Run Orde Analysis Date: 09 Analytes 2	/20/16 08:58	Units: Result	mg/L PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual
Run ID :Run Orde Analysis Date: 09 Analytes 2 Chloride	/20/16 08:58	Units: Result 98.8	mg/L PQL 1.0	SPK value 100	SPK Ref Va	%REC	LowLimit 90	HighLimit 110	RPD Ref Val	%RPD F	RPDLimit	Qual

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Su H16090340	DEQ-Federal Superfund 090340 Prepared by Helena, MT Branch								Date: 28-Dec-16			
Project:	CFR Monitoring-4743	374		В									
Run ID :Run Order: IC102-H_160920A: 27			SampType: Sample Matrix Spike				Lab	ID: <b>H16090</b>	Method: E300.0				
Analysis Date: 09/2	20/16 11:23	Units: <b>m</b>	ng/L			Prep Info	: Prep Da	ite:		Prep Method	:		
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Chloride		55.1	1.0	50	5.295	100	90	110					
Sulfate		337	1.0	200	132.8	102	90	110					
Associated samples	:: H16090340-006A, H160 014A, H16090340-015A	90340-007A, H16090340-	H16090340- 016A, H1609	008A, H16090 90340-017A	0340-009A, H160	)90340-010A,	H1609034	0-011A, H10	6090340-012A,	H16090340-01	3A, H16090	340-	
Run ID :Run Order:	IC102-H_160920A: 28		SampType:	Sample Matri	ix Spike Duplicat	te	Lab	ID: H16090	340-015AMSD	Method	E300.0		
Analysis Date: 09/20/16 11:34 Units: n		Units: <b>n</b>	ng/L	Prep Info	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		55.1	1.0	50	5.295	100	90	110	55.15	0.0	20		
Sulfate		337	1.0	200	132.8	102	90	110	336.8	0.1	20		
Associated samples	5: H16090340-006A, H160 014A, H16090340-015A	90340-007A, H16090340-	H16090340- 016A, H1609	008A, H16090 90340-017A	0340-009A, H160	90340-010A,	H1609034	0-011A, H10	6090340-012A,	H16090340-01	3A, H16090	340-	
Run ID :Run Order:	IC102-H_160920A: 29		SampType:	Continuing C	alibration Verific	cation Standa	r Lab	ID: CCV091	916-2	Method	E300.0		
Analysis Date: 09/20/16 11:45 Units: n			ng/L Pr				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		99.7	1.0	100	0	100	90	110					
Sulfate		402	1.0	400	0	100	90	110					
Associated samples	E H16090340-006A, H160 014A, H16090340-015A	90340-007A, H16090340-	H16090340- 016A, H1609	008A, H1609 90340-017A	0340-009A, H160	90340-010A,	H1609034	0-011A, H10	6090340-012A,	H16090340-01	3A, H16090	340-	

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

<b>ENERGY</b> LABORATORIES	Col	lege Station, TX 8									
Client: Work Order:			Date: 28-Dec-16								
Project:	CFR Monitoring-474	374		В							
Run ID :Run Order	r: ICP2-HE_160921A: 6		SampType:	Initial Calibra	ation Verification	Standard	Lab	ID: <b>ICV</b>		Method: E200.7	
Analysis Date: 09/	21/16 08:29	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Calcium		40.0	1.0	40	0	100	95	105			
Associated sample	s: H16090340-010C										
Run ID :Run Order	r: ICP2-HE_160921A: 7		SampType:	Continuing C	Calibration Verific	ation Standa	<b>ir</b> Lab	ID: CCV-1		Method: E200.7	
Analysis Date: 09/	21/16 08:33	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Calcium		25.2	1.0	25	0	101	95	105			
Associated sample	s: H16090340-010C										
Run ID :Run Order	r: ICP2-HE_160921A: 16		SampType:	Interference	Check Sample A		Lab	ID: ICSA		Method: E200.7	
Analysis Date: 09/21/16 09:07											
Analysis Date: 09/	21/16 09:07	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:	
Analysis Date: <b>09/</b> Analytes <u>1</u>	21/16 09:07	Units: Result	<b>mg/L</b> PQL	SPK value	SPK Ref Val	Prep Info %REC	: Prep Da LowLimit	ite: HighLimit	RPD Ref Val	Prep Method: %RPD RPDLimit	Qual
Analysis Date: <b>09/</b> Analytes <u>1</u> Calcium	21/16 09:07	Units: Result 470	mg/L PQL 1.0	SPK value 500	SPK Ref Val	Prep Info %REC 94	: Prep Da LowLimit 80	te: HighLimit 120	RPD Ref Val	Prep Method: %RPD RPDLimit	Qual
Analysis Date: 09/ Analytes <u>1</u> Calcium Associated sample	21/16 09:07 s: H16090340-010C	Units: Result 470	mg/L PQL 1.0	SPK value 500	SPK Ref Val 0	Prep Info %REC 94	: Prep Da LowLimit 80	ite: HighLimit 120	RPD Ref Val	Prep Method: %RPD RPDLimit	Qual
Analysis Date: 09/ Analytes 1 Calcium Associated sample Run ID :Run Order	21/16 09:07 s: H16090340-010C r: ICP2-HE_160921A: 17	Units: Result 470	mg/L PQL 1.0 SampType:	SPK value 500 Interference	SPK Ref Val 0 Check Sample AE	Prep Info %REC 94	: Prep Da LowLimit 80 Lab	ite: HighLimit 120 ID: ICSAB	RPD Ref Val	Prep Method: %RPD RPDLimit Method: <b>E200.7</b>	Qual
Analysis Date: 09/ Analytes 1 Calcium Associated sample Run ID :Run Order Analysis Date: 09/	21/16 09:07 s: H16090340-010C r: ICP2-HE_160921A: 17 /21/16 09:11	Units: Result 470 Units:	mg/L PQL 1.0 SampType: mg/L	SPK value 500 Interference	SPK Ref Val 0 Check Sample AE	Prep Info %REC 94 Prep Info	: Prep Da LowLimit 80 Lab : Prep Da	Ite: HighLimit 120 ID: ICSAB	RPD Ref Val	Prep Method: %RPD RPDLimit Method: <b>E200.7</b> Prep Method:	Qual
Analysis Date: 09/ Analytes 1 Calcium Associated sample Run ID :Run Order Analysis Date: 09/ Analytes 1	21/16 09:07 s: H16090340-010C r: ICP2-HE_160921A: 17 /21/16 09:11	Units: Result 470 Units: Result	mg/L PQL 1.0 SampType: mg/L PQL	SPK value 500 Interference SPK value	SPK Ref Val 0 Check Sample AE SPK Ref Val	Prep Info %REC 94 Prep Info %REC	: Prep Da LowLimit 80 Lab : Prep Da LowLimit	ID: ICSAB Ite: HighLimit	RPD Ref Val	Prep Method: %RPD RPDLimit Method: <b>E200.7</b> Prep Method: %RPD RPDLimit	Qual
Analysis Date: 09/ Analytes 1 Calcium Associated sample Run ID :Run Order Analysis Date: 09/ Analytes 1 Calcium	21/16 09:07 s: H16090340-010C r: ICP2-HE_160921A: 17 /21/16 09:11	Units: Result 470 Units: Result 465	mg/L           PQL           1.0           SampType:           mg/L           PQL           1.0	SPK value 500 Interference SPK value 500	SPK Ref Val 0 Check Sample AE SPK Ref Val 0	Prep Info %REC 94 Prep Info %REC 93	: Prep Da LowLimit 80 Lab : Prep Da LowLimit 80	tte: HighLimit 120 ID: ICSAB Ite: HighLimit 120	RPD Ref Val	Prep Method: %RPD RPDLimit Method: E200.7 Prep Method: %RPD RPDLimit	Qual
Analysis Date: 09/ Analytes 1 Calcium Associated sample Run ID :Run Order Analysis Date: 09/ Analytes 1 Calcium Associated sample	21/16 09:07 s: H16090340-010C r: ICP2-HE_160921A: 17 /21/16 09:11 s: H16090340-010C	Units: Result 470 Units: Result 465	mg/L         PQL           1.0         1.0           SampType:         mg/L           PQL         1.0	SPK value 500 Interference SPK value 500	SPK Ref Val 0 Check Sample AE SPK Ref Val 0	Prep Info %REC 94 Prep Info %REC 93	: Prep Da LowLimit 80 Lab : Prep Da LowLimit 80	tte: HighLimit 120 ID: ICSAB Ite: HighLimit 120	RPD Ref Val	Prep Method: %RPD RPDLimit Method: E200.7 Prep Method: %RPD RPDLimit	Qual
Analysis Date: 09/ Analytes 1 Calcium Associated sample Run ID :Run Order Analysis Date: 09/ Analytes 1 Calcium Associated sample Run ID :Run Order	21/16 09:07 s: H16090340-010C r: ICP2-HE_160921A: 17 21/16 09:11 s: H16090340-010C r: ICP2-HE_160921A: 19	Units: Result 470 Units: Result 465	mg/L           PQL           1.0           SampType:           mg/L           PQL           1.0	SPK value 500 Interference SPK value 500 Continuing C	SPK Ref Val 0 Check Sample AE SPK Ref Val 0 Calibration Verifica	Prep Info %REC 94 Prep Info %REC 93	: Prep Da LowLimit 80 Lab : Prep Da LowLimit 80	ID: ICSAB HighLimit ID: ICSAB Ite: HighLimit 120 ID: CCV	RPD Ref Val	Prep Method: %RPD RPDLimit Method: E200.7 Prep Method: %RPD RPDLimit Method: E200.7	Qual
Analysis Date: 09/ Analytes 1 Calcium Associated sample Run ID :Run Order Analysis Date: 09/ Analytes 1 Calcium Associated sample Run ID :Run Order Analysis Date: 09/	21/16 09:07 s: H16090340-010C r: ICP2-HE_160921A: 17 /21/16 09:11 s: H16090340-010C r: ICP2-HE_160921A: 19 /21/16 09:19	Units: Result 470 Units: Result 465 Units:	mg/L PQL 1.0 SampType: mg/L PQL 1.0 SampType:	SPK value 500 Interference SPK value 500 Continuing C	SPK Ref Val 0 Check Sample AE SPK Ref Val 0 Calibration Verifica	Prep Info %REC 94 Prep Info %REC 93 ation Standa Prep Info	: Prep Da LowLimit 80 Lab : Prep Da LowLimit 80 ur Lab : Prep Da	ID: ICSAB ID: ICSAB Ite: HighLimit 120 ID: CCV ID: CCV Ite:	RPD Ref Val	Prep Method: %RPD RPDLimit Method: E200.7 Prep Method: %RPD RPDLimit Method: E200.7 Prep Method:	Qual
Analysis Date: 09/ Analytes 1 Calcium Associated sample Run ID :Run Order Analysis Date: 09/ Analytes 1 Calcium Associated sample Run ID :Run Order Analysis Date: 09/ Analysis Date: 09/	21/16 09:07 s: H16090340-010C r: ICP2-HE_160921A: 17 21/16 09:11 s: H16090340-010C r: ICP2-HE_160921A: 19 21/16 09:19	Units: Result 470 Units: Result 465 Units: Result	mg/L         PQL           1.0         1.0           SampType:         PQL           mg/L         PQL           1.0         1.0           SampType:         PQL           mg/L         PQL           PQL         1.0	SPK value 500 Interference SPK value 500 Continuing C SPK value	SPK Ref Val 0 Check Sample AE SPK Ref Val 0 Calibration Verifica SPK Ref Val	Prep Info %REC 94 Prep Info %REC 93 ation Standa Prep Info %REC	: Prep Da LowLimit 80 Lab : Prep Da LowLimit 80 ur Lab : Prep Da LowLimit	ID: ICSAB ID: ICSAB Ite: HighLimit 120 ID: CCV Ite: HighLimit	RPD Ref Val	Prep Method: %RPD RPDLimit Method: E200.7 Prep Method: %RPD RPDLimit Method: E200.7 Prep Method: %RPD RPDLimit	Qual
Analysis Date: 09/ Analytes 1 Calcium Associated sample Run ID :Run Order Analysis Date: 09/ Analytes 1 Calcium Run ID :Run Order Analysis Date: 09/ Analytes 1 Calcium	21/16 09:07 s: H16090340-010C r: ICP2-HE_160921A: 17 /21/16 09:11 s: H16090340-010C r: ICP2-HE_160921A: 19 /21/16 09:19	Units: Result 470 Units: Result 465 Units: Result 25.1	mg/L           PQL           1.0           SampType:           mg/L           PQL           1.0           SampType:           mg/L           PQL           1.0	SPK value 500 Interference SPK value 500 Continuing C SPK value 25	SPK Ref Val 0 Check Sample AE SPK Ref Val 0 Calibration Verifica SPK Ref Val 0	Prep Info %REC 94 Prep Info %REC 93 ation Standa Prep Info %REC 100	: Prep Da LowLimit 80 Lab : Prep Da LowLimit 80 ir Lab : Prep Da LowLimit 90	tte: HighLimit 120 ID: ICSAB Ite: HighLimit 120 ID: CCV Ite: HighLimit 110	RPD Ref Val	Prep Method: %RPD RPDLimit Method: E200.7 Prep Method: %RPD RPDLimit Method: E200.7 Prep Method: %RPD RPDLimit	Qual Qual Qual

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

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Client: Work Order:	MT DEQ-Federal Sup H16090340	erfund		ANALYT	Date: 28-Dec-16						
Project:	CFR Monitoring-4743	74		В	atchID: I	R118872					
Run ID :Run Order:	FIA202-HE_160921A: 9		SampType:	Initial Calibra	tion Verificati	on Standard	Lab	ID: ICV		Method: E365.1	
Analysis Date: 09/2	1/16 13:44	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Phosphorus, Total a	as P	0.478	0.010	0.5	0	96	90	110			
Associated samples	H16090340-001D, H1609 009D, H16090340-010D,	0340-002D H1609034(	9, H16090340 0-011D	-003D, H1609	0340-004D, H <sup>·</sup>	16090340-005D,	H1609034	0-006D, H1	6090340-007D,	H16090340-008D, H1609	0340-
Run ID :Run Order:	FIA202-HE_160921A: 10		SampType:	Continuing C	alibration Ver	ification Standa	r Lab	ID: CCV		Method: E365.1	
Analysis Date: 09/2	1/16 13:45	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Phosphorus, Total a	as P	0.198	0.010	0.2	0	99	90	110			
Associated samples	H16090340-001D, H1609 009D, H16090340-010D,	0340-002D H1609034(	9, H16090340 0-011D	-003D, H1609	0340-004D, H <sup>,</sup>	16090340-005D,	H1609034	0-006D, H1	6090340-007D,	H16090340-008D, H1609	0340-
Run ID :Run Order:	FIA202-HE_160921A: 11		SampType:	Initial Calibra	tion Blank, In	strument Blank	Lab	ID: ICB		Method: E365.1	
Analysis Date: 09/2	1/16 13:46	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Phosphorus, Total a	as P (	0.00164	0.010		0		0	0			
Associated samples	H16090340-001D, H1609 009D, H16090340-010D,	0340-002D H1609034(	), H16090340 0-011D	-003D, H1609	0340-004D, H <sup>·</sup>	16090340-005D,	H1609034	0-006D, H1	6090340-007D,	H16090340-008D, H1609	0340-
Run ID :Run Order:	FIA202-HE_160921A: 27		SampType:	Continuing C	alibration Ver	ification Standa	r Lab	ID: CCV		Method: E365.1	
Analysis Date: 09/2	1/16 14:02	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Phosphorus, Total a	as P	0.205	0.010	0.2	0	103	90	110			

Associated samples: H16090340-001D, H16090340-002D, H16090340-003D, H16090340-004D, H16090340-005D, H16090340-006D, H16090340-007D, H16090340-008D, H160908D, H160908D, H160908D, H160908D, H160908D, H160908D, H160908D, H160

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

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Client: Work Orde	MT DEQ- r: H160903	Federal Superfund 40			Date: 28-Dec-16							
Project:	CFR Mon	CFR Monitoring-474374 BatchID: R118878										
Run ID :Run Order:         ICPMS204-B_160921C: 10           Analysis Date:         09/21/16 10:00         Units: n			SampType:	Initial Calibra	Lab ID: ICV STD				Method: <b>E200.8</b>			
			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	
Arsenic		0.0587	0.0050	0.06	0	98	90	110				
Cadmium		0.0293	0.0010	0.03	0	98	90	110				
Copper		0.0604	0.010	0.06	0	101	90	110				
Lead		0.0577	0.010	0.06	0	96	90	110				
Zinc		0.0614	0.010	0.06	0	102	90	110				
Associated sar	mples: H1609034	0-004B, H16090340-015C,	, H16090340	0-016C								
Run ID :Run C	Order: ICPMS204	-B_160921C: 11	SampType:	Interference	Check Sample A		Lab	D: ICSA		Method: E200.8		
Analysis Date: 09/21/16 10:04 Units:		mg/L			Prep Info	: Prep Da	te:		Prep Method:			
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual	
Arsenic		0.000116	0.0050		0							
Cadmium		0.00106	0.0010		0							
Copper		0.000560	0.010		0							
Lead		0.000242	0.010		0							
Zinc		0.00122	0.010		0							
Associated sar	mples: H1609034	0-004B, H16090340-015C,	, H16090340	0-016C								
Run ID :Run (	Order: ICPMS204	-B_160921C: 57	SampType:	Initial Calibra	tion Verification	Standard	Lab	D: ICV STE	)	Method: E200.8		
Analysis Date	: 09/21/16 16:19	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:		
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual	
Arsenic		0.0612	0.0050	0.06	0	102	90	110				
Cadmium		0.0296	0.0010	0.03	0	99	90	110				
Copper		0.0615	0.010	0.06	0	103	90	110				
Lead		0.0584	0.010	0.06	0	97	90	110				
Zinc		0.0614	0.010	0.06	0	102	90	110				
Associated sar	mples: H1609034	0-004B, H16090340-015C,	, H16090340	0-016C								
Run ID :Run C	Order: ICPMS204	-B_160921C: 58	SampType:	Interference	Check Sample A		Lab	D: ICSA		Method: E200.8		
Analysis Date	: 09/21/16 16:23	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:		
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual	
Arsenic		0.000137	0.0050		0							
Qualifiers:	ND - Not Detecte	d at the Reporting Limit	S	S - Spike Recov	very outside accep	ted recovery	limit N	- Analyte co	ncentration was	not sufficiently high to calc	culate RPD	
J - Analyte detected below quantitation limits R - RPD outside accepted reco							А	- Analyte co	ncentration grea	ter than four times the spil	ke amount	
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Client: Work Order:	MT DEQ-Fede H16090340	eral Superfund		ANALYT	ICAL QC SU Prepared by Hele	MMARY	<b>REPO</b>	RT		Date	e: 28-Dec-	16
Project:	CFR Monitorin	g-474374		В	atchID: R11	8878						
Run ID :Run Order	ICPMS204-B_160	0921C: 58	SampType:	Interference	Check Sample A		Lab	ID: ICSA		Method	d: <b>E200.8</b>	
Analysis Date: 09/2	21/16 16:23	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method	d:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium		0.00106	0.0010		0							
Copper		0.000586	0.010		0							
Lead		0.000212	0.010		0							
Zinc		-6.90E-05	0.010		0							
Associated samples	: H16090340-004E	3, H16090340-015C	;, H16090340	-016C								
Run ID :Run Order	ICPMS204-B_160	0921C: 64	SampType:	Method Blan	k		Lab	ID: LRB		Method	d: <b>E200.8</b>	
Run ID :Run Order Analysis Date: 09/2	: ICPMS204-B_160 21/16 16:43	0921C: 64 Units:	SampType: <b>mg/L</b>	Method Blan	k	Prep Info	Lab : Prep Da	ID: <b>LRB</b> ite:		Methoo Prep Methoo	d: <b>E200.8</b> d:	
Run ID :Run Order Analysis Date: 09/2 Analytes 5	E ICPMS204-B_160 21/16 16:43	0921C: 64 Units: Result	SampType: <b>mg/L</b> PQL	Method Bland	k SPK Ref Val	Prep Info %REC	Lab : Prep Da LowLimit	ID: <b>LRB</b> ite: HighLimit	RPD Ref Val	Methoo Prep Methoo %RPD	d: <b>E200.8</b> d: RPDLimit	Qual
Run ID :Run Order Analysis Date: 09/2 Analytes <u>5</u> Arsenic	E ICPMS204-B_160 21/16 16:43	0921C: 64 Units: Result ND	SampType: mg/L PQL 6E-05	Method Bland	k SPK Ref Val	Prep Info %REC	Lab : Prep Da LowLimit	ID: <b>LRB</b> ite: HighLimit	RPD Ref Val	Methoo Prep Methoo %RPD	d: <b>E200.8</b> d: RPDLimit	Qual
Run ID :Run Order Analysis Date: 09/2 Analytes <u>5</u> Arsenic Cadmium	: ICPMS204-B_160 21/16 16:43	0921C: 64 Units: Result ND ND	SampType: <b>mg/L</b> PQL 6E-05 1E-05	Method Bland	k SPK Ref Val	Prep Info %REC	Lab : Prep Da LowLimit	ID: <b>LRB</b> te: HighLimit	RPD Ref Val	Method Prep Method %RPD	d: <b>E200.8</b> d: RPDLimit	Qual
Run ID :Run Order Analysis Date: 09/2 Analytes <u>5</u> Arsenic Cadmium Copper	: ICPMS204-B_16( 21/16 16:43	0921C: 64 Units: Result ND ND ND ND	SampType: mg/L PQL 6E-05 1E-05 6E-05	Method Bland	k SPK Ref Val	Prep Info %REC	Lab : Prep Da LowLimit	ID: <b>LRB</b> ite: HighLimit	RPD Ref Val	Method Prep Method %RPD	d: <b>E200.8</b> d: RPDLimit	Qual
Run ID :Run Order Analysis Date: 09/2 Analytes <u>5</u> Arsenic Cadmium Copper Lead	: ICPMS204-B_16( 21/16 16:43	0921C: 64 Units: Result ND ND ND ND ND	SampType: mg/L PQL 6E-05 1E-05 6E-05 5E-06	Method Bland	k SPK Ref Val	Prep Info %REC	Lab : Prep Da LowLimit	ID: <b>LRB</b> te: HighLimit	RPD Ref Val	Method Prep Method %RPD	d: <b>E200.8</b> d: RPDLimit	Qual
Run ID :Run Order Analysis Date: 09/2 Analytes 5 Arsenic Cadmium Copper Lead Zinc	: ICPMS204-B_160 21/16 16:43	0921C: 64 Units: Result ND ND ND ND ND ND ND	SampType: mg/L PQL 6E-05 1E-05 6E-05 5E-06 0.0002	Method Bland	k SPK Ref Val	Prep Info %REC	Lab : Prep Da LowLimit	ID: <b>LRB</b> ite: HighLimit	RPD Ref Val	Methoo Prep Methoo %RPD	d: <b>E200.8</b> d: RPDLimit	Qual
Run ID :Run Order Analysis Date: 09/2 Analytes 5 Arsenic Cadmium Copper Lead Zinc Associated samples	: ICPMS204-B_160 21/16 16:43	0921C: 64 Units: Result ND ND ND ND ND ND	SampType: mg/L PQL 6E-05 1E-05 6E-05 5E-06 0.0002	Method Blanl	k SPK Ref Val	Prep Info %REC	Lab : Prep Da LowLimit	ID: <b>LRB</b> te: HighLimit	RPD Ref Val	Method Prep Method %RPD	d: E200.8 d: RPDLimit	Qual
Run ID :Run Order Analysis Date: 09/2 Analytes <u>5</u> Arsenic Cadmium Copper Lead Zinc Associated samples Run ID :Run Order	: ICPMS204-B_160 21/16 16:43 :: H16090340-004E :: ICPMS204-B_160	0921C: 64 Units: Result ND ND ND ND ND ND 3 0921C: 65	SampType: mg/L PQL 6E-05 6E-05 5E-06 0.0002 SampType:	Method Bland SPK value	k SPK Ref Val	Prep Info %REC	Lab : Prep Da LowLimit	ID: LRB te: HighLimit ID: LFB	RPD Ref Val	Method Prep Method %RPD	d: <b>E200.8</b> d: RPDLimit	Qual
Run ID :Run Order Analysis Date: 09/2 Analytes <u>5</u> Arsenic Cadmium Copper Lead Zinc Associated samples Run ID :Run Order Analysis Date: 09/2	: ICPMS204-B_160 21/16 16:43 :: H16090340-004E :: ICPMS204-B_160 21/16 16:46	0921C: 64 Units: Result ND ND ND ND 3 0921C: 65 Units:	SampType: mg/L PQL 6E-05 1E-05 6E-05 5E-06 0.0002 SampType: mg/L	Method Bland SPK value	k SPK Ref Val	Prep Info %REC	Lab : Prep Da LowLimit Lab : Prep Da	ID: LRB HighLimit ID: LFB Ite:	RPD Ref Val	Method Prep Method %RPD	d: <b>E200.8</b> d: RPDLimit	Qual
Run ID :Run Order Analysis Date: 09/2 Analytes <u>5</u> Arsenic Cadmium Copper Lead Zinc Associated samples Run ID :Run Order Analysis Date: 09/2 Analytes <u>5</u>	: ICPMS204-B_160 21/16 16:43 :: H16090340-004E :: ICPMS204-B_160 21/16 16:46	0921C: 64 Units: Result ND ND ND ND ND 3 0921C: 65 Units: Result	SampType: mg/L PQL 6E-05 6E-05 5E-06 0.0002 SampType: mg/L PQL	Method Bland SPK value Laboratory Fo	k SPK Ref Val ortified Blank SPK Ref Val	Prep Info %REC Prep Info %REC	Lab : Prep Da LowLimit Lab : Prep Da LowLimit	ID: LRB tte: HighLimit ID: LFB tte: HighLimit	RPD Ref Val	Method Prep Method %RPD	d: <b>E200.8</b> d: RPDLimit d: <b>E200.8</b> d: RPDLimit	Qual
Run ID :Run Order Analysis Date: 09/2 Analytes 5 Arsenic Cadmium Copper Lead Zinc Associated samples Run ID :Run Order Analysis Date: 09/2 Analytes 5 Arsenic	: ICPMS204-B_160 21/16 16:43 :: H16090340-004E :: ICPMS204-B_160 21/16 16:46	0921C: 64 Units: Result ND ND ND ND ND 3 0921C: 65 Units: Result 0.0508	SampType: mg/L PQL 6E-05 1E-05 6E-05 5E-06 0.0002 SampType: mg/L PQL 0.0050	Method Bland SPK value Laboratory Fo SPK value 0.05	k SPK Ref Val ortified Blank SPK Ref Val 0	Prep Info %REC Prep Info %REC 102	Lab : Prep Da LowLimit Lab : Prep Da LowLimit 85	ID: LRB te: HighLimit ID: LFB te: HighLimit 115	RPD Ref Val	Method Prep Method %RPD Method Prep Method %RPD	d: <b>E200.8</b> d: RPDLimit d: <b>E200.8</b> d: RPDLimit	Qual

Cadmium 0.0512 0.0010 0.05 0 102 85 115 Copper 0.0502 0.010 0.05 0 100 85 115 0.0484 0.010 85 115 Lead 0.05 0 97 Zinc 0.0531 0.010 0.05 0 106 85 115 Associated samples: H16090340-004B

SampType: Sample Matrix Spike Run ID :Run Order: ICPMS204-B\_160921C: 67 Lab ID: H16090322-007CMS Method: E200.8 Prep Info: Prep Date: Prep Method: Analysis Date: 09/21/16 16:56 Units: mg/L PQL LowLimit HighLimit RPD Ref Val Result SPK value SPK Ref Val %REC %RPD RPDLimit Qual Analytes 5 Arsenic 0.0590 0.0010 0.05 0.007376 103 70 130 70 130 Cadmium 0.0500 0.0010 0.05 0.0000441 100

ND - Not Detected at the Reporting Limit Qualifiers:

S - Spike Recovery outside accepted recovery limit

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 four times the spike amount Page 107 of 130

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Client: Work Order:	MT DEC H16090	Q-Federal Superfund 340		ANALYT	ICAL QC SU Prepared by Hel	<b>JMMARY</b> ena, MT Bra	<b>REPOI</b>	RT		<b>Date:</b> 28-De	c-16
Project:	CFR Mo	onitoring-474374		В	atchID: R1	18878					
Run ID :Run Order		04-B_160921C: 67	SampType:	Sample Matri	x Spike		Lab I	D: H16090	322-007CMS	Method: E200.8	
Analysis Date: 09/2	Analysis Date: 09/21/16 16:56 Unit					Prep Info	: Prep Da	te:		Prep Method:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLim	it Qual
Copper		0.0525	0.0050	0.05	0.003468	98	70	130			
Lead		0.0485	0.0010	0.05	0.0000361	97	70	130			
Zinc		0.0575	0.010	0.05	0.005448	104	70	130			
Associated samples	: H160903	40-004B									
		A B. 160021C: 68	SomeType	Comple Metri	v Smike Dumline		Lob		222 007 CMCD	Mathad: E200 8	

Run ID :Run Order: ICPMS204-B_1609210	SampType:	Sample Matri	x Spike Duplicate		Lab	ID: <b>H16090</b>	322-007CMSD	Method	d: <b>E200.8</b>		
Analysis Date: 09/21/16 16:59	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	d:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0585	0.0010	0.05	0.007376	102	70	130	0.05897	0.8	20	
Cadmium	0.0502	0.0010	0.05	0.0000441	100	70	130	0.05003	0.3	20	
Copper	0.0530	0.0050	0.05	0.003468	99	70	130	0.05254	0.8	20	
Lead	0.0488	0.0010	0.05	0.0000361	98	70	130	0.04854	0.6	20	
Zinc	0.0574	0.010	0.05	0.005448	104	70	130	0.05748	0.1	20	

Associated samples: H16090340-004B

ENEDCV

Truct our Pooplo Truct our Data

- S Spike Recovery outside accepted recovery limit
- 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 four times the spike amount

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Client: Work Order:	MT DEQ-Federal St H16090340	uperfund		ANALYT	ICAL QC	SUMMARY Ielena, MT Bra	REPO	RT		Date: 28-Dec	-16
Project:	CFR Monitoring-474	1374		В	atchID: F	R118902					
Run ID :Run Order:	FIA202-HE_160922A: 9	I	SampType:	Initial Calibra	tion Verification	on Standard	Lab	ID: ICV		Method: E365.1	
Analysis Date: 09/2	22/16 13:04	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Phosphorus, Total	as P	0.467	0.010	0.5	0	93	90	110			
Associated samples	E H16090340-012D, H16	090340-0131	D, H16090340	)-014D, H1609	0340-015D, H1	16090340-016D	H1609034	0-017D			
Run ID :Run Order:	FIA202-HE_160922A: 1	0	SampType:	Continuing C	alibration Veri	ification Standa	r Lab	ID: <b>CCV</b>		Method: E365.1	
Run ID :Run Order: Analysis Date: <b>09/2</b>	:FIA202-HE_160922A: 1 22/16 13:05	0 Units:	SampType: <b>mg/L</b>	Continuing C	alibration Veri	ification Standa Prep Info	i <b>r</b> Lab : Prep Da	ID: <b>CCV</b> te:		Method: E365.1 Prep Method:	
Run ID :Run Order: Analysis Date: 09/2 Analytes <u>1</u>	FIA202-HE_160922A: 1 22/16 13:05	0 Units: Result	SampType: mg/L PQL	Continuing C SPK value	SPK Ref Val	ification Standa Prep Info %REC	r Lab : Prep Da LowLimit	ID: <b>CCV</b> te: HighLimit	RPD Ref Val	Method: <b>E365.1</b> Prep Method: %RPD RPDLimit	Qual
Run ID :Run Order: Analysis Date: 09/2 Analytes <u>1</u> Phosphorus, Total	: FIA202-HE_160922A: 1 22/16 13:05 as P	0 Units: Result 0.195	SampType: mg/L PQL 0.010	Continuing C SPK value 0.2	SPK Ref Val	ification Standa Prep Info %REC 97	r Lab : Prep Da LowLimit 90	ID: CCV te: HighLimit 110	RPD Ref Val	Method: <b>E365.1</b> Prep Method: %RPD RPDLimit	Qual
Run ID :Run Order: Analysis Date: 09/2 Analytes <u>1</u> Phosphorus, Total Associated samples	: FIA202-HE_160922A: 1 22/16 13:05 as P :: H16090340-012D, H16	0 Units: Result 0.195 090340-0131	SampType: mg/L PQL 0.010 D, H16090340	Continuing C SPK value 0.2 D-014D, H1609	SPK Ref Val 0 0340-015D, H1	ification Standa Prep Info %REC 97 16090340-016D	r Lab : Prep Da LowLimit 90 H1609034	ID: CCV te: HighLimit 110 0-017D	RPD Ref Val	Method: <b>E365.1</b> Prep Method: %RPD RPDLimit	Qual
Run ID :Run Order: Analysis Date: 09/2 Analytes <u>1</u> Phosphorus, Total Associated samples Run ID :Run Order:	: FIA202-HE_160922A: 1 22/16 13:05 as P s: H16090340-012D, H16 ; FIA202-HE_160922A: 1	0 Units: Result 0.195 090340-0131	SampType: mg/L PQL 0.010 D, H16090340 SampType:	Continuing C SPK value 0.2 J-014D, H1609	SPK Ref Val 0 0340-015D, H1	ification Standa Prep Info %REC 97 16090340-016D strument Blank	r Lab : Prep Da LowLimit 90 H1609034 Lab	ID: CCV te: HighLimit 110 0-017D	RPD Ref Val	Method: E365.1 Prep Method: %RPD RPDLimit Method: E365.1	Qual
Run ID :Run Order: Analysis Date: 09/2 Analytes <u>1</u> Phosphorus, Total Associated samples Run ID :Run Order: Analysis Date: 09/2	: FIA202-HE_160922A: 1 22/16 13:05 as P 5: H16090340-012D, H16 5: FIA202-HE_160922A: 1 22/16 13:07	0 Units: Result 0.195 090340-0131 1 Units:	SampType: mg/L PQL 0.010 D, H16090340 SampType: mg/L	Continuing C SPK value 0.2 D-014D, H1609 Initial Calibra	SPK Ref Val 0 0340-015D, H1	ification Standa Prep Info %REC 97 16090340-016D strument Blank Prep Info	Ir Lab Prep Da LowLimit 90 H1609034 Lab Prep Da	ID: CCV te: HighLimit 110 0-017D ID: ICB te:	RPD Ref Val	Method: E365.1 Prep Method: %RPD RPDLimit Method: E365.1 Prep Method:	Qual
Run ID :Run Order: Analysis Date: 09/2 Analytes <u>1</u> Phosphorus, Total Associated samples Run ID :Run Order: Analysis Date: 09/2 Analytes <u>1</u>	: FIA202-HE_160922A: 1 22/16 13:05 as P :: H16090340-012D, H16 : FIA202-HE_160922A: 1 22/16 13:07	0 Units: Result 0.195 090340-0131 1 Units: Result	SampType: mg/L PQL 0.010 D, H16090340 SampType: mg/L PQL	Continuing C SPK value 0.2 J-014D, H1609 Initial Calibra SPK value	SPK Ref Val 0 0340-015D, H1 tion Blank, Ins SPK Ref Val	ification Standa Prep Info %REC 97 16090340-016D strument Blank Prep Info %REC	r Lab : Prep Da LowLimit 90 H1609034 Lab : Prep Da LowLimit	ID: CCV te: HighLimit 110 0-017D ID: ICB te: HighLimit	RPD Ref Val	Method: E365.1 Prep Method: %RPD RPDLimit Method: E365.1 Prep Method: %RPD RPDLimit	Qual
Run ID :Run Order: Analysis Date: 09/2 Analytes <u>1</u> Phosphorus, Total Associated samples Run ID :Run Order: Analysis Date: 09/2 Analytes <u>1</u> Phosphorus, Total	: FIA202-HE_160922A: 1 22/16 13:05 as P 5: H16090340-012D, H16 5: FIA202-HE_160922A: 1 22/16 13:07 as P	0 Units: Result 0.195 090340-0131 1 Units: Result -0.00204	SampType: mg/L PQL 0.010 D, H16090340 SampType: mg/L PQL 0.010	Continuing C SPK value 0.2 D-014D, H1609 Initial Calibra SPK value	SPK Ref Val 0 0340-015D, H1 tion Blank, Ins SPK Ref Val 0	ification Standa Prep Info %REC 97 16090340-016D strument Blank Prep Info %REC	Ir Lab Prep Da LowLimit 90 H1609034 Lab Prep Da LowLimit 0	ID: CCV te: HighLimit 110 0-017D ID: ICB te: HighLimit 0	RPD Ref Val	Method: E365.1 Prep Method: %RPD RPDLimit Method: E365.1 Prep Method: %RPD RPDLimit	Qual

S - Spike Recovery outside accepted recovery limit

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

A - Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DE( H16090	Q-Federal Su 0340	perfund		ANALYT	ICAL QC S Prepared by He	UMMARY	REPO	RT		Date: 28-Dec-	-16
Project:	CFR M	onitoring-474	374		В	atchID: R	118991					
Run ID :Run Orde	r: IC103-H	_160926A: 18		SampType:	Method Blan	k		Lab	ID: ICB		Method: E300.0	
Analysis Date: 09/	/26/16 14:24	l I	Units:	mg/L			Prep Info:	: Prep Da	te:		Prep Method:	
Analytes 1			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Sulfate			0.2	0.08								
Associated sample	s: <b>H16090</b> 3	340-006A										
Run ID :Run Orde	r: IC103-H	_160926A: 19		SampType:	Initial Calibra	ation Verificatio	n Standard	Lab	ID: ICV		Method: E300.0	
Analysis Date: 09/26/16 14:35			Units:	mg/L			Prep Info:	: Prep Da	te:		Prep Method:	
Analytes 1			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Sulfate			408	1.0	400	0	102	90	110			
Sulfate Associated samples: H16090340-006A												
Run ID :Run Orde	r: IC103-H	_160926A: 20		SampType:	Laboratory F	ortified Blank		Lab	ID: LFB		Method: E300.0	
Analysis Date: 09/	/26/16 14:46	5	Units:	mg/L			Prep Info:	: Prep Da	te:		Prep Method:	
Analytes 1			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Sulfate			210	1.0	200	0.241	105	90	110			
Associated sample	s: <b>H16090</b> 3	340-006A										
Run ID :Run Orde	r: IC103-H	_160926A: 21		SampType:	Continuing C	alibration Verif	ication Standa	i <b>r</b> Lab	ID: CCV092	2616-1	Method: E300.0	
Analysis Date: 09/	/26/16 14:58	3	Units:	mg/L			Prep Info:	: Prep Da	te:		Prep Method:	
Analytes 1			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Sulfate			419	1.0	400	0	105	90	110			
Associated sample	s: <b>H16090</b> 3	340-006A										
Run ID :Run Orde	r: IC103-H	_160926A: 34		SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16090</b>	501-002AMS	Method: E300.0	
Analysis Date: 09/	/26/16 17:22	2	Units:	mg/L			Prep Info:	: Prep Da	te:		Prep Method:	
Analytes 1			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Sulfate		227	1.0	200	10.99	108	90	110				
Associated samples: H16090340-006A												

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

R - RPD outside accepted recovery limits A - Analyte concentration greater than four times the spike amount

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Client: Work Order:	Q-Federal Superfund 0340		ANALYT	ICAL QC S	UMMARY lena, MT Bra	REPO	RT		Date	: 28-Dec-	16	
Project:	CFR M	onitoring-474374		В	atchID: R1	18991						
Run ID :Run Order	IC103-H	_160926A: 35	SampType:	Sample Matri	ix Spike Duplica	te	Lab	ID: H16090	501-002AMSD	Method	: E300.0	
Analysis Date: 09/2	26/16 17:33	B Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		222	1.0	200	10.99	106	90	110	226.7	2.0	20	
Associated samples	: H16090	340-006A										

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Feder H16090340	al Superfund		ANALYT	ICAL QC S Prepared by He	SUMMARY elena, MT Bra	REPO	RT		Date	: 28-Dec-	16
Project:	CFR Monitoring	g-474374		В	atchID: R	119039						
Run ID :Run Order	SOIL DRYING OV	EN 2_160927B: 9	SampType:	Sample Dupl	icate		Lab	ID: <b>H16090</b> ;	340-027ADUP	Method	l: D2974	
Analysis Date: 09/2	8/16 10:37	Units:	wt%			Prep Info	: Prep Da	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Moisture		75.0	0.20		0				75.61	0.8	20	
Associated samples	: H16090340-020A	H16090340-021A	H16090340	-022A. H1609	0340-023A. H16	6090340-024A	H1609034	0-025A. H1	6090340-026A.	H16090340-02	7A. H16090	340-

Dclated samples: H16090340-020A, H16090340-021A, H16090340-022A, H16090340-023A, H16090340-024A, H16090340-025A, H16090340-026A, H

- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

- N Analyte concentration was not sufficiently high to calculate RPD
- A Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Federal St H16090340	uperfund		ANALYT	ICAL QC S	UMMARY lena, MT Bra	REPO	RT		Date: 28-Dec	c-16
Project:	CFR Monitoring-474	1374		В	atchID: R1	19057					
Run ID :Run Order:	ICP2-HE_160928C: 6		SampType:	Initial Calibra	tion Verification	Standard	Lab	ID: <b>ICV</b>		Method: SW6010	В
Analysis Date: 09/2	28/16 09:49	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Copper		0.812	0.010	0.8	0	102	90	110			
Zinc		0.813	0.010	0.8	0	102	90	110			
Associated samples	:: H16090340-020A, H160 028A, H16090340-029A	090340-021A A, H1609034	A, H16090340 D-030A, H160	-022A, H1609 90340-031A, I	0340-023A, H160 H16090340-032A	090340-024A, A, H16090340	, H1609034 -033A, H16	0-025A, H1 090340-034	6090340-026A, IA	H16090340-027A, H1609	0340-
Run ID :Run Order:	: ICP2-HE_160928C: 16		SampType:	Interference	Check Sample A	L.	Lab	ID: ICSA		Method: SW6010	В
Analysis Date: 09/2	28/16 10:28	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Copper		0.00469	0.010		0		0	0			
Zinc		0.00232	0.010		0		0	0			
Associated samples	:: H16090340-020A, H160 028A, H16090340-029A	090340-021 <i>A</i> A, H1609034	A, H16090340 0-030A, H160	-022A, H1609 90340-031A,	0340-023A, H160 H16090340-032A	)90340-024A, A, H16090340	, H1609034 -033A, H16	0-025A, H1 090340-034	6090340-026A, IA	H16090340-027A, H1609	0340-
Run ID :Run Order:	ICP2-HE_160928C: 17		SampType:	Interference	Check Sample A	В	Lab	ID: ICSAB		Method: SW6010	В
Analysis Date: 09/2	28/16 10:32	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Copper		0.502	0.010	0.5	0	100	80	120			
Zinc		0 965	0.010	1	0	97	80	120			

Associated samples: H16090340-020A, H16090340-021A, H16090340-022A, H16090340-023A, H16090340-024A, H16090340-025A, H16090340-026A, H16090340-027A, H16090340-

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S - Spike Recovery outside accepted recovery limit

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Fed H16090340	eral Superfund		ANALYT	CAL QC SU Prepared by Hele	<b>JMMARY</b> ena, MT Bra	REPO	RT		Date:	28-Dec-	16
Project:	CFR Monitorin	ng-474374		В	atchID: R1	19077						
Run ID :Run Order	ICPMS204-B_16	60928B: 10	SampType:	Initial Calibra	tion Verification	Standard	Lab	D: ICV STC	)	Method:	SW6020	
Analysis Date: 09/2	28/16 10:48	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:		
Analytes 3		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0602	0.0010	0.06	0	100	90	110				
Cadmium		0.0294	0.0010	0.03	0	98	90	110				
Lead		0.0578	0.0010	0.06	0	96	90	110				
Associated samples	8: H16090340-020 028A, H1609034	A, H16090340-021A 40-029A, H16090340	, H16090340 )-030A, H160	-022A, H16090 90340-031A, I	0340-023A, H160 H16090340-032A	90340-024A, , H16090340-	H1609034 033A, H16	0-025A, H10 090340-034	6090340-026A, IA	H16090340-027	'A, H16090	340-
Run ID :Run Order	ICPMS204-B_16	60928B: 84	SampType:	Initial Calibra	tion Verification	Standard	Lab	D: ICV STC	)	Method:	SW6020	
Analysis Date: 09/2	28/16 23:48	Units:	mg/L			Prep Info:	: Prep Da	te:		Prep Method:		
Analytes 3		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0632	0.0010	0.06	0	105	90	110				

Associated samples: H16090340-020A, H16090340-021A, H16090340-022A, H16090340-023A, H16090340-024A, H16090340-025A, H16090340-026A, H16090340-027A, H16090340-

0

0

106

100

90

90

110

110

0.03

0.06

Cadmium

Lead

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

0.0317

0.0598

0.0010

0.0010

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal H16090340	I Superfund		ANALYT	ICAL QC S Prepared by He	SUMMARY elena, MT Bra	<b>REPO</b>	RT		Date: 28-Dec-	16
Project:	CFR Monitoring-4	474374		В	atchID: R	119631					
Run ID :Run Order	: ICPMS204-B_16101	9B: 9	SampType:	Initial Calibra	tion Verificatio	on Standard	Lab	ID: ICV STC	)	Method: E200.8	
Analysis Date: 10/	19/16 13:58	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Arsenic		0.0620	0.0050	0.06	0	103	90	110			
Associated samples	s: H16090340-009B										
Run ID :Run Order	: ICPMS204-B_16101	9B: 10	SampType:	Interference	Check Sample	A	Lab	ID: ICSA		Method: E200.8	
Analysis Date: 10/	19/16 14:01	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes <u>1</u> Resul			PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Arialytes 1		-1.40E-05	0.0050		0						
	S. H10090340-009B										
Run ID :Run Order	: ICPMS204-B_16101	9B: 15	SampType:	Method Blan	k		Lab	ID: LRB		Method: E200.8	
Analysis Date: 10/	19/16 14:18	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
	Analytes 1										
Arsenic		ND	6E-05								
Arsenic Associated samples	s: <b>H16090340-009B</b>	ND	6E-05								
Arsenic Associated samples Run ID :Run Order	s: H16090340-009B :: ICPMS204-B_16101	ND 9B: 16	6E-05 SampType:	Laboratory F	ortified Blank		Lab	ID: LFB		Method: <b>E200.8</b>	
Arsenic Associated samples Run ID :Run Order Analysis Date: 10/	s: H16090340-009B :: ICPMS204-B_16101 19/16 14:21	ND 9B: 16 Units:	6E-05 SampType: <b>mg/L</b>	Laboratory F	ortified Blank	Prep Info	Lab : Prep Da	ID: LFB te:		Method: <b>E200.8</b> Prep Method:	
Arsenic Associated samples Run ID :Run Order Analysis Date: 10/ Analytes 1	s: H16090340-009B :: ICPMS204-B_16101 19/16 14:21	ND 9B: 16 Units: Result	6E-05 SampType: <b>mg/L</b> PQL	Laboratory F	ortified Blank SPK Ref Val	Prep Info	Lab : Prep Da LowLimit	ID: <b>LFB</b> tte: HighLimit	RPD Ref Val	Method: <b>E200.8</b> Prep Method: %RPD RPDLimit	Qual
Arsenic Associated samples Run ID :Run Order Analysis Date: 10/ Analytes <u>1</u> Arsenic	s: H16090340-009B :: ICPMS204-B_16101 19/16 14:21	ND 9 <b>B: 16</b> Units: Result 0.0490	6E-05 SampType: <b>mg/L</b> PQL 0.0050	Laboratory F SPK value 0.05	ortified Blank SPK Ref Val 0	Prep Info %REC 98	Lab : Prep Da LowLimit 85	ID: <b>LFB</b> ite: HighLimit 115	RPD Ref Val	Method: <b>E200.8</b> Prep Method: %RPD RPDLimit	Qual
Arsenic Associated samples Run ID :Run Order Analysis Date: 10/ Analytes 1 Arsenic Associated samples	s: H16090340-009B :: ICPMS204-B_16101 19/16 14:21 s: H16090340-009B	ND 9 <b>B: 16</b> Units: Result 0.0490	6E-05 SampType: <b>mg/L</b> 0.0050	Laboratory F SPK value 0.05	ortified Blank SPK Ref Val 0	Prep Info %REC 98	Lab : Prep Da LowLimit 85	ID: <b>LFB</b> ite: HighLimit 115	RPD Ref Val	Method: <b>E200.8</b> Prep Method: %RPD RPDLimit	Qual
Arsenic Associated samples Run ID :Run Order Analysis Date: 10/ Analytes <u>1</u> Arsenic Associated samples Run ID :Run Order	s: H16090340-009B : ICPMS204-B_16101 19/16 14:21 s: H16090340-009B : ICPMS204-B_16101	ND 9B: 16 Units: Result 0.0490 9B: 93	6E-05 SampType: mg/L PQL 0.0050 SampType:	Laboratory F SPK value 0.05 Sample Matri	ortified Blank SPK Ref Val 0 x Spike	Prep Info %REC 98	Lab : Prep Da LowLimit 85 Lab	ID: LFB ite: HighLimit 115 ID: H161003	RPD Ref Val	Method: E200.8 Prep Method: %RPD RPDLimit Method: E200.8	Qual
Arsenic Associated samples Run ID :Run Order Analysis Date: 10/ Analytes <u>1</u> Arsenic Associated samples Run ID :Run Order Analysis Date: 10/	s: H16090340-009B : ICPMS204-B_16101 19/16 14:21 s: H16090340-009B : ICPMS204-B_16101 19/16 18:38	ND 9B: 16 Units: Result 0.0490 9B: 93 Units:	6E-05 SampType: mg/L 0.0050 SampType: mg/L	Laboratory F SPK value 0.05 Sample Matri	ortified Blank SPK Ref Val 0	Prep Info %REC 98 Prep Info	Lab : Prep Da LowLimit 85 Lab : Prep Da	ID: LFB Ite: HighLimit 115 ID: H161003 Ite:	RPD Ref Val	Method: <b>E200.8</b> Prep Method: %RPD RPDLimit Method: <b>E200.8</b> Prep Method:	Qual
Arsenic Associated samples Run ID :Run Order Analysis Date: 10/ Analytes <u>1</u> Arsenic Associated samples Run ID :Run Order Analysis Date: 10/ Analytes <u>1</u>	s: H16090340-009B : ICPMS204-B_16101 19/16 14:21 s: H16090340-009B : ICPMS204-B_16101 19/16 18:38	ND 9B: 16 Units: Result 0.0490 9B: 93 Units: Result	6E-05 SampType: mg/L 0.0050 SampType: mg/L PQL	Laboratory F SPK value 0.05 Sample Matri SPK value	ortified Blank SPK Ref Val 0 x Spike SPK Ref Val	Prep Info %REC 98 Prep Info %REC	Lab : Prep Da LowLimit 85 Lab : Prep Da LowLimit	ID: <b>LFB</b> tte: HighLimit 115 ID: <b>H16100</b> tte: HighLimit	RPD Ref Val	Method: <b>E200.8</b> Prep Method: %RPD RPDLimit Method: <b>E200.8</b> Prep Method: %RPD RPDLimit	Qual
Arsenic Associated samples Run ID :Run Order Analysis Date: 10/ Analytes <u>1</u> Arsenic Associated samples Run ID :Run Order Analysis Date: 10/ Analytes <u>1</u> Arsenic	s: H16090340-009B : ICPMS204-B_16101 19/16 14:21 s: H16090340-009B : ICPMS204-B_16101 19/16 18:38	ND 9B: 16 Units: Result 0.0490 9B: 93 Units: Result 0.216	6E-05 SampType: mg/L 0.0050 SampType: mg/L PQL 0.0010	Laboratory F SPK value 0.05 Sample Matri SPK value 0.05	ortified Blank SPK Ref Val 0 x Spike SPK Ref Val 0.1571	Prep Info %REC 98 Prep Info %REC 119	Lab : Prep Da LowLimit 85 . Lab : Prep Da LowLimit 70	ID: LFB tte: HighLimit 115 ID: H161003 tte: HighLimit 130	RPD Ref Val	Method: <b>E200.8</b> Prep Method: %RPD RPDLimit Method: <b>E200.8</b> Prep Method: %RPD RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEC H16090	Q-Federal Superfund 340		ANALYT	ICAL QC SU Prepared by Hel	JMMAR) ena, MT Bra	<b>REPO</b> l	RT		Date	: 28-Dec-	16
Project:	CFR Mo	onitoring-474374		В	atchID: R1	19631						
Run ID :Run Order:	4-B_161019B: 94	SampType:	Sample Matri	x Spike Duplicat	е	Lab	ID: H16100	310-020BMSD	Method	l: E200.8		
Analysis Date: 10/1	9/16 18:41	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic Associated samples	: H160903	0.213 <b>40-009B</b>	0.0010	0.05	0.1571	111	70	130	0.2164	1.7	20	

- J Analyte detected below quantitation limits
- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD
- R RPD outside accepted recovery limits A Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Federal H16090340	Superfund		ANALYT	ICAL QC	SUMMARY lelena, MT Bra	<b>REPO</b> I	RT		Date	: 28-Dec-	-16
Project:	CFR Monitoring-4	74374		В	atchID: 1	rss160916/	4					
Run ID :Run Order	· ACCU-124 (14410200	0)_160916B: 2	SampType:	Method Blan	k		Lab	D: <b>MB-25</b> _	160916A	Method	: A2540 D	
Analysis Date: 09/	16/16 13:45	Units: <b>m</b>	ng/L			Prep Info	: Prep Da	te:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Susp Associated sample	ended TSS @ 105 C s: H16090340-001A, H 009A, H16090340-01	ND 16090340-002A, 10A, H16090340-	0.1 H16090340- 011A, H160	003A, H1609 90340-012A, I	0340-004A, H1 H16090340-01	6090340-005A, 3A, H16090340	H1609034 -014A, H16	0-006A, H1 090340-01	6090340-007A, 5A, H16090340-	H16090340-00 016A, H160903	8A, H16090 340-017A	340-
Run ID :Run Order	· ACCU-124 (14410200	0)_160916B: 2	SampType:	Laboratory C	ontrol Sample	1	Lab	D: LCS-26	_160916A	Method	: A2540 D	
Analysis Date: 09/	16/16 13:45	Units: <b>r</b>	ng/L			Prep Info	: Prep Da	te:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Susp Associated samples	ended TSS @ 105 C s: H16090340-001A, H <sup>-</sup> 009A, H16090340-01	89.0 16090340-002A, I0A, H16090340-	10 H16090340- 011A, H160	100 003A, H1609 90340-012A, I	0 0340-004A, H1 H16090340-01	89 6090340-005A, 3A, H16090340-	80 H1609034 -014A, H16	120 0-006A, H1 090340-01	6090340-007A, 5A, H16090340-	H16090340-00 016A, H160903	8A, H16090 340-017A	)340-
Run ID :Run Order	· ACCU-124 (14410200	0)_160916B: 2	SampType:	Sample Dupl	icate		Lab	ID: <b>H16090</b>	336-001BDUP	Method	: A2540 D	
Analysis Date: 09/	16/16 13:46	Units: m	ng/L			Prep Info	: Prep Da	te:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Susp	ended TSS @ 105 C	13.0	10		0				11	17	5	R
Associated samples	s: H16090340-001A, H <sup>2</sup> 009A, H16090340-01 e between he analytical res	16090340-002A, IOA, H16090340- ult for the sample an	H16090340- 011A, H160 d its duplicate	003A, H1609 90340-012A, I is less than he r	0340-004A, H1 H16090340-01 eporting limit, the	6090340-005A, 3A, H16090340 RPD variance is no	H16090340 -014A, H16 ot considered	0-006A, H1 090340-01 significant.	6090340-007A, 5A, H16090340-	H16090340-00 016A, H160903	8A, H16090 340-017A	340-
Run ID :Run Order	: ACCU-124 (14410200	0) 160916B: 3	SampType:	Sample Dupl	icate		Lab	D: <b>H16090</b>	340-002ADUP	Method	: A2540 D	
Analysis Date: 09/	16/16 13:51	Units: <b>m</b>	ng/L			Prep Info	: Prep Da	te:		Prep Method	:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Susp	ended TSS @ 105 C	ND	10		0				0		5	
Associated samples	s: H16090340-001A, H <sup>2</sup> 009A, H16090340-01 e between he analytical res	16090340-002A, IOA, H16090340- ult for the sample an	H16090340- 011A, H160 d its duplicate	003A, H1609 90340-012A, I is less than he r	0340-004A, H1 H16090340-01 eporting limit, the	6090340-005A, 3A, H16090340 RPD variance is no	H16090340 -014A, H16 ot considered	0-006A, H1 090340-015 significant.	6090340-007A, 5A, H16090340-	H16090340-00 016A, H160903	8A, H16090 340-017A	340-
Run ID :Run Order	· ACCU-124 (14410200	0) 160916B: 4	SampType:	Method Blan	k		Lab	D: <b>MB-49</b>	160916A	Method	A2540 D	
Analysis Date: 09/	16/16 13:53	Units: m	na/L			Prep Info	: Prep Da	te:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	• %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Susp	ended TSS @ 105 C	ND	0.1									
Qualifiers: ND J - /	- Not Detected at the Re Analyte detected below o	eporting Limit quantitation limits	S	- Spike Reco	very outside ac e accepted reco	cepted recovery	limit N A	- Analyte co - Analyte co	oncentration was	not sufficiently ater than four tir	high to calc nes the spik Page <sup>-</sup>	ulate RPD e amount 117 of 130

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Client: Work Order:	MT DEQ-Federal S H16090340	uperfund		ANALYT	ICAL QC S Prepared by He	SUMMARY elena, MT Brai	REPO	RT		Date	: 28-Dec-	16
Project:	CFR Monitoring-474	4374		В	atchID: T	SS160916A	۱.					
Run ID :Run Order:	ACCU-124 (14410200)_	_160916B: 4	SampType:	Method Blan	k		Lab	ID: <b>MB-49</b> _	160916A	Method	: A2540 D	
Analysis Date: 09/1	6/16 13:53	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Associated samples	: H16090340-001A, H16 009A, H16090340-010	090340-002A A, H16090340	A, H16090340 0-011A, H160	-003A, H16090 90340-012A, I	0340-004A, H16 H16090340-013	6090340-005A, 3A, H16090340-	H1609034 014A, H16	0-006A, H16 090340-015	6090340-007A, 5A, H16090340-	H16090340-00 016A, H16090	8A, H16090 340-017A	340-
Run ID :Run Order:	ACCU-124 (14410200)_	_160916B: 5	SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-50_	_160916A	Method	: A2540 D	
Analysis Date: 09/1	6/16 13:54	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	nded TSS @ 105 C	88.0	10	100	0	88	80	120				
Associated samples	: H16090340-001A, H16 009A, H16090340-010	090340-002A A, H1609034(	A, H16090340 D-011A, H160	-003A, H16090 90340-012A, I	0340-004A, H16 H16090340-013	6090340-005A, 3A, H16090340-	H1609034 014A, H16	0-006A, H16 090340-015	6090340-007A, 5A, H16090340-	H16090340-00 016A, H16090	8A, H16090 340-017A	340-
Run ID :Run Order:	ACCU-124 (14410200)_	_160916B: 5	SampType:	Sample Dupl	icate		Lab	ID: H160903	340-012ADUP	Method	: A2540 D	
Analysis Date: 09/1	6/16 13:54	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	nded TSS @ 105 C	ND	10		0				0		5	
Associated samples	: H16090340-001A, H16	090340-002A	, H16090340	-003A, H1609	0340-004A, H16	6090340-005A,	H1609034	0-006A, H16	6090340-007A,	H16090340-00	8A, H16090	340-

009A, H16090340-010A, H16090340-011A, H16090340-012A, H16090340-013A, H16090340-014A, H16090340-015A, H16090340-016A, H16090340-017A

- Since the difference between he analytical result for the sample and its duplicate is less than he reporting limit, the RPD variance is not considered significant.

S - Spike Recovery outside accepted recovery limit

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

Page 118 of 130

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount



October 17, 2016

Energy Laboratories, Inc. ATTN: Jonathan Dee Hager PO Box 5688 Helena MT 59604 jhager@energylab.com

RE: Project ENL-HL1201

Client Project: H16090340

Dear Jonathan Dee Hager,

This report contains results for the 5 samples received by Brooks Applied Labs (BAL) on September 19, 2016. The samples were logged-in for the contracted analyses according to the chain-of-custody form(s). The samples were received, prepared, analyzed, and stored according to BAL SOPs and EPA methodology.

The results were method blank corrected as described in the calculations section of the relevant BAL SOP(s) and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Sample *H16090340-002F* (1639006-02) was the source for a matrix spike and matrix spike duplicate (MS/MSD) where the MSD recovered outside of method criteria. The source sample was re-analyzed and results confirmed. As a result sample *H16090340-002F* (1639006-02) has been qualified **N** for potential low bias. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details. All other data was reported without qualification (with the exception of concentration qualifiers), and all other associated quality control sample results meet the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more details, please see the *Report Information* page in your report. Please feel free to contact us if you have any questions regarding this report.

Sincerely,

ydia Greon

Lydia Greaves Project Manager Lydia@brooksapplied.com

Prestbo

Anna Prestbo Project Coordinator annap@brooksapplied.com



# **Report Information**

# Laboratory Accreditation

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <a href="http://www.brooksapplied.com/resources/certificates-permits/">http://www.brooksapplied.com/resources/certificates-permits/</a>. Results reported relate only to the samples listed in the report.

# **Field Quality Control Samples**

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

# **Common Abbreviations**

BAL	Brooks Applied Labs	MS	matrix spike
BLK	method blank	MSD	matrix spike duplicate
BS	laboratory fortified blank	ND	non-detect
CAL	calibration standard	NR	non-reportable
CCB	continuing calibration blank	N/C	not calculated
CCV	continuing calibration verification	PS	post preparation spike
COC	chain of custody record	REC	percent recovery
D	dissolved fraction	RPD	relative percent difference
DUP	duplicate	SCV	secondary calibration verification
IBL	instrument blank	SOP	standard operating procedure
ICV	initial calibration verification	SRM	standard reference material
IBL	instrument blank	SOP	standard operating procedure
ICV	initial calibration verification	SRM	standard reference material
MDL	method detection limit	T	total fraction
MRL	method reporting limit	TR	total recoverable fraction

# **Definition of Data Qualifiers**

(Effective 9/23/09)

- **B** Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
- **E** An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
- **H** Holding time and/or preservation requirements not met. Result is estimated.
- J Estimated value. A full explanation is presented in the narrative.
- J-M Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
- J-N Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
- **M** Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
- **N** Spike recovery was not within acceptance criteria. Result is estimated.
- **R** Rejected, unusable value. A full explanation is presented in the narrative.
- U Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
- **X** Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA <u>SOW ILM03.0</u>, Exhibit B, Section III, pg. B-18, and the <u>USEPA Contract Laboratory Program National Functional Guidelines for Inorganic</u> <u>Superfund Data Review; USEPA; January 2010</u>. These supersede all previous gualifiers ever employed by BAL. **Project ID:** ENL-HL1201 **PM:** Lydia Greaves



# Sample Information

Sample	Lab ID	<b>Report Matrix</b>	Туре	Sampled	Received
H16090340-002F	1639006-01	Water	Field Blank	09/12/2016	09/19/2016
H16090340-003F	1639006-02	Water	Sample	09/12/2016	09/19/2016
H16090340-004F	1639006-03	Water	Sample	09/12/2016	09/19/2016
H16090340-018B	1639006-04	Water	Sample	09/12/2016	09/19/2016
H16090340-019A	1639006-05	Water	Trip Blank	09/12/2016	09/19/2016

# **Batch Summary**

Analyte MeHg Lab Matrix Water Method EPA 1630 
 Prepared
 Analyzed
 Batch

 10/10/2016
 10/11/2016
 B162325

**Sequence** 25 1601159



# Sample Results

Sample	Analyte	<b>Report Matrix</b>	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<b>H16090340-00</b> 1639006-01	9 <b>2F</b> MeHg	Water	TR	≤ 0.020	U	0.020	0.049	ng/L	B162325	1601159
<b>H16090340-00</b> 1639006-02	9 <b>3F</b> MeHg	Water	TR	0.414	Ν	0.020	0.049	ng/L	B162325	1601159
<b>H16090340-00</b> 1639006-03	9 <b>4F</b> MeHg	Water	TR	0.480		0.020	0.049	ng/L	B162325	1601159
<b>H16090340-01</b> 1639006-04	8 <b>B</b> MeHg	Water	TR	0.443		0.020	0.050	ng/L	B162325	1601159
<b>H16090340-01</b> 1639006-05	9 <b>A</b> MeHg	Water	TR	≤ 0.020	U	0.020	0.050	ng/L	B162325	1601159



# Accuracy & Precision Summary

Batch: B162325 Lab Matrix: Water Method: EPA 1630

Sample B162325-BS1	Analyte Laboratory Fortified Bl	Native ank, (164	<mark>Spike</mark> 1004)	Result	Units	<b>REC &amp; Limits</b>	<b>RPD &amp; Limits</b>
	MeHg		1.000	0.888	ng/L	89% 67-133	
B162325-BS2	Laboratory Fortified BI MeHg	ank, (164	<b>1004)</b> 1.000	0.944	ng/L	94% 67-133	
B162325-MS2	Matrix Spike, (1639006 MeHg	<b>6-02)</b> 0.414	5.000	4.507	ng/L	82% 65-135	
B162325-MSD2	Matrix Spike Duplicate MeHg	, <b>(163900</b> 0.414	<b>6-02)</b> 5.000	2.901	ng/L	50% 65-135	<b>43%</b> 35

# Method Blanks & Reporting Limits

Batch: B162325 Matrix: Water Method: EPA 1630 Analyte: MeHg			
Sample	Result	Units	
B162325-BLK1	0.005	ng/L	
B162325-BLK2	0.008	ng/L	
B162325-BLK3	0.005	ng/L	
B162325-BLK4	0.004	ng/L	
	Average: 0.006	Standard Deviation: 0.002	MDL: 0.020
	Limit: 0.045	Limit: 0.015	MRL: 0.050

**Project ID:** ENL-HL1201 **PM:** Lydia Greaves



# Sample Containers

Lab Sarr	ID: 1639006-01 ple: H16090340-002F	639006-01Report Matrix: WaterH16090340-002FSample Type: Field Blank				Collected: 09/12/2016 Received: 09/19/2016		
Des	Container	Size	Lot	Preservation	P-Lot	рН	Ship. Cont.	
A	Bottle FLPE Hg-SP	250ml	15-0278	2ml 6N HCI (PP)	1628015	<2	Cooler	
Lab Sarr	<b>ID</b> : 1639006-02 <b>ple</b> : H16090340-003F		Rej Sar	oort Matrix: Water nple Type: Sample		Collect Receiv	ed: 09/12/2016 ed: 09/19/2016	
Des	Container	Size	Lot	Preservation	P-Lot	рН	Ship. Cont.	
A	Bottle FLPE Hg-SP	250ml	15-0278	2ml 6N HCI (PP)	1628015	<2	Cooler	
Lab Sarr	ID: 1639006-03 Iple: H16090340-004F		Rej Sar	oort Matrix: Water nple Type: Sample		Collect Receiv	<b>ed:</b> 09/12/2016 <b>ed:</b> 09/19/2016	
Des	Container	Size	Lot	Preservation	P-Lot	рН	Ship. Cont.	
A	Bottle FLPE Hg-SP	250ml	15-0278	2ml 6N HCI (PP)	1628015	<2	Cooler	
Lab	ID: 1639006-04		Rej	oort Matrix: Water		Collect	ed: 09/12/2016	
Des	Container	Size	Sar	Preservation	P-L of	Receiv	ed: 09/19/2016	
A	Bottle FLPE Hg-SP	250ml	15-0278	2ml 6N HCI (PP)	1628015	<2	Cooler	
Lab	<b>ID</b> : 1639006-05		Rej	oort Matrix: Water		Collect	ed: 09/12/2016	
	Container	Size	Jot	Preservation	P-L of	nH	Ship Cont	
A	Bottle FLPE Hg-SP	250ml	15-0278	2ml 6N HCI (PP)	1628015	<2	Cooler	

**Project ID:** ENL-HL1201 **PM:** Lydia Greaves



Client PM: Jonathan Dee Hager Client PO: H13240

# **Shipping Containers**

Cooler

Received: September 19, 2016 10:00 Tracking No: 1Z37EW970154477417 via UPS Coolant Type: Ice Temperature: 17.4 °C Description: Cooler Damaged in transit? No Returned to client? No Comments: IR#7 Custody seals present? Yes Custody seals intact? Yes COC present? Yes

Energy Laboratories 3161 East Lyndale Avenue Helena MT 59601	Inc			CHAIN-	DF-CU	STODY RECO	RD Page 1 of 1 16-Sep-16
(406) 442-0711				Custody Seal: Intact:	Y N Y N	Shipped By: Receipt Temp:	
Subcontractor:	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1			Signature Match:	YN		
Brooks Applied Labs 18804 North Creek Parkway		(#2)				Requested Tests	
Bothell, WA 98011		5 x 5 •					
TEL: (206) 632-6206 F/	AX: (206) 632-60	17-	RO				
Acct#:							
Subcontractor's Client:							
H16090340-002F   Surfac	ce Water 09/12/16	6 10:45 A   1-MISC	<u></u>				
H16090340-003F Surfac	ce Water 09/12/16	3 11:15 A 1-MISC					
H16090340-004F Surfac	ce Water 09/12/16	6 11:15 A 1-MISC	. [1				
H16090340-018B Surfac	ce Water 09/12/16	3 10:00 A 1-MISC	] [1				
H16090340-019A Surta	ce Water 09/12/16	5 08:45 A 1-MISC	] [1				

Earliest Due Date:	9/27/2016
--------------------	-----------

Comments:	PO# H13240 Please send results to wjohnson@energylab.com
QC Level:	Analyze for moethy merany
STD	
	Date/Time
Relinquished by:	Received by:
Relinquished by:	Acy mark 9/14/14 15:20 Received by: 9/19/16 10:00



# Work Order Receipt Checklist

# MT DEQ-Federal Superfund

# H16090340

Login completed by:	Tracy L. Lorash		Date F	Received: 9/16/2016
Reviewed by:	BL2000\rwilliams		Rec	ceived by: RAT
Reviewed Date: S	9/18/2016		Carr	ier name: Hand Del
Shipping container/cooler in go	bod condition?	Yes 🖌	No 🗌	Not Present
Custody seals intact on all ship	oping container(s)/cooler(s)?	Yes	No 🗌	Not Present 🗹
Custody seals intact on all sam	nple 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 s	sample labels?	Yes 🗹	No 🗌	
Samples in proper container/bo	ottle?	Yes 🗹	No 🗌	
Sample containers intact?		Yes 🗹	No 🗌	
Sufficient sample volume for in	ndicated test?	Yes 🗹	No 🗌	
All samples received within hol (Exclude analyses that are con such as pH, DO, Res CI, Sulfi	lding time? hsidered field parameters te, etc.)	Yes 🗸	No 🗌	
Temp Blank received in all ship	pping container(s)/cooler(s)?	Yes	No 🗹	Not Applicable
Container/Temp Blank tempera	ature:	°C See comments		
Water - VOA vials have zero h	eadspace?	Yes	No 🗌	Not Applicable
Water - pH acceptable upon re	eceipt?	Yes 🗹	No 🗌	Not Applicable

# **Standard Reporting Procedures:**

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

# **Contact and Corrective Action Comments:**

DOC is not a requested analysis on page 2 of the COC for samples 2-7, however vials were received. Cooler 1 was received at 2.3°C, Cooler 2 at 2.8°C. Cooler 3 at 2.6°C, Cooler 4 at 5.0° and both sediment boxes at 20.5°C. Coolers 1-4 were received on wet ice with the temperature taken from a temperature blank in coolers 1-3 and from a client sample in cooler 4. Both sediment boxes were not received on ice and the temperature was taken from a client sample. tl 9/16/16

# $\begin{array}{c} \textbf{APPENDIX B4} \\ \textbf{ANALYTICAL LABORATORY RESULTS} \\ \textbf{4}^{\text{TH}} \textbf{QUARTER MONITORING} \end{array}$



# ANALYTICAL SUMMARY REPORT

January 24, 2017

MT DEQ-Federal Superfund PO Box 200901 Helena, MT 59620-0901

Work Order: H16120270 Quote ID: H1085

Project Name: CFR Monitoring-474374

Energy Laboratories Inc Helena MT received the following 19 samples for MT DEQ-Federal Superfund on 12/14/2016 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H16120270-001	CFR-116A	12/12/16 9:00	0 12/14/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Total P Water Nitrogen, Total P Water Nitrogen, Total Persulfate Phosphorus, Total Solids, Total Suspended
H16120270-002	Field Blank #1 (FC-CFR)	12/12/16 11:	30 12/14/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Mercury, Total Recoverable Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Mercury by CVAA Digestion, Total Persulfate Phosphorus, Total Solids, Total Suspended Subcontracted, Analytics
H16120270-003	FC-CFR	12/12/16 12:0	00 12/14/16	Surface Water	Same As Above
H16120270-004	FC-CFR Duplicate	12/12/16 12:0	00 12/14/16	Surface Water	Same As Above



# ANALYTICAL SUMMARY REPORT

H16120270-005	LBR-CFR-02	12/12/16 13:30 12/14/16	Surface Water	Metals by ICP/ICPMS, Dissolved Metals by ICP/ICPMS, Tot. Rec. Alkalinity Carbon, Dissolved Organic Conductivity Hardness Anions by Ion Chromatography Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite Nitrogen, Total Persulfate Metals Digestion by EPA 200.2 Digestion, Total P Water Nitrogen, Total P Water Nitrogen, Total Persulfate Phosphorus, Total Solids, Total Suspended
H16120270-006	CFR-34	12/12/16 15:00 12/14/16	Surface Water	Same As Above
H16120270-007	CFR-27H	12/12/16 16:00 12/14/16	Surface Water	Same As Above
H16120270-008	CFR-11F	12/13/16 8:45 12/14/16	Surface Water	Same As Above
H16120270-009	CFR-07D	12/13/16 10:00 12/14/16	Surface Water	Same As Above
H16120270-010	CFR-03A	12/13/16 10:45 12/14/16	Surface Water	Same As Above
H16120270-011	WSC-SBC	12/13/16 11:45 12/14/16	Surface Water	Same As Above
H16120270-012	SS-25	12/13/16 12:45 12/14/16	Surface Water	Same As Above
H16120270-013	SBC-P2	12/13/16 13:00 12/14/16	Surface Water	Same As Above
H16120270-014	MWB-SBC	12/13/16 13:45 12/14/16	Surface Water	Same As Above
H16120270-015	MWB-SBC Duplicate	12/13/16 13:45 12/14/16	Surface Water	Same As Above
H16120270-016	MCWC-MWB	12/13/16 15:00 12/14/16	Surface Water	Same As Above
H16120270-017	Field Blank #2 (MCWC- MWB)	12/13/16 15:15 12/14/16	Surface Water	Same As Above
H16120270-018	CFR-84F	12/12/16 10:30 12/14/16	Surface Water	Mercury, Total Recoverable Digestion, Mercury by CVAA Subcontracted, Analytics
H16120270-019	TB 15-0262 11/14/16	12/12/16 9:00 12/14/16	Trip Blank	Subcontracted, Analytics

The analyses presented in this report were performed by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604, unless otherwise noted. 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:

<b>ENERGY</b> LABORATORIES	Trust our People. Trust our Da www.energylab.com	ta. Billings, MT 800.735.4489 • Casper, WY 888.235.0515 College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711
CLIENT:	MT DEQ-Federal Superfund	
Project:	CFR Monitoring-474374	Report Date: 01/24/17
Work Order:	H16120270	CASE NARRATIVE

Tests associated with analyst identified as ELI-CA were subcontracted to Energy Laboratories, 2393 Salt Creek Hwy., Casper, WY, EPA Number WY00002 and WY00937.

Samples for MethylMercury were subcontracted to Brooks Applied Labs on 12/15/16. The final report was received 1/23/17 and is attached to the analytical report issued from Energy Laboratories. abc 1/24/17



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-116ALab ID:H16120270-001Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 12/12/16 09:00 DateReceived: 12/14/16

Report Date: 01/24/17

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	15	mg/L		1		A2540 D	12/14/16 15:05 / SR		-124 (14410200)_161	1214A : 6	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	150	mg/L		4		A2320 B	12/15/16 11:49 / SR		PHSC_101-H_1612	215A : 29	R121311
Bicarbonate as HCO3	180	mg/L		4		A2320 B	12/15/16 11:49 / SR		PHSC_101-H_1612	215A : 29	R121311
Chloride	5.7	mg/L		1.0		E300.0	12/16/16 01:04 / SR		IC METROHM_1612	215A : 45	R121356
Sulfate	62	mg/L		1.0		E300.0	12/16/16 01:04 / SR		IC METROHM_1612	215A : 45	R121356
Hardness as CaCO3	197	mg/L		1		A2340 B	12/27/16 14:53 / abc		CALC_16122	29A : 135	R121655
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.5	mg/L		0.5		A5310 C	12/20/16 16:45 / eli-c		SUB-C2	18317 : 5	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/21/16 10:21 / cm		FIA203-HE_1612	221A : 26	R121479
Nitrogen, Nitrate+Nitrite as N	0.11	mg/L		0.02		E353.2	12/20/16 12:02 / cm		FIA203-HE_1612	220A : 12	R121443
Nitrogen, Total	0.23	mg/L		0.05		A4500 N-C	12/21/16 13:49 / cm	12/20/16 16:40	FIA203-HE_1612	221B : 13	35748
Phosphorus, Total as P	0.025	mg/L		0.003		E365.1	12/27/16 12:42 / cm	12/27/16 11:32	FIA202-HE_1612	227A : 19	35794
METALS, DISSOLVED											
Arsenic	0.006	mg/L		0.001		E200.8	12/29/16 11:15 / dck		ICPMS205-H_1612	229A : 20	R121677
Cadmium	ND	mg/L		0.00003		E200.8	12/29/16 11:15 / dck		ICPMS205-H_1612	229A : 20	R121677
Copper	0.002	mg/L		0.001		E200.8	12/29/16 11:15 / dck		ICPMS205-H_1612	229A : 20	R121677
Lead	ND	mg/L		0.0003		E200.8	12/29/16 11:15 / dck		ICPMS205-H_1612	229A : 20	R121677
Zinc	ND	mg/L		0.008		E200.8	12/29/16 11:15 / dck		ICPMS205-H_1612	229A : 20	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	0.007	mg/L		0.001		E200.8	12/29/16 11:23 / dck	12/21/16 07:12	ICPMS205-H_1612	229A : 24	35751
Cadmium	0.00010	mg/L		0.00003		E200.8	12/29/16 11:23 / dck	12/21/16 07:12	ICPMS205-H_1612	229A : 24	35751
Calcium	55	mg/L		1		E200.7	12/27/16 14:53 / sld	12/21/16 07:12	ICP2-HE_1612	227C : 61	35751
Copper	0.010	mg/L		0.001		E200.8	12/29/16 11:23 / dck	12/21/16 07:12	ICPMS205-H_1612	229A : 24	35751
Lead	0.0016	mg/L		0.0003		E200.8	12/29/16 11:23 / dck	12/21/16 07:12	ICPMS205-H_1612	229A : 24	35751

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-116A
 Collection Date:
 12/12/16 09:00
 DateReceived:
 12/14/16

 Lab ID:
 H16120270-001
 Report Date:
 01/24/17

 Matrix:
 Surface Water
 Project:
 CFR Monitoring-474374

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	14	mg/L		1		E200.7	12/27/16 14:53 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 61	35751
Potassium	3	mg/L		1		E200.7	12/27/16 14:53 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 61	35751
Sodium	12	mg/L		1		E200.7	12/27/16 14:53 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 61	35751
Zinc	0.017	mg/L		0.008		E200.8	12/29/16 11:23 / dck	12/21/16 07:12	ICPMS205-H_16122	9A:24	35751



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:Field Blank #1 (FC-CFR)Lab ID:H16120270-002Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 12/12/16 11:30 DateReceived: 12/14/16

Run

**Report Date: 01/24/17** 

,

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	ND	mg/L		1		A2540 D	12/14/16 15:05 / SR		-124 (14410200)_1612	214A : 7	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	12/15/16 11:55 / SR		PHSC_101-H_16121	I5A : 31	R121311
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	12/15/16 11:55 / SR		PHSC_101-H_16121	I5A : 31	R121311
Chloride	ND	mg/L		1.0		E300.0	12/16/16 01:17 / SR		IC METROHM_16121	I5A : 46	R121356
Sulfate	ND	mg/L		1.0		E300.0	12/16/16 01:17 / SR		IC METROHM_16121	I5A : 46	R121356
Hardness as CaCO3	ND	mg/L		1		A2340 B	12/30/16 09:12 / sld		WATERCALC_1612	230A : 1	R121687
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	ND	mg/L		0.5		A5310 C	12/20/16 17:00 / eli-c		SUB-C218	8317 : 6	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/21/16 10:22 / cm		FIA203-HE_16122	21A : 27	R121479
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	12/20/16 12:06 / cm		FIA203-HE_16122	20A : 15	R121443
Nitrogen, Total	ND	mg/L		0.05		A4500 N-C	12/21/16 13:52 / cm	12/20/16 16:40	FIA203-HE_16122	21B : 16	35748
Phosphorus, Total as P	ND	mg/L		0.003		E365.1	12/27/16 12:43 / cm	12/27/16 11:32	FIA202-HE_16122	27A : 20	35794
METALS, DISSOLVED											
Arsenic	ND	mg/L		0.001		E200.8	12/29/16 11:26 / dck		ICPMS205-H_16122	29A : 25	R121677
Cadmium	ND	mg/L		0.00003		E200.8	12/29/16 11:26 / dck		ICPMS205-H_16122	29A : 25	R121677
Copper	ND	mg/L		0.001		E200.8	12/29/16 11:26 / dck		ICPMS205-H_16122	29A : 25	R121677
Lead	ND	mg/L		0.0003		E200.8	12/29/16 11:26 / dck		ICPMS205-H_16122	29A : 25	R121677
Zinc	0.009	mg/L		0.008		E200.8	12/29/16 11:26 / dck		ICPMS205-H_16122	29A : 25	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L		0.001		E200.8	12/29/16 11:28 / dck	12/21/16 07:12	ICPMS205-H 16122	29A : 26	35751
Cadmium	ND	mg/L		0.00003		E200.8	12/29/16 11:28 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 26	35751
Calcium	ND	mg/L		1		E200.7	12/27/16 14:56 / sld	12/21/16 07:12	ICP2-HE_16122	27C : 62	35751
Copper	ND	mg/L		0.001		E200.8	12/29/16 11:28 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 26	35751
Lead	ND	mg/L		0.0003		E200.8	12/29/16 11:28 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 26	35751

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundProject:CFR Monitoring-474374Client Sample ID:Field Blank #1 (FC-CFR)Collection Date:12/12/16 11:30DateReceived:12/14/16Lab ID:H16120270-002Report Date:01/24/17OutputDateReceived:12/14/16Matrix:Surface WaterSurface WaterOutputOutputOutputOutputOutput

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	ND	mg/L		1		E200.7	12/27/16 14:56 / sld	12/21/16 07:12	ICP2-HE_161227	′C : 62	35751
Mercury	ND	mg/L		5E-06		E245.1	12/28/16 13:53 / rgk	12/27/16 18:47	HGCV202-H_161228	3A : 14	35805
Potassium	ND	mg/L		1		E200.7	12/27/16 14:56 / sld	12/21/16 07:12	ICP2-HE_161227	′C:62	35751
Sodium	ND	mg/L		1		E200.7	12/27/16 14:56 / sld	12/21/16 07:12	ICP2-HE_161227	′C:62	35751
Zinc	ND	mg/L		0.008		E200.8	12/29/16 11:28 / dck	12/21/16 07:12	ICPMS205-H_161229	A : 26	35751



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:FC-CFRLab ID:H16120270-003Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 12/12/16 12:00 DateReceived: 12/14/16

Report Date: 01/24/17

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	3	mg/L		1		A2540 D	12/14/16 15:05 / SR		-124 (14410200)_1612	214A : 8	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	160	mg/L		4		A2320 B	12/15/16 12:01 / SR		PHSC_101-H_1612	15A : 33	R121311
Bicarbonate as HCO3	190	mg/L		4		A2320 B	12/15/16 12:01 / SR		PHSC_101-H_1612	15A : 33	R121311
Chloride	4.0	mg/L		1.0		E300.0	12/16/16 01:31 / SR		IC METROHM_1612	15A : 47	R121356
Sulfate	18	mg/L		1.0		E300.0	12/16/16 01:31 / SR		IC METROHM_1612	15A : 47	R121356
Hardness as CaCO3	165	mg/L		1		A2340 B	12/27/16 15:56 / abc		CALC_161229	9A : 157	R121655
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.3	mg/L		0.5		A5310 C	12/20/16 17:15 / eli-c		SUB-C21	8317 : 7	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/21/16 10:26 / cm		FIA203-HE_16122	21A : 30	R121479
Nitrogen, Nitrate+Nitrite as N	0.25	mg/L		0.02		E353.2	12/20/16 12:07 / cm		FIA203-HE_16122	20A : 16	R121443
Nitrogen, Total	0.29	mg/L		0.05		A4500 N-C	12/21/16 13:54 / cm	12/20/16 16:40	FIA203-HE_16122	21B : 17	35748
Phosphorus, Total as P	0.035	mg/L		0.003		E365.1	12/27/16 12:46 / cm	12/27/16 11:32	FIA202-HE_16122	27A : 23	35794
METALS, DISSOLVED											
Arsenic	0.007	mg/L		0.001		E200.8	12/29/16 11:41 / dck		ICPMS205-H_16122	29A : 33	R121677
Cadmium	ND	mg/L		0.00003		E200.8	12/29/16 11:41 / dck		ICPMS205-H_16122	29A : 33	R121677
Copper	ND	mg/L		0.001		E200.8	12/29/16 11:41 / dck		ICPMS205-H_16122	29A : 33	R121677
Lead	ND	mg/L		0.0003		E200.8	12/29/16 11:41 / dck		ICPMS205-H_16122	29A : 33	R121677
Zinc	ND	mg/L		0.008		E200.8	12/29/16 11:41 / dck		ICPMS205-H_16122	29A : 33	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	0.007	mg/L		0.001		E200.8	12/29/16 11:44 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 34	35751
Cadmium	ND	mg/L		0.00003		E200.8	12/29/16 11:44 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 34	35751
Calcium	44	mg/L		1		E200.7	12/27/16 15:56 / sld	12/21/16 07:12	ICP2-HE_16122	27C : 78	35751
Copper	ND	mg/L		0.001		E200.8	12/30/16 10:54 / dck	12/21/16 07:12	ICPMS205-H_161229	9A : 212	35751
Lead	0.0009	mg/L		0.0003		E200.8	12/29/16 11:44 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 34	35751

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundProject:CFR Monitoring-474374Client Sample ID:FC-CFRCollection Date:12/12/16 12:00DateReceived:12/14/16Lab ID:H16120270-003Report Date:01/24/17OutputDateReceived:12/14/16Matrix:Surface WaterSurface WaterOutput<th

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	13	mg/L		1		E200.7	12/27/16 15:56 / sld	12/21/16 07:12	ICP2-HE_161227	′C : 78	35751
Mercury	0.000018	mg/L		5E-06		E245.1	12/20/16 17:01 / dck	12/19/16 17:41	HGCV202-H_161220	)A : 41	35730
Potassium	3	mg/L		1		E200.7	12/27/16 15:56 / sld	12/21/16 07:12	ICP2-HE_161227	′C : 78	35751
Sodium	10	mg/L		1		E200.7	12/27/16 15:56 / sld	12/21/16 07:12	ICP2-HE_161227	′C : 78	35751
Zinc	ND	mg/L		800.0		E200.8	12/29/16 11:44 / dck	12/21/16 07:12	ICPMS205-H_161229	A : 34	35751



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:FC-CFR DuplicateLab ID:H16120270-004Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 12/12/16 12:00 DateReceived: 12/14/16

Report Date: 01/24/17

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	3	mg/L		1		A2540 D	12/14/16 15:06 / SR		-124 (14410200)_161	214A : 9	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	160	mg/L		4		A2320 B	12/15/16 12:07 / SR		PHSC_101-H_1612	15A : 35	R121311
Bicarbonate as HCO3	200	mg/L		4		A2320 B	12/15/16 12:07 / SR		PHSC_101-H_1612	215A : 35	R121311
Chloride	3.9	mg/L		1.0		E300.0	12/16/16 01:45 / SR		IC METROHM_1612	215A : 48	R121356
Sulfate	18	mg/L		1.0		E300.0	12/16/16 01:45 / SR		IC METROHM_1612	215A : 48	R121356
Hardness as CaCO3	163	mg/L		1		A2340 B	12/27/16 16:00 / abc		CALC_16122	9A : 168	R121655
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.4	mg/L		0.5		A5310 C	12/20/16 17:31 / eli-c		SUB-C21	8317 : 8	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/21/16 10:27 / cm		FIA203-HE_1612	21A : 31	R121479
Nitrogen, Nitrate+Nitrite as N	0.25	mg/L		0.02		E353.2	12/20/16 12:08 / cm		FIA203-HE_1612	20A : 17	R121443
Nitrogen, Total	0.29	mg/L		0.05		A4500 N-C	12/21/16 13:55 / cm	12/20/16 16:40	FIA203-HE_1612	21B : 18	35748
Phosphorus, Total as P	0.035	mg/L		0.003		E365.1	12/27/16 12:47 / cm	12/27/16 11:32	FIA202-HE_1612	27A : 24	35794
METALS, DISSOLVED											
Arsenic	0.007	mg/L		0.001		E200.8	12/29/16 11:46 / dck		ICPMS205-H_1612	29A : 35	R121677
Cadmium	ND	mg/L		0.00003		E200.8	12/29/16 11:46 / dck		ICPMS205-H_1612	29A : 35	R121677
Copper	ND	mg/L		0.001		E200.8	12/29/16 11:46 / dck		ICPMS205-H_1612	29A : 35	R121677
Lead	ND	mg/L		0.0003		E200.8	12/29/16 11:46 / dck		ICPMS205-H_1612	29A : 35	R121677
Zinc	ND	mg/L		0.008		E200.8	12/29/16 11:46 / dck		ICPMS205-H_1612	29A : 35	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	0.007	mg/L		0.001		E200.8	12/29/16 11:48 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 36	35751
Cadmium	ND	mg/L		0.00003		E200.8	12/29/16 11:48 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 36	35751
Calcium	44	mg/L		1		E200.7	12/27/16 16:00 / sld	12/21/16 07:12	ICP2-HE_1612	27C : 79	35751
Copper	ND	mg/L		0.001		E200.8	12/29/16 17:53 / dck	12/21/16 07:12	ICPMS205-H_16122	9A : 146	35751
Lead	0.0009	mg/L		0.0003		E200.8	12/29/16 11:48 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 36	35751

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundProject:CFR Monitoring-474374Client Sample ID:FC-CFR DuplicateCollection Date:12/12/16 12:00DateReceived:12/14/16Lab ID:H16120270-004Report Date:01/24/1701/24/17Matrix:Surface WaterSurface Water01/24/17Surface Water

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	13	mg/L		1		E200.7	12/27/16 16:00 / sld	12/21/16 07:12	ICP2-HE_161227	C:79	35751
Mercury	0.000015	mg/L		5E-06		E245.1	12/20/16 17:04 / dck	12/19/16 17:41	HGCV202-H_161220	A : 42	35730
Potassium	3	mg/L		1		E200.7	12/27/16 16:00 / sld	12/21/16 07:12	ICP2-HE_161227	C:79	35751
Sodium	10	mg/L		1		E200.7	12/27/16 16:00 / sld	12/21/16 07:12	ICP2-HE_161227	C:79	35751
Zinc	ND	mg/L		800.0		E200.8	12/29/16 11:48 / dck	12/21/16 07:12	ICPMS205-H_161229	A : 36	35751


## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:LBR-CFR-02Lab ID:H16120270-005Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 12/12/16 13:30 DateReceived: 12/14/16

Report Date: 01/24/17

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Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	3	mg/L		1		A2540 D	12/14/16 15:06 / SR		124 (14410200)_1612	14A : 10	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	12/15/16 12:13 / SR		PHSC_101-H_1612	15A : 37	R121311
Bicarbonate as HCO3	150	mg/L		4		A2320 B	12/15/16 12:13 / SR		PHSC_101-H_1612	15A : 37	R121311
Chloride	2.4	mg/L		1.0		E300.0	12/16/16 01:58 / SR		IC METROHM_1612	15A : 49	R121356
Sulfate	13	mg/L		1.0		E300.0	12/16/16 01:58 / SR		IC METROHM_1612	15A : 49	R121356
Hardness as CaCO3	128	mg/L		1		A2340 B	12/27/16 16:04 / abc		CALC_16122	9A : 179	R121655
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.1	mg/L		0.5		A5310 C	12/20/16 17:47 / eli-c		SUB-C21	8317 : 9	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/21/16 10:28 / cm		FIA203-HE_1612	21A : 32	R121479
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	12/20/16 12:09 / cm		FIA203-HE_1612	20A : 18	R121443
Nitrogen, Total	ND	mg/L		0.05		A4500 N-C	12/21/16 13:56 / cm	12/20/16 16:40	FIA203-HE_16122	21B : 19	35748
Phosphorus, Total as P	0.021	mg/L		0.003		E365.1	12/27/16 12:48 / cm	12/27/16 11:32	FIA202-HE_1612	27A : 25	35794
METALS, DISSOLVED											
Arsenic	0.003	mg/L		0.001		E200.8	12/29/16 11:50 / dck		ICPMS205-H_16122	29A : 37	R121677
Cadmium	ND	mg/L		0.00003		E200.8	12/29/16 11:50 / dck		ICPMS205-H_16122	29A : 37	R121677
Copper	ND	mg/L		0.001		E200.8	12/29/16 11:50 / dck		ICPMS205-H_16122	29A : 37	R121677
Lead	ND	mg/L		0.0003		E200.8	12/29/16 11:50 / dck		ICPMS205-H_16122	29A : 37	R121677
Zinc	ND	mg/L		0.008		E200.8	12/29/16 11:50 / dck		ICPMS205-H_16122	29A : 37	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	0.004	mg/L		0.001		E200.8	12/29/16 11:52 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 38	35751
Cadmium	ND	mg/L		0.00003		E200.8	12/29/16 11:52 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 38	35751
Calcium	37	mg/L		1		E200.7	12/27/16 16:04 / sld	12/21/16 07:12	ICP2-HE_16122	27C : 80	35751
Copper	ND	mg/L		0.001		E200.8	12/29/16 11:52 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 38	35751
Lead	ND	mg/L		0.0003		E200.8	12/29/16 11:52 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 38	35751

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 LBR-CFR-02
 Collection Date:
 12/12/16 13:30
 DateReceived:
 12/14/16

 Lab ID:
 H16120270-005
 Report Date:
 01/24/17

 Matrix:
 Surface Water
 Dimension

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	9	mg/L		1		E200.7	12/27/16 16:04 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 80	35751
Potassium	2	mg/L		1		E200.7	12/27/16 16:04 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 80	35751
Sodium	6	mg/L		1		E200.7	12/27/16 16:04 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 80	35751
Zinc	ND	mg/L		0.008		E200.8	12/29/16 11:52 / dck	12/21/16 07:12	ICPMS205-H_16122	9A : 38	35751



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-34Lab ID:H16120270-006Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 12/12/16 15:00 DateReceived: 12/14/16

Report Date: 01/24/17

7

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	53	mg/L	D	2		A2540 D	12/14/16 15:06 / SR	l	24 (14410200)_16121	4A : 11	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	170	mg/L		4		A2320 B	12/15/16 12:19 / SR		PHSC_101-H_16121	5A : 39	R121311
Bicarbonate as HCO3	210	mg/L		4		A2320 B	12/15/16 12:19 / SR		PHSC_101-H_16121	5A : 39	R121311
Chloride	11	mg/L		1.0		E300.0	12/16/16 03:19 / SR		IC METROHM_16121	5A : 54	R121356
Sulfate	98	mg/L		1.0		E300.0	12/16/16 14:09 / SR		IC METROHM_16121	6A : 13	R121390
Hardness as CaCO3	250	mg/L		1		A2340 B	12/27/16 16:07 / abc		CALC_161229	9A:190	R121655
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.0	mg/L		0.5		A5310 C	12/20/16 18:04 / eli-c		SUB-C2183	317 : 10	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	0.12	mg/L		0.05		E350.1	12/21/16 10:29 / cm		FIA203-HE_16122	21A : 33	R121479
Nitrogen, Nitrate+Nitrite as N	0.46	mg/L		0.02		E353.2	12/20/16 12:10 / cm		FIA203-HE_16122	20A : 19	R121443
Nitrogen, Total	0.91	mg/L		0.05		A4500 N-C	12/21/16 13:57 / cm	12/20/16 16:40	FIA203-HE_16122	21B : 20	35748
Phosphorus, Total as P	0.069	mg/L		0.003		E365.1	12/27/16 12:51 / cm	12/27/16 11:32	FIA202-HE_16122	27A : 28	35794
METALS, DISSOLVED											
Arsenic	0.009	mg/L		0.001		E200.8	12/29/16 11:54 / dck		ICPMS205-H_16122	29A : 39	R121677
Cadmium	0.00004	mg/L		0.00003		E200.8	12/29/16 11:54 / dck		ICPMS205-H_16122	29A : 39	R121677
Copper	0.005	mg/L		0.001		E200.8	12/29/16 11:54 / dck		ICPMS205-H_16122	29A : 39	R121677
Lead	ND	mg/L		0.0003		E200.8	12/29/16 11:54 / dck		ICPMS205-H_16122	29A : 39	R121677
Zinc	0.010	mg/L		0.008		E200.8	12/29/16 11:54 / dck		ICPMS205-H_16122	29A : 39	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	0.015	mg/L		0.001		E200.8	12/29/16 11:56 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 40	35751
Cadmium	0.00037	mg/L		0.00003		E200.8	12/29/16 11:56 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 40	35751
Calcium	73	mg/L		1		E200.7	12/27/16 16:07 / sld	12/21/16 07:12	ICP2-HE_16122	27C : 81	35751
Copper	0.070	mg/L		0.001		E200.8	12/29/16 11:56 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 40	35751
Lead	0.0097	mg/L		0.0003		E200.8	12/29/16 11:56 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 40	35751

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-34
 Collection Date:
 12/12/16 15:00
 DateReceived:
 12/14/16

 Lab ID:
 H16120270-006
 Report Date:
 01/24/17

 Matrix:
 Surface Water
 Surface Water
 Bun

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	16	mg/L		1		E200.7	12/27/16 16:07 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 81	35751
Potassium	4	mg/L		1		E200.7	12/27/16 16:07 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 81	35751
Sodium	18	mg/L		1		E200.7	12/27/16 16:07 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 81	35751
Zinc	0.069	mg/L		0.008		E200.8	12/29/16 11:56 / dck	12/21/16 07:12	ICPMS205-H_16122	9A:40	35751



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-27HLab ID:H16120270-007Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 12/12/16 16:00 DateReceived: 12/14/16

Report Date: 01/24/17

.

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	19	mg/L		1		A2540 D	12/14/16 15:06 / SR		124 (14410200)_1612	14A : 12	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	170	mg/L		4		A2320 B	12/15/16 12:25 / SR		PHSC_101-H_1612	15A : 41	R121311
Bicarbonate as HCO3	200	mg/L		4		A2320 B	12/15/16 12:25 / SR		PHSC_101-H_1612	15A : 41	R121311
Chloride	11	mg/L		1.0		E300.0	12/16/16 03:33 / SR		IC METROHM_1612	15A : 55	R121356
Sulfate	100	mg/L		1.0		E300.0	12/16/16 14:23 / SR		IC METROHM_1612	16A : 14	R121390
Hardness as CaCO3	251	mg/L		1		A2340 B	12/27/16 16:11 / abc		CALC_16122	9A : 201	R121655
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.0	mg/L		0.5		A5310 C	12/20/16 19:39 / eli-c		SUB-C218	317 : 14	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/21/16 10:31 / cm		FIA203-HE_1612	21A : 34	R121479
Nitrogen, Nitrate+Nitrite as N	0.46	mg/L		0.02		E353.2	12/20/16 12:12 / cm		FIA203-HE_1612	20A : 20	R121443
Nitrogen, Total	0.64	mg/L		0.05		A4500 N-C	12/21/16 13:58 / cm	12/20/16 16:40	FIA203-HE_1612	21B : 21	35748
Phosphorus, Total as P	0.032	mg/L		0.003		E365.1	12/27/16 12:52 / cm	12/27/16 11:32	FIA202-HE_1612	27A : 29	35794
METALS, DISSOLVED											
Arsenic	0.008	mg/L		0.001		E200.8	12/29/16 11:58 / dck		ICPMS205-H_1612	29A : 41	R121677
Cadmium	0.00003	mg/L		0.00003		E200.8	12/29/16 11:58 / dck		ICPMS205-H_1612	29A : 41	R121677
Copper	0.005	mg/L		0.001		E200.8	12/29/16 11:58 / dck		ICPMS205-H_1612	29A : 41	R121677
Lead	ND	mg/L		0.0003		E200.8	12/29/16 11:58 / dck		ICPMS205-H_1612	29A : 41	R121677
Zinc	0.011	mg/L		0.008		E200.8	12/29/16 11:58 / dck		ICPMS205-H_1612	29A : 41	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	0.011	mg/L		0.001		E200.8	12/29/16 12:00 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 42	35751
Cadmium	0.00015	mg/L		0.00003		E200.8	12/29/16 12:00 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 42	35751
Calcium	74	mg/L		1		E200.7	12/27/16 16:11 / sld	12/21/16 07:12	ICP2-HE_1612	27C : 82	35751
Copper	0.028	mg/L		0.001		E200.8	12/29/16 12:00 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 42	35751
Lead	0.0035	mg/L		0.0003		E200.8	12/29/16 12:00 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 42	35751

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-27H
 Collection Date:
 12/12/16 16:00
 DateReceived:
 12/14/16

 Lab ID:
 H16120270-007
 Surface Water
 O1/24/17
 Disconting-474374

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	16	mg/L		1		E200.7	12/27/16 16:11 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 82	35751
Potassium	4	mg/L		1		E200.7	12/27/16 16:11 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 82	35751
Sodium	17	mg/L		1		E200.7	12/27/16 16:11 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 82	35751
Zinc	0.031	mg/L		0.008		E200.8	12/29/16 12:00 / dck	12/21/16 07:12	ICPMS205-H_16122	9A : 42	35751



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-11FLab ID:H16120270-008Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 12/13/16 08:45 DateReceived: 12/14/16

Report Date: 01/24/17

17

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	5	mg/L		1		A2540 D	12/14/16 15:06 / SR	I	24 (14410200)_1612	214A : 13	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	160	mg/L		4		A2320 B	12/15/16 12:31 / SR		PHSC_101-H_1612	215A : 43	R121311
Bicarbonate as HCO3	200	mg/L		4		A2320 B	12/15/16 12:31 / SR		PHSC_101-H_1612	215A : 43	R121311
Chloride	11	mg/L		1.0		E300.0	12/16/16 03:46 / SR		IC METROHM_1612	215A : 56	R121356
Sulfate	110	mg/L		1.0		E300.0	12/16/16 14:36 / SR		IC METROHM_1612	216A : 15	R121390
Hardness as CaCO3	265	mg/L		1		A2340 B	12/27/16 16:15 / abc		CALC_16122	29A : 212	R121655
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.9	mg/L		0.5		A5310 C	12/20/16 19:55 / eli-c		SUB-C218	3317 : 15	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/21/16 10:32 / cm		FIA203-HE_1612	221A : 35	R121479
Nitrogen, Nitrate+Nitrite as N	0.30	mg/L		0.02		E353.2	12/20/16 12:13 / cm		FIA203-HE_1612	220A : 21	R121443
Nitrogen, Total	0.38	mg/L		0.05		A4500 N-C	12/21/16 14:00 / cm	12/20/16 16:40	FIA203-HE_1612	221B : 22	35748
Phosphorus, Total as P	0.021	mg/L		0.003		E365.1	12/27/16 12:53 / cm	12/27/16 11:32	FIA202-HE_1612	227A : 30	35794
METALS, DISSOLVED											
Arsenic	0.008	mg/L		0.001		E200.8	12/29/16 12:08 / dck		ICPMS205-H_1612	229A : 46	R121677
Cadmium	0.00003	mg/L		0.00003		E200.8	12/29/16 12:08 / dck		ICPMS205-H_1612	229A : 46	R121677
Copper	0.003	mg/L		0.001		E200.8	12/29/16 12:08 / dck		ICPMS205-H_1612	229A : 46	R121677
Lead	ND	mg/L		0.0003		E200.8	12/29/16 12:08 / dck		ICPMS205-H_1612	29A : 46	R121677
Zinc	0.008	mg/L		0.008		E200.8	12/29/16 12:08 / dck		ICPMS205-H_1612	229A : 46	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	0.009	mg/L		0.001		E200.8	12/29/16 12:10 / dck	12/21/16 07:12	ICPMS205-H_1612	229A : 47	35751
Cadmium	0.00007	mg/L		0.00003		E200.8	12/29/16 12:10 / dck	12/21/16 07:12	ICPMS205-H_1612	229A : 47	35751
Calcium	77	mg/L		1		E200.7	12/27/16 16:15 / sld	12/21/16 07:12	ICP2-HE_1612	27C : 83	35751
Copper	0.009	mg/L		0.001		E200.8	12/29/16 12:10 / dck	12/21/16 07:12	ICPMS205-H_1612	229A : 47	35751
Lead	0.0010	mg/L		0.0003		E200.8	12/29/16 12:10 / dck	12/21/16 07:12	ICPMS205-H_1612	229A : 47	35751

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-11F
 Collection Date:
 12/13/16 08:45
 DateReceived:
 12/14/16

 Lab ID:
 H16120270-008
 Report Date:
 01/24/17

 Matrix:
 Surface Water
 Dimensional Content of the state of the stat

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	18	mg/L		1		E200.7	12/27/16 16:15 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 83	35751
Potassium	3	mg/L		1		E200.7	12/27/16 16:15 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 83	35751
Sodium	16	mg/L		1		E200.7	12/27/16 16:15 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 83	35751
Zinc	0.013	mg/L	(	800.0		E200.8	12/29/16 12:10 / dck	12/21/16 07:12	ICPMS205-H_16122	9A : 47	35751



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-07DLab ID:H16120270-009Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 12/13/16 10:00 DateReceived: 12/14/16

Report Date: 01/24/17

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	4	mg/L		1		A2540 D	12/14/16 15:07 / SR	ļ	24 (14410200)_16121	I4A : 16	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	160	mg/L		4		A2320 B	12/15/16 12:37 / SR		PHSC_101-H_16121	15A : 45	R121311
Bicarbonate as HCO3	190	mg/L		4		A2320 B	12/15/16 12:37 / SR		PHSC_101-H_16121	15A : 45	R121311
Chloride	11	mg/L		1.0		E300.0	12/16/16 04:00 / SR		IC METROHM_16121	15A : 57	R121356
Sulfate	110	mg/L		1.0		E300.0	12/16/16 14:50 / SR		IC METROHM_16121	16A : 16	R121390
Hardness as CaCO3	251	mg/L		1		A2340 B	12/27/16 16:19 / abc		CALC_161229	9A : 223	R121655
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.8	mg/L		0.5		A5310 C	12/20/16 20:11 / eli-c		SUB-C2183	317:16	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/21/16 10:33 / cm		FIA203-HE_16122	21A : 36	R121479
Nitrogen, Nitrate+Nitrite as N	0.27	mg/L		0.02		E353.2	12/20/16 12:14 / cm		FIA203-HE_16122	20A : 22	R121443
Nitrogen, Total	0.36	mg/L		0.05		A4500 N-C	12/21/16 14:01 / cm	12/20/16 16:40	FIA203-HE_16122	21B : 23	35748
Phosphorus, Total as P	0.016	mg/L		0.003		E365.1	12/27/16 12:54 / cm	12/27/16 11:32	FIA202-HE_16122	27A : 31	35794
METALS, DISSOLVED											
Arsenic	0.008	mg/L		0.001		E200.8	12/29/16 12:12 / dck		ICPMS205-H_16122	29A : 48	R121677
Cadmium	0.00003	mg/L		0.00003		E200.8	12/29/16 12:12 / dck		ICPMS205-H_16122	29A : 48	R121677
Copper	0.003	mg/L		0.001		E200.8	12/29/16 12:12 / dck		ICPMS205-H_16122	29A:48	R121677
Lead	ND	mg/L		0.0003		E200.8	12/29/16 12:12 / dck		ICPMS205-H_16122	29A : 48	R121677
Zinc	ND	mg/L		0.008		E200.8	12/29/16 12:12 / dck		ICPMS205-H_16122	29A : 48	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	0.009	mg/L		0.001		E200.8	12/29/16 12:14 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 49	35751
Cadmium	0.00007	mg/L		0.00003		E200.8	12/29/16 12:14 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 49	35751
Calcium	73	mg/L		1		E200.7	12/27/16 16:19 / sld	12/21/16 07:12	ICP2-HE_16122	27C : 84	35751
Copper	0.008	mg/L		0.001		E200.8	12/29/16 12:14 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 49	35751
Lead	0.0008	mg/L		0.0003		E200.8	12/29/16 12:14 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 49	35751

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-07D
 Collection Date:
 12/13/16 10:00
 DateReceived:
 12/14/16

 Lab ID:
 H16120270-009
 Report Date:
 01/24/17
 Project:
 CFR Monitoring-474374

 Matrix:
 Surface Water
 Surface Water
 Direction Date:
 12/13/16 10:00
 DateReceived:
 12/14/16

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	17	mg/L		1		E200.7	12/27/16 16:19 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 84	35751
Potassium	3	mg/L		1		E200.7	12/27/16 16:19 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 84	35751
Sodium	15	mg/L		1		E200.7	12/27/16 16:19 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 84	35751
Zinc	0.011	mg/L	(	800.0		E200.8	12/29/16 12:14 / dck 1	12/21/16 07:12	ICPMS205-H_16122	9A : 49	35751



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:CFR-03ALab ID:H16120270-010Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 12/13/16 10:45 DateReceived: 12/14/16

Report Date: 01/24/17

7

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	4	mg/L		1		A2540 D	12/14/16 15:07 / SR	l	24 (14410200)_1612	214A : 17	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	140	mg/L		4		A2320 B	12/15/16 12:43 / SR		PHSC_101-H_1612	215A : 47	R121311
Bicarbonate as HCO3	170	mg/L		4		A2320 B	12/15/16 12:43 / SR		PHSC_101-H_1612	215A : 47	R121311
Chloride	14	mg/L		1.0		E300.0	12/16/16 04:13 / SR		IC METROHM_1612	215A : 58	R121356
Sulfate	97	mg/L		1.0		E300.0	12/16/16 15:03 / SR		IC METROHM_1612	216A : 17	R121390
Hardness as CaCO3	228	mg/L		1		A2340 B	12/27/16 16:23 / abc		CALC_16122	29A : 234	R121655
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	2.2	mg/L		0.5		A5310 C	12/20/16 20:27 / eli-c		SUB-C218	3317 : 17	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/22/16 16:42 / cm		FIA203-HE_1612	222B : 14	R121532
Nitrogen, Nitrate+Nitrite as N	0.09	mg/L		0.02		E353.2	12/20/16 12:15 / cm		FIA203-HE_1612	220A : 23	R121443
Nitrogen, Total	0.23	mg/L		0.05		A4500 N-C	12/21/16 14:02 / cm	12/20/16 16:40	FIA203-HE_1612	221B : 24	35748
Phosphorus, Total as P	0.020	mg/L		0.003		E365.1	12/27/16 12:56 / cm	12/27/16 11:32	FIA202-HE_1612	227A : 32	35794
METALS, DISSOLVED											
Arsenic	0.007	mg/L		0.001		E200.8	12/29/16 12:16 / dck		ICPMS205-H_1612	229A : 50	R121677
Cadmium	ND	mg/L		0.00003		E200.8	12/29/16 12:16 / dck		ICPMS205-H_1612	229A : 50	R121677
Copper	0.003	mg/L		0.001		E200.8	12/29/16 12:16 / dck		ICPMS205-H_1612	229A : 50	R121677
Lead	ND	mg/L		0.0003		E200.8	12/29/16 12:16 / dck		ICPMS205-H_1612	229A : 50	R121677
Zinc	ND	mg/L		0.008		E200.8	12/29/16 12:16 / dck		ICPMS205-H_1612	229A : 50	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	0.008	mg/L		0.001		E200.8	12/29/16 12:19 / dck	12/21/16 07:12	ICPMS205-H_1612	229A : 51	35751
Cadmium	0.00006	mg/L		0.00003		E200.8	12/29/16 12:19 / dck	12/21/16 07:12	ICPMS205-H_1612	229A : 51	35751
Calcium	66	mg/L		1		E200.7	12/27/16 16:23 / sld	12/21/16 07:12	ICP2-HE_1612	27C : 85	35751
Copper	0.006	mg/L		0.001		E200.8	12/29/16 12:19 / dck	12/21/16 07:12	ICPMS205-H_1612	229A : 51	35751
Lead	0.0007	mg/L		0.0003		E200.8	12/29/16 12:19 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 51	35751

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 CFR-03A
 Collection Date:
 12/13/16 10:45
 DateReceived:
 12/14/16

 Lab ID:
 H16120270-010
 Report Date:
 01/24/17

 Matrix:
 Surface Water
 Direction Date:
 01/24/17

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	15	mg/L		1		E200.7	12/27/16 16:23 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 85	35751
Potassium	4	mg/L		1		E200.7	12/27/16 16:23 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 85	35751
Sodium	16	mg/L		1		E200.7	12/27/16 16:23 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 85	35751
Zinc	0.009	mg/L		800.0		E200.8	12/29/16 12:19 / dck	12/21/16 07:12	ICPMS205-H_16122	9A : 51	35751



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:WSC-SBCLab ID:H16120270-011Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 12/13/16 11:45 **DateReceived:** 12/14/16

Report Date: 01/24/17

'17

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	4	mg/L		1		A2540 D	12/14/16 15:07 / SR		124 (14410200)_16121	4A : 18	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	140	mg/L		4		A2320 B	12/15/16 12:49 / SR		PHSC_101-H_16121	5A : 49	R121311
Bicarbonate as HCO3	170	mg/L		4		A2320 B	12/15/16 12:49 / SR		PHSC_101-H_16121	5A : 49	R121311
Chloride	1.4	mg/L		1.0		E300.0	12/16/16 04:27 / SR		IC METROHM_16121	5A : 59	R121356
Sulfate	39	mg/L		1.0		E300.0	12/16/16 15:17 / SR		IC METROHM_16121	6A : 18	R121390
Hardness as CaCO3	175	mg/L		1		A2340 B	12/27/16 16:34 / abc		CALC_161229	A : 245	R121655
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	0.7	mg/L		0.5		A5310 C	12/20/16 20:43 / eli-c		SUB-C2183	317 : 18	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/22/16 16:45 / cm		FIA203-HE_16122	2B : 17	R121532
Nitrogen, Nitrate+Nitrite as N	0.14	mg/L		0.02		E353.2	12/20/16 12:19 / cm		FIA203-HE_16122	20A : 26	R121443
Nitrogen, Total	0.14	mg/L		0.05		A4500 N-C	12/22/16 09:41 / cm	12/20/16 16:40	FIA203-HE_16122	2A : 13	35748
Phosphorus, Total as P	0.014	mg/L		0.003		E365.1	12/27/16 12:57 / cm	12/27/16 11:32	FIA202-HE_16122	27A : 33	35794
METALS, DISSOLVED											
Arsenic	0.004	mg/L		0.001		E200.8	12/29/16 12:21 / dck		ICPMS205-H_16122	9A : 52	R121677
Cadmium	ND	mg/L		0.00003		E200.8	12/29/16 12:21 / dck		ICPMS205-H_16122	29A : 52	R121677
Copper	0.002	mg/L		0.001		E200.8	12/29/16 12:21 / dck		ICPMS205-H_16122	29A : 52	R121677
Lead	ND	mg/L		0.0003		E200.8	12/29/16 12:21 / dck		ICPMS205-H_16122	29A : 52	R121677
Zinc	ND	mg/L		0.008		E200.8	12/29/16 12:21 / dck		ICPMS205-H_16122	9A : 52	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	0.005	mg/L		0.001		E200.8	12/29/16 12:29 / dck	12/21/16 07:12	ICPMS205-H_16122	9A : 56	35751
Cadmium	0.00005	mg/L		0.00003		E200.8	12/29/16 12:29 / dck	12/21/16 07:12	ICPMS205-H_16122	9A : 56	35751
Calcium	52	mg/L		1		E200.7	12/27/16 16:34 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 88	35751
Copper	0.007	mg/L		0.001		E200.8	12/29/16 12:29 / dck	12/21/16 07:12	ICPMS205-H_16122	9A : 56	35751
Lead	0.0006	mg/L		0.0003		E200.8	12/29/16 12:29 / dck	12/21/16 07:12	ICPMS205-H_16122	9A : 56	35751

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 WSC-SBC
 Collection Date:
 12/13/16
 DateReceived:
 12/14/16

 Lab ID:
 H16120270-011
 Report Date:
 01/24/17
 DateReceived:
 12/14/16

 Matrix:
 Surface Water
 Surface Water
 Discretion
 Discretion
 Discretion

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	11	mg/L		1		E200.7	12/27/16 16:34 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 88	35751
Potassium	2	mg/L		1		E200.7	12/27/16 16:34 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 88	35751
Sodium	4	mg/L		1		E200.7	12/27/16 16:34 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 88	35751
Zinc	ND	mg/L		0.008		E200.8	12/29/16 12:29 / dck	12/21/16 07:12	ICPMS205-H_16122	9A : 56	35751



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:SS-25Lab ID:H16120270-012Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 12/13/16 12:45 DateReceived: 12/14/16

Report Date: 01/24/17

4/17

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	4	mg/L		1		A2540 D	12/14/16 15:08 / SR		124 (14410200)_1612	14A : 19	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	130	mg/L		4		A2320 B	12/15/16 12:54 / SR		PHSC_101-H_1612	15A : 51	R121311
Bicarbonate as HCO3	150	mg/L		4		A2320 B	12/15/16 12:54 / SR		PHSC_101-H_1612	15A : 51	R121311
Chloride	26	mg/L		1.0		E300.0	12/16/16 04:41 / SR		IC METROHM_1612	15A : 60	R121356
Sulfate	130	mg/L		1.0		E300.0	12/16/16 15:30 / SR		IC METROHM_1612	16A : 19	R121390
Hardness as CaCO3	247	mg/L		1		A2340 B	12/27/16 16:38 / abc		CALC_16122	9A : 256	R121655
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	3.1	mg/L		0.5		A5310 C	12/20/16 20:59 / eli-c		SUB-C218	317 : 19	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/22/16 16:46 / cm		FIA203-HE_1612	22B : 18	R121532
Nitrogen, Nitrate+Nitrite as N	0.06	mg/L		0.02		E353.2	12/20/16 12:22 / cm		FIA203-HE_1612	20A : 29	R121443
Nitrogen, Total	0.33	mg/L		0.05		A4500 N-C	12/22/16 09:44 / cm	12/20/16 16:40	FIA203-HE_1612	22A : 16	35748
Phosphorus, Total as P	0.029	mg/L		0.003		E365.1	12/27/16 13:00 / cm	12/27/16 11:32	FIA202-HE_1612	27A : 36	35794
METALS, DISSOLVED											
Arsenic	0.008	mg/L		0.001		E200.8	12/29/16 12:37 / dck		ICPMS205-H_1612	29A : 60	R121677
Cadmium	0.00004	mg/L		0.00003		E200.8	12/29/16 12:37 / dck		ICPMS205-H_1612	29A : 60	R121677
Copper	0.003	mg/L		0.001		E200.8	12/29/16 12:37 / dck		ICPMS205-H_1612	29A : 60	R121677
Lead	ND	mg/L		0.0003		E200.8	12/29/16 12:37 / dck		ICPMS205-H_1612	29A : 60	R121677
Zinc	ND	mg/L		0.008		E200.8	12/29/16 12:37 / dck		ICPMS205-H_1612	29A : 60	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	0.009	mg/L		0.001		E200.8	12/29/16 12:39 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 61	35751
Cadmium	0.00008	mg/L		0.00003		E200.8	12/29/16 12:39 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 61	35751
Calcium	71	mg/L		1		E200.7	12/27/16 16:38 / sld	12/21/16 07:12	ICP2-HE_1612	27C : 89	35751
Copper	0.005	mg/L		0.001		E200.8	12/29/16 12:39 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 61	35751
Lead	0.0008	mg/L		0.0003		E200.8	12/29/16 12:39 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 61	35751

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 SS-25
 Collection Date:
 12/13/16 12:45
 DateReceived:
 12/14/16

 Lab ID:
 H16120270-012
 Report Date:
 01/24/17

 Matrix:
 Surface Water
 Project:
 CFR Monitoring-474374

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	17	mg/L		1		E200.7	12/27/16 16:38 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 89	35751
Potassium	5	mg/L		1		E200.7	12/27/16 16:38 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 89	35751
Sodium	24	mg/L		1		E200.7	12/27/16 16:38 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 89	35751
Zinc	0.011	mg/L		0.008		E200.8	12/29/16 12:39 / dck	12/21/16 07:12	ICPMS205-H_16122	9A:61	35751



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:SBC-P2Lab ID:H16120270-013Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 12/13/16 13:00 DateReceived: 12/14/16

Report Date: 01/24/17

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	3	mg/L		1		A2540 D	12/14/16 15:08 / SR		124 (14410200)_1612	14A : 20	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	130	mg/L		4		A2320 B	12/15/16 13:00 / SR		PHSC_101-H_1612	15A : 53	R121311
Bicarbonate as HCO3	160	mg/L		4		A2320 B	12/15/16 13:00 / SR		PHSC_101-H_1612	15A : 53	R121311
Chloride	39	mg/L		1.0		E300.0	12/16/16 04:54 / SR		IC METROHM_1612	15A : 61	R121356
Sulfate	120	mg/L		1.0		E300.0	12/16/16 15:44 / SR		IC METROHM_1612	16A : 20	R121390
Hardness as CaCO3	246	mg/L		1		A2340 B	12/27/16 16:41 / abc		CALC_16122	9A : 267	R121655
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	4.6	mg/L		0.5		A5310 C	12/20/16 21:15 / eli-c		SUB-C218	317 : 20	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/22/16 16:47 / cm		FIA203-HE_1612	22B : 19	R121532
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	12/20/16 12:23 / cm		FIA203-HE_1612	20A : 30	R121443
Nitrogen, Total	0.40	mg/L		0.05		A4500 N-C	12/22/16 09:46 / cm	12/20/16 16:40	FIA203-HE_1612	22A : 17	35748
Phosphorus, Total as P	0.029	mg/L		0.003		E365.1	12/27/16 13:01 / cm	12/27/16 11:32	FIA202-HE_1612	27A : 37	35794
METALS, DISSOLVED											
Arsenic	0.006	mg/L		0.001		E200.8	12/29/16 12:41 / dck		ICPMS205-H_1612	29A : 62	R121677
Cadmium	0.00006	mg/L		0.00003		E200.8	12/29/16 12:41 / dck		ICPMS205-H_1612	29A : 62	R121677
Copper	0.005	mg/L		0.001		E200.8	12/29/16 12:41 / dck		ICPMS205-H_1612	29A : 62	R121677
Lead	ND	mg/L		0.0003		E200.8	12/29/16 12:41 / dck		ICPMS205-H_1612	29A : 62	R121677
Zinc	0.010	mg/L		0.008		E200.8	12/29/16 12:41 / dck		ICPMS205-H_1612	29A : 62	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	0.008	mg/L		0.001		E200.8	12/29/16 12:43 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 63	35751
Cadmium	0.00011	mg/L		0.00003		E200.8	12/29/16 12:43 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 63	35751
Calcium	70	mg/L		1		E200.7	12/27/16 16:41 / sld	12/21/16 07:12	ICP2-HE_1612	27C : 90	35751
Copper	0.007	mg/L		0.001		E200.8	12/29/16 12:43 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 63	35751
Lead	0.0009	mg/L		0.0003		E200.8	12/29/16 12:43 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 63	35751

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 SBC-P2
 Collection Date:
 12/13/16 13:00
 DateReceived:
 12/14/16

 Lab ID:
 H16120270-013
 Report Date:
 01/24/17
 Project:
 CFR Monitoring-474374

 Matrix:
 Surface Water
 Surface Water
 Direction Date:
 12/13/16 13:00
 DateReceived:
 12/14/16

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	17	mg/L		1		E200.7	12/27/16 16:41 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 90	35751
Potassium	6	mg/L		1		E200.7	12/27/16 16:41 / sld	12/21/16 07:12	ICP2-HE_16122	7C:90	35751
Sodium	32	mg/L		1		E200.7	12/27/16 16:41 / sld	12/21/16 07:12	ICP2-HE_16122	7C:90	35751
Zinc	0.016	mg/L		0.008		E200.8	12/29/16 12:43 / dck	12/21/16 07:12	ICPMS205-H_16122	9A : 63	35751



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:MWB-SBCLab ID:H16120270-014Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 12/13/16 13:45 DateReceived: 12/14/16

Report Date: 01/24/17

17

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	3	mg/L		1		A2540 D	12/14/16 15:08 / SR		124 (14410200)_1612	14A : 21	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	12/15/16 13:06 / SR		PHSC_101-H_1612	15A : 55	R121311
Bicarbonate as HCO3	150	mg/L		4		A2320 B	12/15/16 13:06 / SR		PHSC_101-H_1612	15A : 55	R121311
Chloride	6.9	mg/L		1.0		E300.0	12/16/16 05:08 / SR		IC METROHM_1612	15A : 62	R121356
Sulfate	140	mg/L		1.0		E300.0	12/16/16 15:58 / SR		IC METROHM_1612	216A : 21	R121390
Hardness as CaCO3	248	mg/L		1		A2340 B	12/27/16 16:45 / abc		CALC_16122	9A : 278	R121655
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.3	mg/L		0.5		A5310 C	12/20/16 21:30 / eli-c		SUB-C218	3317 : 21	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/22/16 16:49 / cm		FIA203-HE_1612	22B : 20	R121532
Nitrogen, Nitrate+Nitrite as N	0.13	mg/L		0.02		E353.2	12/20/16 12:25 / cm		FIA203-HE_1612	20A : 31	R121443
Nitrogen, Total	0.22	mg/L		0.05		A4500 N-C	12/22/16 09:47 / cm	12/20/16 16:40	FIA203-HE_1612	22A : 18	35748
Phosphorus, Total as P	0.016	mg/L		0.003		E365.1	12/27/16 13:02 / cm	12/27/16 11:32	FIA202-HE_1612	27A : 38	35794
METALS, DISSOLVED											
Arsenic	0.010	mg/L		0.001		E200.8	12/29/16 12:45 / dck		ICPMS205-H_1612	29A : 64	R121677
Cadmium	ND	mg/L		0.00003		E200.8	12/29/16 12:45 / dck		ICPMS205-H_1612	29A : 64	R121677
Copper	ND	mg/L		0.001		E200.8	12/29/16 17:55 / dck		ICPMS205-H_16122	9A : 147	R121677
Lead	ND	mg/L		0.0003		E200.8	12/29/16 12:45 / dck		ICPMS205-H_1612	29A : 64	R121677
Zinc	ND	mg/L		0.008		E200.8	12/29/16 12:45 / dck		ICPMS205-H_1612	29A : 64	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	0.012	mg/L		0.001		E200.8	12/29/16 12:47 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 65	35751
Cadmium	0.00004	mg/L		0.00003		E200.8	12/29/16 12:47 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 65	35751
Calcium	72	mg/L		1		E200.7	12/27/16 16:45 / sld	12/21/16 07:12	ICP2-HE_1612	27C : 91	35751
Copper	0.002	mg/L		0.001		E200.8	12/29/16 12:47 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 65	35751
Lead	0.0006	mg/L		0.0003		E200.8	12/29/16 12:47 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 65	35751

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 MWB-SBC
 Collection Date:
 12/13/16
 13:45
 DateReceived:
 12/14/16

 Lab ID:
 H16120270-014
 Report Date:
 01/24/17

 Matrix:
 Surface Water
 Dimension

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	17	mg/L		1		E200.7	12/27/16 16:45 / sld	12/21/16 07:12	ICP2-HE_161227	C : 91	35751
Potassium	2	mg/L		1		E200.7	12/27/16 16:45 / sld	12/21/16 07:12	ICP2-HE_161227	C : 91	35751
Sodium	13	mg/L		1		E200.7	12/27/16 16:45 / sld	12/21/16 07:12	ICP2-HE_161227	C : 91	35751
Zinc	ND	mg/L		800.0		E200.8	12/29/16 12:47 / dck	12/21/16 07:12	ICPMS205-H_161229	A : 65	35751



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:MWB-SBC DuplicateLab ID:H16120270-015Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 12/13/16 13:45 DateReceived: 12/14/16

Report Date: 01/24/17

7

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	3	mg/L		1		A2540 D	12/14/16 15:08 / SR		24 (14410200)_1612	14A : 22	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	12/15/16 13:12 / SR		PHSC_101-H_1612	15A : 57	R121311
Bicarbonate as HCO3	150	mg/L		4		A2320 B	12/15/16 13:12 / SR		PHSC_101-H_1612	15A : 57	R121311
Chloride	7.1	mg/L		1.0		E300.0	12/16/16 05:21 / SR		IC METROHM_1612	15A : 63	R121356
Sulfate	140	mg/L		1.0		E300.0	12/16/16 17:19 / SR		IC METROHM_1612	16A : 26	R121390
Hardness as CaCO3	249	mg/L		1		A2340 B	12/27/16 16:49 / abc		CALC_16122	9A : 289	R121655
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.3	mg/L		0.5		A5310 C	12/20/16 21:46 / eli-c		SUB-C218	317 : 22	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/22/16 16:50 / cm		FIA203-HE_1612	22B : 21	R121532
Nitrogen, Nitrate+Nitrite as N	0.13	mg/L		0.02		E353.2	12/20/16 12:26 / cm		FIA203-HE_1612	20A : 32	R121443
Nitrogen, Total	0.22	mg/L		0.05		A4500 N-C	12/22/16 09:48 / cm	12/20/16 16:40	FIA203-HE_1612	22A : 19	35748
Phosphorus, Total as P	0.019	mg/L		0.003		E365.1	12/23/16 09:14 / cm	12/20/16 14:15	FIA202-HE_1612	23B : 14	35743
METALS, DISSOLVED											
Arsenic	0.010	mg/L		0.001		E200.8	12/29/16 12:49 / dck		ICPMS205-H_1612	29A : 66	R121677
Cadmium	ND	mg/L		0.00003		E200.8	12/29/16 12:49 / dck		ICPMS205-H_1612	29A : 66	R121677
Copper	ND	mg/L		0.001		E200.8	12/29/16 12:49 / dck		ICPMS205-H_1612	29A : 66	R121677
Lead	ND	mg/L		0.0003		E200.8	12/29/16 12:49 / dck		ICPMS205-H_1612	29A : 66	R121677
Zinc	ND	mg/L		0.008		E200.8	12/29/16 12:49 / dck		ICPMS205-H_1612	29A : 66	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	0.011	mg/L		0.001		E200.8	12/29/16 12:52 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 67	35751
Cadmium	0.00003	mg/L		0.00003		E200.8	12/29/16 12:52 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 67	35751
Calcium	72	mg/L		1		E200.7	12/27/16 16:49 / sld	12/21/16 07:12	ICP2-HE_1612	27C : 92	35751
Copper	0.002	mg/L		0.001		E200.8	12/29/16 12:52 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 67	35751
Lead	0.0006	mg/L		0.0003		E200.8	12/29/16 12:52 / dck	12/21/16 07:12	ICPMS205-H_1612	29A : 67	35751

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 MWB-SBC Duplicate
 Collection Date:
 12/13/16
 13:45
 DateReceived:
 12/14/16

 Lab ID:
 H16120270-015
 Report Date:
 01/24/17

 Matrix:
 Surface Water
 Output
 Collection Date:
 01/24/17

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	17	mg/L		1		E200.7	12/27/16 16:49 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 92	35751
Potassium	2	mg/L		1		E200.7	12/27/16 16:49 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 92	35751
Sodium	13	mg/L		1		E200.7	12/27/16 16:49 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 92	35751
Zinc	ND	mg/L		0.008		E200.8	12/29/16 12:52 / dck	12/21/16 07:12	ICPMS205-H_16122	9A : 67	35751



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:MCWC-MWBLab ID:H16120270-016Matrix:Surface Water

Project: CFR Monitoring-474374

Collection Date: 12/13/16 15:00 DateReceived: 12/14/16

Report Date: 01/24/17

,

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	21	mg/L	D	2		A2540 D	12/14/16 15:08 / SR		124 (14410200)_16121	I4A : 23	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	100	mg/L		4		A2320 B	12/15/16 13:18 / SR		PHSC_101-H_16121	I5A : 59	R121311
Bicarbonate as HCO3	130	mg/L		4		A2320 B	12/15/16 13:18 / SR		PHSC_101-H_16121	I5A : 59	R121311
Chloride	1.8	mg/L		1.0		E300.0	12/16/16 06:42 / SR		IC METROHM_16121	I5A : 68	R121356
Sulfate	26	mg/L		1.0		E300.0	12/16/16 06:42 / SR		IC METROHM_16121	I5A : 68	R121356
Hardness as CaCO3	120	mg/L		1		A2340 B	12/27/16 16:53 / abc		CALC_161229	9A : 300	R121655
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	1.1	mg/L		0.5		A5310 C	12/20/16 23:36 / eli-c		SUB-C2183	317 : 27	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/22/16 16:51 / cm		FIA203-HE_16122	22B : 22	R121532
Nitrogen, Nitrate+Nitrite as N	0.14	mg/L		0.02		E353.2	12/20/16 12:27 / cm		FIA203-HE_16122	20A : 33	R121443
Nitrogen, Total	0.38	mg/L		0.05		A4500 N-C	12/22/16 09:49 / cm	12/20/16 16:40	FIA203-HE_16122	22A : 20	35748
Phosphorus, Total as P	0.038	mg/L		0.003		E365.1	12/23/16 09:15 / cm	12/20/16 14:15	FIA202-HE_16122	23B : 15	35743
METALS, DISSOLVED											
Arsenic	0.009	mg/L		0.001		E200.8	12/29/16 12:54 / dck		ICPMS205-H_16122	29A : 68	R121677
Cadmium	ND	mg/L		0.00003		E200.8	12/29/16 12:54 / dck		ICPMS205-H_16122	29A : 68	R121677
Copper	ND	mg/L		0.001		E200.8	12/29/16 12:54 / dck		ICPMS205-H_16122	29A : 68	R121677
Lead	ND	mg/L		0.0003		E200.8	12/29/16 12:54 / dck		ICPMS205-H_16122	29A : 68	R121677
Zinc	0.009	mg/L		0.008		E200.8	12/29/16 12:54 / dck		ICPMS205-H_16122	29A : 68	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	0.013	mg/L		0.001		E200.8	12/29/16 12:56 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 69	35751
Cadmium	0.00018	mg/L		0.00003		E200.8	12/29/16 12:56 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 69	35751
Calcium	34	mg/L		1		E200.7	12/27/16 16:53 / sld	12/21/16 07:12	ICP2-HE_16122	27C : 93	35751
Copper	0.017	mg/L		0.001		E200.8	12/29/16 12:56 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 69	35751
Lead	0.0060	mg/L		0.0003		E200.8	12/29/16 12:56 / dck	12/21/16 07:12	ICPMS205-H_16122	29A : 69	35751

Report RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.

Definitions: D - RL increased due to sample matrix.



## LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 MCWC-MWB
 Collection Date:
 12/13/16 15:00
 DateReceived:
 12/14/16

 Lab ID:
 H16120270-016
 Report Date:
 01/24/17

 Matrix:
 Surface Water
 Direction Date:
 01/24/17

Analyses	Resul	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID
METALS, TOTAL RECOVERABLE											
Magnesium	9	mg/L		1		E200.7	12/27/16 16:53 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 93	35751
Potassium	1	mg/L		1		E200.7	12/27/16 16:53 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 93	35751
Sodium	9	mg/L		1		E200.7	12/27/16 16:53 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 93	35751
Zinc	0.024	mg/L		0.008		E200.8	12/29/16 12:56 / dck	12/21/16 07:12	ICPMS205-H_16122	9A : 69	35751



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:MT DEQ-Federal SuperfundClient Sample ID:Field Blank #2 (MCWC-MWB)Lab ID:H16120270-017Matrix:Surface Water

Project: CFR Monitoring-474374

**Collection Date:** 12/13/16 15:15 **DateReceived:** 12/14/16

Run

Report Date: 01/24/17

7

Analyses	Result	Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Order	BatchID
PHYSICAL PROPERTIES											
Solids, Total Suspended TSS @ 105 C	ND	mg/L		1		A2540 D	12/14/16 15:09 / SR		124 (14410200)_16121	4A : 24	TSS161214A
INORGANICS											
Alkalinity, Total as CaCO3	ND	mg/L		4		A2320 B	12/15/16 13:29 / SR		PHSC_101-H_16121	5A : 63	R121311
Bicarbonate as HCO3	ND	mg/L		4		A2320 B	12/15/16 13:29 / SR		PHSC_101-H_16121	5A : 63	R121311
Chloride	ND	mg/L		1.0		E300.0	12/16/16 06:56 / SR		IC METROHM_16121	5A : 69	R121356
Sulfate	ND	mg/L		1.0		E300.0	12/16/16 06:56 / SR		IC METROHM_16121	5A : 69	R121356
Hardness as CaCO3	ND	mg/L		1		A2340 B	12/30/16 09:47 / sld		WATERCALC_1612	30B : 1	R121690
AGGREGATE ORGANICS											
Organic Carbon, Dissolved (DOC)	ND	mg/L		0.5		A5310 C	12/20/16 23:52 / eli-c		SUB-C2183	317 : 28	C_R218317
NUTRIENTS											
Nitrogen, Ammonia as N	ND	mg/L		0.05		E350.1	12/22/16 16:55 / cm		FIA203-HE_16122	2B : 25	R121532
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.02		E353.2	12/20/16 12:28 / cm		FIA203-HE_16122	0A : 34	R121443
Nitrogen, Total	ND	mg/L		0.05		A4500 N-C	12/22/16 09:50 / cm	12/20/16 16:40	) FIA203-HE_16122	2A : 21	35748
Phosphorus, Total as P	0.008	mg/L	(	0.003		E365.1	12/23/16 09:16 / cm	12/20/16 14:15	5 FIA202-HE_16122	3B : 16	35743
-Total Phosphorous was confirmed by duplicate	e analysis.										
METALS, DISSOLVED											
Arsenic	ND	mg/L	(	0.001		E200.8	12/29/16 13:04 / dck		ICPMS205-H_16122	9A : 73	R121677
Cadmium	ND	mg/L	0.	00003		E200.8	12/29/16 13:04 / dck		ICPMS205-H_16122	9A : 73	R121677
Copper	ND	mg/L	(	0.001		E200.8	12/29/16 13:04 / dck		ICPMS205-H_16122	9A : 73	R121677
Lead	ND	mg/L	0	.0003		E200.8	12/29/16 13:04 / dck		ICPMS205-H_16122	9A : 73	R121677
Zinc	0.011	mg/L	(	0.008		E200.8	12/29/16 17:57 / dck		ICPMS205-H_161229	A : 148	R121677
METALS, TOTAL RECOVERABLE											
Arsenic	ND	mg/L	(	0.001		E200.8	12/29/16 13:06 / dck	12/21/16 07:12	2 ICPMS205-H_16122	9A : 74	35751
Cadmium	ND	mg/L	0.	00003		E200.8	12/29/16 13:06 / dck	12/21/16 07:12	2 ICPMS205-H_16122	9A : 74	35751
Calcium	ND	mg/L		1		E200.7	12/27/16 16:56 / sld	12/21/16 07:12	2 ICP2-HE_16122	7C : 94	35751
Copper	ND	mg/L	(	0.001		E200.8	12/29/16 17:59 / dck	12/21/16 07:12	2 ICPMS205-H_161229	A : 149	35751
Lead	ND	mg/L	0	.0003		E200.8	12/29/16 13:06 / dck	12/21/16 07:12	2 ICPMS205-H_16122	9A : 74	35751

ReportRL - Analyte reporting limit.Definitions:

MCL - Maximum contaminant level.



# LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

 Client:
 MT DEQ-Federal Superfund
 Project:
 CFR Monitoring-474374

 Client Sample ID:
 Field Blank #2 (MCWC-MWB)
 Collection Date:
 12/13/16 15:15
 DateReceived:
 12/14/16

 Lab ID:
 H16120270-017
 Report Date:
 01/24/17

 Matrix:
 Surface Water
 Output
 Collection Date:
 01/24/17

Analyses	Result	t Units	Qualifiers	RL	MDL	Method	Analysis Date / By	Prep Date	RunID	Run Order	BatchID	
METALS, TOTAL RECOVERABLE												
Magnesium	ND	mg/L		1		E200.7	12/27/16 16:56 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 94	35751	
Potassium	ND	mg/L		1		E200.7	12/27/16 16:56 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 94	35751	
Sodium	ND	mg/L		1		E200.7	12/27/16 16:56 / sld	12/21/16 07:12	ICP2-HE_16122	7C : 94	35751	
Zinc	ND	mg/L		0.008		E200.8	12/29/16 13:06 / dck	12/21/16 07:12	ICPMS205-H_16122	9A : 74	35751	



### LABORATORY ANALYTICAL REPORT

Prepared by Helena, MT Branch

Client:	MT DEQ-Federal Sup	erfund	Project: CFR Monitoring-474374										
Client Sample ID:	CFR-84F						Colle	ction Date: 12/12	2/16 10:30	DateReceived:	12/14/16		
Lab ID:	H16120270-018						Re	eport Date: 01/24	l/17				
Matrix:	Surface Water												
Analyses		Result	Units	Qualifiers	RL	MDL	Method	Analysis Date	By Prep Date	RunID	Run Order	BatchID	
METALS, TOTAL	RECOVERABLE												
Mercury		7.6E-06	mg/L		5E-06		E245.1	01/04/17 13:32 /	rgk 01/03/17 09:1	3 HGCV202-H_	170104A : 16	35861	



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Client: Work Order:	MT DEQ-F H16120270	ederal Superfund )		ANALYT	ICAL QC S Prepared by He	UMMARY elena, MT Bra	REPO	RT		Date: 24-Jan-7	17
Project:	CFR Monito	oring-474374		В	atchID: 1	61220wa-h	gcv202				
Run ID :Run Order:	HGCV202-H_	_161220A: 32	SampType:	Initial Calibra	tion Verificatio	n Standard	Lab	ID: ICV		Method: E245.1	
Analysis Date: 12/2	0/16 16:38	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Mercury		0.000197	0.00010	0.0002	0	99	90	110			
Associated samples	: H16120270-0	003C, H16120270-004C	;								
Run ID :Run Order:	HGCV202-H_	_161220A: 33	SampType:	Continuing C	alibration Verif	ication Standa	<b>r</b> Lab	ID: CCV1		Method: E245.1	
Analysis Date: 12/2	0/16 16:40	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Mercury		0.000202	0.00010	0.0002	0	101	90	110			

Associated samples: H16120270-003C, H16120270-004C

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Fede H16120270	eral Superfund		ANALYT	ICAL QC S Prepared by He	SUMMARY elena, MT Bra	REPO	RT		Date: 24-Jan-1	17
Project:	CFR Monitorin	ng-474374		В	atchID: 1	61228wa-h	gcv202				
Run ID :Run Order:	HGCV202-H_161	1228A: 9	SampType:	Initial Calibra	tion Verificatio	on Standard	Lab	ID: ICV		Method: E245.1	
Analysis Date: 12/2	8/16 13:36	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Mercury		0.000193	0.00010	0.0002	0	96	90	110			
Associated samples	: H16120270-002	C									
Run ID :Run Order:	HGCV202-H_161	1228A: 10	SampType:	Continuing C	alibration Verif	fication Standa	<b>r</b> Lab	ID: CCV1		Method: E245.1	
Analysis Date: 12/2	8/16 13:39	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Mercury		0.000206	0.00010	0.0002	0	103	90	110			

Associated samples: H16120270-002C

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DE0 H16120	Q-Federal Superfund 270		ANALYT	ICAL QC Prepared by I	SUMMARY Helena, MT Bra	<b>REPO</b>	RT		Date: 24-Jan	-17
Project:	CFR M	onitoring-474374		В	atchID:	170104wa-h	gcv202				
Run ID :Run Order:	HGCV20	2-H_170104A: 8	SampType:	Initial Calibra	tion Verificat	ion Standard	Lab	ID: ICV		Method: E245.1	
Analysis Date: 01/0	4/17 13:04	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Mercury		0.000198	0.00010	0.0002	0	99	90	110			
Associated samples	: H161202	270-018A									

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

R - RPD outside accepted recovery limits

A - Analyte concentration greater than four times the spike amount Page 42 of 102

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Client: Work Order:	MT DEQ-Fede H16120270	ral Superfund		ANALYT	ICAL QC SUI	MMARY na, MT Bra	REPO	RT		Date	: 24-Jan-	17
Project:	CFR Monitoring	g-474374		В	atchID: 3573	30						
Run ID :Run Order:	HGCV202-H_1612	220A: 35	SampType:	Method Blan	k		Lab	ID: <b>MB-357</b>	30	Method	1: E245.1	
Analysis Date: 12/2	0/16 16:46	Units:	mg/L			Prep Info	: Prep Da	ite: 12/19/20	016	Prep Method	: E245.1	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		ND	1E-06									
Associated samples	: H16120270-003C	, H16120270-004C										
Run ID :Run Order:	HGCV202-H_1612	220A: 36	SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-35	730	Method	: E245.1	
Analysis Date: 12/2	0/16 16:48	Units:		Prep Info: Prep Da			ite: 12/19/20	016	Prep Method			
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00014	0.00010	0.00015	0	96	90	110				
Associated samples	: H16120270-003C	, H16120270-004C										
Run ID :Run Order:	HGCV202-H_1612	220A: 39	SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16120</b>	269-001BMS	Method	: E245.1	
Analysis Date: 12/2	0/16 16:56	Units:	mg/L			Prep Info	: Prep Da	ite: 12/20/20	)16	Prep Method	: E245.1	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.000121	0.00010	0.00015	0	80	70	130				
Associated samples	: H16120270-003C	, H16120270-004C										
Run ID :Run Order:	HGCV202-H_1612	220A: 40	SampType:	Sample Matri	ix Spike Duplicate		Lab	ID: <b>H16120</b>	269-001BMSD	Method	: E245.1	
Analysis Date: 12/20/16 16:59 Units: mg/L						Prep Info	: Prep Da	ite: 12/20/20	)16	Prep Method	: E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.000142	0.00010	0.00015	0	94	70	130	0.0001207	16	20	

Associated samples: H16120270-003C, H16120270-004C

- S Spike Recovery outside accepted recovery limit
- 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 four times the spike amount

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Client: Work Order:	MT DEQ-Federal H16120270	Superfund		ANALYT	ICAL QC SU Prepared by Heler	MMARY na, MT Bra	REPO	RT		Date	: 24-Jan-	17
Project:	CFR Monitoring-4	74374		В	atchID: 357	30						
Run ID :Run Order:	HGCV202-H_161220	A: 35	SampType:	Method Blan	k		Lab	ID: <b>MB-357</b>	30	Method	: E245.1	
Analysis Date: 12/2	0/16 16:46	Units:	mg/L			Prep Info	Prep Da	ite: 12/19/20	016	Prep Method	: E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		ND	1E-06									
Associated samples	: H16120270-003C, H	16120270-004C	;									
Run ID :Run Order:	HGCV202-H_161220	A: 36	SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-35	730	Method	: E245.1	
Analysis Date: 12/2	0/16 16:48	Units:	mg/L			Prep Info: Prep Date: 12/19/2016				Prep Method		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00014	0.00010	0.00015	0	96	90	110				
Associated samples	: H16120270-003C, H	16120270-004C	;									
Run ID :Run Order:	HGCV202-H_161220	A: 39	SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16120</b>	269-001BMS	Method	: E245.1	
Analysis Date: 12/2	0/16 16:56	Units:	mg/L			Prep Info	: Prep Da	ite: 12/20/20	)16	Prep Method	: E245.1	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.000121	0.00010	0.00015	0	80	70	130				
Associated samples	: H16120270-003C, H	16120270-004C	;									
Run ID :Run Order:	HGCV202-H_161220	A: 40	SampType:	ampType: Sample Matrix Spike Duplicate			Lab	ID: <b>H16120</b>	269-001BMSD	D Method: E245.1		
Analysis Date: 12/20/16 16:59 Units: mg/L						Prep Info: Prep Date: 12/20/2016			Prep Method: E245.1			
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00010	0.00015	0	94	70	130	0.0001207	16	20			

Associated samples: H16120270-003C, H16120270-004C

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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<b>ENERGY</b> LABORATORIES	Trust our People. Trust our Pe	ust our Data.	Col	lege Station, TX <b>88</b>	.0515 .0711							
Client: Work Order:	MT DEQ-Federal Sup H16120270	erfund		ANALYT	ICAL QC SU	MMARY na, MT Bra	REPO	RT		Date	e: 24-Jan-	17
Project:	CFR Monitoring-4743	74		В	atchID: 357	43						
Run ID :Run Order:	FIA202-HE_161223B: 12		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-35	743	Method	d: E365.1	
Analysis Date: 12/2	3/16 09:12	Units:	mg/L			Prep Info	: Prep Da	nte: <b>12/20/20</b>	)16	Prep Method	d: E365.1	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total a	as P	0.421	0.010	0.4	0	105	90	110				
Associated samples	H16120270-015D, H1612	0270-016E	), H16120270	-017D								
Run ID :Run Order:	FIA202-HE_161223B: 13		SampType:	Method Blan	k		Lab	ID: <b>MB-357</b>	43	Method	: <b>E365.1</b>	
Analysis Date: 12/2	3/16 09:13	Units:	mg/L			Prep Info	: Prep Da	nte: <b>12/20/20</b>	)16	Prep Method	d: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total a	as P	ND	0.001									
Associated samples	H16120270-015D, H1612	0270-016	), H16120270	-017D								
Run ID :Run Order:	FIA202-HE_161223B: 17		SampType:	Sample Matri	x Spike		Lab	ID: <b>H16120</b>	270-017DMS	Method	: <b>E365.1</b>	
Analysis Date: 12/2	3/16 09:17	Units:	mg/L			Prep Info	: Prep Da	nte: <b>12/20/20</b>	)16	Prep Method	d: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total a	as P	0.466	0.010	0.2	0.00826	<u>229</u>	90	110				S
Associated samples	H16120270-015D, H1612	0270-016E	), H16120270	-017D								
Run ID :Run Order:	FIA202-HE_161223B: 18		SampType:	Sample Matri	ix Spike Duplicate		Lab	ID: <b>H16120</b>	270-017DMSD	Method	d: E365.1	
Analysis Date: 12/2	3/16 09:18	Units:	mg/L			Prep Info	: Prep Da	ite: 12/20/20	016	Prep Method	d: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total a	as P	0.485	0.010	0.2	0.00826	<u>239</u>	90	110	0.4664	<u>4.0</u>	20	S

Associated samples: H16120270-015D, H16120270-016D, H16120270-017D

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16120270	perfund			ICAL QC S	SUMMARY elena. MT Bra	REPO	RT		Date: 2	24-Jan-1	17
Project:	CFR Monitoring-4743	574		В	atchID: 3	5748						
Run ID :Run O	rder: FIA203-HE_161221B: 11		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-357	48	Method: A	4500 N-C	;
Analysis Date:	12/21/16 13:46	Units:	mg/L			Prep Info	: Prep Da	ate: 12/20/201	16	Prep Method: A	4500 N-C	;
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD R	PDLimit	Qual
Nitrogen, Total		12.9	0.30	13.7	0.007734	94	90	110				
Associated sam	ples: H16120270-001A, H1612 009A, H16120270-010A,	0270-002A H1612027(	, H16120270- D-011A, H1612	003A, H1612 20270-012A,	0270-004A, H10 H16120270-013	6120270-005A, 3A, H16120270	H1612027 -014A, H16	0-006A, H16 120270-015/	120270-007A, A, H16120270-	H16120270-008A 016A, H16120270	, H161202 )-017A	270-
Run ID :Run O	rder: FIA203-HE_161221B: 12		SampType:	Method Blan	k		Lab	ID: <b>MB-3574</b>	8	Method: A	4500 N-C	;
Analysis Date:	12/21/16 13:48	Units:	mg/L			Prep Info	: Prep Da	ate: 12/20/201	16	Prep Method: A	4500 N-C	;
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD R	PDLimit	Qual
Nitrogen, Total		0.008	0.007									
Associated sam	ples: H16120270-001A, H1612 009A, H16120270-010A,	0270-002A H1612027(	, H16120270- D-011A, H1612	003A, H1612 20270-012A,	0270-004A, H10 H16120270-013	6120270-005A, 3A, H16120270	H1612027 -014A, H16	0-006A, H16 120270-015/	120270-007A, A, H16120270-	H16120270-008A 016A, H16120270	, H161202 )-017A	270-
Run ID :Run O	rder: FIA203-HE_161221B: 14		SampType:	Sample Matr	ix Spike		Lab	ID: <b>H161202</b>	70-001AMS	Method: A	4500 N-C	;
Analysis Date:	12/21/16 13:50	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD R	PDLimit	Qual
Nitrogen, Total		1.17	0.10	1	0.2291	94	90	110				
Associated sam	ples: H16120270-001A, H1612 009A, H16120270-010A,	0270-002A H1612027(	, H16120270- D-011A, H1612	003A, H1612 20270-012A,	0270-004A, H10 H16120270-013	6120270-005A, 8A, H16120270	H1612027 -014A, H16	0-006A, H16 120270-015/	120270-007A, A, H16120270-	H16120270-008A 016A, H16120270	, H161202 )-017A	270-
Run ID :Run O	rder: FIA203-HE_161221B: 15		SampType:	Sample Matr	ix Spike Duplic	ate	Lab	ID: H161202	70-001AMSD	Method: A	4500 N-C	;
Analysis Date:	12/21/16 13:51	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD R	PDLimit	Qual
Nitrogen, Total		1.18	0.10	1	0.2291	95	90	110	1.171	0.3	20	
Associated sam	pples: H16120270-001A, H1612 009A, H16120270-010A,	0270-002A H1612027	, H16120270- D-011A, H1612	003A, H1612 20270-012A,	0270-004A, H10 H16120270-013	6120270-005A, 8A, H16120270	H1612027 -014A, H16	0-006A, H16 120270-015/	120270-007A, A, H16120270-	H16120270-008A 016A, H16120270	, H161202 )-017A	270-
Run ID :Run O	rder: FIA203-HE_161222A: 11		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-357	48	Method: A	4500 N-C	;
Analysis Date:	12/22/16 09:38	Units:	mg/L			Prep Info	: Prep Da	ate: 12/20/201	6	Prep Method: A	4500 N-C	;
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD R	PDLimit	Qual
Nitrogen, Total		13.6	0.30	13.7	0	100	90	110				
Qualifiers:	ND - Not Detected at the Report J - Analyte detected below quan	ing Limit titation limit	s R	- Spike Reco - RPD outsid	very outside acc e accepted reco	epted recovery	limit N A	- Analyte cor - Analyte cor	centration was	not sufficiently hic	ງh to calcι s the spik∉	Jate RPD e amount

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Client: Work Order:	MT DEQ-Federal Sup H16120270	erfund		ANALYT	CAL QC SU Prepared by Hel	<b>JMMARY</b> ena, MT Bra	REPO	RT		Date:	24-Jan-	17
Project:	CFR Monitoring-47437	74		В	atchID: 35	748						
Run ID :Run Order:	FIA203-HE_161222A: 11		SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-357	748	Method:	A4500 N-C	;
Analysis Date: 12/2	2/16 09:38	Units:	mg/L			Prep Info:	: Prep Da	ate: <b>12/20/20</b>	16	Prep Method:	A4500 N-0	;
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Associated samples	: H16120270-001A, H1612( 009A, H16120270-010A, I	)270-002A 11612027(	, H16120270 )-011A, H161	-003A, H1612( 20270-012A, I	0270-004A, H161 H16120270-013A	20270-005A, , H16120270-	H1612027 014A, H16	0-006A, H16 6120270-015	5120270-007A,   5A, H16120270-0	H16120270-008 016A, H161202	A, H16120 70-017A	270-
Run ID :Run Order:	FIA203-HE_161222A: 12		SampType:	Method Blan	K		Lab	ID: MB-357	48	Method:	A4500 N-0	;
Analysis Date: 12/2	2/16 09:40	Units:	mg/L			Prep Info:	: Prep Da	ate: <b>12/20/20</b>	16	Prep Method:	A4500 N-C	;
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		ND	0.007									
Associated samples	: H16120270-001A, H16120 009A, H16120270-010A, I	)270-002A 11612027(	, H16120270 )-011A, H161	-003A, H1612( 20270-012A, I	0270-004A, H161 H16120270-013A	20270-005A, , H16120270-	H1612027 014A, H16	0-006A, H16 6120270-015	6120270-007A,   6A, H16120270-(	H16120270-008 016A, H161202	A, H16120 70-017A	270-
Run ID :Run Order:	FIA203-HE_161222A: 14		SampType:	Sample Matri	x Spike		Lab	ID: H161202	270-011AMS	Method:	A4500 N-0	;
Analysis Date: 12/2	2/16 09:42	Units:	mg/L			Prep Info:	: Prep Da	ate: <b>12/20/20</b>	16	Prep Method:	A4500 N-0	;
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		1.18	0.10	1	0.1403	104	90	110				
Associated samples	: H16120270-001A, H16120 009A, H16120270-010A, I	)270-002A 11612027(	, H16120270 )-011A, H161	-003A, H1612( 20270-012A, I	0270-004A, H161 H16120270-013A	20270-005A, , H16120270-	H1612027 014A, H16	0-006A, H16 3120270-015	6120270-007A,   6A, H16120270-(	H16120270-008 016A, H161202	A, H16120 70-017A	270-
Run ID :Run Order:	FIA203-HE_161222A: 15		SampType:	Sample Matri	x Spike Duplicat	e	Lab	ID: <b>H16120</b> 2	270-011AMSD	Method:	A4500 N-0	;
Analysis Date: 12/2	2/16 09:43	Units:	mg/L			Prep Info:	: Prep Da	ate: <b>12/20/20</b>	16	Prep Method:	A4500 N-0	;
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		1.13	0.10	1	0.1403	99	90	110	1.177	<u>4.4</u>	20	
Associated samples	: H16120270-001A, H16120 009A, H16120270-010A, H	)270-002A 11612027(	, H16120270 )-011A, H161	-003A, H1612( 20270-012A, I	0270-004A, H161 H16120270-013A	20270-005A, , H16120270-	H1612027 014A, H16	0-006A, H16 3120270-015	5120270-007A,   5A, H16120270-(	H16120270-008 016A, H161202	A, H16120 70-017A	270-

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEC H16120	Q-Federal Superfund 270		ANALYT	CAL QC SU Prepared by Hel	<b>JMMARY</b> ena, MT Bra	<b>REPOR</b>	RT	Date: 24-Jai	า-17
Project:	CFR Mo	onitoring-474374		В	atchID: 35	751				
Run ID :Run Order	ICP2-HE	_161227C: 59	SampType:	Method Blan	(		Lab I	D: MB-35751	Method: E200.7	
Analysis Date: 12/2	nalysis Date: 12/27/16 14:45 Uni		mg/L			Prep Info	: Prep Date	e: 12/21/2016	Prep Method: E200.2	
Analytes 4	alysis Date: <b>12/27/16 14:45</b> Uni alytes <u>4</u> Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD RPDLim	t Qual
Calcium		0.05	0.04							
Magnesium		ND	0.01							
Potassium		ND	0.04							
Sodium		ND	0.02							
Associated samples	H161202	70-001C, H16120270-002C	, H16120270∙ -011C. H161	-003C, H1612 20270-012C.	0270-004C, H161 H16120270-013C	20270-005C, . H16120270	H16120270	-006C, H16120270-007C, 20270-015C, H16120270	H16120270-008C, H161-016C, H16120270-017C	20270-

Run ID :Run Order:       ICP2-HE_161227C: 60       SampType:       Laboratory Control Sample					Lab ID: LCS-35751				Method: E200.7		
Analysis Date: 12/27/16 14:49	Units: <b>mg/L</b> Result POI				Prep Info	: Prep Dat	te: 12/21/20	16	Prep Method: E200.2		
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.1	1.0	25	0.04558	100	85	115				
Magnesium	25.0	1.0	25	0	100	85	115				
Potassium	26.3	1.0	25	0	105	85	115				
Sodium	26.7	1.0	25	0	107	85	115				

Associated samples: H16120270-001C, H16120270-002C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-006C, H16120270-007C, H16120270-008C, H16120270-009C, H16120270-010C, H16120270-011C, H16120270-012C, H16120270-013C, H16120270-014C, H16120270-015C, H16120270-016C, H16120270-017C

Run ID :Run Order: ICP2-HE_161227C: 63 SampType: Serial Dilution					Lab I	D: H161202	270-002CDIL	Method: <b>E200.7</b>		
Analysis Date: 12/27/16 15:00	Units:	mg/L		Prep Info: Prep Date:		te: 12/21/2016		Prep Method:		
Analytes 4	Result	PQL	SPK value SPK Ref Val	%REC Low	<i>v</i> Limit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual	
Calcium	0.241	1.0	0		0	0	0.06212	10	Ν	
Magnesium	ND	1.0	0		0	0	0	10		
Potassium	ND	1.0	0		0	0	0	10		
Sodium	ND	1.0	0		0	0	0	10		

Associated samples: H16120270-001C, H16120270-002C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-006C, H16120270-007C, H16120270-008C, H16020270-008C, H1602020008C, H160202000008C, H16020008C, H1602008C, H1602008C, H1602008C,

Run ID :Run Order:       ICP2-HE_161227C: 65       SampType:       Sample Matrix Spike						Lab I	D: H161202	270-002CMS3	Method		
Analysis Date: 12/27/16 15:08	27/16 15:08 Units: mg/L				Prep Info	: Prep Dat	te: 12/21/20	16	Prep Method	E200.2	
Analytes <u>4</u>	Result PQL SPK value SPK Ref Val			%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Calcium	25.5	1.0	25	0.06212	102	70	130				
Magnesium	25.6	1.0	25	0	102	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit

File Deleted at the reporting Linit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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LABORATORIES		www.energylab.con	n	Coll	ege Station, TX 88	2.0711							
Client: Work Order:	Client:         MT DEQ-Federal Superfund           Vork Order:         H16120270           'roject:         CFR Monitoring-474374				ANALYT	CAL QC S Prepared by He	<b>UMMARY</b> lena, MT Bra	REPO	RT		Date	: 24-Jan-	17
roject: CFR Monitoring-474374					В	atchID: 35	5751						
2un ID :Run Order: ICP2-HE_161227C: 65			SampType:	Sample Matri	x Spike		Lab	ID: H16120	270-002CMS3	Method: E200.7			
Analysis Date: 12/2	27/16 15:08		Units:	mg/L			Prep Info	Prep Da	te: 12/21/20	016	Prep Method	E200.2	
Analytes 4			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium			26.9	1.0	25	0	108	70	130				
Sodium			27.2	1.0	25	0	109	70	130				
Associated samples	5: H1612027	70-001C, H1612	20270-0020	C, H16120270	-003C, H1612	0270-004C, H16	120270-005C,	H1612027	0-006C, H1	6120270-007C,	H16120270-00	8C, H1612	0270-

Dillingo MT 000 725 4400 - Cooper WV 000 225 0515

009C, H16120270-010C, H16120270-011C, H16120270-012C, H16120270-013C, H16120270-014C, H16120270-015C, H16120270-016C, H16120270-017C

Run ID :Run Order:       ICP2-HE_161227C: 66       SampType:       Sample Matrix Spike Duplic					•	Lab ID: H16120270-002CMS			Method		
Analysis Date: 12/27/16 15:11	Units: <b>mg/L</b>				Prep Info:	Prep Da	te: 12/21/20	16	Prep Method	E200.2	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	25.2	1.0	25	0.06212	101	70	130	25.53	1.3	20	
Magnesium	25.1	1.0	25	0	100	70	130	25.56	1.7	20	
Potassium	26.3	1.0	25	0	105	70	130	26.9	2.2	20	
Sodium	26.7	1.0	25	0	107	70	130	27.24	2.1	20	

Associated samples: H16120270-001C, H16120270-002C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-006C, H16120270-007C, H16120270-008C, H16120270-009C, H16120270-010C, H16120270-011C, H16120270-012C, H16120270-013C, H16120270-014C, H16120270-015C, H16120270-016C, H16120270-017C

Run ID :Run Order: ICP2-HE_161227C: 96		SampType: Serial Dilution				Lab I	D: H16120	302-001FDIL	Method		
Analysis Date: 12/27/16 17:04	Units:	Units: <b>mg/L</b>			Prep Info	Prep Info: Prep Date: 12/21/2016			Prep Method:		
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	3.94	1.0		0		0	0	3.621	<u>8.4</u>	10	
Magnesium	1.20	1.0		0		0	0	1.22	1.4	10	
Potassium	ND	1.0		0		0	0	0.1474		10	
Sodium	0.663	1.0		0		0	0	0.7335		10	Ν

Associated samples: H16120270-001C, H16120270-002C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-006C, H16120270-007C, H16120270-008C, H16120270-009C, H16120270-010C, H16120270-011C, H16120270-012C, H16120270-013C, H16120270-014C, H16120270-015C, H16120270-016C, H16120270-017C

Run ID :Run Order: ICP2-HE_161227C: 100		SampType: Sample Matrix Spike				Lab ID: H16120302-001FMS			Method		
Analysis Date: 12/27/16 17:19	Units:	mg/L			Prep Info	Prep Da	te: 12/21/20	16	Prep Method: E200.2		
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	30.8	1.0	25	3.621	109	70	130				
Magnesium	27.9	1.0	25	1.22	107	70	130				
Potassium	26.3	1.0	25	0.1474	105	70	130				
Sodium	26.6	1.0	25	0.7335	104	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit

EN ED CV

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S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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<b>ENERGY</b> LABORATORIES	Trust our People. Tru www.energylab.com	ıst our Data.	Coll	ege Station, TX <b>88</b>	Billings, MT 800.735.4489 • Casper, WY 888.235.0515 n, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711						
Client: Work Order:	MT DEQ-Federal Sup H16120270	erfund		ANALYT		Date: 24-Jan-1	17				
Project:     CFR Monitoring-474374     BatchID: 35751											
Run ID :Run Order:       ICP2-HE_161227C: 100       SampType:       Sample Matrix Spike							Lab ID: <b>H1612030</b>	2-001FMS3	Method: E200.7		
Analysis Date: 12/2	7/16 17:19	Units:	mg/L			Prep Info:	Prep Date: 12/21/201	6	Prep Method: E200.2		
Analytes <u>4</u>	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit I	RPD Ref Val	%RPD RPDLimit	Qual		

Associated samples: H16120270-001C, H16120270-002C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-006C, H16120270-007C, H16120270-008C, H16020270-008C, H16020200, H1602000, H1602000, H1602000, H1602000, H16020000, H1602000, H1

Run ID :Run Order: ICP2-HE_161227C: 101	un ID :Run Order: ICP2-HE_161227C: 101 SampType: Sample Matrix Spike Duplicate						Lab ID: H16120302-001FMS				
Analysis Date: 12/27/16 17:22	Units:	Units: <b>mg/L</b> esult POI			Prep Info:	nfo: Prep Date: 12/21/2016		16	Prep Method: E200.2		
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	30.6	1.0	25	3.621	108	70	130	30.83	0.8	20	
Magnesium	27.6	1.0	25	1.22	106	70	130	27.94	1.1	20	
Potassium	26.9	1.0	25	0.1474	107	70	130	26.31	2.2	20	
Sodium	27.2	1.0	25	0.7335	106	70	130	26.65	2.0	20	

Associated samples: H16120270-001C, H16120270-002C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-006C, H16120270-007C, H16120270-008C, H16120270-009C, H16120270-010C, H16120270-011C, H16120270-012C, H16120270-013C, H16120270-014C, H16120270-015C, H16120270-016C, H16120270-017C

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits



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Client: MT DEQ-Federal Superfund

Billings, MT 800.735.4489 • Casper, WY 888.235.0515 College Station. TX 888.690.2218 • Gillette. WY 866.686.7175 • Helena. MT 877.472.0711

### Date: 24-Jan-17

Work Order: H16120270

Project: CFR Monitoring-474374

ANALYTICAL QC SUMMARY REPORT Prepared by Helena, MT Branch

#### BatchID: 35751

Run ID :Run Order: ICPMS205-H 161229A: 27 SampType: Sample Matrix Spike Lab ID: H16120270-002CMS3 Method: E200.8 Prep Method: E200.2 Analysis Date: 12/29/16 11:30 Units: ma/L Prep Info: Prep Date: 12/21/2016 PQL %RPD RPDLimit Qual Result SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val Analytes 9 70 Arsenic 0.489 0.0010 0.5 0 98 130 Cadmium 0.247 0.0010 0.25 0 99 70 130 Calcium 25.4 1.0 25 0.02219 70 130 102 0.502 70 Copper 0.0050 0.5 0 100 130 0.496 0.0010 0 70 Lead 0.5 99 130 70 Magnesium 25.1 1.0 25 0.0004243 100 130 Potassium 24.5 1.0 25 0 98 70 130 Sodium 25.0 25 0 100 70 130 1.0 70 Zinc 0.484 0.010 0.5 0.001011 97 130

Associated samples: H16120270-001C, H16120270-002C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-006C, H16120270-007C, H16120270-008C, H16120270-009C, H16120270-010C, H16120270-011C, H16120270-012C, H16120270-013C, H16120270-014C, H16120270-015C, H16120270-016C, H16120270-017C

Run ID :Run Order: ICPMS205-H_161229A: 28		SampType: Sample Matrix Spike Duplicate			ate Lab ID: H16120270-002CMSI				Method		
nalysis Date: 12/29/16 11:31 Unit		: mg/L			Prep Info:	Prep Da	te: 12/21/20	16	Prep Method	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.487	0.0010	0.5	0	97	70	130	0.4889	0.4	20	
Cadmium	0.245	0.0010	0.25	0	98	70	130	0.2473	1.0	20	
Calcium	24.9	1.0	25	0.02219	100	70	130	25.4	1.9	20	
Copper	0.504	0.0050	0.5	0	101	70	130	0.5015	0.4	20	
Lead	0.495	0.0010	0.5	0	99	70	130	0.4955	0.1	20	
Magnesium	24.4	1.0	25	0.0004243	98	70	130	25.08	2.6	20	
Potassium	24.8	1.0	25	0	99	70	130	24.48	1.1	20	
Sodium	24.7	1.0	25	0	99	70	130	24.95	1.0	20	
Zinc	0.484	0.010	0.5	0.001011	97	70	130	0.484	0.1	20	

Associated samples: H16120270-001C, H16120270-002C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-006C, H16120270-007C, H16120270-008C, H16120270-009C, H16120270-010C, H16120270-011C, H16120270-012C, H16120270-013C, H16120270-014C, H16120270-015C, H16120270-016C, H16120270-017C

Run ID :Run Order: ICPMS205-H_161229A:	94	SampType:		Lab	D: <b>MB-357</b>	51	Method				
Analysis Date: 12/29/16 15:43	Units:	mg/L			Prep Info	: Prep Da	te: 12/21/20	16	Prep Method	: E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	6E-05									
Cadmium	1E-05	1.0E-05									

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits



Work Order:

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MT DEQ-Federal Superfund Client:

H16120270

# ANALYTICAL QC SUMMARY REPORT

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Billings, MT 800.735.4489 • Casper, WY 888.235.0515

Date: 24-Jan-17

### Prepared by Helena, MT Branch

CFR Monitoring-474374 Project:

## BatchID: 35751

Run ID :Run Order: ICPMS205-H 161229A: 94 SampType: Method Blank Lab ID: MB-35751 Method: E200.8 Prep Info: Prep Date: 12/21/2016 Prep Method: E200.2 Analysis Date: 12/29/16 15:43 Units: ma/L PQL SPK value SPK Ref Val %RPD RPDLimit Result %REC LowLimit HighLimit RPD Ref Val Qual Analytes 9 ND Calcium 0.004 Copper 8E-05 7E-05 Lead ND 9E-06 -0.0002 Magnesium Potassium 0.02 0.004 Sodium ND 0.005 Zinc 0.0006 0.0005

Associated samples: H16120270-001C, H16120270-002C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-006C, H16120270-007C, H16120270-008C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-005C, H16120270-007C, H16120270-008C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-005C, H16120270-007C, H16120270-008C, H16120270-004C, H16120270-005C, H16120270-005C, H16120270-007C, H16120270-008C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-006C, H16120270-007C, H16120270-008C, H16120270-008C, H16120270-008C, H16120270-004C, H16120270-005C, H16120270-006C, H16120270-008C, H16120270-008C 009C, H16120270-010C, H16120270-011C, H16120270-012C, H16120270-013C, H16120270-014C, H16120270-015C, H16120270-016C, H16120270-017C

Run ID :Run Order: ICPMS2	205-H_161229A: 95	SampType:	Laboratory C	ontrol Sample		Lab I	D: LCS-357	'51	Method:	E200.8	
Analysis Date: 12/29/16 15:4	5 Units:	mg/L			Prep Info:	Prep Da	te: 12/21/20	16	Prep Method:	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.482	0.0010	0.5	0	96	85	115				
Cadmium	0.246	0.0010	0.25	0.00001092	98	85	115				
Calcium	26.3	1.0	25	0	105	85	115				
Copper	0.512	0.0050	0.5	0.00008094	102	85	115				
Lead	0.496	0.0010	0.5	0	99	85	115				
Magnesium	25.6	1.0	25	-0.000222	102	85	115				
Potassium	24.7	1.0	25	0.02458	99	85	115				
Sodium	25.8	1.0	25	0	103	85	115				
Zinc	0.480	0.010	0.5	0.0005926	96	85	115				

009C, H16120270-010C, H16120270-011C, H16120270-012C, H16120270-013C, H16120270-014C, H16120270-015C, H16120270-016C, H16120270-017C

Run ID :Run Order: ICPMS205-H_161229	A: 102	SampType:	Sample Matri	x Spike		Lab I	D: H16120	802-001FMS3	Method: E200.8	
Analysis Date: 12/29/16 16:15	Units:	mg/L			Prep Info	: Prep Da	te: 12/21/20	16	Prep Method: E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Arsenic	0.479	0.0010	0.5	0.00008774	96	70	130			
Cadmium	0.245	0.0010	0.25	0.00002545	98	70	130			
Calcium	29.4	1.0	25	3.491	104	70	130			
Copper	0.508	0.0050	0.5	0.0003379	101	70	130			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

LABORATORIES	www.en	ergylab.com	Coll	ege Station, TX <b>88</b>	88.690.2218 • Gillet	te, WY 866.686.	7175 • Helena	a, MT <b>877.472</b>	.0711			
Client: Work Order:	MT DEQ-Fede H16120270	eral Superfund		ANALYT	ICAL QC SU Prepared by Hele	<b>JMMARY</b> ena, MT Bra	REPO	RT		Date:	24-Jan-*	17
Project:	CFR Monitorir	ng-474374		В	atchID: 35	751						
Run ID :Run Order	: ICPMS205-H_16	1229A: 102	SampType:	Sample Matri	x Spike		Lab	D: <b>H16120</b> 3	302-001FMS3	Method:	E200.8	
Analysis Date: 12/2	29/16 16:15	Units:	mg/L			Prep Info	Prep Da	te: 12/21/20	16	Prep Method:	E200.2	
Analytes 9		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead		0.499	0.0010	0.5	0.00002356	100	70	130				
Magnesium		27.0	1.0	25	1.113	104	70	130				
Potassium		25.0	1.0	25	0.196	99	70	130				
Sodium		26.3	1.0	25	0.555	103	70	130				
Zinc		0.478	0.010	0.5	0.001517	95	70	130				
Associated samples	E H16120270-001 009C, H1612027	C, H16120270-0020 70-010C, H1612027	C, H16120270 0-011C, H161	003C, H1612 20270-012C,	0270-004C, H161 H16120270-013C	120270-005C, C, H16120270	H1612027 -014C, H16	0-006C, H1 120270-01	6120270-007C, 5C, H16120270	H16120270-00 -016C, H161202	BC, H16120 270-017C	)270-
Run ID :Run Order	ICPMS205-H 16	1229A: 103	SampType:	Sample Matri	x Spike Duplicat	e	Lab	D: <b>H16120</b> 3	302-001FMSD3	Method:	E200.8	

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Run ID :Run Order: ICPMS205-H_161229A: 103		SampType:	Sample Matri	x Spike Duplicate		Lab I	D: <b>H16120</b> 3	02-001FMSD3	Method	: <b>E200.8</b>	
Analysis Date: 12/29/16 16:17	Units:	mg/L			Prep Info:	Prep Da	te: 12/21/20	16	Prep Method	E200.2	
Analytes 9	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.475	0.0010	0.5	0.00008774	95	70	130	0.4786	0.7	20	
Cadmium	0.243	0.0010	0.25	0.00002545	97	70	130	0.2446	0.6	20	
Calcium	29.0	1.0	25	3.491	102	70	130	29.41	1.6	20	
Copper	0.508	0.0050	0.5	0.0003379	101	70	130	0.5078	0.0	20	
Lead	0.493	0.0010	0.5	0.00002356	99	70	130	0.4987	1.2	20	
Magnesium	26.9	1.0	25	1.113	103	70	130	27.03	0.6	20	
Potassium	24.5	1.0	25	0.196	97	70	130	24.96	1.7	20	
Sodium	26.3	1.0	25	0.555	103	70	130	26.34	0.2	20	
Zinc	0.477	0.010	0.5	0.001517	95	70	130	0.4785	0.3	20	

Associated samples: H16120270-001C, H16120270-002C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-006C, H16120270-007C, H16120270-008C, H16120270-009C, H16120270-010C, H16120270-011C, H16120270-012C, H16120270-013C, H16120270-014C, H16120270-015C, H16120270-016C, H16120270-017C

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- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order	MT DEQ-Federal Sup H16120270	perfund		ANALYT	ICAL QC Prepared by	SUMMARY Helena, MT Bra	REPO	RT		Date	: 24-Jan-	17
Project:	CFR Monitoring-4743	374		В	atchID:	35794						
Run ID :Run O	rder: FIA202-HE_161227A: 12		SampType:	Laboratory C	ontrol Sampl	e	Lab	ID: LCS-357	/94	Method	E365.1	
Analysis Date:	12/27/16 12:35	Units: r	ng/L			Prep Info	: Prep Da	ite: 12/27/20	16	Prep Method	: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, T	otal as P	0.424	0.010	0.4	C	) 106	90	110				
Associated sam	pples: H16120270-001D, H1612 009D, H16120270-010D,	20270-002D, H16120270	, H16120270 -011D, H161	-003D, H1612 20270-012D,	0270-004D, H H16120270-0	116120270-005D 13D, H16120270	, H1612027 -014D	70-006D, H1	6120270-007D,	H16120270-00	18D, H1612	0270-
Run ID :Run O	rder: FIA202-HE_161227A: 13		SampType:	Method Blan	k		Lab	ID: <b>MB-357</b>	94	Method	E365.1	
Analysis Date:	12/27/16 12:36	Units: r	ng/L			Prep Info	: Prep Da	ite: 12/27/20	16	Prep Method	E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, T	otal as P	ND	0.001									
Associated sam	pples: H16120270-001D, H1612 009D, H16120270-010D,	20270-002D, H16120270	, H16120270 -011D, H161	-003D, H1612 20270-012D,	0270-004D, H H16120270-0	116120270-005D 13D, H16120270	, H1612027 -014D	'0-006D, H1	6120270-007D,	H16120270-00	8D, H1612	0270-
Run ID :Run O	rder: FIA202-HE_161227A: 21		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16120</b> 2	270-002Dms	Method	: E365.1	
Analysis Date:	12/27/16 12:44	Units: <b>r</b>	ng/L			Prep Info	: Prep Da	ite: 12/15/20	16	Prep Method	: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, T	otal as P	0.223	0.010	0.2	C	) <u>111</u>	90	110				S
Associated sam	ples: H16120270-001D, H1612 009D, H16120270-010D,	20270-002D, H16120270	, H16120270 -011D, H161	-003D, H1612 20270-012D,	0270-004D, H H16120270-0	116120270-005D 13D, H16120270	, H1612027 -014D	'0-006D, H1	6120270-007D,	H16120270-00	18D, H1612	0270-
Run ID :Run O	rder: FIA202-HE_161227A: 22		SampType:	Sample Matri	ix Spike Dupl	icate	Lab	ID: <b>H16120</b>	270-002Dmsd	Method	: E365.1	
Analysis Date:	12/27/16 12:45	Units: r	ng/L			Prep Info	: Prep Da	ite: 12/15/20	16	Prep Method	: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, T	otal as P	0.214	0.010	0.2	C	) 107	90	110	0.2226	<u>4.0</u>	20	
Associated sam	pples: H16120270-001D, H1612 009D, H16120270-010D,	20270-002D, H16120270	, H16120270 -011D, H161	-003D, H1612 20270-012D,	0270-004D, H H16120270-0	116120270-005D 13D, H16120270	, H1612027 -014D	'0-006D, H1	6120270-007D,	H16120270-00	18D, H1612	0270-
Run ID :Run O	rder: FIA202-HE_161227A: 34		SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16120</b>	270-011Dms	Method	: E365.1	
Analysis Date:	12/27/16 12:58	Units: r	ng/L			Prep Info	: Prep Da	ite: 12/27/20	16	Prep Method	: E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, T	otal as P	0.237	0.010	0.2	0.01353	<u>112</u>	90	110				S
Qualifiers:	ND - Not Detected at the Report J - Analyte detected below quan	ing Limit titation limits	S S	- Spike Reco R - RPD outsid	very outside a e accepted red	ccepted recovery	limit N A	- Analyte co	ncentration was	not sufficiently ater than four tin	high to calc	ulate RPD

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Client: Work Order:	MT DEQ-Federal Superfund       ANALYTICAL QC SUMMARY REPORT         rk Order:       H16120270         prepared by Helena, MT Branch         prect:       CER Monitoring-474374										24-Jan-1	17
Project:	et: CFR Monitoring-474374 BatchID: 35794											
Run ID :Run Order:	FIA202-HE_161227A: 3	4	SampType:	Sample Matri	ix Spike		Lab I	D: H16120	270-011Dms	Method:	E365.1	
Analysis Date: 12/2	7/16 12:58	Units: I	mg/L			Prep Info:	Prep Dat	te: 12/27/20	016	Prep Method:	E365.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Associated samples:	H16120270-001D, H16 009D, H16120270-010I	120270-002D ), H16120270	, H16120270 )-011D, H161	-003D, H1612 20270-012D,	0270-004D, H16 H16120270-013	120270-005D, D, H16120270	H1612027 014D	0-006D, H1	6120270-007D,	H16120270-00	8D, H16120	)270-

Run ID :Run Order: FIA202-HE_161227A: 35	SampType:	Sample Matri	x Spike Duplicate		Lab I	D: H161202	270-011Dmsd	Method	E365.1		
Analysis Date: 12/27/16 12:59	Units: I	mg/L			Prep Info:	Prep Dat	e: <b>12/27/20</b>	16	Prep Method	E365.1	
Analytes 1	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total as P	0.237	0.010	0.2	0.01353	<u>112</u>	90	110	0.2374	0.1	20	S

Associated samples: H16120270-001D, H16120270-002D, H16120270-003D, H16120270-004D, H16120270-005D, H16120270-006D, H16120270-007D, H16120270-008D, H16120270-009D, H16120270-010D, H16120270-011D, H16120270-012D, H16120270-013D, H16120270-014D

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Fede H16120270	eral Superfund		ANALYT	ICAL QC SU Prepared by Hele	MMARY	<b>REPO</b>	RT		Date	<b>:</b> 24-Jan-	17
Project:	CFR Monitorin	ng-474374		В	atchID: 358	05						
Run ID :Run Order:	HGCV202-H_161	1228A: 12	SampType:	Method Blan	k		Lab	ID: <b>MB-358</b>	05	Method	d: <b>E245.1</b>	
Analysis Date: 12/2	8/16 13:48	Units:	mg/L			Prep Info	: Prep Da	nte: 12/27/20	016	Prep Method	d: E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		ND	1E-06									
Associated samples:	H16120270-002	C										
Run ID :Run Order:	HGCV202-H_161	1228A: 13	SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-35	805	Method	: <b>E245.1</b>	
Analysis Date: 12/2	8/16 13:50	Units:	mg/L			Prep Info	: Prep Da	nte: 12/27/20	016	Prep Method	d: E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.000145	0.00010	0.00015	0	97	90	110				
Associated samples:	H16120270-002	C										
Run ID :Run Order:	HGCV202-H_161	228A: 16	SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16120</b>	303-013BMS	Method	: <b>E245.1</b>	
Analysis Date: 12/2	8/16 13:58	Units:	mg/L			Prep Info	: Prep Da	nte: 12/28/20	016	Prep Method	d: E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.000147	0.00010	0.00015	0	98	70	130				
Associated samples:	H16120270-002	C										
Run ID :Run Order:	HGCV202-H_161	228A: 17	SampType:	Sample Matri	ix Spike Duplicate		Lab	ID: <b>H16120</b>	303-013BMSD	Method	d: <b>E245.1</b>	
Analysis Date: 12/28/16 14:01 Units: mg/L						Prep Info	: Prep Da	ite: 12/28/20	016	Prep Method	d: E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.000148	0.00010	0.00015	0	99	70	130	0.0001469	0.9	20	

Associated samples: H16120270-002C

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Fede H16120270	ral Superfund		ANALYT	ICAL QC SU Prepared by Hele	MMARY	REPO	RT		Date	: 24-Jan-	17
Project:	CFR Monitorin	g-474374		В	atchID: 358	61						
Run ID :Run Order:	HGCV202-H_170	104A: 11	SampType:	Method Blan	k		Lab	ID: <b>MB-358</b>	04	Method	: E245.1	
Analysis Date: 01/0	4/17 13:19	Units: I	mg/L			Prep Info	: Prep Da	te: 1/3/2017	7	Prep Method	: E245.1	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		1E-06	1E-06									
Associated samples	: H16120270-018	A										
Run ID :Run Order:	HGCV202-H_170	104A: 15	SampType:	Laboratory C	ontrol Sample		Lab	ID: LCS-358	861	Method	: E245.1	
Analysis Date: 01/0	Analysis Date: 01/04/17 13:30 Units: mg/L						: Prep Da	te: 1/3/2017	7	Prep Method	: E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.000153	0.00010	0.00015	0	102	90	110				
Associated samples	: H16120270-018	A Contraction of the second seco										
Run ID :Run Order:	HGCV202-H_170	104A: 17	SampType:	Sample Matri	x Spike		Lab	ID: <b>H16120</b> 2	270-018AMS	Method	E245.1	
Analysis Date: 01/0	4/17 13:35	Units: I	mg/L			Prep Info	: Prep Da	te: 1/3/2017	7	Prep Method	: E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00016	0.00010	0.00015	0.00000763	102	70	130				
Associated samples	: H16120270-018	A Contraction of the second seco										
Run ID :Run Order:	HGCV202-H_170	104A: 18	SampType:	Sample Matri	x Spike Duplicate		Lab	ID: <b>H16120</b> 2	270-018AMSD	Method	: E245.1	
Analysis Date: 01/0	4/17 13:38	Units:	mg/L			Prep Info	: Prep Da	te: 1/3/2017	7	Prep Method	: E245.1	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00015	0.00010	0.00015	0.00000763	98	70	130	0.0001602	<u>3.8</u>	20	

Associated samples: H16120270-018A

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal S H16120270	Superfund		ANALYT	ICAL QC Prepared by	<b>SUMMAR</b> Helena, MT Bra	<b>REPO</b>	RT		Date:	24-Jan-´	17
Project:	CFR Monitoring-47	74374		В	atchID:	C_R218317						
Run ID :Run Ord	der: SUB-C218317: 1	S	SampType:	Initial Calibra	tion Verifica	tion Standard	Lab	ID: ICV-926	9	Method:	A5310 C	
Analysis Date: 1	2/20/16 14:29	Units: mg	g/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon,	Dissolved (DOC)	4.98	0.50	5		0 <b>100</b>	90	110	0			
Associated samp	les: H16120270-001E, H1 009E, H16120270-01	6120270-002E, H 0E, H16120270-0	116120270- 11E, H161	003E, H1612 20270-012E, I	0270-004E, I H16120270-(	H16120270-005E, D13E, H16120270	H1612027 -014E, H16	0-006E, H10 120270-015	6120270-007E, 5E, H16120270-	H16120270-008 016E, H161202	E, H16120 70-017E	270-
Run ID :Run Ord	der: SUB-C218317: 2	S	SampType:	Method Blan	k		Lab	ID: MBLK		Method:	A5310 C	
Analysis Date: 1	2/20/16 14:43	Units: mg	g/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Associated samp	Dissolved (DOC) les: H16120270-001E, H1 009E, H16120270-01	ND 6120270-002E, H 0E, H16120270-0	0.04 116120270- 11E, H161	003E, H1612 20270-012E, I	0270-004E, I H16120270-(	H16120270-005E 013E, H16120270	, H1612027 -014E, H16	0-006E, H10 120270-015	6120270-007E, iE, H16120270-	H16120270-008 016E, H161202	E, H16120 70-017E	270-
Run ID :Run Ord	der: SUB-C218317: 3	S	SampType:	Sample Matri	ix Spike		Lab	ID: <b>C16120</b>	443-001BMS	Method:	A5310 C	
Analysis Date: 1	2/20/16 15:43	Units: mg	g/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon,	Dissolved (DOC)	23.3	0.50	20	3.35	9 100	85	115	0			
Associated samp	les: H16120270-001E, H1 009E, H16120270-01	6120270-002E, H 0E, H16120270-0	116120270- 11E, H161:	003E, H1612 20270-012E, I	0270-004E, I H16120270-0	H16120270-005E, D13E, H16120270	, H1612027 -014E, H16	0-006E, H10 120270-015	6120270-007E, E, H16120270-	H16120270-008 016E, H161202	E, H16120 70-017E	270-
Run ID :Run Ord	der: SUB-C218317: 4	S	SampType:	Sample Matri	ix Spike Dup	licate	Lab	ID: C16120	443-001BMSD	Method:	A5310 C	
Analysis Date: 1	2/20/16 15:58	Units: mg	g/L	•		Prep Info	: Prep Da	ite:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon,	, Dissolved (DOC)	23.5	0.50	20	3.35	9 101	85	115	23.33	0.7	10	
Associated samp	les: H16120270-001E, H1 009E, H16120270-01	6120270-002E, H 0E, H16120270-0	116120270- 11E, H161	003E, H1612 20270-012E, I	0270-004E, I H16120270-0	H16120270-005E, D13E, H16120270	, H1612027 -014E, H16	0-006E, H10 120270-015	6120270-007E, 5E, H16120270-	H16120270-008 016E, H161202	E, H16120 70-017E	270-
Run ID :Run Ord	der: SUB-C218317: 12	S	SampType:	Sample Matri	ix Spike		Lab	ID: <b>H16120</b>	270-007E	Method:	A5310 C	
Analysis Date: 1	2/20/16 19:09	Units: <b>m</b> g	g/L			Prep Info	: Prep Da	ite:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon,	Dissolved (DOC)	22.3	0.50	20		0 111	85	115	0			
Qualifiers: N J	D - Not Detected at the Re - Analyte detected below q	porting Limit uantitation limits	S	- Spike Reco	very outside a	accepted recovery ecovery limits	limit N A	- Analyte co - Analyte co	ncentration was	s not sufficiently hater than four tim	igh to calcues the spik <sup>,</sup>	ulate RPD e amount

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Client: Work Order:	MT DEQ-Federal S H16120270	uperfund		ANALYT	ICAL Q	C SUI	MMARY na. MT Brai	REPO	RT		Date	: 24-Jan-	17
Project:	CFR Monitoring-474	4374		В	atchID:	C_R	218317						
Run ID :Run Order	: SUB-C218317: 12	S	SampType:	Sample Matri	ix Spike			Lab	ID: <b>H16120</b>	270-007E	Method	: A5310 C	
Analysis Date: 12/	20/16 19:09	Units: <b>m</b>	g/L				Prep Info:	Prep Da	te:		Prep Method	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref \	/al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Associated samples	s: H16120270-001E, H16 009E, H16120270-010	120270-002E, H E, H16120270-0	H16120270 011E, H161	-003E, H1612 20270-012E,	0270-004E, H16120270	H16120 -013E, I	)270-005E, H16120270-	H1612027 014E, H16	0-006E, H10 120270-015	6120270-007E, 5E, H16120270	H16120270-00 -016E, H16120	98E, H16120 270-017E	270-
Run ID :Run Order	: SUB-C218317: 13	S	SampType:	Sample Matri	ix Spike Du	plicate		Lab	ID: <b>H16120</b>	270-007E	Method	: A5310 C	
Analysis Date: 12/	20/16 19:24	Units: m	g/L				Prep Info:	Prep Da	te:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref \	∕al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, D	issolved (DOC)	22.3	0.50	20		0	112	85	115	22.28	0.1	10	
Associated samples	s: H16120270-001E, H16 009E, H16120270-010	120270-002E, H E, H16120270-0	H16120270 011E, H161	-003E, H1612 20270-012E,	0270-004E, H16120270	H16120 -013E, I	0270-005E, H16120270-	H1612027 014E, H16	0-006E, H10 120270-015	6120270-007E, 5E, H16120270	H16120270-00 -016E, H16120	8E, H16120 270-017E	270-
Run ID :Run Order	: SUB-C218317: 23	S	SampType:	Laboratory C	ontrol Sam	ple		Lab	ID: LCS-92	69	Method	: A5310 C	
Analysis Date: 12/	20/16 22:02	Units: m	g/L				Prep Info:	Prep Da	te:		Prep Method	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref \	∕al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, D	issolved (DOC)	5.11	0.50	5		0	102	90	110	0			
Associated samples	s: H16120270-001E, H16 009E, H16120270-010	120270-002E, H E, H16120270-0	H16120270 011E, H161	-003E, H1612 20270-012E,	0270-004E, H16120270	H16120 -013E, I	0270-005E, H16120270-	H1612027 014E, H16	0-006E, H10 120270-015	6120270-007E, 5E, H16120270	H16120270-00 -016E, H16120	8E, H16120 270-017E	270-
Run ID :Run Order	SUB-C218317: 25	ç	SampType:	Sample Matri	ix Spike			Lab	ID: <b>H16120</b>	270-016E	Method	: A5310 C	
Analysis Date: 12/	20/16 23:06	Units: <b>m</b>	g/L				Prep Info:	Prep Da	te:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref \	/al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, D	issolved (DOC)	21.2	0.50	20		0	106	85	115	0			
Associated samples	s: H16120270-001E, H16 009E, H16120270-010	120270-002E, H E, H16120270-0	H16120270 011E, H161	-003E, H1612 20270-012E,	0270-004E, H16120270	H16120 -013E, I	0270-005E, H16120270-	H1612027 014E, H16	0-006E, H10 120270-015	6120270-007E, 5E, H16120270	H16120270-00 -016E, H16120	98E, H16120 270-017E	270-
Run ID :Run Order	SUB-C218317: 26	S	SampType:	Sample Matri	ix Spike Du	plicate		Lab	ID: <b>H16120</b>	270-016E	Method	: A5310 C	
Analysis Date: 12/	20/16 23:21	Units: <b>m</b>	g/L				Prep Info:	Prep Da	te:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref \	/al	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, D	issolved (DOC)	21.3	0.50	20		0	107	85	115	21.25	0.3	10	
Associated samples	s: H16120270-001E, H16 009E, H16120270-010	120270-002E, H E, H16120270-0	H16120270 011E, H161	-003E, H1612 20270-012E,	0270-004E, H16120270	H16120 -013E, I	0270-005E, H16120270-	H1612027 014E, H16	0-006E, H10 120270-015	6120270-007E, 5E, H16120270	H16120270-00 -016E, H16120	98E, H16120 270-017E	270-
Qualifiers: ND	- Not Detected at the Rep	orting Limit	S	S - Spike Reco	very outside	accepte	ed recovery	limit N	- Analyte co	oncentration was	s not sufficiently	high to calc	ulate RPD

R - RPD outside accepted recovery limits

LABORATORIES	Ē	Trust our People. Trust our Dat www.energylab.com	ta. Col	lege Station, TX <b>8</b> 1	88.690.2218 •	Billings, MT 800.735. Gillette, WY 866.686.	4489 • Caspe .7175 • Helen	er, WY <b>888.235</b> ia, MT <b>877.472</b>	.0515 .0711			
Client: Work Order:	MT DE0 H16120	Q-Federal Superfund 270		ANALYT	ICAL QC Prepared by	SUMMARY Helena, MT Bra	<b>( REPO</b>	RT		Date	: 24-Jan-	17
Project:	CFR Mo	onitoring-474374		В	atchID:	C_R218317						
Run ID :Run Order:	SUB-C21	8317: 29	SampType:	Laboratory C	ontrol Samp	ble	Lab	ID: LCS-92	69	Method	: A5310 C	
Analysis Date: 12/2	1/16 00:07	' Units	s: <b>mg/L</b>			Prep Info	: Prep Da	ate:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Di	ssolved (D	OC) 5.00	0.50	5		0 <b>100</b>	90	110	0			
Associated samples	H161202	70-001E H16120270-00	2E H16120270	-003E H1612	0270-004F	H16120270-005E	H1612027	0-006E H1	6120270-007F	H16120270-00	8F H16120	270-

Associated samples: H16120270-001E, H16120270-002E, H16120270-003E, H16120270-004E, H16120270-005E, H16120270-006E, H16120270-007E, H16120270-008E, H16120270-008E, H16120270-017E 009E, H16120270-010E, H16120270-011E, H16120270-012E, H16120270-013E, H16120270-014E, H16120270-015E, H16120270-016E, H16120270-017E

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEC H161202	Q-Federal Superfund 270		ANALYT	ICAL QC Prepared by	<b>C SUMMARY</b> y Helena, MT Bra	<b>REPO</b>	RT		Date	<b>e:</b> 24-Jan-	17
Project:	CFR Mo	nitoring-474374		В	atchID:	R121311						
Run ID :Run Orde	r: PHSC_10	1-H_161215A: 21	SampType:	Method Blan	k		Lab	ID: MBLK		Metho	d: <b>A2320 B</b>	
Analysis Date: 12	/15/16 11:10	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Metho	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref V	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
A kalinity, Total as	CaCO3	2	0.2									
Associated sample	es: H161202 009A, H1	70-001A, H16120270-002 6120270-010A, H161202	A, H16120270 70-011A, H16 <sup>-</sup>	0-003A, H1612 120270-012A,	0270-004A, H16120270-	H16120270-005A, 013A, H16120270	H1612027 -014A, H16	0-006A, H1 120270-01	6120270-007A, 5A, H16120270	H16120270-00 -016A, H16120	08A, H16120 0270-017A	270-
Run ID :Run Orde	r: PHSC_10	1-H_161215A: 22	SampType:	Laboratory C	ontrol Sam	ple	Lab	ID: LCS		Metho	d: A2320 B	
		L Inits:	mg/L			Prep Info	: Prep Da	ite:		Prep Metho	d:	
Analysis Date: 12	15/16 11:16	01110.	•									
Analysis Date: <b>12</b> Analytes <u>1</u>	/15/16 11:16	Result	PQL	SPK value	SPK Ref V	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLIMIT	Qual
Analysis Date: <b>12</b> Analytes <u>1</u> A kalinity, Total as	CaCO3	Result 590	PQL 4.0	SPK value 600	SPK Ref V	/al %REC 96 <b>99</b>	LowLimit 90	HighLimit 110	RPD Ref Val	%RPD	RPDLIMIT	Qual
Analysis Date: <b>12</b> Analytes <u>1</u> A kalinity, Total as Associated sample	<ul> <li>CaCO3</li> <li>S: H161202</li> <li>009A, H1</li> </ul>	Result 590 70-001A, H16120270-002 6120270-010A, H1612027	PQL 4.0 A, H16120270 70-011A, H167	SPK value 600 0-003A, H1612 120270-012A,	SPK Ref V 1.9 0270-004A, H16120270-	′al %REC 96 99 H16120270-005A, •013A, H16120270-	LowLimit 90 H1612027 -014A, H16	HighLimit 110 0-006A, H10 120270-015	RPD Ref Val 6120270-007A, 5A, H16120270	%RPD H16120270-00 -016A, H16120	08A, H16120 0270-017A	Qual 270-
Analysis Date: <b>12</b> Analytes <u>1</u> A kalinity, Total as Associated sample Run ID :Run Orde	r: PHSC_10	Result 590 70-001A, H16120270-002 6120270-010A, H1612027 11-H_161215A: 27	PQL 4.0 A, H16120270 70-011A, H16 SampType:	SPK value 600 0-003A, H1612 120270-012A, : Sample Dupl	SPK Ref V 1.9 0270-004A, H16120270- icate	/al %REC 96 99 H16120270-005A, •013A, H16120270-	LowLimit 90 H1612027 -014A, H16 Lab	HighLimit 110 0-006A, H1 120270-015 ID: H16120	RPD Ref Val 6120270-007A, 5A, H16120270 234-001ADUP	%RPD H16120270-00 -016A, H16120 Metho	CPDLIMIT 08A, H16120 0270-017A d: A2320 B	Qual 270-
Analysis Date: 12 Analytes 1 A kalinity, Total as Associated sample Run ID :Run Orde Analysis Date: 12	<ul> <li>r15/16 11:16</li> <li>caCO3</li> <li>H161202 009A, H1</li> <li>PHSC_10</li> <li>r15/16 11:43</li> </ul>	Result 590 70-001A, H16120270-002 6120270-010A, H1612027 11-H_161215A: 27 Units:	PQL 4.0 A, H16120270 70-011A, H16 SampType: mg/L	SPK value 600 0-003A, H1612 120270-012A, Sample Dupl	SPK Ref V 1.9 0270-004A, H16120270- icate	ral %REC 96 99 H16120270-005A, 013A, H16120270 Prep Info	LowLimit 90 H1612027 -014A, H16 Lab : Prep Da	HighLimit 110 0-006A, H10 120270-015 ID: H16120 Ite:	RPD Ref Val 6120270-007A, 5A, H16120270 234-001ADUP	%RPD H16120270-00 -016A, H16120 Metho Prep Metho	RPDLimit 08A, H16120 0270-017A d: A2320 B d:	Qual 270-
Analysis Date: 12 Analytes <u>1</u> A kalinity, Total as Associated sample Run ID :Run Orde Analysis Date: 12 Analytes <u>2</u>	r: PHSC_10 /15/16 11:16 caCO3 /09A, H1 r: PHSC_10 /15/16 11:43	Result 590 70-001A, H16120270-002 6120270-010A, H1612027 11-H_161215A: 27 Units: Result	PQL 4.0 A, H16120270 70-011A, H16 SampType: mg/L PQL	SPK value 600 0-003A, H1612 120270-012A, Sample Dupl SPK value	SPK Ref V 1.9 0270-004A, H16120270- icate SPK Ref V	ral %REC 96 99 H16120270-005A, 013A, H16120270 Prep Info ral %REC	LowLimit 90 H1612027 -014A, H16 Lab : Prep Da LowLimit	HighLimit 110 0-006A, H1 120270-015 ID: H16120 Ite: HighLimit	RPD Ref Val 6120270-007A, 5A, H16120270 234-001ADUP RPD Ref Val	%RPD H16120270-00 -016A, H16120 Metho Prep Metho %RPD	RPDLimit 08A, H16120 0270-017A d: A2320 B d: RPDLimit	Qual 270-
Analysis Date: 12 Analytes <u>1</u> A kalinity, Total as Associated sample Run ID :Run Orde Analysis Date: 12, Analytes <u>2</u> A kalinity, Total as Bicarbonate as H	<ul> <li>r15/16 11:16</li> <li>CaCO3</li> <li>H161202' 009A, H1</li> <li>r: PHSC_10</li> <li>/15/16 11:43</li> <li>CaCO3</li> <li>CO3</li> </ul>	Result 590 70-001A, H16120270-002 6120270-010A, H1612027 11-H_161215A: 27 Units: Result 150 180	PQL 4.0 A, H16120270 70-011A, H16 SampType: mg/L PQL 4.0 4.0	SPK value 600 0-003A, H1612 120270-012A, Sample Dupl SPK value	SPK Ref V 1.9 0270-004A, H16120270- icate SPK Ref V	/al %REC 96 99 H16120270-005A, 013A, H16120270 Prep Info /al %REC 0	LowLimit 90 H1612027 -014A, H16 Lab : Prep Da LowLimit	HighLimit 110 0-006A, H1 120270-015 ID: H16120 Ite: HighLimit	RPD Ref Val 6120270-007A, 5A, H16120270 234-001ADUP RPD Ref Val 151.4 184.2	%RPD H16120270-00 -016A, H16120 Metho Prep Metho %RPD 0.4 0.4	RPDLimit 08A, H16120 0270-017A d: A2320 B d: RPDLimit 10	Qual 270-
Analysis Date: 12 Analytes 1 A kalinity, Total as Associated sample Run ID :Run Orde Analysis Date: 12 Analytes 2 A kalinity, Total as Bicarbonate as HC Associated sample	<ul> <li>r: PHSC_10</li> <li>r: PHSC_10</li> <li>r: PHSC_10</li> <li>r/15/16 11:43</li> <li>r: CaCO3</li> <li>r: CaCO3</li> <li>r: H161202'</li> <li>r: 009A, H1</li> </ul>	Result 590 70-001A, H16120270-002 6120270-010A, H1612027 11-H_161215A: 27 Units: Result 150 180 70-001A, H16120270-002 6120270-010A, H1612027	PQL 4.0 A, H16120270 70-011A, H16 SampType: mg/L PQL 4.0 4.0 A, H16120270 70-011A, H16	SPK value 600 0-003A, H1612 120270-012A, Sample Dupl SPK value 0-003A, H1612 120270-012A,	SPK Ref V 1.9 0270-004A, H16120270- icate SPK Ref V 0270-004A, H16120270-	(al %REC 96 99 H16120270-005A, 013A, H16120270 Prep Info (al %REC 0 0 0 H16120270-005A, 013A, H16120270	LowLimit 90 H1612027 -014A, H16 Lab : Prep Da LowLimit H1612027 -014A, H16	HighLimit 110 0-006A, H10 120270-015 ID: H16120 ID: H16120 Ite: HighLimit 0-006A, H10 120270-015	RPD Ref Val 6120270-007A, 5A, H16120270 234-001ADUP RPD Ref Val 151.4 184.2 6120270-007A, 5A, H16120270	%RPD H16120270-00 -016A, H16120 Prep Metho %RPD 0.4 0.4 H16120270-00 -016A, H16120	RPDLimit 08A, H16120 0270-017A d: A2320 B d: RPDLimit 10 10 08A, H16120 0270-017A	Qual 270- Qual 270-
Analysis Date: 12 Analytes <u>1</u> A kalinity, Total as Associated sample Run ID :Run Orde Analysis Date: 12, Analytes <u>2</u> A kalinity, Total as Bicarbonate as HC Associated sample Run ID :Run Orde	<ul> <li>r15/16 11:16</li> <li>a CaCO3</li> <li>b H161202' 009A, H1</li> <li>r: PHSC_10</li> <li>/15/16 11:43</li> <li>c CaCO3</li> <li>c CaCO3</li> <li>c CaCO3</li> <li>c H161202' 009A, H1</li> <li>r: PHSC_10</li> </ul>	Result 590 70-001A, H16120270-002 6120270-010A, H1612027 11-H_161215A: 27 Units: Result 150 180 70-001A, H16120270-002 6120270-010A, H1612027	PQL 4.0 A, H16120270 70-011A, H16 SampType: mg/L PQL 4.0 4.0 A, H16120270 70-011A, H16 SampType:	SPK value 600 0-003A, H1612 120270-012A, SPK value SPK value 0-003A, H1612 120270-012A,	SPK Ref V 1.5 0270-004A, H16120270- icate SPK Ref V 0270-004A, H16120270- icate	<pre>/al %REC /al %REC /al 99 H16120270-005A, -013A, H16120270- /al %REC /al %REC 0 0 H16120270-005A, -013A, H16120270-</pre>	LowLimit 90 H1612027 -014A, H16 Lab : Prep Da LowLimit H1612027 -014A, H16 Lab	HighLimit 110 0-006A, H1 120270-015 ID: H16120 te: HighLimit 120270-015 ID: H16120	RPD Ref Val 6120270-007A, 5A, H16120270 234-001ADUP RPD Ref Val 151.4 184.2 6120270-007A, 5A, H16120270 270-016ADUP	%RPD H16120270-00 -016A, H16120 Methor %RPD 0.4 0.4 0.4 H16120270-00 -016A, H16120 Methor	RPDLimit 08A, H16120 0270-017A d: A2320 B d: RPDLimit 10 10 08A, H16120 0270-017A d: A2320 B	Qual 270- Qual 270-
Analysis Date: 12 Analytes <u>1</u> A kalinity, Total as Associated sample Run ID :Run Orde Analysis Date: 12 Analytes <u>2</u> A kalinity, Total as Bicarbonate as H0 Associated sample Run ID :Run Orde Analysis Date: 12/	<ul> <li>r: PHSC_10</li> <li>r: PHSC_10</li> <li>r: PHSC_10</li> <li>r: PHSC_10</li> <li>r: CaCO3</li> <li>r: CaCO3</li> <li>r: PHSC_10</li> <li>r: PHSC_10</li> <li>r: PHSC_10</li> <li>r: PHSC_10</li> <li>r: PHSC_10</li> <li>r: PHSC_10</li> </ul>	Result 590 70-001A, H16120270-002 6120270-010A, H1612027 11-H_161215A: 27 Units: Result 150 180 70-001A, H16120270-002 6120270-010A, H1612027 11-H_161215A: 61 Units:	PQL 4.0 A, H16120270 70-011A, H16 SampType: mg/L 4.0 4.0 A, H16120270 70-011A, H16 SampType: mg/L	SPK value 600 0-003A, H1612 120270-012A, SPK value SPK value 0-003A, H1612 120270-012A, Sample Dupl	SPK Ref V 1.9 0270-004A, H16120270- icate SPK Ref V 0270-004A, H16120270- icate	ral %REC 96 99 H16120270-005A, 013A, H16120270 Prep Info ral %REC 0 0 H16120270-005A, 013A, H16120270 Prep Info	LowLimit 90 H1612027 -014A, H16 Lab : Prep Da LowLimit H1612027 -014A, H16 Lab : Prep Da	HighLimit 110 0-006A, H1 120270-015 ID: H16120 ite: HighLimit 0-006A, H1 120270-015 ID: H16120 ite:	RPD Ref Val 6120270-007A, 5A, H16120270 234-001ADUP RPD Ref Val 151.4 184.2 6120270-007A, 5A, H16120270 270-016ADUP	%RPD •H16120270-00 •016A, H16120 Methor %RPD 0.4 0.4 H16120270-00 •016A, H16120 Methor Prep Methor	RPDLimit 08A, H16120 0270-017A d: A2320 B d: RPDLimit 10 08A, H16120 0270-017A d: A2320 B d: d: A2320 B	Qual 270- Qual 270-
Analysis Date: 12 Analytes <u>1</u> A kalinity, Total as Associated sample Run ID :Run Orde Analysis Date: 12, Analytes <u>2</u> A kalinity, Total as Bicarbonate as HC Associated sample Run ID :Run Orde Analysis Date: 12, Analytes <u>2</u>	<ul> <li>ris/16 11:16</li> <li>caCO3</li> <li>s: H161202' 009A, H1</li> <li>r: PHSC_10</li> <li>/15/16 11:43</li> <li>caCO3</li> <li>co3</li> <li>s: H161202' 009A, H1</li> <li>r: PHSC_10</li> <li>r: PHSC_10</li> <li>/15/16 13:24</li> </ul>	Result 590 70-001A, H16120270-002 6120270-010A, H1612027 11-H_161215A: 27 Units: Result 150 180 70-001A, H16120270-002 6120270-010A, H1612027 11-H_161215A: 61 Units: Result	PQL 4.0 A, H16120270 70-011A, H16 SampType: mg/L 4.0 4.0 A, H16120270 70-011A, H16 SampType: mg/L PQL	SPK value 600 0-003A, H1612 120270-012A, SPK value 0-003A, H1612 120270-012A, SPK value	SPK Ref V 1.5 0270-004A, H16120270- icate SPK Ref V 0270-004A, H16120270- icate SPK Ref V	/al         %REC           96         99           H16120270-005A,           •013A, H16120270-           /al         %REC           0           0           H16120270-005A,           •013A, H16120270-           /al           %REC           0           0           Prep Info           •013A, H16120270-005A,           •013A, H16120270-           Prep Info           /al           %REC	LowLimit 90 H1612027 -014A, H16 Lab : Prep Da LowLimit H1612027 -014A, H16 Lab : Prep Da LowLimit	HighLimit 110 0-006A, H1 120270-015 ID: H16120 ID: H16120 ID: H16120 ID: H16120 ID: H16120 ID: H16120	RPD Ref Val 6120270-007A, 5A, H16120270 234-001ADUP RPD Ref Val 151.4 184.2 6120270-007A, 5A, H16120270 270-016ADUP RPD Ref Val	%RPD H16120270-00 -016A, H16120 Metho Prep Metho %RPD 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4	RPDLimit 08A, H16120 0270-017A d: A2320 B d: RPDLimit 10 10 08A, H16120 0270-017A d: A2320 B d: RPDLimit	Qual 270- Qual 270-
Analysis Date: 12 Analytes 1 A kalinity, Total as Associated sample Run ID :Run Orde Analysis Date: 12 Analytes 2 A kalinity, Total as Bicarbonate as H0 Associated sample Run ID :Run Orde Analysis Date: 12 Analytes 2 A kalinity, Total as	<ul> <li>r: PHSC_10</li> <li>r: PHSC_30</li> </ul>	Result 590 70-001A, H16120270-002 6120270-010A, H1612027 11-H_161215A: 27 Units: Result 150 180 70-001A, H16120270-002 6120270-010A, H1612027 11-H_161215A: 61 Units: Result 100	PQL 4.0 A, H16120270 70-011A, H16 SampType: mg/L 4.0 4.0 A, H16120270 70-011A, H16 SampType: mg/L PQL 4.0 4.0	SPK value 600 0-003A, H1612 120270-012A, SPK value 0-003A, H1612 120270-012A, SPK value SPK value	SPK Ref V 1.9 0270-004A, H16120270- icate SPK Ref V 0270-004A, H16120270- icate SPK Ref V	%REC           96         99           H16120270-005A,           •013A, H16120270-           •013A, H16120270-           %REC           0           Prep Info           /al           %REC           0	LowLimit 90 H1612027 -014A, H16 Lab : Prep Da LowLimit H1612027 -014A, H16 Lab : Prep Da LowLimit	HighLimit 110 0-006A, H1 120270-015 ID: H16120 ID: H16120 120270-015 ID: H16120 ID: H16120 ID: H16120	RPD Ref Val 6120270-007A, 5A, H16120270 234-001ADUP RPD Ref Val 151.4 184.2 6120270-007A, 5A, H16120270 270-016ADUP RPD Ref Val RPD Ref Val 103.5	%RPD H16120270-00 -016A, H16120 Metho Prep Metho %RPD 0.4 0.4 H16120270-00 -016A, H16120 Metho Prep Metho %RPD 0.6	RPDLimit 08A, H16120 0270-017A d: A2320 B d: RPDLimit 10 10 08A, H16120 0270-017A d: A2320 B d: RPDLimit 10	Qual 270- 270- 270- Qual

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federa H16120270	al Superfund		ANALYT	ICAL QC	SUMMARY Helena, MT Brai	REPO	RT		Date: 24-Jan-	-17
Project:	CFR Monitoring	-474374		В	atchID:	R121356					
Run ID :Run Order	IC METROHM_161	1215A: 2	SampType:	Method Blan	k		Lab	ID: ICB		Method: E300.0	
Analysis Date: 12/	15/16 14:39	Units: <b>n</b>	ng/L			Prep Info:	Prep Da	ate:		Prep Method:	
Analytes 2		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Chloride		0.03	0.008								
Sulfate		ND	0.08								
Associated sample	s: H16120270-001A, 009A, H16120270	H16120270-002A, -010A, H16120270-	H16120270- 011A, H161	003A, H1612 20270-012A, I	0270-004A, H H16120270-0	16120270-005A, 13A, H16120270-	H1612027 014A, H16	0-006A, H1 120270-015	6120270-007A, 5A, H16120270∙	H16120270-008A, H1612 016A, H16120270-017A	0270-
Run ID :Run Order	IC METROHM_161	I215A: 3	SampType:	Initial Calibra	tion Verificat	ion Standard	Lab	ID: ICV		Method: E300.0	
Analysis Date: 12/	15/16 14:53	Units: <b>n</b>	ng/L			Prep Info:	Prep Da	ate:		Prep Method:	
Analytes 2		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Chloride		99	1.0	100	C	) 99	90	110			
Sulfate		390	1.0	400	C	98	90	110			
Associated samples	s: H16120270-001A, 009A, H16120270	H16120270-002A, -010A, H16120270-	H16120270- 011A, H161	003A, H1612 20270-012A, I	0270-004A, H H16120270-0	16120270-005A, 13A, H16120270-	H1612027 014A, H16	0-006A, H1 120270-01	6120270-007A, 5A, H16120270-	H16120270-008A, H16120 016A, H16120270-017A	0270-
		1215A: 4	Samp i ype:	Laboratory F	ortified Blank	n na seconda da com	Lab Deve De			Method: E300.0	
Analysis Date: 12/	15/16 15:06	Units: <b>m</b>	ng/L			Prep Into:	Prep Da	ate:		Prep Method:	<b>A</b> 1
Analytes 2		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Chloride		46	1.0	50	0	92	90	110			
Sulfate		180	1.0	200		91	90	110			
	8: H16120270-001A, 009A, H16120270	H16120270-002A, -010A, H16120270-	011A, H161	003A, H1612 20270-012A, I	0270-004A, H H16120270-0	16120270-005A, 13A, H16120270-	H1612027 014A, H16	0-006A, H1 120270-01	6120270-007A, 5A, H16120270∙	016A, H16120270-008A, H16120 016A, H16120270-017A	0270-
Run ID :Run Order	IC METROHM_161	1215A: 36	SampType:	Continuing C	alibration Ve	rification Standa	r Lab	ID: CCV		Method: E300.0	
Analysis Date: 12/	15/16 22:48	Units: <b>n</b>	ng/L			Prep Info:	Prep Da	ate:		Prep Method:	
Analytes 2		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Chloride		100	1.0	100	C	) 100	90	110			
Sulfate		400	1.0	400	C	) 99	90	110			
Associated sample	s: H16120270-001A, 009A, H16120270	H16120270-002A, -010A, H16120270-	H16120270- 011A, H161	003A, H1612 20270-012A, I	0270-004A, H H16120270-0	16120270-005A, 13A, H16120270-	H1612027 014A, H16	0-006A, H1 120270-01	6120270-007A, 5A, H16120270-	H16120270-008A, H1612 016A, H16120270-017A	0270-

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: M Work Order: H Project: C Run ID :Run Order: IC Analysis Date: 12/16/1 Analytes 2 Chloride	IT DEQ-Federal Supe 16120270 FR Monitoring-47437 CMETROHM_161215A: 5	erfund 4		ANALYT	ICAL QC	SUMMARY	REPOR	τ		Date	: 24-Jan-	17
Project: C Run ID :Run Order: IC Analysis Date: 12/16/1 Analytes 2 Chloride	FR Monitoring-47437 CMETROHM_161215A: 5	4		ł	Prepared by	Helena, MT Bra	nch					
Run ID :Run Order: IC Analysis Date: 12/16/1 Analytes 2 Chloride	C METROHM_161215A: 5			В	atchID:	R121356						
Analysis Date: <b>12/16/1</b> Analytes <u>2</u> Chloride		0	SampType:	Sample Matr	ix Spike		Lab I	D: H161202	270-005AMS	Method	E300.0	
Analytes <u>2</u> Chloride	6 02:12	Units:	mg/L			Prep Info	Prep Dat	te:		Prep Method	:	
Chloride		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
		44	1.0	50	2.367	<u>82</u>	90	110				S
Sulfate		180	1.0	200	13.26	; <u>82</u>	90	110				S
Associated samples: H	l16120270-001A, H16120 09A, H16120270-010A, H	270-002A 1612027	A, H16120270 0-011A, H161	-003A, H1612 20270-012A,	0270-004A, H H16120270-0	16120270-005A, 13A, H16120270·	H1612027( 014A, H16	0-006A, H16 120270-015	6120270-007A, A, H16120270-	H16120270-00 016A, H161202	8A, H16120 270-017A	270-
Run ID :Run Order: IC	C METROHM_161215A: 5	1	SampType:	Sample Matr	ix Spike Dupl	icate	Lab I	D: H161202	270-005AMSD	Method	E300.0	
Analysis Date: 12/16/1	6 02:25	Units:	mg/L			Prep Info	Prep Dat	te:		Prep Method	:	
Analytes 2		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		44	1.0	50	2.367	<u>83</u>	90	110	43.54	1.0	20	S
Sulfate		180	1.0	200	13.26	6 <u>83</u>	90	110	176.9	1.7	20	S
Associated samples: H	116120270-001A, H16120 09A, H16120270-010A, H	270-002A 1612027	0-011A, H161	-003A, H1612 20270-012A,	0270-004A, H H16120270-0	16120270-005A, 13A, H16120270-	014A, H16	D-006A, H10 120270-015	A, H16120270-	H16120270-00 016A, H16120	8A, H16120 270-017A	1270-
	3 METROHM_161215A: 5	Z	Samp i ype:	Continuing C	alibration ve	Prese Info	r Labi				E300.0	
Analysis Date: 12/16/1	6 02:39	Units:	mg/L				: Prep Dat	(e:				Qual
		Result	PQL	SPK value	SPK Ker va	I %REC	LOWLIMIT	HighLimit	RPD Ref val	%RPD	RPDLIMIT	Quai
Chloride		99 300	1.0	100		) 99	90	110				
Associated samples: H 0	116120270-001A, H16120 09A, H16120270-010A, H	270-002A 1612027	A, H16120270 0-011A, H161	-003A, H1612 20270-012A,	0270-004A, H H16120270-0	,	H1612027( 014A, H16	0-006A, H10 120270-015	5120270-007A, A, H16120270-	H16120270-00 016A, H16120	8A, H16120 270-017A	270-
Run ID :Run Order: IC	C METROHM_161215A: 6	4	SampType:	Sample Matr	ix Spike		Lab I	D: H161202	270-015AMS	Method	: <b>E300.0</b>	
Analysis Date: 12/16/1	6 05:35	Units:	mg/L			Prep Info	Prep Dat	te:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		47	1.0	50	7.061	<u>8</u> 1	90	110				S

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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<b>ENERGY</b> LABORATORIES	Trust our P	<b>'eople. Trust our Data.</b> Jylab.com	Coll	ege Station, TX <b>8</b> 8	Bi 38.690.2218 • G	llings, MT <b>800.735.4</b> illette, WY <b>866.686.7</b>	489 • Caspe 175 • Helen	er, WY <b>888.235</b> a, MT <b>877.472</b>	.0515 .0711			
Client: Work Order:	MT DEQ-Feder H16120270	al Superfund		ANALYT	ICAL QC Prepared by H	SUMMARY Helena, MT Brai	REPO	RT		Date	: 24-Jan-	17
Project:	CFR Monitoring	-474374		В	atchID:	R121356						
Run ID :Run Order:	IC METROHM_161	1215A: 65	SampType:	Sample Matri	ix Spike Dupli	cate	Lab	ID: <b>H16120</b> 2	270-015AMSD	Method	: E300.0	
Analysis Date: 12/1	6/16 05:48	Units: n	ng/L			Prep Info:	Prep Da	ite:		Prep Method	ł:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		48	1.0	50	7.061	<u>82</u>	90	110	47.4	0.9	20	S
Associated samples	: H16120270-001A, 009A, H16120270	H16120270-002A, -010A, H16120270-	H16120270 -011A, H161	-003A, H1612 20270-012A,	0270-004A, H H16120270-01	16120270-005A, I3A, H16120270-	H1612027 014A, H16	0-006A, H10 120270-015	6120270-007A, 5A, H16120270-	H16120270-00 016A, H16120	8A, H16120 270-017A	270-
Run ID :Run Order:	IC METROHM_161	1215A: 66	SampType:	Continuing C	alibration Ve	rification Standa	r Lab	ID: <b>CCV</b>		Method	: E300.0	
Analysis Date: 12/1	6/16 06:02	Units: n	ng/L			Prep Info:	Prep Da	ite:		Prep Method	ł:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		98	1.0	100	0	98	90	110				
Sulfate		390	1.0	400	0	98	90	110				
Associated samples	: H16120270-001A, 009A, H16120270	H16120270-002A, -010A, H16120270	H16120270 -011A, H161	-003A, H1612 20270-012A,	0270-004A, H <sup>·</sup> H16120270-01	16120270-005A, I3A, H16120270-	H1612027 014A, H16	0-006A, H10 120270-015	6120270-007A, 5A, H16120270-	H16120270-00 016A, H16120	8A, H16120 270-017A	270-
Run ID :Run Order:	IC METROHM_161	1215A: 70	SampType:	Sample Matri	ix Spike		Lab	ID: H16120	270-017AMS	Method	: E300.0	
Analysis Date: 12/1	6/16 07:10	Units: n	ng/L			Prep Info:	Prep Da	ite:		Prep Method	ł:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		43	1.0	50	0.028	<u>86</u>	90	110				S
Sulfate		170	1.0	200	0.114	<u>87</u>	90	110				S
Associated samples	: H16120270-001A, 009A, H16120270	H16120270-002A, -010A, H16120270	H16120270 -011A, H161	-003A, H1612 20270-012A,	0270-004A, H <sup>·</sup> H16120270-01	16120270-005A, I3A, H16120270-	H1612027 014A, H16	0-006A, H10 120270-015	6120270-007A, 5A, H16120270-	H16120270-00 016A, H16120	8A, H16120 270-017A	270-
Run ID :Run Order:	IC METROHM_161	1215A: 71	SampType:	Sample Matri	ix Spike Dupli	cate	Lab	ID: <b>H16120</b> 2	270-017AMS	Method	: E300.0	
Analysis Date: 12/1	6/16 07:23	Units: <b>n</b>	ng/L			Prep Info:	Prep Da	ite:		Prep Method	ł:	
Analytes 2		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		41	1.0	50	0.028	<u>83</u>	90	110	43.16	<u>4.4</u>	20	S
Sulfate		170	1.0	200	0.114	<u>83</u>	90	110	174.9	<u>5.2</u>	20	S

Associated samples: H16120270-001A, H16120270-002A, H16120270-003A, H16120270-004A, H16120270-005A, H16120270-006A, H16120270-007A, H16120270-008A, H16120270-

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order	MT DEQ-Feder r: H16120270	al Superfund			ICAL QC	SUMMARY	REPO	RT		Date: 24-Jan-	17
Project:	CFR Monitoring	J-474374		В	atchID: F	R121390					
Run ID :Run 0	Drder: IC METROHM_16	1216A: 2 S	ampType:	Method Blan	k		Lab	ID: ICB		Method: E300.0	
Analysis Date	: 12/16/16 11:27	Units: <b>m</b> g	J∕L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Sulfate		ND	0.08								
Associated sar	nples: H16120270-006A, 014A, H16120270	H16120270-007A, H -015A	16120270-	-008A, H1612	0270-009A, H1	6120270-010A,	H1612027	0-011A, H1	6120270-012A,	H16120270-013A, H16120	)270-
Run ID :Run C	Order: IC METROHM_16	1216A: 3 S	ampType:	Initial Calibra	ation Verification	on Standard	Lab	ID: ICV		Method: E300.0	
Analysis Date	: 12/16/16 11:40	Units: mg	J∕L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Sulfate		410	1.0	400	0	102	90	110			
Associated sar	nples: H16120270-006A, 014A, H16120270	H16120270-007A, H -015A	16120270-	-008A, H1612	0270-009A, H1	6120270-010A,	H1612027	0-011A, H1	6120270-012A,	H16120270-013A, H16120	)270-
Run ID :Run C	Order: IC METROHM_16	1216A: 4 S	ampType:	Laboratory F	ortified Blank		Lab	ID: LFB		Method: E300.0	
Analysis Date	: 12/16/16 11:54	Units: mg	J∕L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Sulfate		200	1.0	200	0	98	90	110			
Associated sar	nples: H16120270-006A, 014A, H16120270	H16120270-007A, H -015A	16120270-	-008A, H1612	0270-009A, H1	6120270-010A,	H1612027	0-011A, H1	6120270-012A,	H16120270-013A, H16120	)270-
Run ID :Run C	Order: IC METROHM_16	1216A: 6 S	ampType:	Continuing C	alibration Veri	ification Standa	i <b>r</b> Lab	ID: CCV		Method: E300.0	
Analysis Date	: 12/16/16 12:21	Units: mg	J∕L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Sulfate		420	1.0	400	0	106	90	110			
Associated sar	nples: H16120270-006A, 014A, H16120270	H16120270-007A, H -015A	16120270-	-008A, H1612	0270-009A, H1	6120270-010A,	H1612027	0-011A, H1	6120270-012A,	H16120270-013A, H16120	)270-
Run ID :Run C	Drder: IC METROHM_16	1216A: 22 S	ampType:	Sample Matri	ix Spike		Lab	ID: <b>H16120</b>	270-014AMS	Method: E300.0	
Analysis Date	: 12/16/16 16:11	Units: <b>mg</b>	J/L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Sulfate		340	1.0	200	138.4	98	90	110			
Qualifiers:	ND - Not Detected at the	Reporting Limit	S	- Spike Reco	very outside ac	cepted recovery	limit N	- Analyte co	oncentration was	not sufficiently high to calc	ulate RPD
	J - Analyte detected belo	w quantitation limits	R	R - RPD outsid	e accepted reco	overy limits	A	- Analyte co	oncentration grea	ater than four times the spik Pag	te amount ge 65 of 102

<b>ENERGY</b> LABORATORIES	Trust www.	our People. Trust our Data. .energylab.com	Col	lege Station, TX <b>8</b> 8	Billin 88.690.2218 • Gillet	gs, MT <b>800.735.</b> 4 tte, WY <b>866.686.</b>	<b>1489 •</b> Caspe <b>7175 •</b> Helena	r, WY <b>888.235</b> a, MT <b>877.472</b>	.0515 .0711			
Client: Work Order:	MT DEQ-Fe H16120270	deral Superfund		ANALYT	ICAL QC S	UMMARY lena, MT Bra	REPO	RT		Date	: 24-Jan-	17
Project:	CFR Monito	ring-474374		В	atchID: R1	121390						
Run ID :Run Order:	IC METROHM	_161216A: 22	SampType:	Sample Matri	ix Spike		Lab	ID: H16120	270-014AMS	Method	E300.0	
Analysis Date: 12/1	6/16 16:11	Units: I	mg/L			Prep Info	: Prep Da	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Associated samples	: H16120270-00 014A, H16120	06A, H16120270-007A 0270-015A	, H16120270	-008A, H1612	0270-009A, H16 <sup>-</sup>	120270-010A,	H1612027	0-011A, H1(	6120270-012A,	H16120270-01	3A, H16120	270-
Run ID :Run Order:	IC METROHM	_161216A: 23	SampType:	Sample Matri	ix Spike Duplica	te	Lab	ID: H16120	270-014AMSD	Method	E300.0	
Analysis Date: 12/1	6/16 16:25	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		340	1.0	200	138.4	98	90	110	335.3	0.1	20	
Associated samples	: H16120270-00 014A, H16120	06A, H16120270-007A )270-015A	, H16120270	-008A, H1612	0270-009A, H16′	120270-010A,	H1612027	0-011A, H10	6120270-012A,	H16120270-01	3A, H16120	270-
Run ID :Run Order:	IC METROHM	_161216A: 24	SampType:	Continuing C	alibration Verifi	cation Standa	r Lab	ID: CCV		Method	E300.0	
Analysis Date: 12/1	6/16 16:38	Units: I	mg/L			Prep Info	: Prep Da	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		400	1.0	400	0	101	90	110				
Associated samples	: H16120270-0	06A, H16120270-007A	, H16120270	-008A, H1612	0270-009A, H161	120270-010A,	H1612027	0-011A, H1	6120270-012A,	H16120270-01	3A, H16120	270-

014A, H16120270-015A

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order	MT DEQ-Federal Sup H16120270	perfund		ANALYT	ICAL QC	SUMMARY Helena, MT Bra	<b>REPO</b>	RT		Date	: 24-Jan-	17
Project:	CFR Monitoring-4743	74		В	atchID:	R121443						
Run ID :Run O	rder: FIA203-HE_161220A: 9		SampType:	Initial Calibra	ation Verifica	tion Standard	Lab	ID: ICV		Method	: E353.2	
Analysis Date:	12/20/16 11:58	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrat	te+Nitrite as N	0.935	0.010	1	(	) <b>94</b>	90	110				
Associated sam	nples: H16120270-001D, H1612 009D, H16120270-010D,	0270-0020 H1612027	D, H16120270 0-011D, H161	-003D, H1612 120270-012D,	0270-004D, H H16120270-0	116120270-005D 013D, H16120270	, H1612027 )-014D, H10	70-006D, H1 6120270-01	6120270-007D, 5D, H16120270	, H16120270-00 ⊢016D, H16120	)8D, H1612 270-017D	0270-
Run ID :Run O	rder: FIA203-HE_161220A: 10		SampType:	Method Blan	k		Lab	ID: MBLK		Method	: E353.2	
Analysis Date:	12/20/16 12:00	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrat	te+Nitrite as N	ND	0.001									
Associated sam	nples: H16120270-001D, H1612 009D, H16120270-010D,	0270-0020 H1612027	D, H16120270 0-011D, H161	-003D, H1612 120270-012D,	20270-004D, H H16120270-0	116120270-005D 013D, H16120270	, H1612027 )-014D, H1(	70-006D, H1 6120270-01	6120270-007D 5D, H16120270	H16120270-00 -016D, H16120	18D, H1612 270-017D	0270-
Run ID :Run O	order: FIA203-HE_161220A: 11		SampType:	Laboratory F	ortified Blanl	ĸ	Lab	ID: LFB		Method	: E353.2	
Analysis Date:	12/20/16 12:01	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrat	te+Nitrite as N	1.03	0.011	1	(	) <b>103</b>	90	110				
Associated sam	nples: H16120270-001D, H1612 009D, H16120270-010D,	0270-0020 H1612027	D, H16120270 0-011D, H161	-003D, H1612 120270-012D,	20270-004D, H H16120270-0	H16120270-005D 013D, H16120270	, H1612027 )-014D, H10	70-006D, H1 6120270-01	6120270-007D, 5D, H16120270	H16120270-00 -016D, H16120	18D, H1612 270-017D	0270-
Run ID :Run O	rder: FIA203-HE_161220A: 13		SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16120</b>	270-001DMS	Method	: E353.2	
Analysis Date:	12/20/16 12:03	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	1	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrat Associated sam	te+Nitrite as N pples: H16120270-001D, H1612 009D, H16120270-010D,	0.952 0270-002[ H1612027	0.011 D, H16120270 0-011D, H161	1 -003D, H1612 120270-012D,	0.1122 20270-004D, H H16120270-0	2 84 116120270-005D 013D, H16120270	90 , H1612027 9-014D, H10	110 7 <b>0-006D, H1</b> 6120270-01	6120270-007D 5D, H16120270	, H16120270-00 -016D, H16120	)8D, H1612 270-017D	S 1 <b>0270-</b>
Run ID :Run O	rder: FIA203-HE_161220A: 14		SampType:	Sample Matr	ix Spike Dup	licate	Lab	ID: <b>H16120</b>	270-001DMSD	Method	: E353.2	
Analysis Date:	12/20/16 12:04	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrat	te+Nitrite as N	1.05	0.011	1	0.1122	2 <b>94</b>	90	110	0.9525	10	20	
Qualifiers:	ND - Not Detected at the Report J - Analyte detected below quan	ing Limit titation limit	ts F	6 - Spike Reco R - RPD outsid	very outside a	ccepted recovery	limit N A	- Analyte co	oncentration was	not sufficiently ater than four tir	high to calc	ulate RPD

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Client: Work Order:	MT DEQ-Federal St H16120270	uperfund		ANALYT	ICAL QC S		REPO	RT		Date	<b>::</b> 24-Jan-	·17
Project:	CFR Monitoring-474	374		B	RatchID: R	121443	non					
Run ID :Run Orc	der: FIA203-HE 161220A: 1	4	SampType:	Sample Matr	ix Spike Duplica	121440	Lab	ID: H16120	270-001DMSD	Methor	d: E353.2	
Analysis Date: 1	2/20/16 12:04	Units:	ma/l			Pren Info	Prep Da	te:		Prep Methor	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Associated samp	les: H16120270-001D, H16 009D, H16120270-010I	120270-002I D, H1612027	D, H1612027( 70-011D, H16	0-003D, H1612 120270-012D,	20270-004D, H16 H16120270-013	5120270-005D, D, H16120270	H1612027 -014D, H16	0-006D, H1 5120270-01	6120270-007D 5D, H16120270	, H16120270-0 -016D, H1612(	08D, H1612 0270-017D	:0270-
Run ID :Run Orc	der: FIA203-HE_161220A: 2	5	SampType:	Continuing C	Calibration Verif	ication Standa	<b>r</b> Lab	ID: CCV		Method	d: <b>E353.2</b>	
Analysis Date: 1	2/20/16 12:18	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Methor	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate	+Nitrite as N	0.519	0.010	0.5	0	104	90	110				
Associated samp	les: H16120270-001D, H16 009D, H16120270-010I	120270-002I D, H1612027	D, H1612027( 70-011D, H16	0-003D, H1612 120270-012D,	20270-004D, H16 H16120270-013	5120270-005D, D, H16120270	H1612027 -014D, H16	0-006D, H1 5120270-01	6120270-007D 5D, H16120270	, H16120270-0 -016D, H1612(	08D, H1612 0270-017D	:0270-
Run ID :Run Orc	der: FIA203-HE_161220A: 2	7	SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16120</b>	270-011DMS	Method	d: <b>E353.2</b>	
Analysis Date: 1	2/20/16 12:20	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Methor	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate Associated samp	H-Nitrite as N Nes: H16120270-001D, H16 009D, H16120270-010I	1.05 <b>120270-002 </b> D, H1612027	0.011 D, H1612027( 70-011D, H16	1 0-003D, H1612 120270-012D,	0.1381 20270-004D, H16 H16120270-013	91 6120270-005D, D, H16120270	90 H1612027 -014D, H16	110 <b>'0-006D, H1</b> 5 <b>120270-01</b>	6120270-007D 5D, H16120270	, H16120270-0 -016D, H1612(	08D, H1612 0270-017D	20270-
Run ID :Run Orc	der: FIA203-HE_161220A: 2	8	SampType:	Sample Matr	ix Spike Duplica	ate	Lab	ID: <b>H16120</b>	270-011DMSD	Methor	d: <b>E353.2</b>	
Analysis Date: 1	2/20/16 12:21	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Methor	d:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate	+Nitrite as N	1.06	0.011	1	0.1381	92	90	110	1.048	1.2	20	
Associated samp	les: H16120270-001D, H16 009D, H16120270-010I	120270-002I D, H1612027	D, H16120270 ⁄0-011D, H16	0-003D, H1612 120270-012D,	20270-004D, H16 H16120270-013	5120270-005D, 5D, H16120270	H1612027 -014D, H16	0-006D, H1 5120270-01	6120270-007D 5D, H16120270	, H16120270-0 -016D, H1612(	08D, H1612 0270-017D	:0270-
Run ID :Run Orc	der: FIA203-HE_161220A: 4	1	SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16120</b>	279-004EMS	Method	d: <b>E353.2</b>	
Analysis Date: 1	2/20/16 12:37	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	d:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate	+Nitrite as N	1.05	0.011	1	0.1597	<u>89</u>	90	110				S
Associated samp	les: H16120270-001D, H16 009D, H16120270-010I	120270-002I D, H1612027	D, H1612027( 70-011D, H16	0-003D, H1612 120270-012D,	20270-004D, H16 H16120270-013	6120270-005D, D, H16120270	H1612027 -014D, H16	0-006D, H1 5120270-01	6120270-007D 5D, H16120270	, H16120270-0 -016D, H1612(	08D, H1612 0270-017D	:0270-
Qualifiers: N	D - Not Detected at the Repo	orting Limit	:	S - Spike Reco	overy outside acco	epted recovery	limit N	- Analyte co	oncentration was	s not sufficiently	/ high to calc	ulate RP
J	- Analyte detected below qua	antitation limi	ts	R - RPD outsid	le accepted recov	very limits	A	- Analyte co	oncentration grea	ater than four ti	mes the spik	<e amoun<="" td=""></e>

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Client: Work Order:	MT DEC H16120	Q-Federal Superfund 270		ANALYT	CAL QC S Prepared by He	UMMARY elena, MT Bra	REPO	RT		Date	: 24-Jan-	17
Project:	CFR Mo	onitoring-474374		В	atchID: R	121443						
Run ID :Run Order:	FIA203-H	E_161220A: 42	SampType:	Sample Matri	x Spike Duplica	ate	Lab	ID: H16120	279-004EMSD	Method	l: E353.2	
Analysis Date: 12/2	0/16 12:38	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	1:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate+N	itrite as N	1.06	0.011	1	0.1597	90	90	110	1.05	1.3	20	
Associated samples	H161202	70-001D. H16120270-0020	D. H16120270	-003D. H1612	0270-004D. H16	6120270-005D	H1612027	0-006D. H1	6120270-007D.	H16120270-00	08D. H1612	0270-

009D, H16120270-010D, H16120270-012D, H16120270-013D, H16120270-013D, H16120270-014D, H16120270-015D, H16120270-016D, H16120270-016D, H16120270-017D

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16120270	perfund		ANALYT	ICAL QC	<b>SUMMARY</b> Helena, MT Bra	REPO	RT		Date	: 24-Jan-	17
Project:	CFR Monitoring-4743	74		В	atchID:	R121479						
Run ID :Run Orde	r: FIA203-HE_161221A: 7		SampType:	Initial Calibra	ation Verifica	tion Standard	Lab	ID: ICV		Method	E350.1	
Analysis Date: 12	/21/16 09:58	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammon Associated sample	a as N s: H16120270-001D, H1612 009D	15.5 20270-002	0.50 D, H1612027(	14.2 <b>)-003D, H1612</b>	20270-004D, I	0 109 H16120270-005D	90 , <b>H161202</b> 7	110 <b>70-006D, H</b> 1	6120270-007D	, H16120270-0	08D, H1612	0270-
Run ID :Run Orde	r: FIA203-HE_161221A: 8		SampType:	Laboratory F	ortified Blan	k	Lab	ID: LFB		Method	: E350.1	
Analysis Date: 12	/21/16 10:00	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammon	a as N	1.10	0.055	1		0 <b>110</b>	90	110				
Associated sample	s: H16120270-001D, H1612 009D	0270-002	D, H16120270	0-003D, H1612	20270-004D, I	H16120270-005D	, H1612027	70-006D, H1	6120270-007D	, H16120270-0	08D, H1612	0270-
Run ID :Run Orde	r: FIA203-HE_161221A: 10		SampType:	Method Blan	k		Lab	ID: MBLK		Method	: E350.1	
Analysis Date: 12	/21/16 10:02	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammon Associated sample	a as N s: H16120270-001D, H1612 009D	ND 20270-002	0.02 D, H1612027(	0-003D, H1612	20270-004D, I	H16120270-005D	, H1612027	70-006D, H1	6120270-007D	, H16120270-0	08D, H1612	0270-
Run ID :Run Orde	r: FIA203-HE_161221A: 23		SampType:	Continuing C	Calibration V	erification Standa	ar Lab	ID: CCV		Method	E350.1	
Analysis Date: 12	/21/16 10:18	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammon	a as N	0.514	0.050	0.5		0 <b>103</b>	90	110				
Associated sample	s: H16120270-001D, H1612 009D	0270-002	D, H16120270	0-003D, H1612	20270-004D, I	H16120270-005D	, H1612027	70-006D, H1	6120270-007D	, H16120270-0	08D, H1612	0270-
Run ID :Run Orde	r: FIA203-HE_161221A: 29		SampType:	Sample Matr	ix Spike Dup	licate	Lab	ID: <b>H16120</b>	270-002DMSD	Method	: E350.1	
Analysis Date: 12	/21/16 10:25	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	al %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammon	a as N	0.952	0.055	1	0.0271	9 <b>92</b>	80	120	0.9716	<u>2.1</u>	10	
Qualifiers: ND J -	- Not Detected at the Report Analyte detected below quan	ing Limit titation limi	ts	S - Spike Reco R - RPD outsid	very outside a	accepted recovery ecovery limits	limit N A	- Analyte co - Analyte co	oncentration was	s not sufficiently ater than four tir	high to calc mes the spik	ulate RPD e amount

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Client: Work Order:	MT DEQ-Federal Sup H16120270	erfund		ANALYT	ICAL QC S Prepared by He	SUMMARY elena, MT Brai	REPO	RT		Date: 24-Jan-	17
Project:	CFR Monitoring-4743	74		В	atchID: R	121479					
Run ID :Run Order:	FIA203-HE_161221A: 29		SampType:	Sample Matri	x Spike Duplic	ate	Lab	ID: <b>H16120</b>	270-002DMSD	Method: E350.1	
Analysis Date: 12/2	21/16 10:25	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Associated samples	: H16120270-001D, H1612 009D	0270-002C	D, H16120270	-003D, H1612	0270-004D, H1	6120270-005D,	H1612027	0-006D, H1	6120270-007D,	H16120270-008D, H1612	0270-
Run ID :Run Order:	FIA203-HE_161221A: 37		SampType:	Sample Matri	x Spike		Lab	ID: <b>H16120</b>	270-002DMS	Method: E350.1	
Analysis Date: 12/2	21/16 10:34	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Nitrogen, Ammonia	as N	0.972	0.055	1	0.02719	94	80	120			
Associated samples	: H16120270-001D, H1612 009D	0270-002C	D, H16120270	-003D, H1612	0270-004D, H1	6120270-005D,	H1612027	0-006D, H1	6120270-007D,	H16120270-008D, H1612	0270-
Run ID :Run Order:	FIA203-HE_161221A: 38		SampType:	Continuing C	alibration Verif	fication Standa	r Lab	ID: CCV		Method: E350.1	
Analysis Date: 12/2	21/16 10:35	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Nitrogen, Ammonia	as N	0.536	0.050	0.5	0	107	90	110			
Associated samples	: H16120270-001D, H1612 009D	0270-002D	D, H16120270	-003D, H1612	0270-004D, H1	6120270-005D,	H1612027	0-006D, H1	6120270-007D,	H16120270-008D, H1612	0270-
Run ID :Run Order:	FIA203-HE_161221A: 65		SampType:	Initial Calibra	tion Verificatio	on Standard	Lab	ID: ICV		Method: E350.1	
Analysis Date: 12/2	21/16 11:44	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Nitrogen, Ammonia	as N	15.1	0.50	14.2	0	106	90	110			
Associated samples	: H16120270-001D, H1612 009D	0270-0020	D, H16120270	-003D, H1612	0270-004D, H1	6120270-005D,	H1612027	0-006D, H1	6120270-007D,	H16120270-008D, H1612	0270-

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16120270	erfund		ANALYT	ICAL QC S Prepared by He	<b>UMMARY</b> elena, MT Brar	REPO	RT		Date:	: 24-Jan-	17
Project:	CFR Monitoring-4743	74		В	atchID: R	121495						
Run ID :Run Order:	FIA203-HE_161221B: 9		SampType:	Continuing C	Calibration Verifi	ication Standa	r Lab	D: CCV		Method	A4500 N-C	;
Analysis Date: 12/2	21/16 13:44	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Total		0.464	0.10	0.5	0	93	90	110				
Associated samples	: H16120270-001A, H1612 009A, H16120270-010A	0270-002/	A, H16120270	0-003A, H1612	0270-004A, H16	120270-005A,	H16120270	0-006A, H16	6120270-007A,	H16120270-008	BA, H16120	270-
Run ID :Run Order:	FIA203-HE_161221B: 10		SampType:	Initial Calibra	ation Blank, Inst	rument Blank	Lab	D: <b>ICB</b>		Method	: A4500 N-C	<u> </u>
Run ID :Run Order: Analysis Date: <b>12/2</b>	FIA203-HE_161221B: 10	Units:	SampType: <b>mg/L</b>	Initial Calibra	ation Blank, Inst	rument Blank Prep Info:	Lab I Prep Da	D: ICB te:		Method: Prep Method:	A4500 N-0	;
Run ID :Run Order: Analysis Date: <b>12/2</b> Analytes <u>1</u>	FIA203-HE_161221B: 10 21/16 13:45	Units: Result	SampType: <b>mg/L</b> PQL	Initial Calibra	ation Blank, Inst	rument Blank Prep Info: %REC	Lab I Prep Da LowLimit	D: <b>ICB</b> te: HighLimit	RPD Ref Val	Method: Prep Method: %RPD	A4500 N-C	Qual
Run ID :Run Order: Analysis Date: <b>12/2</b> Analytes <u>1</u> Nitrogen, Total	FIA203-HE_161221B: 10 21/16 13:45	Units: Result 0.0147	SampType: mg/L PQL 0.10	Initial Calibra	ation Blank, Inst SPK Ref Val 0	rument Blank Prep Info: %REC	Lab I Prep Da LowLimit 0	D: ICB te: HighLimit	RPD Ref Val	Method: Prep Method: %RPD	RPDLimit	Qual
Run ID :Run Order: Analysis Date: <b>12/2</b> Analytes <u>1</u> Nitrogen, Total Associated samples	FIA203-HE_161221B: 10 1/16 13:45 H16120270-001A, H16120 009A, H16120270-010A	Units: Result 0.0147 0270-002 <i>4</i>	SampType: mg/L PQL 0.10 A, H16120270	Initial Calibra SPK value D-003A, H1612	ation Blank, Inst SPK Ref Val 0 0270-004A, H16	rument Blank Prep Info: %REC 120270-005A,	Lab I Prep Da LowLimit 0 H16120276	D: ICB te: HighLimit 0 D-006A, H16	RPD Ref Val 6120270-007A,	Method: Prep Method: %RPD H16120270-008	: <b>A4500 N-C</b> : RPDLimit <b>8A, H16120</b>	Qual 270-
Run ID :Run Order: Analysis Date: <b>12/2</b> Analytes <u>1</u> Nitrogen, Total Associated samples Run ID :Run Order:	FIA203-HE_161221B: 10 21/16 13:45 : H16120270-001A, H16120 009A, H16120270-010A FIA203-HE_161221B: 26	Units: Result 0.0147 0270-0024	SampType: <b>mg/L</b> PQL 0.10 A, H16120270 SampType:	Initial Calibra SPK value D-003A, H1612 Continuing C	ation Blank, Inst SPK Ref Val 0 0270-004A, H16 Calibration Verifi	rument Blank Prep Info: %REC 120270-005A, ication Standa	Lab I Prep Da LowLimit 0 H16120270	D: ICB te: HighLimit 0 0-006A, H10 D: CCV	RPD Ref Val 6120270-007A,	Method: Prep Method: %RPD H16120270-008	: A4500 N-C RPDLimit BA, H16120 : A4500 N-C	Qual 270-
Run ID :Run Order: Analysis Date: <b>12/2</b> Analytes <u>1</u> Nitrogen, Total Associated samples Run ID :Run Order: Analysis Date: <b>12/2</b>	FIA203-HE_161221B: 10 21/16 13:45 : H16120270-001A, H16120 009A, H16120270-010A FIA203-HE_161221B: 26 21/16 14:04	Units: Result 0.0147 0270-002 <i>4</i> Units:	SampType: <b>mg/L</b> 0.10 A, H16120270 SampType: <b>mg/L</b>	Initial Calibra SPK value -003A, H1612 Continuing C	ation Blank, Inst SPK Ref Val 0 0270-004A, H16 Calibration Verifi	rument Blank Prep Info: %REC 120270-005A, ication Standa Prep Info:	Lab I Prep Da LowLimit 0 H16120270 r Lab I Prep Da	D: ICB te: HighLimit 0 <b>0-006A, H10</b> D: CCV te:	RPD Ref Val 6120270-007A,	Method: Prep Method: %RPD H16120270-008 Method: Prep Method:	A4500 N-C RPDLimit BA, H16120	Qual 270-
Run ID :Run Order: Analysis Date: <b>12/2</b> Analytes <u>1</u> Nitrogen, Total Associated samples Run ID :Run Order: Analysis Date: <b>12/2</b> Analytes <u>1</u>	FIA203-HE_161221B: 10 21/16 13:45 : H16120270-001A, H16120 009A, H16120270-010A FIA203-HE_161221B: 26 21/16 14:04	Units: Result 0.0147 0270-0024 Units: Result	SampType: <b>mg/L</b> 0.10 <b>A, H16120270</b> SampType: <b>mg/L</b> PQL	Initial Calibra SPK value D-003A, H1612 Continuing C SPK value	ation Blank, Inst SPK Ref Val 0 0270-004A, H16 Calibration Verifi SPK Ref Val	rument Blank Prep Info: %REC 120270-005A, ication Standa Prep Info: %REC	Lab I Prep Da LowLimit 0 H16120270 r Lab I Prep Da LowLimit	D: ICB te: HighLimit 0 0-006A, H10 D: CCV te: HighLimit	RPD Ref Val 6120270-007A, RPD Ref Val	Method: Prep Method: %RPD H16120270-008 Method: %RPD	: <b>A4500 N-C</b> RPDLimit <b>8A, H16120</b> : <b>A4500 N-C</b> RPDLimit	Qual 270-

Associated samples: H16120270-001A, H16120270-002A, H16120270-003A, H16120270-004A, H16120270-005A, H16120270-006A, H16120270-007A, H16120270-008A, H1612028A, H1612028A, H1612028A, H1612028A, H161208A, H161208A,

S - Spike Recovery outside accepted recovery limit

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

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Client: Work Order:	MT DEQ-Federal Supe H16120270	erfund		ANALYTICAL QC SUMMARY REPORT Prepared by Helena, MT Branch							n-17
Project:	CFR Monitoring-47437	4		В	atchID: R	121519					
Run ID :Run Order:	FIA203-HE_161222A: 9		SampType:	Continuing C	alibration Verifi	cation Standa	r Lab	D: CCV		Method: A4500 I	1-C
Analysis Date: 12/2	22/16 09:36	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLim	t Qual
Nitrogen, Total		0.500	0.10	0.5	0	100	90	110			
Associated samples	: H16120270-011A, H16120	270-012A	, H16120270	0-013A, H1612	0270-014A, H16	120270-015A,	H1612027	)-016A, H1(	6120270-017A		
Run ID :Run Order:	FIA203-HE_161222A: 10		SampType:	Initial Calibra	tion Blank, Inst	rument Blank	Lab	D: <b>ICB</b>		Method: A4500 I	I-C
Run ID :Run Order: Analysis Date: <b>12/2</b>	FIA203-HE_161222A: 10 22/16 09:37	Units:	SampType: <b>mg/L</b>	Initial Calibra	ation Blank, Inst	rument Blank Prep Info:	Lab I Prep Da	D: ICB te:		Method: A4500 I Prep Method:	I-C
Run ID :Run Order: Analysis Date: <b>12/2</b> Analytes <u>1</u>	FIA203-HE_161222A: 10 22/16 09:37	Units: Result	SampType: <b>mg/L</b> PQL	Initial Calibra	<b>ttion Blank, Inst</b>	rument Blank Prep Info: %REC	Lab I Prep Da LowLimit	D: <b>ICB</b> te: HighLimit	RPD Ref Val	Method: A4500 I Prep Method: %RPD RPDLim	<b>I-C</b> t Qual
Run ID :Run Order: Analysis Date: <b>12/2</b> Analytes <u>1</u> Nitrogen, Total	FIA203-HE_161222A: 10 22/16 09:37 -0	Units: Result 0.0156	SampType: <b>mg/L</b> PQL 0.10	Initial Calibra	<b>ition Blank, Inst</b> SPK Ref Val 0	rument Blank Prep Info: %REC	Lab I Prep Da LowLimit 0	D: ICB te: HighLimit	RPD Ref Val	Method: A4500 I Prep Method: %RPD RPDLim	<b>I-C</b> t Qual
Run ID :Run Order: Analysis Date: <b>12/2</b> Analytes <u>1</u> Nitrogen, Total Associated samples	E FIA203-HE_161222A: 10 22/16 09:37 -( E H16120270-011A, H161202	Units: Result ).0156 <b>270-012A</b>	SampType: mg/L PQL 0.10 , H16120270	Initial Calibra SPK value	ntion Blank, Inst SPK Ref Val 0 0270-014A, H16	rument Blank Prep Info: %REC 120270-015A,	Lab Prep Da LowLimit 0 H16120276	D: ICB te: HighLimit 0 D-016A, H10	RPD Ref Val	Method: A4500 N Prep Method: %RPD RPDLim	<b>I-C</b> t Qual
Run ID :Run Order: Analysis Date: <b>12/2</b> Analytes <u>1</u> Nitrogen, Total Associated samples Run ID :Run Order:	FIA203-HE_161222A: 10 22/16 09:37 -( H16120270-011A, H161202 FIA203-HE_161222A: 72	Units: Result ).0156 <b>270-012A</b>	SampType: mg/L PQL 0.10 , H16120270 SampType:	Initial Calibra SPK value I-013A, H1612 Initial Calibra	tion Blank, Inst SPK Ref Val 0 0270-014A, H16 ntion Blank, Inst	rument Blank Prep Info: %REC 120270-015A, rument Blank	Lab   Prep Da LowLimit 0 H16120270	D: ICB te: HighLimit 0 D-016A, H10 D: ICB	RPD Ref Val 6120270-017A	Method: A4500 N Prep Method: %RPD RPDLim Method: A4500 N	t Qual
Run ID :Run Order: Analysis Date: <b>12/2</b> Analytes <u>1</u> Nitrogen, Total Associated samples Run ID :Run Order: Analysis Date: <b>12/2</b>	FIA203-HE_161222A: 10 22/16 09:37 	Units: Result ).0156 <b>270-012A</b> Units:	SampType: mg/L PQL 0.10 , H16120270 SampType: mg/L	Initial Calibra SPK value -013A, H1612 Initial Calibra	tion Blank, Inst SPK Ref Val 0 0270-014A, H16 ntion Blank, Inst	rument Blank Prep Info: %REC 120270-015A, rument Blank Prep Info:	Lab   Prep Da LowLimit 0 H16120270 Lab   Prep Da	D: ICB te: HighLimit 0 0-016A, H10 D: ICB te:	RPD Ref Val 6120270-017A	Method: A4500 Method: Prep Method: %RPD RPDLim Method: A4500 Method:	I-C t Qual I-C
Run ID :Run Order: Analysis Date: <b>12/2</b> Analytes <u>1</u> Nitrogen, Total Associated samples Run ID :Run Order: Analysis Date: <b>12/2</b> Analytes <u>1</u>	FIA203-HE_161222A: 10 22/16 09:37 	Units: Result 0.0156 270-012A Units: Result	SampType: mg/L 0.10 , H16120270 SampType: mg/L PQL	Initial Calibra SPK value I-013A, H1612 Initial Calibra SPK value	tion Blank, Inst SPK Ref Val 0 0270-014A, H16 tion Blank, Inst SPK Ref Val	rument Blank Prep Info: %REC 120270-015A, rument Blank Prep Info: %REC	Lab   Prep Da LowLimit 0 H16120270 Lab   Prep Da LowLimit	D: ICB te: HighLimit 0 D-016A, H10 D: ICB te: HighLimit	RPD Ref Val 6120270-017A RPD Ref Val	Method: A4500 N Prep Method: %RPD RPDLim Method: A4500 N Prep Method: %RPD RPDLim	I-C t Qual I-C t Qual
Run ID :Run Order: Analysis Date: 12/2 Analytes <u>1</u> Nitrogen, Total Associated samples Run ID :Run Order: Analysis Date: 12/2 Analytes <u>1</u>	FIA203-HE_161222A: 10 22/16 09:37 	Units: Result 0.0156 270-012A Units: Result	SampType: mg/L PQL 0.10 , H16120270 SampType: mg/L PQL	Initial Calibra SPK value -013A, H1612 Initial Calibra SPK value	tion Blank, Inst SPK Ref Val 0 0270-014A, H16 ntion Blank, Inst SPK Ref Val	rument Blank Prep Info: %REC 120270-015A, rument Blank Prep Info: %REC	Lab   Prep Da LowLimit 0 H16120270 Lab   Prep Da LowLimit	D: ICB te: HighLimit 0 0-016A, H10 D: ICB te: HighLimit	RPD Ref Val 6120270-017A RPD Ref Val	Method: A4500 Method: Prep Method: %RPD RPDLim Method: A4500 Method: %RPD RPDLim	I-C t I-C

R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD

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Client: Work Order:	MT DEQ-Federal Sup H16120270	perfund		ANALYT	ICAL QC Prepared by	SUMMARY Helena, MT Bra	REPO	RT		Date:	24-Jan-	17
Project:	CFR Monitoring-4743	74		В	atchID:	R121532						
Run ID :Run Order:	FIA203-HE_161222B: 7		SampType:	Initial Calibra	tion Verifica	tion Standard	Lab I	D: ICV		Method:	E350.1	
Analysis Date: 12/2	22/16 16:33	Units: <b>n</b>	ng/L			Prep Info	: Prep Dat	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	a as N	15.5	0.50	14.2	(	) <b>109</b>	90	110				
Associated samples	E H16120270-010D, H1612	0270-011D,	H16120270-	012D, H1612	0270-013D, I	116120270-014D,	H1612027	0-015D, H1	6120270-016D,	H16120270-01	7D	
Run ID :Run Order:	: FIA203-HE_161222B: 8		SampType:	Laboratory F	ortified Blan	k	Lab I	D: LFB		Method:	E350.1	
Analysis Date: 12/2	22/16 16:34	Units: <b>n</b>	ng/L			Prep Info	: Prep Dat	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	a as N	0.956	0.055	1	(	) <b>96</b>	90	110				
Associated samples	E H16120270-010D, H1612	0270-011D,	H16120270-	012D, H1612	0270-013D, I	116120270-014D,	, H1612027	0-015D, H1	6120270-016D,	H16120270-01	7D	
Run ID :Run Order	FIA203-HE_161222B: 9		SampType:	Continuing C	alibration Ve	erification Standa	nr Labl	D: <b>CCV</b>		Method:	E350.1	
Analysis Date: 12/2	22/16 16:36	Units: <b>n</b>	ng/L			Prep Info	: Prep Dat	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	a as N	0.453	0.050	0.5	(	) 91	90	110				
Associated samples	E H16120270-010D, H1612	0270-011D,	H16120270-	012D, H1612	0270-013D, I	H16120270-014D,	, H1612027	0-015D, H1	6120270-016D,	H16120270-01	7D	
Run ID :Run Order:	FIA203-HE_161222B: 10		SampType:	Method Blan	k		Lab I	D: MBLK		Method:	E350.1	
Analysis Date: 12/2	22/16 16:37	Units: <b>n</b>	ng/L			Prep Info	: Prep Dat	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	a as N	ND	0.02									
Associated samples	E H16120270-010D, H1612	0270-011D,	H16120270-	012D, H1612	0270-013D, I	116120270-014D,	, H1612027	0-015D, H1	6120270-016D,	H16120270-01	7D	
Run ID :Run Order:	FIA203-HE_161222B: 15		SampType:	Sample Matri	x Spike		Lab I	D: H16120	270-010DMS	Method:	E350.1	
Analysis Date: 12/2	22/16 16:43	Units: <b>n</b>	ng/L			Prep Info	: Prep Dat	te:		Prep Method:		
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	a as N	0.899	0.055	1	(	) 90	80	120				
Associated samples	s: H16120270-010D, H1612	0270-011D,	H16120270-	012D, H1612	0270-013D, I	116120270-014D,	H1612027	0-015D, H1	6120270-016D,	H16120270-01	7D	

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

S - Spike Recovery outside accepted recovery limit N - Analyte concentration was not sufficiently high to calculate RPD

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Client: Work Order:	MT DEQ-Federal Sup H16120270	erfund		ANALYT	ICAL QC SU Prepared by Heler	MMARY na, MT Bra	REPO	RT		Date	: 24-Jan-	17
Project:	CFR Monitoring-4743	74		В	atchID: R12	1532						
Run ID :Run Order	: FIA203-HE_161222B: 16		SampType:	Sample Matri	ix Spike Duplicate		Lab	ID: <b>H16120</b> 2	270-010DMSD	Method	E350.1	
Analysis Date: 12/	22/16 16:44	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	1:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	a as N	0.885	0.055	1	0	88	80	120	0.8988	1.6	10	
Associated samples	8: H16120270-010D, H1612	0270-0110	D, H16120270	-012D, H1612	0270-013D, H1612	0270-014D,	H1612027	0-015D, H1	6120270-016D,	H16120270-0	17D	
Run ID :Run Order	: FIA203-HE_161222B: 23		SampType:	Continuing C	alibration Verifica	tion Standa	<b>r</b> Lab	ID: CCV		Method	E350.1	
Analysis Date: 12/	22/16 16:52	Units:	mg/L			Prep Info	Prep Da	te:		Prep Method	l:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	a as N	0.467	0.050	0.5	0	93	90	110				
Associated samples	8: H16120270-010D, H1612	0270-0110	D, H16120270	-012D, H1612	0270-013D, H1612	0270-014D,	H1612027	0-015D, H1	6120270-016D,	H16120270-0	17D	
Run ID :Run Order	: FIA203-HE_161222B: 26		SampType:	Sample Matri	x Spike		Lab	ID: <b>H16120</b> 2	270-017DMS	Method	E350.1	
Analysis Date: 12/	22/16 16:56	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	a as N	0.895	0.055	1	0	89	80	120				
Associated samples	s: H16120270-010D, H1612	0270-011[	D, H16120270	-012D, H1612	0270-013D, H1612	0270-014D,	H1612027	0-015D, H1	6120270-016D,	H16120270-0	17D	
Run ID :Run Order	: FIA203-HE_161222B: 27		SampType:	Sample Matri	x Spike Duplicate		Lab	ID: <b>H16120</b> 2	270-017DMSD	Method	E350.1	
Analysis Date: 12/	22/16 16:57	Units:	mg/L			Prep Info	Prep Da	te:		Prep Method	1:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	a as N	0.921	0.055	1	0	92	80	120	0.8947	<u>2.9</u>	10	
Associated samples	s: H16120270-010D, H1612	0270-0110	D, H16120270	-012D, H1612	0270-013D, H1612	0270-014D,	H1612027	0-015D, H1	6120270-016D,	H16120270-0	17D	

- S Spike Recovery outside accepted recovery limit
- N Analyte concentration was not sufficiently high to calculate RPD

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal H16120270	Superfund		ANALYT	ICAL QC	SUMMARY Helena, MT Bra	REPO	RT		Date: 24-Jan	-17
Project:	CFR Monitoring-4	74374		В	atchID:	R121543					
Run ID :Run Order	FIA202-HE_161223B	: 9	SampType:	Initial Calibra	tion Verificat	ion Standard	Lab	ID: <b>ICV</b>		Method: E365.1	
Analysis Date: 12/	23/16 09:09	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Phosphorus, Total	as P	0.257	0.010	0.25	0	103	90	110			
Associated samples	s: H16120270-015D, H <sup>.</sup>	16120270-016[	D, H16120270	)-017D							
Run ID :Run Order	FIA202-HE_161223B	: 10	SampType:	Continuing C	alibration Ve	rification Standa	n <b>r</b> Lab	ID: <b>CCV</b>		Method: E365.1	
Analysis Date: 12/	23/16 09:10	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Phosphorus, Total	as P	0.0985	0.010	0.1	0	99	90	110			
Associated samples	s: H16120270-015D, H <sup>4</sup>	16120270-016[	D, H16120270	)-017D							
Run ID :Run Order	FIA202-HE_161223B	: 11	SampType:	Initial Calibra	ition Blank, Ir	strument Blank	Lab	ID: ICB		Method: E365.1	
Analysis Date: 12/	23/16 09:11	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Phosphorus, Total	as P	-0.000720	0.010		0		0	0			
Associated samples	s: H16120270-015D, H <sup>.</sup>	16120270-016[	D, H16120270	)-017D							
Run ID :Run Order	FIA202-HE_161223B	: 36	SampType:	Initial Calibra	tion Verificat	ion Standard	Lab	ID: <b>ICV</b>		Method: E365.1	
Analysis Date: 12/	23/16 09:46	Units:	mg/L			Prep Info	: Prep Da	ite:		Prep Method:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Phosphorus, Total	as P	0.255	0.010	0.25	0	102	90	110			
Associated samples	s: H16120270-015D, H <sup>4</sup>	16120270-016[	D, H16120270	)-017D							
Run ID :Run Order	: FIA202-HE_161223B	: 38	SampType:	Initial Calibra	ition Blank, Ir	strument Blank	Lab	ID: ICB		Method: E365.1	
Analysis Date: 12/	23/16 09:48	Units:	mg/L			Prep Info	Prep Da	ite:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Phosphorus, Total	as P	-0.00201	0.010		0		0	0			
Associated samples	s: H16120270-015D, H <sup>2</sup>	16120270-016[	D, H16120270	)-017D							

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Su H16120270	perfund		ANALYT	ICAL QC	SUMMARY Helena, MT Bra	<b>REPO</b>	RT		Date: 24-Jan-	17
Project:	CFR Monitoring-4743	374		В	atchID:	R121594					
Run ID :Run Order	: FIA202-HE_161227A: 9		SampType:	Initial Calibra	ation Verificati	ion Standard	Lab	ID: ICV		Method: E365.1	
Analysis Date: 12/2	27/16 12:32	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Phosphorus, Total	as P	0.255	0.010	0.25	0	102	90	110			
Associated samples	S: H16120270-001D, H161 009D, H16120270-010D	20270-002I , H1612027	D, H16120270 ′0-011D, H16′	0-003D, H1612 120270-012D,	0270-004D, H H16120270-0	16120270-005D, 13D, H16120270	H1612027 -014D	70-006D, H1	6120270-007D,	H16120270-008D, H1612	0270-
Run ID :Run Order	FIA202-HE_161227A: 10	)	SampType:	Continuing C	alibration Vei	rification Standa	n <b>r</b> Lab	ID: CCV		Method: E365.1	
Analysis Date: 12/2	27/16 12:33	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Phosphorus, Total	as P	0.101	0.010	0.1	0	101	90	110			
Associated samples	E H16120270-001D, H161 009D, H16120270-010D	20270-002I , H1612027	D, H16120270 ′0-011D, H16′	0-003D, H1612 120270-012D,	0270-004D, H H16120270-0 <sup>-</sup>	16120270-005D, 13D, H16120270	H1612027 -014D	70-006D, H1	6120270-007D,	H16120270-008D, H1612	0270-
Run ID :Run Order	: FIA202-HE_161227A: 11		SampType:	Initial Calibra	ation Blank, In	strument Blank	Lab	ID: ICB		Method: E365.1	
Analysis Date: 12/	27/16 12:34	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Phosphorus, Total	as P	-0.00237	0.010		0		0	0			
Associated samples	8: H16120270-001D, H161 009D, H16120270-010D	20270-002I , H1612027	D, H16120270 70-011D, H16 <sup>-</sup>	0-003D, H1612 120270-012D,	0270-004D, H H16120270-0	16120270-005D, 13D, H16120270	H1612027 -014D	70-006D, H1	6120270-007D,	H16120270-008D, H1612	0270-
Run ID :Run Order	FIA202-HE_161227A: 27	,	SampType:	Continuing C	Calibration Ver	rification Standa	r Lab	ID: CCV		Method: E365.1	
Analysis Date: 12/	27/16 12:50	Units:	mg/L			Prep Info	: Prep Da	ate:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Phosphorus, Total	as P	0.102	0.010	0.1	0	102	90	110			
Associated samples	E H16120270-001D, H161	20270-0020	D, H16120270	-003D, H1612	0270-004D, H	16120270-005D,	H1612027	70-006D, H1	6120270-007D,	H16120270-008D, H1612	0270-

009D, H16120270-010D, H16120270-011D, H16120270-012D, H16120270-013D, H16120270-014D

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Su H16120270	perfund		ANALYT	CAL QC SU Prepared by Hele		Date: 24-Jan-17					
Project:	CFR Monitoring-474	374		В	atchID: R1	21597						
Run ID :Run Order:	ICP2-HE_161227C: 6		SampType: I	Initial Calibra	tion Verification	Standard	Lab	ID: ICV		Method	E200.7	
Analysis Date: 12/2	27/16 11:27	Units: <b>n</b>	ng/L			Prep Info:	: Prep Da	te:		Prep Method	:	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		39.9	1.0	40	0	100	95	105				
Magnesium		39.8	1.0	40	0	100	95	105				
Potassium		40.2	1.0	40	0	100	95	105				
Sodium		40.3	1.0	40	0	101	95	105				
Run ID :Run Order:	009C, H16120270-010C	, H16120270-	011C, H1612	20270-012C, Continuing C	H16120270-013C	ation Standa	-014C, H16	120270-01	5C, H16120270-	016C, H16120	270-017C	
Analysis Date: 12/2	27/16 11:31	Units: <b>n</b>	ng/L			Prep Info:	: Prep Da	te:		Prep Method	:	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		25.2	1.0	25	0	101	95	105				
Magnesium		24.9	1.0	25	0	100	95	105				
Potassium		25.8	1.0	25	0	103	95	105				
Sodium		25.9	1.0	25	0	103	95	105				
Associated samples	E H16120270-001C, H161 009C, H16120270-010C	20270-002C, , H16120270-	H16120270- 011C, H1612	003C, H1612 20270-012C,	0270-004C, H161 H16120270-013C	20270-005C, , H16120270	H1612027 -014C, H10	0-006C, H1 5120270-01	6120270-007C, 5C, H16120270-	H16120270-00 ∙016C, H16120	8C, H1612 270-017C	0270-
Run ID :Run Order	ICP2-HE_161227C: 10		SampType: I	Interference (	Check Sample A		Lab	ID: ICSA		Method	E200.7	
Analysis Date: 12/2	27/16 11:42	Units: <b>m</b>	ng/L			Prep Info:	: Prep Da	te:		Prep Method	:	

Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	461	1.0	500	0	92	80	120				
Magnesium	497	1.0	500	0	99	80	120				
Potassium	-0.0337	1.0		0		0	0				
Sodium	0.0298	1.0		0		0	0				

Associated samples: H16120270-001C, H16120270-002C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-006C, H16120270-007C, H16120270-008C, H16020270-008C, H16020200, H1602000000, H16020000000000, H16020000000000000000000000000000

Run ID :Run Order:       ICP2-HE_161227C: 11       SampType:       Interference Check Sample AB						B Lab ID: ICSAB				E200.7	
Analysis Date: 12/27/16 11:46	Units: I	mg/L			Prep Info	: Prep Da	te:		Prep Method:		
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	468	1.0	500	0	94	80	120				
Magnesium	507	1.0	500	0	101	80	120				

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Su H16120270	perfund		ANALYT	ICAL QC	SUMMARY Helena, MT Brar	REPOI	RT		Date	: 24-Jan-	17
Project:	CFR Monitoring-4743	374		В	atchID:	R121597						
Run ID :Run Order	: ICP2-HE_161227C: 11		SampType:	Interference	Check Sampl	e AB	Lab	ID: ICSAB		Method	: <b>E200.7</b>	
Analysis Date: 12/2	27/16 11:46	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	:	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium		19.6	1.0	20	0	98	80	120				
Sodium		19.7	1.0	20	0	99	80	120				
Associated samples	5: H16120270-001C, H161 009C, H16120270-010C	20270-002C , H1612027(	с, H16120270- 0-011С, H161	003C, H1612 20270-012C,	0270-004C, H H16120270-0	I16120270-005C, 13C, H16120270∙	H1612027 014C, H16	0-006C, H1 6120270-01	6120270-007C, 5C, H16120270	H16120270-00 -016C, H16120	98C, H1612 270-017C	0270-
Run ID :Run Order	: ICP2-HE_161227C: 55		SampType:	Continuing C	alibration Ve	rification Standa	r Lab	ID: <b>CCV</b>		Method	E200.7	
Analysis Date: 12/2	27/16 14:30	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	:	
Analytes 4		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		24.6	1.0	25	0	98	90	110				
Magnesium		24.5	1.0	25	0	98	90	110				
Potassium		25.2	1.0	25	0	) <b>101</b>	90	110				
Sodium		25.5	1.0	25	0	102	90	110				

Associated samples: H16120270-001C, H16120270-002C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-006C, H16120270-007C, H16120270-008C, H16120270-009C, H16120270-010C, H16120270-011C, H16120270-012C, H16120270-013C, H16120270-014C, H16120270-015C, H16120270-016C, H16120270-017C

Run ID :Run Order:         ICP2-HE_161227C: 74         SampType:         Continuing Calibration Vertice						ication Standar Lab ID: CCV			Method	: <b>E200.7</b>	
nalysis Date: 12/27/16 15:41 Units: mg/L					Prep Info:	Prep Da	te:		Prep Method	:	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	24.6	1.0	25	0	99	90	110				
Magnesium	24.4	1.0	25	0	98	90	110				
Potassium	24.4	1.0	25	0	97	90	110				
Sodium	24.4	1.0	25	0	98	90	110				

Associated samples: H16120270-001C, H16120270-002C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-006C, H16120270-007C, H16120270-008C, H16120270-009C, H16120270-010C, H16120270-011C, H16120270-012C, H16120270-013C, H16120270-014C, H16120270-015C, H16120270-016C, H16120270-017C

Run ID :Run Order: ICP2-HE_161227C: 86		SampType:	Continuing C	alibration Verifi	cation Standa	r Lab	D: <b>CCV</b>		Method: E200.7	
Analysis Date: 12/27/16 16:26	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 4	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Calcium	25.0	1.0	25	0	100	90	110			
Magnesium	24.8	1.0	25	0	99	90	110			
Potassium	24.7	1.0	25	0	99	90	110			
Sodium	24.8	1.0	25	0	99	90	110			

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Sup H16120270	erfund	ANALYTICAL QC SUMMARY REPORT Prepared by Helena, MT Branch						Date: 24-Jan-17		
Project:	CFR Monitoring-4743	74		В	atchID:						
Run ID :Run Order:	ICP2-HE_161227C: 86		SampType:	Continuing C	alibration Ve	rification Standar	Lab ID: CCV		Method: E200.7		
Analysis Date: 12/2	7/16 16:26	Units: r	ng/L			Prep Info:	Prep Date:		Prep Method:		
Analytes <u>4</u>		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit HighLimit	RPD Ref Val	%RPD RPDLimit	Qual	

Associated samples: H16120270-001C, H16120270-002C, H16120270-003C, H16120270-004C, H16120270-005C, H16120270-006C, H16120270-007C, H16120270-008C, H16020270-008C, H16020200, H1602000, H1602000, H1602000, H1602000, H16020000, H1602000, H1

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Super H16120270	fund		ANALYT	ICAL QC Prepared by	SUMMA Helena, Mī	<b>RY</b> Bran	REPOI	RT		Date	24-Jan-	17
Project:	CFR Monitoring-474374	-		В	atchID:	R121677	,						
Run ID :Run Order:	ICPMS205-H_161229A: 10		SampType:	Initial Calibra	tion Verifica	tion Standa	ď	Lab I	ID: ICV		Method	E200.8	
Analysis Date: 12/2	9/16 10:42	Units: <b>r</b>	mg/L			Prep	Info:	Prep Da	te:		Prep Method		
Analytes 5	R	lesult	PQL	SPK value	SPK Ref Va	al %R	EC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.	0602	0.0050	0.06		0 ·	00	90	110				
Cadmium	0.	0298	0.0010	0.03		0	99	90	110				
Copper	0.	0612	0.010	0.06		0 ·	02	90	110				
Lead	0.	0587	0.010	0.06		0	98	90	110				
Zinc	0.	0608	0.010	0.06		0 ·	01	90	110				
Associated samples:	H16120270-001B, H161202 005B, H16120270-005C, H1 H16120270-009C, H161202 013C, H16120270-014B, H1	70-001C, 6120270 70-010B, 6120270	, H16120270 -006B, H161 , H16120270 -014C, H161	002B, H1612 20270-006C, 010C, H1612 20270-015B,	0270-002C, I H16120270-( 0270-011B, I H16120270-(	H16120270-0 007B, H1612 H16120270-0 015C, H1612	03B,   0270-( 11C,   0270-(	H16120270 D07C, H16 H16120270 D16B, H16	0-003C, H1 120270-008 0-012B, H1 120270-016	6120270-004B 3B, H16120270 6120270-012C 6C, H16120270	, H16120270-00 )-008C, H16120 , H16120270-01 )-017B, H161202	4C, H16120 270-009B, 3B, H16120 270-017C	)270- )270-
Run ID :Run Order:	ICPMS205-H_161229A: 11		SampType:	Interference	Check Samp	le A		Lab I	ID: ICSA		Method	E200.8	
Analysis Date: 12/2	9/16 10:44	Units: <b>r</b>	mg/L			Prep	Info:	Prep Da	te:		Prep Method		

Analytes 5	Result	PQL	SPK value SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	2.09E-06	0.0050	0							
Cadmium	2.02E-05	0.0010	0							
Copper	0.000273	0.010	0							
Lead	0.000217	0.010	0							
Zinc	0.000419	0.010	0							

Associated samples: H16120270-001B, H16120270-001C, H16120270-002B, H16120270-002C, H16120270-003B, H16120270-003C, H16120270-004B, H16120270-004C, H16120270-005B, H16120270-005C, H16120270-006B, H16120270-006C, H16120270-007B, H16120270-007C, H16120270-008B, H16120270-008C, H16120270-009B, H16120270-009C, H16120270-010B, H16120270-010C, H16120270-011B, H16120270-012B, H16120270-008C, H16120270-009B, H16120270-009C, H16120270-010B, H16120270-010C, H16120270-011B, H16120270-011C, H16120270-012B, H16120270-012C, H16120270-013B, H16120270-013B, H16120270-011C, H16120270-016B, H16120270-016C, H16120270-017B, H16120270-017C

Run ID :Run Order: ICPMS205-H_161229	A: 12	SampType:	Interference	Check Sample AB		Lab	ID: ICSAB		Method: <b>E200.8</b>			
Analysis Date: 12/29/16 10:46	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:			
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD F	RPDLimit	Qual	
Arsenic	0.0111	0.0050	0.01	0	111	70	130					
Cadmium	0.0110	0.0010	0.01	0	109	70	130					
Copper	0.0223	0.010	0.02	0	112	70	130					
Lead	0.000207	0.010		0		0	0					
Zinc	0.0111	0.010	0.01	0	111	70	130					

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal Supe H16120270	rfund	1	ANALYTI P	CAL QC SU	<b>MMARY</b> a, MT Brar	REPORT nch		Date: 24-Jan-1	17
Project:	CFR Monitoring-47437	4		B	atchID: R12	1677				
Run ID :Run Order:	ICPMS205-H_161229A: 12	S	SampType: I	nterference (	Check Sample AB		Lab ID: ICSAB		Method: E200.8	
Analysis Date: 12/2	9/16 10:46	Units: <b>m</b> g	g/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

Associated samples: H16120270-001B, H16120270-001C, H16120270-002B, H16120270-002C, H16120270-003B, H16120270-003C, H16120270-004B, H16120270-004C, H16120270-007C, H16120270-003B, H16120270-004B, H16120270-004C, H16120270-009B, H16120270-007C, H16120270-007C, H16120270-008B, H16120270-008C, H16120270-009B, H16120270-009C, H16120270-010B, H16120270-010C, H16120270-011B, H16120270-011C, H16120270-012B, H16120270-012C, H16120270-013B, H16120270-013C, H16120270-014B, H16120270-014C, H16120270-015B, H16120270-015C, H16120270-016B, H16120270-016C, H16120270-017C

Run ID :Run Order: ICPMS205-H_161229	)A: 17	SampType:	Method Blanl	k		Lab	ID: LRB		Method	E200.8	
Analysis Date: 12/29/16 11:09	Units:	mg/L			Prep Info	Prep Da	te:		Prep Method	l:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1E-05									
Cadmium	ND	5E-06									
Copper	ND	9E-05									
Lead	ND	1E-05									
Zinc	ND	8E-05									

Associated samples: H16120270-001B, H16120270-002B, H16120270-003B, H16120270-004B, H16120270-005B, H16120270-006B, H16120270-007B, H16120270-008B, H16120270-008B, H16120270-007B, H1602020, H16020, H16020,

Run ID :Run Order: ICPMS205-H_16122	9A: 18	SampType:	Laboratory Fo	ortified Blank		Lab	ID: LFB		Method: E200.8			
Analysis Date: 12/29/16 11:11	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	l:		
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	0.0478	0.0050	0.05	0	96	85	115					
Cadmium	0.0485	0.0010	0.05	0	97	85	115					
Copper	0.0495	0.010	0.05	0	99	85	115					
Lead	0.0468	0.010	0.05	0	94	85	115					
Zinc	0.0498	0.010	0.05	0	100	85	115					

Associated samples: H16120270-001B, H16120270-002B, H16120270-003B, H16120270-004B, H16120270-005B, H16120270-006B, H16120270-007B, H16120270-008B, H16120270-008B, H16120270-007B, H1602020, H16020, H16020,

Run ID :Run Order: ICPMS205-H_161229A: 2	21	SampType:	Sample Matri	ix Spike		Lab	D: <b>H16120</b>	270-001BMS	Method	E200.8	
Analysis Date: 12/29/16 11:17	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0565	0.0010	0.05	0.005582	102	70	130				
Cadmium	0.0497	0.0010	0.05	0.000009155	99	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ H161202	-Federal Superfund 270		ANALYT	ICAL QC SU Prepared by Hele	<b>JMMARY</b> ena, MT Bra	<b>REPO</b>	RT		Date:	24-Jan-	17	
Project:	CFR Mo	nitoring-474374		В	atchID: R1	21677							
Run ID :Run Order	: ICPMS20	5-H_161229A: 21	SampType:	Sample Matri	x Spike		Lab	ID: <b>H16120</b> 2	270-001BMS	Method:	E200.8		
Analysis Date: 12/2	29/16 11:17	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:			
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Copper		0.0522	0.0050	0.05	0.001795	101	70	130					
Lead		0.0488	0.0010	0.05	0.00003845	98	70	130					
Zinc		0.0547	0.010	0.05	0.003931	102	70	130					
Associated samples	H1612027	0-001B H16120270-002B	H16120270	003B H1612	0270-004B H161	20270-005B	H1612027	0-006B H1	120270-007B	H16120270-009	B H16120	270-	•

Associated samples: H16120270-001B, H16120270-002B, H16120270-003B, H16120270-004B, H16120270-005B, H16120270-006B, H16120270-007B, H16120270-008B, H16120270-007B, H16120270-008B, H1612028B, H1612028B, H1612028B, H1612028B, H161208B, 009B, H16120270-010B, H16120270-011B, H16120270-012B, H16120270-013B, H16120270-014B, H16120270-015B, H16120270-016B, H16120270-017B

Run ID :Run Order: ICPMS205-H_161229A	: 22	SampType:	Sample Matr	ix Spike Duplicate	•	Lab	ID: H161202	270-001BMSD	Method: <b>E200.8</b>		
Analysis Date: 12/29/16 11:19	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method	l:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0547	0.0010	0.05	0.005582	98	70	130	0.0565	<u>3.3</u>	20	
Cadmium	0.0484	0.0010	0.05	0.000009155	97	70	130	0.04972	2.7	20	
Copper	0.0507	0.0050	0.05	0.001795	98	70	130	0.05219	<u>3.0</u>	20	
Lead	0.0466	0.0010	0.05	0.00003845	93	70	130	0.0488	<u>4.5</u>	20	
Zinc	0.0527	0.010	0.05	0.003931	98	70	130	0.05471	<u>3.7</u>	20	

Associated samples: H16120270-001B, H16120270-002B, H16120270-003B, H16120270-004B, H16120270-005B, H16120270-006B, H16120270-007B, H16120270-008B, H16120270-007B, H16120270-008B, H1612028, H1612028, H1612028, H1612028, H161208, H16120 009B, H16120270-010B, H16120270-011B, H16120270-012B, H16120270-013B, H16120270-014B, H16120270-015B, H16120270-016B, H16120270-017B

Run ID :Run Order: ICPMS205-H_16122	29A: 53	SampType:	Sample Matri	x Spike		Lab	ID: H16120	270-011BMS	1BMS Method: E200.8			
Analysis Date: 12/29/16 12:23	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method:			
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual		
Arsenic	0.0519	0.0010	0.05	0.004107	96	70	130					
Cadmium	0.0484	0.0010	0.05	0.00001551	97	70	130					
Copper	0.0518	0.0050	0.05	0.001842	100	70	130					
Lead	0.0469	0.0010	0.05	0.00002037	94	70	130					
Zinc	0.0516	0.010	0.05	0.003981	95	70	130					

Associated samples: H16120270-001B, H16120270-002B, H16120270-003B, H16120270-004B, H16120270-005B, H16120270-006B, H16120270-007B, H16120270-008B, H16120270-009B, H16120270-010B, H16120270-011B, H16120270-012B, H16120270-013B, H16120270-014B, H16120270-015B, H16120270-016B, H16120270-017B

Run ID :Run Order: ICPMS205-H_161229A: \$	54	SampType:	Sample Matri	x Spike Duplicate		Lab	ID: <b>H16120</b> 2	270-011BMSD	Method	: <b>E200.8</b>	
Analysis Date: 12/29/16 12:25	Units:	mg/L			Prep Info:	: Prep Da	te:		Prep Method	:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0524	0.0010	0.05	0.004107	97	70	130	0.0519	0.9	20	
Qualifiers: ND - Not Detected at the Report	ing Limit	S	- Spike Recov	very outside accept	ed recovery	limit N	- Analyte co	ncentration was	not sufficiently	high to calcu	ulate RPD

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits
LABORATORIES	www.ener	gylab.com	Coll	ege Station, TX <b>8</b>	.0711							
Client: Work Order:	MT DEQ-Feder H16120270	al Superfund		ANALYT	ICAL QC SU Prepared by Heler	MMARY na, MT Bra	REPO	RT		Date	: 24-Jan-	17
Project:	CFR Monitoring	g-474374		В	atchID: R12	1677						
Run ID :Run Orde	r: ICPMS205-H_161	229A: 54	SampType:	Sample Matr	ix Spike Duplicate		Lab	ID: <b>H16120</b> 2	270-011BMSD	Method: E200.8		
Analysis Date: 12/	29/16 12:25	Units:	mg/L		Prep Info:	: Prep Da	te:		Prep Method	l:		
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium		0.0486	0.0010	0.05	0.00001551	97	70	130	0.04837	0.6	20	
Copper		0.0526	0.0050	0.05	0.001842	102	70	130	0.05181	1.5	20	
Lead		0.0470	0.0010	0.05	0.00002037	94	70	130	0.04686	0.4	20	
Zinc		0.0527	0.010	0.05	0.003981	97	70	130	0.05162	2.1	20	
Associated sample	s: H16120270-001B 009B, H16120270	, H16120270-002B, -010B, H16120270	H16120270- -011B, H161	003B, H1612 20270-012B,	0270-004B, H1612 H16120270-013B, I	0270-005B, H16120270-	H16120270 014B, H16	0-006B, H10 120270-015	6120270-007B, 6B, H16120270-	H16120270-00 016B, H16120	8B, H16120 270-017B	270-
Run ID :Run Orde	r: ICPMS205-H_161	229A: 120	SampType:	Sample Matr	ix Spike		Lab	ID: <b>H16120</b> :	303-010BMS	Method	: E200.8	
Analysis Date: 12/	29/16 16:58	Units: I	mg/L			Prep Info:	: Prep Da	te:		Prep Method	ł:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0490	0.0010	0.05	0.0008948	96	70	130				
Cadmium		0.0476	0.0010	0.05	0	95	70	130				
Copper		0.0496	0.0050	0.05	0	99	70	130				
Lead		0.0472	0.0010	0.05	0	94	70	130				

0.0003825 Associated samples: H16120270-001B, H16120270-002B, H16120270-003B, H16120270-004B, H16120270-005B, H16120270-006B, H16120270-007B, H16120270-008B, H1612028, H1612028, H1612028, H1612028, H161208, H16120 009B, H16120270-010B, H16120270-011B, H16120270-012B, H16120270-013B, H16120270-014B, H16120270-015B, H16120270-016B, H16120270-017B

93

70

130

0.05

Run ID :Run Order: ICPMS205-H_16122	SampType:	Sample Matri	x Spike Duplicate	•	Lab	D: <b>H16120</b>	303-010BMSD	Method: E200.8			
Analysis Date: 12/29/16 17:00	Units:	mg/L			Prep Info	: Prep Da	te:		Prep Method	1:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0480	0.0010	0.05	0.0008948	94	70	130	0.04898	1.9	20	
Cadmium	0.0471	0.0010	0.05	0	94	70	130	0.04761	1.1	20	
Copper	0.0488	0.0050	0.05	0	98	70	130	0.04962	1.6	20	
Lead	0.0469	0.0010	0.05	0	94	70	130	0.0472	0.7	20	
Zinc	0.0462	0.010	0.05	0.0003825	92	70	130	0.04692	1.6	20	

Associated samples: H16120270-001B, H16120270-002B, H16120270-003B, H16120270-004B, H16120270-005B, H16120270-006B, H16120270-007B, H16120270-008B, H16120270-007B, H16120270-008B, H1612028, H1612028, H1612028, H1612028, H161208, H161 009B, H16120270-010B, H16120270-011B, H16120270-012B, H16120270-013B, H16120270-014B, H16120270-015B, H16120270-016B, H16120270-017B

Zinc

J - Analyte detected below quantitation limits

0.0469

0.010

S - Spike Recovery outside accepted recovery limit

R - RPD outside accepted recovery limits

- N Analyte concentration was not sufficiently high to calculate RPD
- A Analyte concentration greater than four times the spike amount

LABORATORIES	www.energylab.com	tour Data.	College Station, TX 8	88.690.2218 • Gille	.0515 2.0711							
Client: Work Order:	MT DEQ-Federal Supe H16120270	rfund	ANALYTICAL QC SUMMARY REPORT Prepared by Helena, MT Branch							Date: 24-Jan-17		
Project:	CFR Monitoring-474374	1	E	BatchID: R	121677							
Run ID :Run Order:	ICPMS205-H_161229A: 138	SampTy	pe: Initial Calibra	ation Verificatio	n Standard	Lab	ID: ICV		Method	E200.8		
Analysis Date: 12/2	9/16 17:36	Units: <b>mg/L</b>			Prep Info:	Prep Da	te:		Prep Method:	:		
Analytes 5	F	Result PC	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	0	.0618 0.005	50 0.06	0	103	90	110					
Cadmium	0	.0306 0.007	0.03	0	102	90	110					
Copper	0	.0631 0.01	0.06	0	105	90	110					
Lead	0	.0603 0.07	0.06	0	101	90	110					
Zinc	0	.0622 0.01	0.06	0	104	90	110					
Associated samples	H16120270-001B, H161202 005B, H16120270-005C, H H16120270-009C, H161202 013C, H16120270-014B, H	270-001C, H16120 16120270-006B, H 270-010B, H16120 16120270-014C, H	270-002B, H1612 16120270-006C, 270-010C, H1612 16120270-015B,	20270-002C, H16 H16120270-007 20270-011B, H16 H16120270-015	120270-003B, B, H16120270 3120270-011C, C, H16120270	H1612027 -007C, H16 H1612027 -016B, H16	0-003C, H1 120270-008 0-012B, H1 120270-010	6120270-004B, 3B, H16120270 6120270-012C, 6C, H16120270	H16120270-00 -008C, H161202 H16120270-01 -017B, H161202	4C, H1612( 270-009B, 3B, H1612( 270-017C	)270- )270-	
Run ID :Run Order:	ICPMS205-H_161229A: 139	SampTy	pe: Interference	Check Sample	A	Lab	ID: ICSA		Method	E200.8		
Analysis Date: 12/2	9/16 17:38	Units: mg/L			Prep Info:	: Prep Da	te:		Prep Method:	:		

%REC LowLimit HighLimit RPD Ref Val

 Lead
 0.000224
 0.010
 0

 Zinc
 0.000521
 0.010
 0

 Associated samples:
 H16120270-001B, H16120270-001C, H16120270-002B, H16120270-002C, H16120270-003B, H16120270-003C, H16120270-004B, H16120270-004C, H16120270-004B, H1612027

SPK value SPK Ref Val

H16120270-003C, H16120270-003C, H16120270-000C, H16120270-0007B, H16120270-007C, H16120270-008B, H16120270-008C, H16120270-003B, H16120270-003B, H16120270-003B, H16120270-013B, H16120270-011C, H16120270-012B, H16120270-012C, H16120270-013B, H16120270-011C, H16120270-016B, H16120270-016C, H16120270-017B, H16120270-017C

0

0

0

Run ID :Run Order: ICPMS205-H_161229	SampType:	B Lab ID: ICSAB				Method: <b>E200.8</b>					
Analysis Date: 12/29/16 17:40	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
Arsenic	0.0112	0.0050	0.01	0	112	70	130				
Cadmium	0.0110	0.0010	0.01	0	110	70	130				
Copper	0.0222	0.010	0.02	0	111	70	130				
Lead	0.000218	0.010		0		0	0				
Zinc	0.0108	0.010	0.01	0	108	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit

Analytes 5

Arsenic

Copper

Cadmium

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD

J - Analyte detected below quantitation limits

Result

3.82E-06

3.96E-05

0.000284

PQL

0.0050

0.0010

0.010

R - RPD outside accepted recovery limits

A - Analyte concentration greater than four times the spike amount

%RPD RPDLimit

Qual

LABORATORIES	E	Trust our People. Trust our Dat www.energylab.com	ta. Col	lege Station, TX <b>88</b>	.0515 .0711							
Client: Work Order:	MT DE0 H16120	Q-Federal Superfund 270		ANALYT	ICAL QC SU Prepared by Hel	<b>JMMARY</b> ena, MT Brai	REPOI	RT		Date	: 24-Jan-	17
Project:	CFR Mo	onitoring-474374		В	atchID: R1	21677						
Run ID :Run Order:	ICPMS20	)5-H_161229A: 140	SampType:	Interference	Check Sample A	В	Lab I	D: ICSAB		Method	: <b>E200.8</b>	
Analysis Date: 12/2	9/16 17:40	Units	s: <b>mg/L</b>			Prep Info:	Prep Dat	ie:		Prep Method	:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: H16120270-001B, H16120270-001C, H16120270-002B, H16120270-002C, H16120270-003B, H16120270-003C, H16120270-004B, H16120270-004C, H16120270-007C, H16120270-003E, H16120270-004C, H16120270-009B, H16120270-007C, H16120270-004B, H16120270-004C, H16120270-009B, H16120270-004C, H16120270-004E, H16120270-004E, H16120270-007E, H16120270-007C, H16120270-004B, H16120270-004E, H16120270-009B, H16120270-007E, H16120270-004E, H16120270-004E, H16120270-004E, H16120270-007E, H16120270-007E, H16120270-007E, H16120270-004E, H16020270-004E, H16020270-

Run ID :Run Order: ICPMS205-H_1612	SampType:	Lab ID: ICSA				Method: E200.8					
Analysis Date: 12/30/16 08:13	Units: mg/L				Prep Info: Prep Date:		te:	Prep Method:		l:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	7.03E-05	0.0050		0							
Cadmium	3.72E-05	0.0010		0							
Copper	0.000300	0.010		0							
Lead	0.000231	0.010		0							
Zinc	0.000529	0.010		0							

Associated samples: H16120270-001B, H16120270-001C, H16120270-002B, H16120270-002C, H16120270-003B, H16120270-003C, H16120270-004B, H16120270-004C, H16120270-005B, H16120270-005C, H16120270-006B, H16120270-006C, H16120270-007B, H16120270-007C, H16120270-008B, H16120270-008C, H16120270-009B, H16120270-009C, H16120270-010B, H16120270-010C, H16120270-011B, H16120270-011C, H16120270-012B, H16120270-012C, H16120270-013B, H16120270-013C, H16120270-014B, H16120270-014C, H16120270-015B, H16120270-015C, H16120270-016B, H16120270-016C, H16120270-017B, H16120270-017C

Run ID :Run Order: ICPMS205-H_16122	SampType:	Lab ID: ICSAB				Method: E200.8					
Analysis Date: 12/30/16 08:15	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:		
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0114	0.0050	0.01	0	114	70	130				
Cadmium	0.0114	0.0010	0.01	0	114	70	130				
Copper	0.0230	0.010	0.02	0	115	70	130				
Lead	0.000221	0.010		0		0	0				
Zinc	0.0112	0.010	0.01	0	112	70	130				

Associated samples: H16120270-001B, H16120270-001C, H16120270-002B, H16120270-002C, H16120270-003B, H16120270-003C, H16120270-004B, H16120270-004C, H16120270-005B, H16120270-005C, H16120270-006B, H16120270-006C, H16120270-007B, H16120270-007C, H16120270-008B, H16120270-008C, H16120270-009B, H16120270-009C, H16120270-010B, H16120270-010C, H16120270-011B, H16120270-011C, H16120270-012B, H16120270-012C, H16120270-013B, H16120270-013C, H16120270-014B, H16120270-014C, H16120270-015B, H16120270-015C, H16120270-016B, H16120270-016C, H16120270-017B, H16120270-017C

**Qualifiers:** ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

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LABORATORIES	www.energyla	b.com	Colle	ege Station, TX <b>8</b>	BII 88.690.2218 • Gi	.0515						
Client: Work Order:	MT DEQ-Federal H16120270	Superfund		ANALYTICAL QC SUMMARY REPORT Prepared by Helena, MT Branch							: 24-Jan-	17
Project:	CFR Monitoring-4	74374		В	atchID:	R121677						
Run ID :Run Order	: ICPMS205-H_161229	A: 224	SampType: Initial Calibration Verification Standard Lab ID: ICV							Method	E200.8	
Analysis Date: 12/	30/16 11:28	Units: r	ng/L			Prep Info:	Prep Da	te:		Prep Method	:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.0579	0.0050	0.06	0	96	90	110				
Cadmium		0.0289	0.0010	0.03	0	96	90	110				
Copper		0.0587	0.010	0.06	0	98	90	110				
Lead		0.0563	0.010	0.06	0	94	90	110				
Zinc		0.0590	0.010	0.06	0	98	90	110				
Associated samples	8: H16120270-001B, H 005B, H16120270-00 H16120270-009C, H 013C, H16120270-01	16120270-001C, 95C, H16120270 16120270-010B, 14B, H16120270	H16120270- -006B, H161 H16120270- -014C, H161	002B, H1612 20270-006C, 010C, H1612 20270-015B,	0270-002C, H1 H16120270-00 0270-011B, H1 H16120270-01	16120270-003B, 17B, H16120270 16120270-011C, 5C, H16120270	H1612027 007C, H16 H1612027 016B, H16	0-003C, H1 120270-008 0-012B, H1 120270-010	6120270-004B, 3B, H16120270- 6120270-012C, 5C, H16120270-	H16120270-00 -008C, H16120 H16120270-01 -017B, H16120	4C, H16120 270-009B, 3B, H16120 270-017C	)270- )270-
Run ID :Run Order	: ICPMS205-H_161229	A: 225	SampType:	Interference	Check Sample	A	Lab	ID: ICSA		Method	: <b>E200.8</b>	
Analysis Date: 12/3	30/16 11:30	Units: r	ng/L			Prep Info:	Prep Da	te:		Prep Method	:	
Analytes 5		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Associated samples: H16120270-001B, H16120270-001C, H16120270-002B, H16120270-002C, H16120270-003B, H16120270-003C, H16120270-004B, H16120270-004C, H16120270-005B, H16120270-005C, H16120270-006B, H16120270-006C, H16120270-007B, H16120270-007C, H16120270-008B, H16120270-008C, H16120270-009B, H16120270-009C, H16120270-010B, H16120270-010C, H16120270-011B, H16120270-011C, H16120270-012B, H16120270-012C, H16120270-013B, H16120270-013C, H16120270-014B, H16120270-014C, H16120270-015B, H16120270-015C, H16120270-016B, H16120270-016C, H16120270-017B, H16120270-017C

Run ID :Run Order: ICPMS205-H_16122	SampType: Interference Check Sample AB				Lab	D: ICSAB	Method: E200.8			
Analysis Date: 12/30/16 11:32	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 RPDLim	t Qual
Arsenic	0.0112	0.0050	0.01	0	112	70	130			
Cadmium	0.0112	0.0010	0.01	0	112	70	130			
Copper	0.0222	0.010	0.02	0	111	70	130			
Lead	0.000228	0.010		0		0	0			
Zinc	0.0112	0.010	0.01	0	112	70	130			

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPD A - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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<b>ENERGY</b> LABORATORIES	Trust our People. Trust ou www.energylab.com	ur Data. Co	Billings, lege Station, TX 888.690.2218 • Gillette,						
Client: Work Order:	Date: 24-Jan-17								
Project: CFR Monitoring-474374 BatchID: R121677									
Run ID :Run Order:	ICPMS205-H_161229A: 226	SampType	Interference Check Sample AB	Lab ID: ICSAB	Method: <b>E200.8</b>				
Analysis Date: 12/3	0/16 11:32	Units: <b>mg/L</b>		Prep Info: Prep Date:	Prep Method:				
Analytes 5	Re	sult PQL	SPK value SPK Ref Val	%REC LowLimit HighLimit RPD R	ef Val %RPD RPDLimit Qual				

Associated samples: H16120270-001B, H16120270-001C, H16120270-002B, H16120270-002C, H16120270-003B, H16120270-003C, H16120270-004B, H16120270-004C, H16120270-007C, H16120270-003C, H16120270-004C, H16120270-009B, H16120270-005C, H16120270-006B, H16120270-006C, H16120270-007B, H16120270-007C, H16120270-008B, H16120270-008C, H16120270-009B, H16120270-009C, H16120270-010B, H16120270-011C, H16120270-011C, H16120270-012C, H16120270-013B, H16120270-013B, H16120270-013C, H16120270-014B, H16120270-014C, H16120270-015B, H16120270-015C, H16120270-016B, H16120270-016C, H16120270-017C

Run ID :Run Order: ICPMS205-H_161229	SampType:	Sample Matri	x Spike		Lab I	D: <b>H16120</b>	307-001BMS	001BMS Method: E200.8			
Analysis Date: 12/30/16 14:11	Units:	mg/L			Prep Info	Prep Da	te:		Prep Method	:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0493	0.0010	0.05	0.002395	94	70	130				
Cadmium	0.0462	0.0010	0.05	0.00003963	92	70	130				
Copper	0.0489	0.0050	0.05	0.002269	93	70	130				
Lead	0.0458	0.0010	0.05	0.0000697	92	70	130				
Zinc	0.0645	0.010	0.05	0.01756	94	70	130				

Associated samples: H16120270-001B, H16120270-002B, H16120270-003B, H16120270-004B, H16120270-005B, H16120270-006B, H16120270-007B, H16120270-008B, H16120270-008B, H16120270-007B, H16020270-007B, H16020270-

Run ID :Run Order: ICPMS205-H_16122	9A: 276	SampType:	Sample Matri	ix Spike Duplicate	9	Lab	ID: <b>H16120</b> 3	307-001BMSD	Method	E200.8	
Analysis Date: 12/30/16 14:13	Units:	mg/L			Prep Info:	: Prep Da	te:		Prep Method	l:	
Analytes 5	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0498	0.0010	0.05	0.002395	95	70	130	0.04931	1.1	20	
Cadmium	0.0468	0.0010	0.05	0.00003963	94	70	130	0.04621	1.3	20	
Copper	0.0492	0.0050	0.05	0.002269	94	70	130	0.04888	0.7	20	
Lead	0.0461	0.0010	0.05	0.0000697	92	70	130	0.04584	0.7	20	
Zinc	0.0645	0.010	0.05	0.01756	94	70	130	0.06447	0.0	20	

Associated samples: H16120270-001B, H16120270-002B, H16120270-003B, H16120270-004B, H16120270-005B, H16120270-006B, H16120270-007B, H16120270-008B, H16120270-008B, H16120270-008B, H16120270-008B, H16120270-008B, H16120270-007B, H16020270-007B, H16020270-

- S Spike Recovery outside accepted recovery limit
- 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 four times the spike amount

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Client: Work Order:	MT DE0 H16120	Q-Federal Superfund 270		ANALYTI	Date: 24-Jan-17						
Project:	CFR M	onitoring-474374	<sup>4</sup> BatchID: R121782								
Run ID :Run Order:	HGCV20	2-H_170104A: 9	SampType	Continuing C	alibration Ve	erification Standa	r Lab	ID: <b>CCV1</b>		Method: E245.1	
Analysis Date: 01/0	4/17 13:07	Units:	mg/L			Prep Info:	Prep Da	te:		Prep Method:	
Analytes 1		Result	PQL	SPK value	SPK Ref Va	I %REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Mercury		0.000206	0.00010	0.0002	(	) 103	95	105			
Associated samples	: H161202	270-018A									

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

R - RPD outside accepted recovery limits

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Client: Work Order:	MT DEQ-Federal S H16120270	uperfund		ANALYT	ICAL QC S Prepared by H	SUMMARY lelena, MT Brar	REPOI	RT		Date	: 24-Jan-	17
Project:	CFR Monitoring-474	4374		В	atchID: 1	SS161214A	ι					
Run ID :Run Order:	ACCU-124 (14410200)_	161214A: 1	SampType:	Method Blan	k		Lab I	D: MB-1_1	61214A	Method	: A2540 D	
Analysis Date: 12/1	4/16 15:04	Units:	mg/L			Prep Info:	Prep Dat	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	nded TSS @ 105 C	ND	0.1									
Associated samples: H16120270-001A, H16120270-002A, H16120270-003A, H16120270-004A, H16120270-005A, H16120270-006A, H16120270-007A, H16120270-008A, H16120270- 009A, H16120270-010A, H16120270-011A, H16120270-012A, H16120270-013A, H16120270-014A, H16120270-015A, H16120270-016A, H16120270-017A												
Run ID :Run Order:	ACCU-124 (14410200)_	161214A: 2	SampType:	Laboratory C	ontrol Sample		Lab I	D: LCS-2_1	161214A	Method	: A2540 D	
Analysis Date: 12/1	4/16 15:04	Units:	mg/L			Prep Info:	Prep Dat	te:		Prep Method	l:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	nded TSS @ 105 C	93.0	10	100	0	93	80	120				
Associated samples	: H16120270-001A, H16 009A, H16120270-010/	120270-002A A, H1612027(	, H16120270 D-011A, H161	-003A, H1612( 20270-012A, I	0270-004A, H1 H16120270-01:	6120270-005A, 3A, H16120270-	H1612027( 014A, H16	D-006A, H16 120270-015	6120270-007A,   5A, H16120270-(	H16120270-00 D16A, H16120	8A, H16120 270-017A	270-
Run ID :Run Order:	ACCU-124 (14410200)_	161214A: 4	SampType:	Sample Dupl	icate		Lab I	D: H161202	247-002BDUP	Method	: A2540 D	
Analysis Date: 12/1	4/16 15:05	Units:	mg/L			Prep Info:	Prep Dat	te:		Prep Method	l:	
Analytes <u>1</u>		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	nded TSS @ 105 C	2.00	10		0				2		5	
Associated samples	: H16120270-001A, H16 009A, H16120270-010	120270-002A A, H1612027(	, H16120270 D-011A, H161	-003A, H1612( 20270-012A, I	0270-004A, H1 H16120270-01:	6120270-005A, 3A, H16120270-	H1612027( 014A, H16	0-006A, H16 120270-015	6120270-007A,   5A, H16120270-(	H16120270-00 D16A, H16120	8A, H16120 270-017A	270-
Run ID :Run Order:	ACCU-124 (14410200)_	161214A: 1	SampType:	Sample Dupl	icate		Lab I	D: H161202	252-001ADUP	Method	: A2540 D	
Analysis Date: 12/1	4/16 15:07	Units:	mg/L			Prep Info:	Prep Dat	te:		Prep Method	l:	
Analytes 1		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Solids, Total Suspe	nded TSS @ 105 C	170	33		0				176.7	3.8	5	<b>_</b> _
Associated samples	H16120270-001A, H16 009A, H16120270-010	120270-002A A, H1612027(	, H16120270 D-011A, H161	-003A, H1612 20270-012A, I	0270-004A, H1 H16120270-01:	6120270-005A, 3A, H16120270-	H16120270 014A, H16	0-006A, H10 120270-015	6120270-007A,   5A, H16120270-	H16120270-00 D16A, H16120	8A, H16120 270-017A	270-

S - Spike Recovery outside accepted recovery limit

N - Analyte concentration was not sufficiently high to calculate RPDA - Analyte concentration greater than four times the spike amount

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

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H16120270

### Work Order Receipt Checklist

### MT DEQ-Federal Superfund

Login completed by:	Tracy L. Lorash	Date Received: 12/14/2016						
Reviewed by:	BL2000\wjohnson		Rec	ceived by: TLL				
Reviewed Date:	12/20/2016	Carrier name: Hand Del						
Shipping container/cooler in	good condition?	Yes 🗹	No 🗌	Not Present				
Custody seals intact on all sl	hipping container(s)/cooler(s)?	Yes	No 🗌	Not Present 🗹				
Custody seals intact on all sa	ample bottles?	Yes	No 🗌	Not Present 🗹				
Chain of custody present?		Yes 🗹	No 🗌					
Chain of custody signed whe	en relinquished and received?	Yes 🗹	No 🗌					
Chain of custody agrees with	n 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 h (Exclude analyses that are c such as pH, DO, Res CI, Su	nolding time? onsidered field parameters Ifite, Ferrous Iron, etc.)	Yes 🖌	No 🗌					
Temp Blank received in all sl	hipping container(s)/cooler(s)?	Yes 🗹	No 🗌	Not Applicable				
Container/Temp Blank tempe	erature:	°C See comments						
Water - VOA vials have zero	headspace?	Yes	No 🗌	No VOA vials submitted				
Water - pH acceptable upon	receipt?	Yes 🗹	No 🗌	Not Applicable				

#### Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

#### **Contact and Corrective Action Comments:**

Sample ID on COC includes parentheses for Field Blank #1 (FC-CFR) and Field Blank #2 (MCWC-MWB) -ID on bottles does not. Logged in with ID from COC. Cooler 1 was received at 3.9°C, Cooler 2 at 3.9°C, Cooler 3 at 3.1°C. Samples were not received on ice. tl 12/15/16



January 23, 2017

Energy Laboratories, Inc. ATTN: Jonathan Dee Hager PO Box 5688 Helena, MT 59604 jhager@energylab.com

RE: Project ENL-HL1201

Client Project: H16120270

Dear Jonathan Dee Hager,

This report contains results for the 5 samples received by Brooks Applied Labs (BAL) on December 16, 2016. The samples were logged-in for the contracted analyses according to the chain-of-custody form(s). The samples were received, prepared, analyzed, and stored according to BAL SOPs and EPA methodology.

The results were method blank corrected as described in the calculations section of the relevant BAL SOP(s) and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details. All data was reported without qualification (with the exception of concentration qualifiers), and all associated quality control sample results meet the acceptance criteria.

BAL, an accredited laboratory, certifies that the reported results of all analyses for which BAL is NELAP accredited meet all NELAP requirements. For more details, please see the *Report Information* page in your report. Please feel free to contact me if you have any questions regarding this report.

Sincerely,

Lydia Dreoves

Lydia Greaves Project Manager Lydia@brooksapplied.com



### **Report Information**

#### **Laboratory Accreditation**

BAL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BAL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <a href="http://www.brooksapplied.com/resources/certificates-permits/">http://www.brooksapplied.com/resources/certificates-permits/</a>. Results reported relate only to the samples listed in the report.

#### **Field Quality Control Samples**

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

#### **Common Abbreviations**

BAL BLK BS CAL CCB CCV COC D DUP IBL ICV	Brooks Applied Labs method blank laboratory fortified blank calibration standard continuing calibration blank continuing calibration verification chain of custody record dissolved fraction duplicate instrument blank initial calibration verification	MS MSD NR N/C PS REC RPD SCV SOP SRM	matrix spike matrix spike duplicate non-detect non-reportable not calculated post preparation spike percent recovery relative percent difference secondary calibration verification standard operating procedure standard reference material
IBL	instrument blank	SOP	standard operating procedure
ICV	initial calibration verification	SRM	standard reference material
MDL	method detection limit	T	total fraction
MRL	method reporting limit	TR	total recoverable fraction

#### **Definition of Data Qualifiers**

(Effective 9/23/09)

- **B** Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
- **E** An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
- **H** Holding time and/or preservation requirements not met. Result is estimated.
- J Estimated value. A full explanation is presented in the narrative.
- J-M Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
- J-N Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
- **M** Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
- **N** Spike recovery was not within acceptance criteria. Result is estimated.
- **R** Rejected, unusable value. A full explanation is presented in the narrative.
- U Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
- **X** Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Applied Labs, those found in the EPA <u>SOW ILM03.0</u>, Exhibit B, Section III, pg. B-18, and the <u>USEPA Contract Laboratory Program National Functional Guidelines for Inorganic</u> <u>Superfund Data Review; USEPA; January 2010</u>. These supersede all previous gualifiers ever employed by BAL.



## Sample Information

Sample	Lab ID	<b>Report Matrix</b>	Туре	Sampled	Received
H16120270-002F	1651055-01	Water	Sample	12/12/2016	12/16/2016
H16120270-003F	1651055-02	Water	Sample	12/12/2016	12/16/2016
H16120270-004F	1651055-03	Water	Sample	12/12/2016	12/16/2016
H16120270-018B	1651055-04	Water	Sample	12/12/2016	12/16/2016
H16120270-019A	1651055-05	Water	Trip Blank	12/12/2016	12/16/2016

### **Batch Summary**

Analyte MeHg Lab Matrix Water Method EPA 1630 
 Prepared
 Analyzed
 Batch

 01/18/2017
 01/19/2017
 B170014

Sequence 1700071



# Sample Results

Sample	Analyte	<b>Report Matrix</b>	Basis	Result	Qualifie	er MDL	MRL	Unit	Batch	Sequence
H16120270-00	02F		TD	< 0.000		0.000	0.050	/	D470044	
1651055-01	МеНд	vvater	IR	≤ 0.020	U	0.020	0.050	ng/L	B170014	1700071
H16120270-00	03F									
1651055-02	MeHg	Water	TR	0.413		0.020	0.050	ng/L	B170014	1700071
H16120270-00	)4F									
1651055-03	MeHg	Water	TR	0.421		0.020	0.049	ng/L	B170014	1700071
H16120270-01	18B									
1651055-04	MeHg	Water	TR	0.234		0.020	0.050	ng/L	B170014	1700071
H16120270-01	19A									
1651055-05	MeHg	Water	TR	≤ 0.020	U	0.020	0.049	ng/L	B170014	1700071



### Accuracy & Precision Summary

Batch: B170014 Lab Matrix: Water Method: EPA 1630

Sample B170014-BS1	Analyte Laboratory Fortified Bla MeHg	Native ank, (1702	Spike 2004) 1.000	<b>Result</b> 1.327	Units ng/L	<b>REC &amp; Limits</b> 133% 67-133	RPD & Limits
B170014-BS2	Laboratory Fortified Bla MeHg	ank, (1702	<b>2004)</b> 1.000	1.231	ng/L	123% 67-133	
B170014-MS1	Matrix Spike, (1651055 MeHg	<b>-03)</b> 0.421	1.000	1.630	ng/L	121% 65-135	
B170014-MSD1	Matrix Spike Duplicate, MeHg	<b>(1651055</b> 0.421	5 <b>-03)</b> 1.000	1.679	ng/L	126% 65-135	3% 35

### Method Blanks & Reporting Limits

Batch: B170014 Matrix: Water Method: EPA 1630 Analyte: MeHg			
Sample	Result	Units	
B170014-BLK1	0.008	ng/L	
B170014-BLK2	0.011	ng/L	
B170014-BLK3	0.007	ng/L	
B170014-BLK4	0.010	ng/L	
	Average: 0.009	Standard Deviation: 0.002	MDL: 0.020
	Limit: 0.045	Limit: 0.015	MRL: 0.050



BAL Report 1651055 Client PM: Jonathan Dee Hager Client Project: H16120270

### Sample Containers

Lab Sam	ID: 1651055-01 iple: H16120270-002F		Rej Sar	oort Matrix: Water nple Type: Sample		Collected: 12/12/2016 Received: 12/16/2016				
Des A	Container Bottle FLPE Hg-SP	Size 250mL	Lot 15-0262	Preservation 1mL 6N HCI (PP)	<b>P-Lot</b> 1646022	<b>рН</b> <2	Ship. Cont. Cooler			
Lab Sarr Des A	ID: 1651055-02 pple: H16120270-003F Container Bottle FLPE Hg-SP	<mark>Size</mark> 250mL	Rej Sar Lot 15-0262	oort Matrix: Water nple Type: Sample Preservation 1mL 6N HCI (PP)	<b>P-Lot</b> 1646022	Collect Receiv pH <2	ed: 12/12/2016 ed: 12/16/2016 Ship. Cont. Cooler			
Lab Sam Des A	ID: 1651055-03 ple: H16120270-004F Container Bottle FLPE Hg-SP	<mark>Size</mark> 250mL	Rej Sar Lot 15-0262	oort Matrix: Water nple Type: Sample Preservation 1mL 6N HCI (PP)	<b>P-Lot</b> 1646022	Collect Receiv pH <2	ed: 12/12/2016 ed: 12/16/2016 Ship. Cont. Cooler			
Lab Sam Des A	ID: 1651055-04 pple: H16120270-018B Container Bottle FLPE Hg-SP	<mark>Size</mark> 250mL	Rej Sar Lot 15-0262	oort Matrix: Water nple Type: Sample Preservation 1mL 6N HCI (PP)	<b>P-Lot</b> 1646022	Collecto Receiv pH <2	ed: 12/12/2016 ed: 12/16/2016 Ship. Cont. Cooler			
Lab Sam	ID: 1651055-05 Iple: H16120270-019A		Rej Sar	oort Matrix: Water nple Type: Trip Blank		Collect Receiv	ed: 12/12/2016 ed: 12/16/2016			
Des A	Container Bottle FLPE Hg-SP	Size 250mL	Lot 15-0262	Preservation 1mL 6N HCI (PP)	<b>P-Lot</b> 1646022	<b>рН</b> <2	Ship. Cont. Cooler			



BAL Report 1651055 Client PM: Jonathan Dee Hager Client Project: H16120270

# **Shipping Containers**

Cooler

Received: December 16, 2016 10:15 Tracking No: 1Z37EW970155924977 via UPS Coolant Type: Ice Temperature: ambient Description: Cooler Damaged in transit? No Returned to client? No Comments: Ambient Custody seals present? Yes Custody seals intact? Yes COC present? Yes

Energy Laboratories Inc 3161 East Lyndale Avenue	H16120270 CHAIN-OF-C								STODY RECORD								BAL <b>Ragget 11 65 1</b> 055 15-Dec-16		
Helena, MT 59601 (406) 442-0711	10120270		Custo Intact: Signal	dy Sea ture Ma	l: atch:	Y Y Y	N N N		Shipp Recei	ed By ipt Te	/: mp: _	-5			_				
Subcontractor:				- Contraction of the second			AND DECKER OF	1						-			(C.).		
Brooks Applied Labs								Req	ueste	d Tes	sts								
Bothell, WA 98011		SUE																	
		BR															1 1		
TEL: (206) 632-6206 FAX: (206) 632-601	7	Ő																	
Acct #:	- 22	KSP																	
Subcontractor's Client:		AND																	
H16120270-002F   Surface Water   12/12/16	11:30 A 1-MISC	1																	
H16120270-003F Surface Water 12/12/16	12:00 P 1-MISC	1																	
H16120270-004F Surface Water 12/12/16	12:00 P 1-MISC	1													-				
H16120270-018B Surface Water 12/12/16	10:30 A 1-MISC	1													$\Box$				
H16120270-019A Trip Blank 12/12/16	09:00 A 1-MISC	1																	

Earliest Due Date: 12/23/2016		
Comments: <u>PO# H13260</u>		
QC Level: STD	9 10 21	
	Date/Time	
Relinquished by:	Received by: 12/15/14 10:36 Received by: Allow	12/16/16 1015

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.1

**APPENDIX C** 

SURFACE WATER DATA

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Solids, Total Suspended TSS @ 105 C	5	1	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Alkalinity, Total as CaCO3	99	4	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Bicarbonate Alkalinity as HCO3	120	4	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Sulfate	32	1	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Chloride	2	1	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Hardness as CaCO3	107	1	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Organic Carbon, Dissolved	2	0.5	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	N-Total, mg/L	0.2	0.05	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Phosphorus, Total as P, mg/L	0.027	0.003	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Arsenic, Dissolved	0.02	0.001	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Cadmium, Dissolved	ND	0.00003	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Copper, Dissolved	0.003	0.001	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Lead, Dissolved	ND	0.0003	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Zinc, Dissolved	ND	0.008	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Arsenic, Total Recoverable	0.021	0.001	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Cadmium, Total Recoverable	0.00006	0.00003	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Calcium, Total Recoverable	30	1	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Copper, Total Recoverable	0.006	0.001	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Lead, Total Recoverable	0.0014	0.0003	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Magnesium, Total Recoverable	8	1	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Potassium, Total Recoverable	1	1	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Sodium, Total Recoverable	10	1	mg/L
MCWC-MWB	Natural Sample	H16030296-016	3/15/2016	Zinc, Total Recoverable	0.011	0.008	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Solids, Total Suspended TSS @ 105 C	4	1	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Alkalinity, Total as CaCO3	110	4	mg/L

Table C1. Surface water metal concentrations in the Clark Fork River Operable Unit, 2016.

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Bicarbonate Alkalinity as HCO3	140	4	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Sulfate	145	1	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Chloride	6	1	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Hardness as CaCO3	232	1	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Organic Carbon, Dissolved	2.5	0.5	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	N-Total, mg/L	0.22	0.05	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Phosphorus, Total as P, mg/L	0.022	0.003	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Arsenic, Dissolved	0.02	0.001	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Cadmium, Dissolved	ND	0.00003	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Copper, Dissolved	0.002	0.001	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Lead, Dissolved	ND	0.0003	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Zinc, Dissolved	ND	0.008	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Arsenic, Total Recoverable	0.022	0.001	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Calcium, Total Recoverable	68	1	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Copper, Total Recoverable	0.005	0.001	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Lead, Total Recoverable	0.0008	0.0003	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Magnesium, Total Recoverable	15	1	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Potassium, Total Recoverable	2	1	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Sodium, Total Recoverable	13	1	mg/L
MWB-SBC	Natural Sample	H16030296-014	3/15/2016	Zinc, Total Recoverable	ND	0.008	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Solids, Total Suspended TSS @ 105 C	12	1	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Alkalinity, Total as CaCO3	99	4	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Bicarbonate Alkalinity as HCO3	110	4	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Sulfate	109	1	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Chloride	34	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Hardness as CaCO3	191	1	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Organic Carbon, Dissolved	2.9	0.5	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	N-Total, mg/L	0.63	0.05	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Phosphorus, Total as P, mg/L	0.056	0.003	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Arsenic, Dissolved	0.006	0.001	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Cadmium, Dissolved	0.00005	0.00003	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Copper, Dissolved	0.003	0.001	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Lead, Dissolved	ND	0.0003	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Zinc, Dissolved	ND	0.008	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Arsenic, Total Recoverable	0.007	0.001	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Cadmium, Total Recoverable	0.00011	0.00003	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Calcium, Total Recoverable	55	1	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Copper, Total Recoverable	0.008	0.001	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Lead, Total Recoverable	0.0019	0.0003	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Magnesium, Total Recoverable	13	1	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Potassium, Total Recoverable	5	1	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Sodium, Total Recoverable	25	1	mg/L
SBC-P2	Natural Sample	H16030296-015	3/15/2016	Zinc, Total Recoverable	0.021	0.008	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Solids, Total Suspended TSS @ 105 $\rm C$	11	1	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Alkalinity, Total as CaCO3	100	4	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Bicarbonate Alkalinity as HCO3	120	4	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Sulfate	116	1	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Chloride	26	1	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Hardness as CaCO3	201	1	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Organic Carbon, Dissolved	2.8	0.5	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
SS-25	Natural Sample	H16030296-013	3/15/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	N-Total, mg/L	0.51	0.05	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Phosphorus, Total as P, mg/L	0.032	0.003	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Arsenic, Dissolved	0.009	0.001	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Cadmium, Dissolved	0.00003	0.00003	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Copper, Dissolved	0.003	0.001	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Lead, Dissolved	ND	0.0003	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Zinc, Dissolved	ND	0.008	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Arsenic, Total Recoverable	0.012	0.001	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Cadmium, Total Recoverable	0.00012	0.00004	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Calcium, Total Recoverable	58	1	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Copper, Total Recoverable	0.008	0.001	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Lead, Total Recoverable	0.0016	0.0003	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Magnesium, Total Recoverable	14	1	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Potassium, Total Recoverable	4	1	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Sodium, Total Recoverable	22	1	mg/L
SS-25	Natural Sample	H16030296-013	3/15/2016	Zinc, Total Recoverable	0.017	0.008	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Solids, Total Suspended TSS @ 105 C	2	1	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Alkalinity, Total as CaCO3	140	4	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Bicarbonate Alkalinity as HCO3	170	4	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Sulfate	52	1	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Chloride	2	1	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Hardness as CaCO3	185	1	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Organic Carbon, Dissolved	0.8	0.5	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	NO3+NO2 as N, mg/L	0.07	0.02	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	N-Total, mg/L	0.17	0.05	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Phosphorus, Total as P, mg/L	0.008	0.003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Arsenic, Dissolved	0.005	0.001	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Cadmium, Dissolved	ND	0.00003	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Copper, Dissolved	0.002	0.001	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Lead, Dissolved	ND	0.0003	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Zinc, Dissolved	ND	0.008	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Arsenic, Total Recoverable	0.005	0.001	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Cadmium, Total Recoverable	0.00004	0.00004	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Calcium, Total Recoverable	56	1	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Copper, Total Recoverable	0.005	0.001	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Lead, Total Recoverable	0.0003	0.0003	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Magnesium, Total Recoverable	11	1	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Potassium, Total Recoverable	2	1	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Sodium, Total Recoverable	4	1	mg/L
WSC-SBC	Natural Sample	H16030296-012	3/15/2016	Zinc, Total Recoverable	ND	0.008	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Solids, Total Suspended TSS @ 105 $\rm C$	16	2	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Alkalinity, Total as CaCO3	120	4	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Bicarbonate Alkalinity as HCO3	150	4	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Sulfate	107	1	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Chloride	18	1	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Hardness as CaCO3	207	1	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Organic Carbon, Dissolved	2.3	0.5	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	N-Total, mg/L	0.4	0.05	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Phosphorus, Total as P, mg/L	0.029	0.003	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Arsenic, Dissolved	0.01	0.001	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Cadmium, Dissolved	0.00004	0.00003	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Copper, Dissolved	0.004	0.001	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Arsenic, Total Recoverable	0.012	0.001	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Cadmium, Total Recoverable	0.00016	0.00004	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Calcium, Total Recoverable	60	1	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Copper, Total Recoverable	0.015	0.001	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Lead, Total Recoverable	0.0022	0.0003	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Magnesium, Total Recoverable	14	1	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Potassium, Total Recoverable	4	1	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Sodium, Total Recoverable	17	1	mg/L
CFR-03A	Natural Sample	H16030296-010	3/15/2016	Zinc, Total Recoverable	0.022	0.008	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Solids, Total Suspended TSS @ 105 C	14	1	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Alkalinity, Total as CaCO3	140	4	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Bicarbonate Alkalinity as HCO3	170	4	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Sulfate	121	1	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Chloride	14	1	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Hardness as CaCO3	239	1	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Organic Carbon, Dissolved	2.1	0.5	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	NO3+NO2 as N, mg/L	0.13	0.02	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	N-Total, mg/L	0.4	0.05	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Phosphorus, Total as P, mg/L	0.023	0.003	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Arsenic, Dissolved	0.012	0.001	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Cadmium, Dissolved	0.00005	0.00003	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Copper, Dissolved	0.004	0.001	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Arsenic, Total Recoverable	0.015	0.001	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Cadmium, Total Recoverable	0.00013	0.00004	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Calcium, Total Recoverable	69	1	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Copper, Total Recoverable	0.018	0.001	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Lead, Total Recoverable	0.0026	0.0003	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Magnesium, Total Recoverable	16	1	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Sodium, Total Recoverable	16	1	mg/L
CFR-07D	Natural Sample	H16030296-009	3/15/2016	Zinc, Total Recoverable	0.022	0.008	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Solids, Total Suspended TSS @ 105 $ m C$	18	2	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Alkalinity, Total as CaCO3	140	4	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Bicarbonate Alkalinity as HCO3	180	4	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Sulfate	120	1	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Chloride	14	1	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Hardness as CaCO3	244	1	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Organic Carbon, Dissolved	2.1	0.5	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	NO3+NO2 as N, mg/L	0.14	0.02	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	N-Total, mg/L	0.5	0.05	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Phosphorus, Total as P, mg/L	0.027	0.003	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Arsenic, Dissolved	0.012	0.001	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Cadmium, Dissolved	0.00004	0.00003	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Copper, Dissolved	0.005	0.001	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Zinc, Dissolved	0.008	0.008	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Arsenic, Total Recoverable	0.015	0.001	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Cadmium, Total Recoverable	0.00015	0.00004	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Calcium, Total Recoverable	70	1	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Copper, Total Recoverable	0.023	0.001	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Lead, Total Recoverable	0.0032	0.0003	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Magnesium, Total Recoverable	16	1	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Sodium, Total Recoverable	17	1	mg/L
CFR-11F	Natural Sample	H16030296-008	3/15/2016	Zinc, Total Recoverable	0.027	0.008	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Solids, Total Suspended TSS @ 105 C	22	2	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Alkalinity, Total as CaCO3	150	4	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Bicarbonate Alkalinity as HCO3	180	4	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Sulfate	99	1	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Chloride	11	1	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Hardness as CaCO3	220	1	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Organic Carbon, Dissolved	1.9	0.5	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	NO3+NO2 as N, mg/L	0.18	0.02	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	N-Total, mg/L	0.44	0.05	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Phosphorus, Total as P, mg/L	0.024	0.003	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Arsenic, Dissolved	0.01	0.001	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Cadmium, Dissolved	0.00005	0.00003	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Copper, Dissolved	0.007	0.001	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Arsenic, Total Recoverable	0.014	0.001	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Cadmium, Total Recoverable	0.00017	0.00004	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Calcium, Total Recoverable	65	1	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Copper, Total Recoverable	0.032	0.001	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Lead, Total Recoverable	0.0039	0.0003	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Magnesium, Total Recoverable	14	1	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Potassium, Total Recoverable	3	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Sodium, Total Recoverable	16	1	mg/L
CFR-27H	Natural Sample	H16030296-007	3/14/2016	Zinc, Total Recoverable	0.033	0.008	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Solids, Total Suspended TSS @ 105 C	24	2	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Alkalinity, Total as CaCO3	150	4	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Bicarbonate Alkalinity as HCO3	180	4	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Sulfate	96	1	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Chloride	11	1	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Hardness as CaCO3	218	1	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Organic Carbon, Dissolved	2.3	0.5	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	NO3+NO2 as N, mg/L	0.14	0.02	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	N-Total, mg/L	0.5	0.05	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Phosphorus, Total as P, mg/L	0.029	0.003	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Arsenic, Dissolved	0.011	0.001	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Cadmium, Dissolved	0.00004	0.00003	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Copper, Dissolved	0.007	0.001	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Arsenic, Total Recoverable	0.014	0.001	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Cadmium, Total Recoverable	0.00018	0.00004	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Calcium, Total Recoverable	64	1	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Copper, Total Recoverable	0.034	0.001	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Lead, Total Recoverable	0.0044	0.0003	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Magnesium, Total Recoverable	14	1	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Sodium, Total Recoverable	16	1	mg/L
CFR-34	Natural Sample	H16030296-006	3/14/2016	Zinc, Total Recoverable	0.034	0.008	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Solids, Total Suspended TSS @ 105 C	5	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Alkalinity, Total as CaCO3	110	4	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Bicarbonate Alkalinity as HCO3	130	4	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Sulfate	18	1	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Chloride	2	1	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Hardness as CaCO3	114	1	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Organic Carbon, Dissolved	2.2	0.5	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	N-Total, mg/L	0.15	0.05	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Phosphorus, Total as P, mg/L	0.021	0.003	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Arsenic, Dissolved	0.004	0.001	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Cadmium, Dissolved	ND	0.00003	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Copper, Dissolved	ND	0.001	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Lead, Dissolved	ND	0.0003	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Zinc, Dissolved	ND	0.008	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Arsenic, Total Recoverable	0.004	0.001	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Cadmium, Total Recoverable	ND	0.00004	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Calcium, Total Recoverable	33	1	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Copper, Total Recoverable	0.001	0.001	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Lead, Total Recoverable	ND	0.0003	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Magnesium, Total Recoverable	8	1	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Potassium, Total Recoverable	2	1	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Sodium, Total Recoverable	6	1	mg/L
LBR-CFR-02	Natural Sample	H16030296-005	3/14/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Solids, Total Suspended TSS @ 105 C	15	2	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Alkalinity, Total as CaCO3	140	4	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Bicarbonate Alkalinity as HCO3	170	4	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Sulfate	18	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Chloride	3	1	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Hardness as CaCO3	147	1	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Organic Carbon, Dissolved	1.9	0.5	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	N-Total, mg/L	0.29	0.05	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Phosphorus, Total as P, mg/L	0.027	0.003	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Arsenic, Dissolved	0.007	0.001	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Copper, Dissolved	ND	0.001	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Lead, Dissolved	ND	0.0003	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Zinc, Dissolved	ND	0.008	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Arsenic, Total Recoverable	0.008	0.001	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Cadmium, Total Recoverable	0.00003	0.00004	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Calcium, Total Recoverable	39	1	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Copper, Total Recoverable	0.002	0.001	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Lead, Total Recoverable	0.0037	0.0003	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Magnesium, Total Recoverable	12	1	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Potassium, Total Recoverable	3	1	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Sodium, Total Recoverable	8	1	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Zinc, Total Recoverable	0.012	0.008	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Mercury, Total	0.00014	0.000005	mg/L
FC-CFR	Natural Sample	H16030296-003	3/14/2016	Mercury, Methyl	1.17	0.050	ng/L
CFR-84F	Natural Sample	H16030296-018	3/14/2016	Mercury, Total	0.000035	0.000005	mg/L
CFR-84F	Natural Sample	H16030296-018	3/14/2016	Mercury, Methyl	0.444	0.049	ng/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Solids, Total Suspended TSS @ 105 C	21	2	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Alkalinity, Total as CaCO3	120	4	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Bicarbonate Alkalinity as HCO3	140	4	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Sulfate	51	1	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Chloride	4	1	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Hardness as CaCO3	154	1	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Organic Carbon, Dissolved	1.8	0.5	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	NO3+NO2 as N, mg/L	0.02	0.02	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	N-Total, mg/L	0.33	0.05	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Phosphorus, Total as P, mg/L	0.025	0.003	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Arsenic, Dissolved	0.006	0.001	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Copper, Dissolved	0.003	0.001	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Arsenic, Total Recoverable	0.007	0.001	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Cadmium, Total Recoverable	0.00009	0.00004	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Calcium, Total Recoverable	44	1	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Copper, Total Recoverable	0.014	0.001	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Lead, Total Recoverable	0.0023	0.0003	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Magnesium, Total Recoverable	11	1	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Potassium, Total Recoverable	2	1	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Sodium, Total Recoverable	9	1	mg/L
CFR-116A	Natural Sample	H16030296-001	3/14/2016	Zinc, Total Recoverable	0.022	0.008	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Solids, Total Suspended TSS @ 105 C	14	2	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Alkalinity, Total as CaCO3	140	4	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Bicarbonate Alkalinity as HCO3	170	4	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Sulfate	18	1	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Chloride	3	1	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Hardness as CaCO3	146	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Organic Carbon, Dissolved	1.9	0.5	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	N-Total, mg/L	0.25	0.05	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Phosphorus, Total as P, mg/L	0.021	0.003	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Arsenic, Dissolved	0.007	0.001	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Copper, Dissolved	ND	0.001	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Lead, Dissolved	ND	0.0003	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Zinc, Dissolved	ND	0.008	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Arsenic, Total Recoverable	0.009	0.001	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Cadmium, Total Recoverable	0.00003	0.00004	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Calcium, Total Recoverable	39	1	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Copper, Total Recoverable	0.002	0.001	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Lead, Total Recoverable	0.0038	0.0003	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Magnesium, Total Recoverable	12	1	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Potassium, Total Recoverable	3	1	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Sodium, Total Recoverable	8	1	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Zinc, Total Recoverable	0.015	0.008	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Mercury, Total	0.0002	0.000005	mg/L
FC-CFR	Duplicate Sample	H16030296-004	3/14/2016	Mercury, Methyl	1.14	0.049	ng/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Solids, Total Suspended TSS @ 105 $ m C$	5	2	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Alkalinity, Total as CaCO3	100	4	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Bicarbonate Alkalinity as HCO3	120	4	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Sulfate	31	1	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Chloride	2	1	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Hardness as CaCO3	109	1	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Organic Carbon, Dissolved	2.3	0.5	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	N-Total, mg/L	0.17	0.05	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Phosphorus, Total as P, mg/L	0.03	0.003	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Arsenic, Dissolved	0.02	0.001	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Cadmium, Dissolved	ND	0.00003	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Copper, Dissolved	0.003	0.001	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Lead, Dissolved	ND	0.0003	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Zinc, Dissolved	ND	0.008	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Arsenic, Total Recoverable	0.023	0.001	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Cadmium, Total Recoverable	0.00007	0.00004	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Calcium, Total Recoverable	31	1	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Copper, Total Recoverable	0.006	0.001	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Lead, Total Recoverable	0.0016	0.0003	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Magnesium, Total Recoverable	8	1	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Potassium, Total Recoverable	1	1	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Sodium, Total Recoverable	10	1	mg/L
MCWC-MWB	Duplicate Sample	H16030296-017	3/14/2016	Zinc, Total Recoverable	0.01	0.008	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Solids, Total Suspended TSS @ 105 C	ND	1	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Alkalinity, Total as CaCO3	ND	4	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Bicarbonate Alkalinity as HCO3	ND	4	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Sulfate	ND	1	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Chloride	ND	1	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Hardness as CaCO3	ND	1	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Organic Carbon, Dissolved	ND	0.5	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	N-Total, mg/L	ND	0.05	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Phosphorus, Total as P, mg/L	ND	0.003	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Arsenic, Dissolved	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Copper, Dissolved	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Lead, Dissolved	ND	0.0003	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Zinc, Dissolved	ND	0.008	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Arsenic, Total Recoverable	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Cadmium, Total Recoverable	ND	0.00004	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Calcium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Copper, Total Recoverable	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Lead, Total Recoverable	ND	0.0003	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Magnesium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Potassium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Sodium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Mercury, Total	ND	0.000005	mg/L
FC-CFR	Field Blank 1	H16030296-002	3/14/2016	Mercury, Methyl	ND	0.051	ng/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Solids, Total Suspended TSS @ 105 C	ND	1	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Alkalinity, Total as CaCO3	ND	4	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Bicarbonate Alkalinity as HCO3	ND	4	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Sulfate	ND	1	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Chloride	ND	1	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Hardness as CaCO3	ND	1	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Organic Carbon, Dissolved	ND	0.5	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	N-Total, mg/L	ND	0.05	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Phosphorus, Total as P, mg/L	ND	0.003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Arsenic, Dissolved	ND	0.001	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Cadmium, Dissolved	ND	0.00003	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Copper, Dissolved	ND	0.001	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Lead, Dissolved	ND	0.0003	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Zinc, Dissolved	0.009	0.008	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Arsenic, Total Recoverable	ND	0.001	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Cadmium, Total Recoverable	ND	0.00004	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Calcium, Total Recoverable	ND	1	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Copper, Total Recoverable	ND	0.001	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Lead, Total Recoverable	ND	0.0003	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Magnesium, Total Recoverable	ND	1	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Potassium, Total Recoverable	ND	1	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Sodium, Total Recoverable	ND	1	mg/L
WSC-SBC	Field Blank 2	H16030296-011	3/15/2016	Zinc, Total Recoverable	ND	0.008	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Solids, Total Suspended TSS @ 105 C	22	2	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Alkalinity, Total as CaCO3	84	4	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Bicarbonate Alkalinity as HCO3	100	4	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Sulfate	52	1	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Chloride	15	1	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Hardness as CaCO3	122	1	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Organic Carbon, Dissolved	6.3	0.5	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	NO3+NO2 as N, mg/L	0.2	0.02	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	N-Total, mg/L	0.67	0.05	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Phosphorus, Total as P, mg/L	0.182	0.003	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Arsenic, Dissolved	0.006	0.001	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Cadmium, Dissolved	0.00008	0.00003	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Copper, Dissolved	0.01	0.001	mg/L
Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
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SS-19	Natural Sample	H16040518-018	4/28/2016	Lead, Dissolved	ND	0.0003	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Zinc, Dissolved	0.027	0.008	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Arsenic, Total Recoverable	0.007	0.001	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Cadmium, Total Recoverable	0.00029	0.00003	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Calcium, Total Recoverable	37	1	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Copper, Total Recoverable	0.023	0.001	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Lead, Total Recoverable	0.0031	0.0003	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Magnesium, Total Recoverable	7	1	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Potassium, Total Recoverable	3	1	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Sodium, Total Recoverable	16	1	mg/L
SS-19	Natural Sample	H16040518-018	4/28/2016	Zinc, Total Recoverable	0.069	0.008	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Solids, Total Suspended TSS @ 105 C	9	1	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Alkalinity, Total as CaCO3	59	4	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Bicarbonate Alkalinity as HCO3	71	4	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Sulfate	14	1	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Chloride	<1	1	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Hardness as CaCO3	59	1	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Organic Carbon, Dissolved	4	0.5	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	N-Total, mg/L	0.24	0.05	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Phosphorus, Total as P, mg/L	0.034	0.003	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Arsenic, Dissolved	0.021	0.001	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Cadmium, Dissolved	ND	0.00003	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Copper, Dissolved	0.004	0.001	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Lead, Dissolved	ND	0.0003	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Zinc, Dissolved	ND	0.008	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Arsenic, Total Recoverable	0.023	0.001	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Cadmium, Total Recoverable	0.00008	0.00003	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Calcium, Total Recoverable	17	1	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Copper, Total Recoverable	0.008	0.001	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Lead, Total Recoverable	0.0017	0.0003	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Magnesium, Total Recoverable	4	1	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Potassium, Total Recoverable	1	1	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Sodium, Total Recoverable	6	1	mg/L
MCWC-MWB	Natural Sample	H16040518-017	4/28/2016	Zinc, Total Recoverable	0.009	0.008	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Solids, Total Suspended TSS @ 105 C	14	2	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Alkalinity, Total as CaCO3	65	4	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Bicarbonate Alkalinity as HCO3	79	4	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Sulfate	53	1	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Chloride	2	1	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Hardness as CaCO3	105	1	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Organic Carbon, Dissolved	4	0.5	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	N-Total, mg/L	0.27	0.05	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Phosphorus, Total as P, mg/L	0.038	0.003	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Arsenic, Dissolved	0.021	0.001	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Cadmium, Dissolved	ND	0.00003	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Copper, Dissolved	0.004	0.001	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Lead, Dissolved	ND	0.0003	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Zinc, Dissolved	ND	0.008	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Arsenic, Total Recoverable	0.024	0.001	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Cadmium, Total Recoverable	0.00011	0.00003	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Calcium, Total Recoverable	31	1	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Copper, Total Recoverable	0.01	0.001	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Lead, Total Recoverable	0.0022	0.0003	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Magnesium, Total Recoverable	7	1	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Potassium, Total Recoverable	1	1	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Sodium, Total Recoverable	8	1	mg/L
MWB-SBC	Natural Sample	H16040518-015	4/28/2016	Zinc, Total Recoverable	0.012	0.008	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Solids, Total Suspended TSS @ 105 C	5	1	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Alkalinity, Total as CaCO3	100	4	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Bicarbonate Alkalinity as HCO3	120	4	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Sulfate	86	1	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Chloride	27	1	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Hardness as CaCO3	173	1	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Organic Carbon, Dissolved	4.9	0.5	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	NO3+NO2 as N, mg/L	0.11	0.02	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	N-Total, mg/L	0.57	0.05	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Phosphorus, Total as P, mg/L	0.055	0.003	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Arsenic, Dissolved	0.012	0.001	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Cadmium, Dissolved	0.00008	0.00003	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Copper, Dissolved	0.007	0.001	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Lead, Dissolved	0.0003	0.0003	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Zinc, Dissolved	0.015	0.008	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Arsenic, Total Recoverable	0.014	0.001	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Cadmium, Total Recoverable	0.00025	0.00003	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Calcium, Total Recoverable	51	1	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Copper, Total Recoverable	0.017	0.001	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Lead, Total Recoverable	0.0022	0.0003	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Magnesium, Total Recoverable	11	1	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Potassium, Total Recoverable	5	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Sodium, Total Recoverable	23	1	mg/L
SBC-P2	Natural Sample	H16040518-016	4/28/2016	Zinc, Total Recoverable	0.044	0.008	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Solids, Total Suspended TSS @ 105 C	9	1	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Alkalinity, Total as CaCO3	87	4	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Bicarbonate Alkalinity as HCO3	110	4	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Sulfate	72	1	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Chloride	16	1	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Hardness as CaCO3	145	1	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Organic Carbon, Dissolved	4.4	0.5	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	NO3+NO2 as N, mg/L	0.07	0.02	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	N-Total, mg/L	0.43	0.05	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Phosphorus, Total as P, mg/L	0.047	0.003	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Arsenic, Dissolved	0.016	0.001	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Cadmium, Dissolved	0.00006	0.00003	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Copper, Dissolved	0.006	0.001	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Lead, Dissolved	ND	0.0003	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Zinc, Dissolved	0.012	0.008	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Arsenic, Total Recoverable	0.017	0.001	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Cadmium, Total Recoverable	0.0002	0.00004	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Calcium, Total Recoverable	43	1	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Copper, Total Recoverable	0.014	0.001	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Lead, Total Recoverable	0.0021	0.0003	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Magnesium, Total Recoverable	9	1	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Potassium, Total Recoverable	3	1	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Sodium, Total Recoverable	16	1	mg/L
SS-25	Natural Sample	H16040518-014	4/28/2016	Zinc, Total Recoverable	0.031	0.008	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Solids, Total Suspended TSS @ 105 C	7	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Alkalinity, Total as CaCO3	110	4	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Bicarbonate Alkalinity as HCO3	140	4	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Sulfate	29	1	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Chloride	ND	1	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Hardness as CaCO3	135	1	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Organic Carbon, Dissolved	1.6	0.5	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	NO3+NO2 as N, mg/L	0.03	0.02	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	N-Total, mg/L	0.11	0.05	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Phosphorus, Total as P, mg/L	0.013	0.003	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Arsenic, Dissolved	0.004	0.001	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Cadmium, Dissolved	ND	0.00003	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Copper, Dissolved	0.003	0.001	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Lead, Dissolved	ND	0.0003	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Zinc, Dissolved	ND	0.008	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Arsenic, Total Recoverable	0.005	0.001	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Cadmium, Total Recoverable	0.00006	0.00004	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Calcium, Total Recoverable	41	1	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Copper, Total Recoverable	0.011	0.001	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Lead, Total Recoverable	0.001	0.0003	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Magnesium, Total Recoverable	8	1	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Potassium, Total Recoverable	1	1	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Sodium, Total Recoverable	3	1	mg/L
WSC-SBC	Natural Sample	H16040518-013	4/28/2016	Zinc, Total Recoverable	ND	0.008	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Solids, Total Suspended TSS @ 105 C	12	2	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Alkalinity, Total as CaCO3	96	4	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Bicarbonate Alkalinity as HCO3	120	4	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Sulfate	65	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Chloride	11	1	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Hardness as CaCO3	148	1	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Organic Carbon, Dissolved	3.4	0.5	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	NO3+NO2 as N, mg/L	0.04	0.02	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	N-Total, mg/L	0.36	0.05	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Phosphorus, Total as P, mg/L	0.04	0.003	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Arsenic, Dissolved	0.013	0.001	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Cadmium, Dissolved	0.00006	0.00003	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Copper, Dissolved	0.005	0.001	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Zinc, Dissolved	0.009	0.008	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Arsenic, Total Recoverable	0.015	0.001	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Cadmium, Total Recoverable	0.00017	0.00004	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Calcium, Total Recoverable	43	1	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Copper, Total Recoverable	0.026	0.001	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Lead, Total Recoverable	0.0024	0.0003	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Magnesium, Total Recoverable	10	1	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Sodium, Total Recoverable	13	1	mg/L
CFR-03A	Natural Sample	H16040518-012	4/28/2016	Zinc, Total Recoverable	0.025	0.008	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Solids, Total Suspended TSS @ 105 C	19	2	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Alkalinity, Total as CaCO3	110	4	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Bicarbonate Alkalinity as HCO3	140	4	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Sulfate	80	1	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Chloride	10	1	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Hardness as CaCO3	179	1	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Organic Carbon, Dissolved	3	0.5	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	NO3+NO2 as N, mg/L	0.09	0.02	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	N-Total, mg/L	0.42	0.05	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Phosphorus, Total as P, mg/L	0.037	0.003	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Arsenic, Dissolved	0.013	0.001	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Copper, Dissolved	0.005	0.001	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Zinc, Dissolved	0.009	0.008	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Arsenic, Total Recoverable	0.017	0.001	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Cadmium, Total Recoverable	0.00019	0.00004	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Calcium, Total Recoverable	52	1	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Copper, Total Recoverable	0.031	0.001	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Lead, Total Recoverable	0.0042	0.0003	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Magnesium, Total Recoverable	12	1	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Sodium, Total Recoverable	13	1	mg/L
CFR-07D	Natural Sample	H16040518-011	4/28/2016	Zinc, Total Recoverable	0.031	0.008	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Solids, Total Suspended TSS @ 105 C	23	2	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Alkalinity, Total as CaCO3	110	4	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Bicarbonate Alkalinity as HCO3	140	4	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Sulfate	78	1	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Chloride	10	1	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Hardness as CaCO3	184	1	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Organic Carbon, Dissolved	3.3	0.5	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	NO3+NO2 as N, mg/L	0.09	0.02	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	N-Total, mg/L	0.4	0.05	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Phosphorus, Total as P, mg/L	0.043	0.003	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Arsenic, Dissolved	0.013	0.001	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Cadmium, Dissolved	0.00004	0.00003	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Copper, Dissolved	0.005	0.001	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Zinc, Dissolved	0.009	0.008	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Arsenic, Total Recoverable	0.018	0.001	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Cadmium, Total Recoverable	0.00019	0.00004	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Calcium, Total Recoverable	54	1	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Copper, Total Recoverable	0.036	0.001	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Lead, Total Recoverable	0.0047	0.0003	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Magnesium, Total Recoverable	12	1	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Sodium, Total Recoverable	13	1	mg/L
CFR-11F	Natural Sample	H16040518-009	4/28/2016	Zinc, Total Recoverable	0.036	0.008	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Solids, Total Suspended TSS @ 105 C	46	2	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Alkalinity, Total as CaCO3	120	4	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Bicarbonate Alkalinity as HCO3	140	4	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Sulfate	69	1	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Chloride	9	1	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Hardness as CaCO3	174	1	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Organic Carbon, Dissolved	3.4	0.5	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	NO3+NO2 as N, mg/L	0.14	0.02	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	N-Total, mg/L	0.51	0.05	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Phosphorus, Total as P, mg/L	0.059	0.003	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Arsenic, Dissolved	0.013	0.001	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Cadmium, Dissolved	0.00005	0.00003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Copper, Dissolved	0.008	0.001	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Lead, Dissolved	0.0003	0.0003	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Zinc, Dissolved	0.009	0.008	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Arsenic, Total Recoverable	0.022	0.001	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Cadmium, Total Recoverable	0.00038	0.00004	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Calcium, Total Recoverable	51	1	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Copper, Total Recoverable	0.088	0.001	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Lead, Total Recoverable	0.0139	0.0003	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Magnesium, Total Recoverable	11	1	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Sodium, Total Recoverable	13	1	mg/L
CFR-27H	Natural Sample	H16040518-007	4/27/2016	Zinc, Total Recoverable	0.072	0.008	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Solids, Total Suspended TSS @ 105 C	52	2	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Alkalinity, Total as CaCO3	120	4	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Bicarbonate Alkalinity as HCO3	150	4	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Sulfate	67	1	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Chloride	9	1	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Hardness as CaCO3	175	1	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Organic Carbon, Dissolved	3.4	0.5	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	NO3+NO2 as N, mg/L	0.16	0.02	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	N-Total, mg/L	0.57	0.05	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Phosphorus, Total as P, mg/L	0.073	0.003	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Arsenic, Dissolved	0.013	0.001	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Cadmium, Dissolved	0.00005	0.00003	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Copper, Dissolved	0.008	0.001	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Zinc, Dissolved	0.01	0.008	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-34	Natural Sample	H16040518-006	4/27/2016	Arsenic, Total Recoverable	0.022	0.001	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Cadmium, Total Recoverable	0.0004	0.00004	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Calcium, Total Recoverable	52	1	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Copper, Total Recoverable	0.093	0.001	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Lead, Total Recoverable	0.012	0.0003	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Magnesium, Total Recoverable	11	1	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Sodium, Total Recoverable	14	1	mg/L
CFR-34	Natural Sample	H16040518-006	4/27/2016	Zinc, Total Recoverable	0.08	0.008	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Solids, Total Suspended TSS @ 105 C	17	2	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Alkalinity, Total as CaCO3	64	4	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Bicarbonate Alkalinity as HCO3	77	4	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Sulfate	10	1	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Chloride	1	1	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Hardness as CaCO3	67	1	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Organic Carbon, Dissolved	4.5	0.5	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	N-Total, mg/L	0.24	0.05	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Phosphorus, Total as P, mg/L	0.038	0.003	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Arsenic, Dissolved	0.004	0.001	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Cadmium, Dissolved	ND	0.00003	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Copper, Dissolved	0.001	0.001	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Lead, Dissolved	ND	0.0003	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Zinc, Dissolved	ND	0.008	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Arsenic, Total Recoverable	0.005	0.001	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Cadmium, Total Recoverable	0.00003	0.00004	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Calcium, Total Recoverable	19	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Copper, Total Recoverable	0.003	0.001	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Lead, Total Recoverable	0.0013	0.0003	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Magnesium, Total Recoverable	5	1	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Potassium, Total Recoverable	1	1	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Sodium, Total Recoverable	4	1	mg/L
LBR-CFR-02	Natural Sample	H16040518-005	4/27/2016	Zinc, Total Recoverable	0.008	0.008	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Solids, Total Suspended TSS @ 105 $ m C$	58	2	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Alkalinity, Total as CaCO3	93	4	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Bicarbonate Alkalinity as HCO3	110	4	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Sulfate	10	1	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Chloride	2	1	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Hardness as CaCO3	100	1	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Organic Carbon, Dissolved	4.3	0.5	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	NO3+NO2 as N, mg/L	0.07	0.02	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	N-Total, mg/L	0.31	0.05	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Phosphorus, Total as P, mg/L	0.054	0.003	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Arsenic, Dissolved	0.006	0.001	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Copper, Dissolved	ND	0.001	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Lead, Dissolved	0.0005	0.0003	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Zinc, Dissolved	ND	0.008	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Arsenic, Total Recoverable	0.02	0.001	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Cadmium, Total Recoverable	0.00017	0.00004	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Calcium, Total Recoverable	27	1	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Copper, Total Recoverable	0.007	0.001	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Lead, Total Recoverable	0.0177	0.0003	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Magnesium, Total Recoverable	8	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Potassium, Total Recoverable	2	1	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Sodium, Total Recoverable	5	1	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Zinc, Total Recoverable	0.053	0.008	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Mercury, Total	0.000830	0.00002	mg/L
FC-CFR	Natural Sample	H16040518-003	4/27/2016	Mercury, Methyl	4.050	0.062	ng/L
CFR-84F	Natural Sample	H16040518-019	4/27/2016	Mercury, Total	0.000190	0.000005	mg/L
CFR-84F	Natural Sample	H16040518-019	4/27/2016	Mercury, Methyl	1.750	0.063	ng/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Solids, Total Suspended TSS @ 105 C	46	2	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Alkalinity, Total as CaCO3	71	4	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Bicarbonate Alkalinity as HCO3	86	4	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Sulfate	23	1	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Chloride	2	1	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Hardness as CaCO3	90	1	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Organic Carbon, Dissolved	3.7	0.5	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	NO3+NO2 as N, mg/L	0.06	0.02	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	N-Total, mg/L	0.24	0.05	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Phosphorus, Total as P, mg/L	0.051	0.003	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Arsenic, Dissolved	0.004	0.001	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Copper, Dissolved	0.003	0.001	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Arsenic, Total Recoverable	0.009	0.001	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Cadmium, Total Recoverable	0.00022	0.00004	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Calcium, Total Recoverable	26	1	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Copper, Total Recoverable	0.035	0.001	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Lead, Total Recoverable	0.0063	0.0003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Magnesium, Total Recoverable	6	1	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Potassium, Total Recoverable	2	1	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Sodium, Total Recoverable	5	1	mg/L
CFR-116A	Natural Sample	H16040518-001	4/27/2016	Zinc, Total Recoverable	0.045	0.008	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Solids, Total Suspended TSS @ 105 C	60	4	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Alkalinity, Total as CaCO3	92	4	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Bicarbonate Alkalinity as HCO3	110	4	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Sulfate	10	1	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Chloride	2	1	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Hardness as CaCO3	99	1	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Organic Carbon, Dissolved	4.3	0.5	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	NO3+NO2 as N, mg/L	0.07	0.02	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	N-Total, mg/L	0.32	0.05	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Phosphorus, Total as P, mg/L	0.058	0.003	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Arsenic, Dissolved	0.006	0.001	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Copper, Dissolved	ND	0.001	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Lead, Dissolved	0.0005	0.0003	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Zinc, Dissolved	ND	0.008	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Arsenic, Total Recoverable	0.019	0.001	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Cadmium, Total Recoverable	0.00017	0.00004	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Calcium, Total Recoverable	27	1	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Copper, Total Recoverable	0.006	0.001	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Lead, Total Recoverable	0.017	0.0003	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Magnesium, Total Recoverable	8	1	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Potassium, Total Recoverable	2	1	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Sodium, Total Recoverable	5	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Zinc, Total Recoverable	0.052	0.008	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Mercury, Total	0.000790	0.00002	mg/L
FC-CFR	Duplicate Sample	H16040518-004	4/27/2016	Mercury, Methyl	4.010	0.058	ng/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Solids, Total Suspended TSS @ 105 C	22	2	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Alkalinity, Total as CaCO3	110	4	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Bicarbonate Alkalinity as HCO3	140	4	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Sulfate	79	1	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Chloride	10	1	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Hardness as CaCO3	181	1	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Organic Carbon, Dissolved	3.2	0.5	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	NO3+NO2 as N, mg/L	0.09	0.02	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	N-Total, mg/L	0.35	0.05	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Phosphorus, Total as P, mg/L	0.039	0.003	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Arsenic, Dissolved	0.013	0.001	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Copper, Dissolved	0.005	0.001	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Zinc, Dissolved	0.01	0.008	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Arsenic, Total Recoverable	0.017	0.001	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Cadmium, Total Recoverable	0.0002	0.00004	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Calcium, Total Recoverable	53	1	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Copper, Total Recoverable	0.039	0.001	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Lead, Total Recoverable	0.0087	0.0003	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Magnesium, Total Recoverable	12	1	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Sodium, Total Recoverable	13	1	mg/L
CFR-11F	Duplicate Sample	H16040518-010	4/28/2016	Zinc, Total Recoverable	0.035	0.008	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Solids, Total Suspended TSS @ 105 C	ND	1	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Alkalinity, Total as CaCO3	ND	4	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Bicarbonate Alkalinity as HCO3	ND	4	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Sulfate	ND	1	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Chloride	ND	1	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Hardness as CaCO3	ND	1	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Organic Carbon, Dissolved	ND	0.5	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	N-Total, mg/L	ND	0.05	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Phosphorus, Total as P, mg/L	ND	0.003	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Arsenic, Dissolved	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Copper, Dissolved	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Lead, Dissolved	ND	0.0003	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Zinc, Dissolved	0.008	0.008	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Arsenic, Total Recoverable	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Cadmium, Total Recoverable	ND	0.00004	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Calcium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Copper, Total Recoverable	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Lead, Total Recoverable	ND	0.0003	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Magnesium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Potassium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Sodium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Mercury, Total	ND	0.000005	mg/L
FC-CFR	Field Blank 1	H16040518-002	4/27/2016	Mercury, Methyl	ND	0.059	ng/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Solids, Total Suspended TSS @ 105 C	ND	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Alkalinity, Total as CaCO3	ND	4	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Bicarbonate Alkalinity as HCO3	ND	4	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Sulfate	ND	1	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Chloride	ND	1	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Hardness as CaCO3	ND	1	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Organic Carbon, Dissolved	ND	0.5	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	N-Total, mg/L	ND	0.05	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Phosphorus, Total as P, mg/L	ND	0.003	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Arsenic, Dissolved	ND	0.001	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Copper, Dissolved	ND	0.001	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Zinc, Dissolved	0.009	0.008	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Arsenic, Total Recoverable	ND	0.001	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Cadmium, Total Recoverable	ND	0.00004	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Calcium, Total Recoverable	ND	1	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Copper, Total Recoverable	ND	0.001	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Lead, Total Recoverable	ND	0.0003	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Magnesium, Total Recoverable	ND	1	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Potassium, Total Recoverable	ND	1	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Sodium, Total Recoverable	ND	1	mg/L
CFR-11F	Field Blank 2	H16040518-008	4/28/2016	Zinc, Total Recoverable	ND	0.008	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Solids, Total Suspended TSS @ 105 C	10	1	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Alkalinity, Total as CaCO3	74	4	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Bicarbonate Alkalinity as HCO3	90	4	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Sulfate	35	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Chloride	1	1	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Hardness as CaCO3	98	1	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Organic Carbon, Dissolved	4.2	0.5	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	N-Total, mg/L	0.25	0.05	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Phosphorus, Total as P, mg/L	0.043	0.003	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Arsenic, Dissolved	0.036	0.001	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Cadmium, Dissolved	ND	0.00003	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Copper, Dissolved	0.005	0.001	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Lead, Dissolved	ND	0.0003	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Zinc, Dissolved	ND	0.008	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Arsenic, Total Recoverable	0.04	0.001	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Cadmium, Total Recoverable	0.0001	0.00003	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Calcium, Total Recoverable	28	1	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Copper, Total Recoverable	0.01	0.001	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Lead, Total Recoverable	0.0019	0.0003	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Magnesium, Total Recoverable	7	1	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Potassium, Total Recoverable	1	1	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Sodium, Total Recoverable	7	1	mg/L
MCWC-MWB	Natural Sample	H16060056-014	6/1/2016	Zinc, Total Recoverable	0.012	0.008	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Solids, Total Suspended TSS @ 105 C	9	1	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Alkalinity, Total as CaCO3	70	4	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Bicarbonate Alkalinity as HCO3	85	4	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Sulfate	11	1	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Chloride	ND	1	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Hardness as CaCO3	70	1	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Organic Carbon, Dissolved	4.6	0.5	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	N-Total, mg/L	0.25	0.05	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Phosphorus, Total as P, mg/L	0.045	0.003	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Arsenic, Dissolved	0.038	0.001	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Cadmium, Dissolved	0.00004	0.00003	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Copper, Dissolved	0.005	0.001	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Lead, Dissolved	ND	0.0003	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Zinc, Dissolved	ND	0.008	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Arsenic, Total Recoverable	0.041	0.001	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Cadmium, Total Recoverable	0.0001	0.00003	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Calcium, Total Recoverable	20	1	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Copper, Total Recoverable	0.01	0.001	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Lead, Total Recoverable	0.0019	0.0003	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Magnesium, Total Recoverable	5	1	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Potassium, Total Recoverable	1	1	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Sodium, Total Recoverable	6	1	mg/L
MWB-SBC	Natural Sample	H16060056-016	6/1/2016	Zinc, Total Recoverable	0.011	0.008	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Solids, Total Suspended TSS @ 105 $ m C$	3	1	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Alkalinity, Total as CaCO3	92	4	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Bicarbonate Alkalinity as HCO3	67	4	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Sulfate	69	1	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Chloride	18	1	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Hardness as CaCO3	145	1	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Organic Carbon, Dissolved	5.8	0.5	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	N-Total, mg/L	0.34	0.05	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Phosphorus, Total as P, mg/L	0.065	0.003	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Arsenic, Dissolved	0.014	0.001	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Cadmium, Dissolved	0.0001	0.00003	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Copper, Dissolved	0.01	0.001	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Lead, Dissolved	ND	0.0003	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Zinc, Dissolved	0.011	0.008	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Arsenic, Total Recoverable	0.015	0.001	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Cadmium, Total Recoverable	0.00015	0.00003	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Calcium, Total Recoverable	43	1	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Copper, Total Recoverable	0.012	0.001	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Lead, Total Recoverable	0.0007	0.0003	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Magnesium, Total Recoverable	10	1	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Potassium, Total Recoverable	4	1	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Sodium, Total Recoverable	18	1	mg/L
SBC-P2	Natural Sample	H16060056-015	6/1/2016	Zinc, Total Recoverable	0.022	0.008	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Solids, Total Suspended TSS @ 105 $ m C$	6	1	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Alkalinity, Total as CaCO3	84	4	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Bicarbonate Alkalinity as HCO3	80	4	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Sulfate	53	1	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Chloride	9	1	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Hardness as CaCO3	122	1	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Organic Carbon, Dissolved	5	0.5	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	N-Total, mg/L	0.32	0.05	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Phosphorus, Total as P, mg/L	0.054	0.003	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Arsenic, Dissolved	0.025	0.001	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Cadmium, Dissolved	0.00006	0.00003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
SS-25	Natural Sample	H16060056-012	6/1/2016	Copper, Dissolved	0.007	0.001	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Lead, Dissolved	ND	0.0003	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Zinc, Dissolved	ND	0.008	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Arsenic, Total Recoverable	0.028	0.001	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Cadmium, Total Recoverable	0.00013	0.00004	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Calcium, Total Recoverable	35	1	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Copper, Total Recoverable	0.012	0.001	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Lead, Total Recoverable	0.0013	0.0003	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Magnesium, Total Recoverable	8	1	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Potassium, Total Recoverable	3	1	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Sodium, Total Recoverable	13	1	mg/L
SS-25	Natural Sample	H16060056-012	6/1/2016	Zinc, Total Recoverable	0.018	0.008	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Solids, Total Suspended TSS @ 105 C	8	1	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Alkalinity, Total as CaCO3	81	4	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Bicarbonate Alkalinity as HCO3	98	4	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Sulfate	20	1	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Chloride	ND	1	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Hardness as CaCO3	97	1	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Organic Carbon, Dissolved	1.5	0.5	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	N-Total, mg/L	0.08	0.05	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Phosphorus, Total as P, mg/L	0.012	0.003	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Arsenic, Dissolved	0.003	0.001	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Cadmium, Dissolved	ND	0.00003	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Copper, Dissolved	0.003	0.001	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Lead, Dissolved	ND	0.0003	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Zinc, Dissolved	ND	0.008	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Arsenic, Total Recoverable	0.005	0.001	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Cadmium, Total Recoverable	0.00006	0.00004	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Calcium, Total Recoverable	30	1	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Copper, Total Recoverable	0.013	0.001	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Lead, Total Recoverable	0.0013	0.0003	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Magnesium, Total Recoverable	6	1	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Potassium, Total Recoverable	1	1	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Sodium, Total Recoverable	2	1	mg/L
WSC-SBC	Natural Sample	H16060056-011	6/1/2016	Zinc, Total Recoverable	ND	0.008	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Solids, Total Suspended TSS @ 105 C	18	2	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Alkalinity, Total as CaCO3	84	4	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Bicarbonate Alkalinity as HCO3	95	4	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Sulfate	41	1	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Chloride	6	1	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Hardness as CaCO3	121	1	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Organic Carbon, Dissolved	3.5	0.5	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	N-Total, mg/L	0.25	0.05	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Phosphorus, Total as P, mg/L	0.048	0.003	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Arsenic, Dissolved	0.016	0.001	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Cadmium, Dissolved	0.00005	0.00003	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Copper, Dissolved	0.006	0.001	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Zinc, Dissolved	0.008	0.008	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Arsenic, Total Recoverable	0.019	0.001	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Cadmium, Total Recoverable	0.00014	0.00004	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Calcium, Total Recoverable	36	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Copper, Total Recoverable	0.02	0.001	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Lead, Total Recoverable	0.0023	0.0003	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Magnesium, Total Recoverable	8	1	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Potassium, Total Recoverable	2	1	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Sodium, Total Recoverable	9	1	mg/L
CFR-03A	Natural Sample	H16060056-010	6/1/2016	Zinc, Total Recoverable	0.023	0.008	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Solids, Total Suspended TSS @ 105 C	11	2	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Alkalinity, Total as CaCO3	92	4	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Bicarbonate Alkalinity as HCO3	110	4	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Sulfate	53	1	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Chloride	5	1	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Hardness as CaCO3	138	1	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Organic Carbon, Dissolved	3.6	0.5	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	N-Total, mg/L	0.26	0.05	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Phosphorus, Total as P, mg/L	0.047	0.003	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Arsenic, Dissolved	0.018	0.001	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Cadmium, Dissolved	0.00004	0.00003	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Copper, Dissolved	0.007	0.001	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Zinc, Dissolved	0.01	0.008	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Arsenic, Total Recoverable	0.021	0.001	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Cadmium, Total Recoverable	0.00014	0.00004	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Calcium, Total Recoverable	40	1	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Copper, Total Recoverable	0.026	0.001	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Lead, Total Recoverable	0.0028	0.0003	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Magnesium, Total Recoverable	9	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Potassium, Total Recoverable	2	1	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Sodium, Total Recoverable	10	1	mg/L
CFR-07D	Natural Sample	H16060056-009	6/1/2016	Zinc, Total Recoverable	0.025	0.008	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Solids, Total Suspended TSS @ 105 C	15	7	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Alkalinity, Total as CaCO3	98	4	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Bicarbonate Alkalinity as HCO3	120	4	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Sulfate	57	1	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Chloride	6	1	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Hardness as CaCO3	147	1	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Organic Carbon, Dissolved	3.5	0.5	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	N-Total, mg/L	0.29	0.05	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Phosphorus, Total as P, mg/L	0.041	0.003	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Arsenic, Dissolved	0.018	0.001	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Cadmium, Dissolved	0.00005	0.00003	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Copper, Dissolved	0.007	0.001	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Zinc, Dissolved	0.009	0.008	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Arsenic, Total Recoverable	0.022	0.001	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Cadmium, Total Recoverable	0.00016	0.00004	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Calcium, Total Recoverable	43	1	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Copper, Total Recoverable	0.029	0.001	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Lead, Total Recoverable	0.0032	0.0003	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Magnesium, Total Recoverable	10	1	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Potassium, Total Recoverable	2	1	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Sodium, Total Recoverable	10	1	mg/L
CFR-11F	Natural Sample	H16060056-008	6/1/2016	Zinc, Total Recoverable	0.029	0.008	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Solids, Total Suspended TSS @ 105 C	25	7	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Alkalinity, Total as CaCO3	110	4	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Bicarbonate Alkalinity as HCO3	130	4	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Sulfate	57	1	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Chloride	6	1	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Hardness as CaCO3	157	1	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Organic Carbon, Dissolved	3.7	0.5	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	NO3+NO2 as N, mg/L	0.03	0.02	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	N-Total, mg/L	0.32	0.05	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Phosphorus, Total as P, mg/L	0.046	0.003	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Arsenic, Dissolved	0.019	0.001	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Cadmium, Dissolved	0.00005	0.00003	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Copper, Dissolved	0.01	0.001	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Arsenic, Total Recoverable	0.025	0.001	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Cadmium, Total Recoverable	0.00024	0.00004	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Calcium, Total Recoverable	46	1	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Copper, Total Recoverable	0.05	0.001	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Lead, Total Recoverable	0.0054	0.0003	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Magnesium, Total Recoverable	10	1	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Sodium, Total Recoverable	12	1	mg/L
CFR-27H	Natural Sample	H16060056-007	5/31/2016	Zinc, Total Recoverable	0.04	0.008	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Solids, Total Suspended TSS @ 105 C	25	7	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Alkalinity, Total as CaCO3	120	4	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Bicarbonate Alkalinity as HCO3	140	4	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-34	Natural Sample	H16060056-006	5/31/2016	Sulfate	55	1	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Chloride	6	1	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Hardness as CaCO3	168	1	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Organic Carbon, Dissolved	4	0.5	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	NO3+NO2 as N, mg/L	0.03	0.02	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	N-Total, mg/L	0.34	0.05	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Phosphorus, Total as P, mg/L	0.053	0.003	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Arsenic, Dissolved	0.019	0.001	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Cadmium, Dissolved	0.00005	0.00003	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Copper, Dissolved	0.011	0.001	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Zinc, Dissolved	0.009	0.008	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Arsenic, Total Recoverable	0.024	0.001	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Cadmium, Total Recoverable	0.00023	0.00004	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Calcium, Total Recoverable	49	1	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Copper, Total Recoverable	0.052	0.001	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Lead, Total Recoverable	0.0058	0.0003	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Magnesium, Total Recoverable	11	1	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Sodium, Total Recoverable	13	1	mg/L
CFR-34	Natural Sample	H16060056-006	5/31/2016	Zinc, Total Recoverable	0.041	0.008	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Solids, Total Suspended TSS @ 105 C	6	5	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Alkalinity, Total as CaCO3	86	4	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Bicarbonate Alkalinity as HCO3	100	4	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Sulfate	10	1	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Chloride	1	1	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Hardness as CaCO3	91	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Organic Carbon, Dissolved	3.3	0.5	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	N-Total, mg/L	0.14	0.05	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Phosphorus, Total as P, mg/L	0.025	0.003	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Arsenic, Dissolved	0.004	0.001	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Cadmium, Dissolved	ND	0.00003	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Copper, Dissolved	ND	0.001	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Lead, Dissolved	ND	0.0003	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Zinc, Dissolved	ND	0.008	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Arsenic, Total Recoverable	0.005	0.001	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Cadmium, Total Recoverable	ND	0.00004	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Calcium, Total Recoverable	26	1	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Copper, Total Recoverable	0.001	0.001	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Lead, Total Recoverable	0.0005	0.0003	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Magnesium, Total Recoverable	6	1	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Potassium, Total Recoverable	2	1	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Sodium, Total Recoverable	5	1	mg/L
LBR-CFR-02	Natural Sample	H16060056-005	5/31/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Solids, Total Suspended TSS @ 105 C	19	7	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Alkalinity, Total as CaCO3	120	4	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Bicarbonate Alkalinity as HCO3	150	4	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Sulfate	12	1	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Chloride	2	1	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Hardness as CaCO3	125	1	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Organic Carbon, Dissolved	3.6	0.5	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Natural Sample	H16060056-003	5/31/2016	N-Total, mg/L	0.21	0.05	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Phosphorus, Total as P, mg/L	0.044	0.003	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Arsenic, Dissolved	0.006	0.001	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Copper, Dissolved	ND	0.001	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Lead, Dissolved	ND	0.0003	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Zinc, Dissolved	ND	0.008	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Arsenic, Total Recoverable	0.01	0.001	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Cadmium, Total Recoverable	0.00005	0.00004	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Calcium, Total Recoverable	34	1	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Copper, Total Recoverable	0.003	0.001	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Lead, Total Recoverable	0.0053	0.0003	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Magnesium, Total Recoverable	10	1	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Potassium, Total Recoverable	2	1	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Sodium, Total Recoverable	6	1	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Zinc, Total Recoverable	0.016	0.008	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Mercury, Total	0.00042	0.000005	mg/L
FC-CFR	Natural Sample	H16060056-003	5/31/2016	Mercury, Methyl	1.460	0.050	ng/L
CFR-84F	Natural Sample	H16060056-018	5/31/2016	Mercury, Total	0.000037	0.000005	mg/L
CFR-84F	Natural Sample	H16060056-018	5/31/2016	Mercury, Methyl	0.543	0.049	ng/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Solids, Total Suspended TSS @ 105 $\rm C$	21	7	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Alkalinity, Total as CaCO3	83	4	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Bicarbonate Alkalinity as HCO3	100	4	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Sulfate	25	1	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Chloride	2	1	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Hardness as CaCO3	102	1	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Organic Carbon, Dissolved	3.1	0.5	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-116A	Natural Sample	H16060056-001	5/31/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	N-Total, mg/L	0.24	0.05	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Phosphorus, Total as P, mg/L	0.039	0.003	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Arsenic, Dissolved	0.006	0.001	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Copper, Dissolved	0.004	0.001	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Arsenic, Total Recoverable	0.007	0.001	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Cadmium, Total Recoverable	0.0001	0.00004	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Calcium, Total Recoverable	29	1	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Copper, Total Recoverable	0.017	0.001	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Lead, Total Recoverable	0.0025	0.0003	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Magnesium, Total Recoverable	7	1	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Potassium, Total Recoverable	2	1	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Sodium, Total Recoverable	6	1	mg/L
CFR-116A	Natural Sample	H16060056-001	5/31/2016	Zinc, Total Recoverable	0.022	0.008	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Solids, Total Suspended TSS @ 105 C	17	7	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Alkalinity, Total as CaCO3	120	4	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Bicarbonate Alkalinity as HCO3	150	4	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Sulfate	12	1	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Chloride	2	1	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Hardness as CaCO3	127	1	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Organic Carbon, Dissolved	4.2	0.5	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	N-Total, mg/L	0.29	0.05	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Phosphorus, Total as P, mg/L	0.041	0.003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Arsenic, Dissolved	0.006	0.001	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Copper, Dissolved	0.001	0.001	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Lead, Dissolved	ND	0.0003	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Zinc, Dissolved	ND	0.008	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Arsenic, Total Recoverable	0.01	0.001	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Cadmium, Total Recoverable	0.00007	0.00004	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Calcium, Total Recoverable	35	1	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Copper, Total Recoverable	0.003	0.001	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Lead, Total Recoverable	0.0052	0.0003	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Magnesium, Total Recoverable	10	1	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Potassium, Total Recoverable	3	1	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Sodium, Total Recoverable	6	1	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Zinc, Total Recoverable	0.017	0.008	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Mercury, Total	0.00033	0.000005	mg/L
FC-CFR	Duplicate Sample	H16060056-004	5/31/2016	Mercury, Methyl	1.410	0.049	ng/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Solids, Total Suspended TSS @ 105 C	6	2	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Alkalinity, Total as CaCO3	84	4	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Bicarbonate Alkalinity as HCO3	81	4	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Sulfate	53	1	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Chloride	9	1	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Hardness as CaCO3	127	1	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Organic Carbon, Dissolved	5.1	0.5	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	N-Total, mg/L	0.3	0.05	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Phosphorus, Total as P, mg/L	0.058	0.003	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Arsenic, Dissolved	0.025	0.001	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Cadmium, Dissolved	0.00006	0.00003	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Copper, Dissolved	0.007	0.001	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Lead, Dissolved	ND	0.0003	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Zinc, Dissolved	ND	0.008	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Arsenic, Total Recoverable	0.026	0.001	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Cadmium, Total Recoverable	0.00012	0.00004	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Calcium, Total Recoverable	37	1	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Copper, Total Recoverable	0.011	0.001	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Lead, Total Recoverable	0.0012	0.0003	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Magnesium, Total Recoverable	8	1	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Potassium, Total Recoverable	3	1	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Sodium, Total Recoverable	13	1	mg/L
SS-25	Duplicate Sample	H16060056-013	6/1/2016	Zinc, Total Recoverable	0.016	0.008	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Solids, Total Suspended TSS @ 105 C	ND	5	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Alkalinity, Total as CaCO3	ND	4	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Bicarbonate Alkalinity as HCO3	ND	4	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Sulfate	ND	1	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Chloride	ND	1	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Hardness as CaCO3	ND	1	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Organic Carbon, Dissolved	ND	0.5	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	N-Total, mg/L	ND	0.05	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Phosphorus, Total as P, mg/L	ND	0.003	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Arsenic, Dissolved	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Copper, Dissolved	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Lead, Dissolved	ND	0.0003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Zinc, Dissolved	0.01	0.008	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Arsenic, Total Recoverable	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Cadmium, Total Recoverable	ND	0.00004	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Calcium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Copper, Total Recoverable	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Lead, Total Recoverable	ND	0.0003	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Magnesium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Potassium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Sodium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Mercury, Total	ND	0.000005	mg/L
FC-CFR	Field Blank 1	H16060056-002	5/31/2016	Mercury, Methyl	ND	0.050	ng/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Solids, Total Suspended TSS @ 105 C	ND	1	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Alkalinity, Total as CaCO3	ND	4	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Bicarbonate Alkalinity as HCO3	ND	4	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Sulfate	ND	1	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Chloride	ND	1	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Hardness as CaCO3	ND	1	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Organic Carbon, Dissolved	ND	0.5	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	N-Total, mg/L	ND	0.05	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Phosphorus, Total as P, mg/L	ND	0.003	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Arsenic, Dissolved	ND	0.001	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Cadmium, Dissolved	ND	0.00003	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Copper, Dissolved	ND	0.001	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Lead, Dissolved	ND	0.0003	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Zinc, Dissolved	0.012	0.008	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Arsenic, Total Recoverable	ND	0.001	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Cadmium, Total Recoverable	ND	0.00004	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Calcium, Total Recoverable	ND	1	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Copper, Total Recoverable	ND	0.001	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Lead, Total Recoverable	ND	0.0003	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Magnesium, Total Recoverable	ND	1	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Potassium, Total Recoverable	ND	1	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Sodium, Total Recoverable	ND	1	mg/L
MCWC-MWB	Field Blank 2	H16060056-017	6/1/2016	Zinc, Total Recoverable	ND	0.008	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Solids, Total Suspended TSS @ 105 C	2	1	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Alkalinity, Total as CaCO3	98	4	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Bicarbonate Alkalinity as HCO3	86	4	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Sulfate	70	1	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Chloride	21	1	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Hardness as CaCO3	161	1	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Organic Carbon, Dissolved	4	0.5	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	NO3+NO2 as N, mg/L	0.03	0.02	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	N-Total, mg/L	0.35	0.05	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Phosphorus, Total as P, mg/L	0.167	0.003	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Arsenic, Dissolved	0.007	0.001	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Cadmium, Dissolved	0.00012	0.00003	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Copper, Dissolved	0.009	0.001	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Lead, Dissolved	ND	0.0003	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Zinc, Dissolved	0.011	0.008	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Arsenic, Total Recoverable	0.008	0.001	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Cadmium, Total Recoverable	0.00013	0.00003	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Calcium, Total Recoverable	49	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
SS-19	Natural Sample	H16060430-017	6/21/2016	Copper, Total Recoverable	0.011	0.001	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Lead, Total Recoverable	0.0006	0.0003	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Magnesium, Total Recoverable	10	1	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Potassium, Total Recoverable	4	1	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Sodium, Total Recoverable	21	1	mg/L
SS-19	Natural Sample	H16060430-017	6/21/2016	Zinc, Total Recoverable	0.020	0.008	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Solids, Total Suspended TSS @ $105~\mathrm{C}$	4	1	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Alkalinity, Total as CaCO3	71	4	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Bicarbonate Alkalinity as HCO3	86	1	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Sulfate	10	1	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Chloride	ND	1	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Hardness as CaCO3	75	0.5	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Organic Carbon, Dissolved	3.3	0.05	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Nitrogen, Ammonia as N, mg/L	ND	0.02	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	NO3+NO2 as N, mg/L	ND	0.05	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	N-Total, mg/L	0.18	0.003	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Phosphorus, Total as P, mg/L	0.034	0.001	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Arsenic, Dissolved	0.039	0.00003	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Cadmium, Dissolved	0.00003	0.001	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Copper, Dissolved	0.003	0.0003	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Lead, Dissolved	ND	0.008	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Zinc, Dissolved	ND	0.001	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Arsenic, Total Recoverable	0.04	0.00003	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Cadmium, Total Recoverable	0.00007	1	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Calcium, Total Recoverable	22	0.001	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Copper, Total Recoverable	0.005	0.0003	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Lead, Total Recoverable	0.001	1	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Magnesium, Total Recoverable	5	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Potassium, Total Recoverable	1	1	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Sodium, Total Recoverable	6	0.008	mg/L
MCWC-MWB	Natural Sample	H16060430-017	6/21/2016	Zinc, Total Recoverable	ND	0.008	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Solids, Total Suspended TSS @ 105 $ m C$	5	1	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Alkalinity, Total as CaCO3	78	4	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Bicarbonate Alkalinity as HCO3	94	4	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Sulfate	39	1	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Chloride	2	1	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Hardness as CaCO3	113	1	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Organic Carbon, Dissolved	3.1	0.5	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	N-Total, mg/L	0.24	0.05	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Phosphorus, Total as P, mg/L	0.029	0.003	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Arsenic, Dissolved	0.039	0.001	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Cadmium, Dissolved	ND	0.00003	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Copper, Dissolved	0.003	0.001	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Lead, Dissolved	ND	0.0003	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Zinc, Dissolved	0.011	0.008	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Arsenic, Total Recoverable	0.04	0.001	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Cadmium, Total Recoverable	0.00007	0.00003	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Calcium, Total Recoverable	33	1	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Copper, Total Recoverable	0.005	0.001	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Lead, Total Recoverable	0.001	0.0003	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Magnesium, Total Recoverable	7	1	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Potassium, Total Recoverable	1	1	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Sodium, Total Recoverable	7	1	mg/L
MWB-SBC	Natural Sample	H16060430-015	6/21/2016	Zinc, Total Recoverable	ND	0.008	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Solids, Total Suspended TSS @ 105 C	2	1	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Alkalinity, Total as CaCO3	99	4	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Bicarbonate Alkalinity as HCO3	110	4	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Sulfate	70	1	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Chloride	19	1	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Hardness as CaCO3	161	1	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Organic Carbon, Dissolved	6.3	0.5	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	N-Total, mg/L	0.56	0.05	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Phosphorus, Total as P, mg/L	0.156	0.003	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Arsenic, Dissolved	0.023	0.001	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Cadmium, Dissolved	ND	0.00003	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Copper, Dissolved	0.004	0.001	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Lead, Dissolved	ND	0.0003	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Zinc, Dissolved	ND	0.008	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Arsenic, Total Recoverable	0.024	0.001	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Cadmium, Total Recoverable	0.00004	0.00003	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Calcium, Total Recoverable	47	1	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Copper, Total Recoverable	0.005	0.001	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Lead, Total Recoverable	0.0003	0.0003	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Magnesium, Total Recoverable	11	1	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Potassium, Total Recoverable	4	1	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Sodium, Total Recoverable	20	1	mg/L
SBC-P2	Natural Sample	H16060430-016	6/21/2016	Zinc, Total Recoverable	ND	0.008	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Solids, Total Suspended TSS @ 105 C	4	1	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Alkalinity, Total as CaCO3	83	4	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Bicarbonate Alkalinity as HCO3	98	4	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
SS-25	Natural Sample	H16060430-014	6/21/2016	Sulfate	46	1	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Chloride	5	1	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Hardness as CaCO3	111	1	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Organic Carbon, Dissolved	3.7	0.5	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	N-Total, mg/L	0.32	0.05	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Phosphorus, Total as P, mg/L	0.053	0.003	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Arsenic, Dissolved	0.036	0.001	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Cadmium, Dissolved	ND	0.00003	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Copper, Dissolved	0.003	0.001	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Lead, Dissolved	ND	0.0003	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Zinc, Dissolved	ND	0.008	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Arsenic, Total Recoverable	0.036	0.001	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Cadmium, Total Recoverable	0.00006	0.00003	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Calcium, Total Recoverable	32	1	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Copper, Total Recoverable	0.005	0.001	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Lead, Total Recoverable	0.0009	0.0003	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Magnesium, Total Recoverable	8	1	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Potassium, Total Recoverable	2	1	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Sodium, Total Recoverable	9	1	mg/L
SS-25	Natural Sample	H16060430-014	6/21/2016	Zinc, Total Recoverable	ND	0.008	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Solids, Total Suspended TSS @ 105 C	6	2	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Alkalinity, Total as CaCO3	81	4	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Bicarbonate Alkalinity as HCO3	98	4	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Sulfate	21	1	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Chloride	ND	1	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Hardness as CaCO3	104	1	mg/L
Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
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WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Organic Carbon, Dissolved	1.3	0.5	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	NO3+NO2 as N, mg/L	0.03	0.02	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	N-Total, mg/L	0.15	0.05	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Phosphorus, Total as P, mg/L	0.012	0.003	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Arsenic, Dissolved	0.004	0.001	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Cadmium, Dissolved	0.00005	0.00003	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Copper, Dissolved	0.003	0.001	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Lead, Dissolved	ND	0.0003	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Zinc, Dissolved	ND	0.008	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Arsenic, Total Recoverable	0.005	0.001	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Cadmium, Total Recoverable	0.00005	0.00003	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Calcium, Total Recoverable	32	1	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Copper, Total Recoverable	0.011	0.001	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Lead, Total Recoverable	0.0011	0.0003	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Magnesium, Total Recoverable	6	1	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Potassium, Total Recoverable	1	1	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Sodium, Total Recoverable	2	1	mg/L
WSC-SBC	Natural Sample	H16060430-013	6/21/2016	Zinc, Total Recoverable	ND	0.008	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Solids, Total Suspended TSS @ 105 C	6	1	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Alkalinity, Total as CaCO3	84	4	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Bicarbonate Alkalinity as HCO3	100	4	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Sulfate	35	1	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Chloride	3	1	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Hardness as CaCO3	105	1	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Organic Carbon, Dissolved	2.5	0.5	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-03A	Natural Sample	H16060430-011	6/21/2016	N-Total, mg/L	0.22	0.05	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Phosphorus, Total as P, mg/L	0.029	0.003	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Arsenic, Dissolved	0.017	0.001	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Copper, Dissolved	0.004	0.001	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Arsenic, Total Recoverable	0.018	0.001	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Cadmium, Total Recoverable	0.00007	0.00003	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Calcium, Total Recoverable	31	1	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Copper, Total Recoverable	0.01	0.001	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Lead, Total Recoverable	0.0012	0.0003	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Magnesium, Total Recoverable	7	1	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Potassium, Total Recoverable	2	1	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Sodium, Total Recoverable	6	1	mg/L
CFR-03A	Natural Sample	H16060430-011	6/21/2016	Zinc, Total Recoverable	0.009	0.008	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Solids, Total Suspended TSS @ 105 C	5	1	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Alkalinity, Total as CaCO3	88	4	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Bicarbonate Alkalinity as HCO3	110	4	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Sulfate	41	1	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Chloride	3	1	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Hardness as CaCO3	126	1	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Organic Carbon, Dissolved	2.6	0.5	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	N-Total, mg/L	0.23	0.05	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Phosphorus, Total as P, mg/L	0.028	0.003	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Arsenic, Dissolved	0.018	0.001	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Cadmium, Dissolved	0.00003	0.00003	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Copper, Dissolved	0.005	0.001	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Zinc, Dissolved	0.014	0.008	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Arsenic, Total Recoverable	0.019	0.001	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Cadmium, Total Recoverable	0.00006	0.00003	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Calcium, Total Recoverable	37	1	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Copper, Total Recoverable	0.012	0.001	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Lead, Total Recoverable	0.0011	0.0003	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Magnesium, Total Recoverable	8	1	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Potassium, Total Recoverable	2	1	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Sodium, Total Recoverable	7	1	mg/L
CFR-07D	Natural Sample	H16060430-009	6/21/2016	Zinc, Total Recoverable	0.010	0.008	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Solids, Total Suspended TSS @ 105 C	4	1	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Alkalinity, Total as CaCO3	97	4	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Bicarbonate Alkalinity as HCO3	120	4	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Sulfate	47	1	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Chloride	3	1	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Hardness as CaCO3	144	1	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Organic Carbon, Dissolved	2.7	0.5	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	N-Total, mg/L	0.23	0.05	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Phosphorus, Total as P, mg/L	0.026	0.003	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Arsenic, Dissolved	0.017	0.001	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Copper, Dissolved	0.005	0.001	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Lead, Dissolved	ND	0.0003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Zinc, Dissolved	0.012	0.008	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Arsenic, Total Recoverable	0.02	0.001	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Cadmium, Total Recoverable	0.00006	0.00003	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Calcium, Total Recoverable	42	1	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Copper, Total Recoverable	0.012	0.001	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Lead, Total Recoverable	0.001	0.0003	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Magnesium, Total Recoverable	9	1	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Potassium, Total Recoverable	2	1	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Sodium, Total Recoverable	8	1	mg/L
CFR-11F	Natural Sample	H16060430-008	6/21/2016	Zinc, Total Recoverable	0.010	0.008	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Solids, Total Suspended TSS @ 105 C	5	1	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Alkalinity, Total as CaCO3	110	4	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Bicarbonate Alkalinity as HCO3	120	4	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Sulfate	45	1	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Chloride	4	1	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Hardness as CaCO3	151	1	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Organic Carbon, Dissolved	2.8	0.5	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	N-Total, mg/L	0.25	0.05	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Phosphorus, Total as P, mg/L	0.021	0.003	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Arsenic, Dissolved	0.017	0.001	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Cadmium, Dissolved	0.00003	0.00003	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Copper, Dissolved	0.007	0.001	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Arsenic, Total Recoverable	0.019	0.001	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Cadmium, Total Recoverable	0.00007	0.00003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Calcium, Total Recoverable	45	1	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Copper, Total Recoverable	0.015	0.001	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Lead, Total Recoverable	0.0011	0.0003	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Magnesium, Total Recoverable	9	1	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Potassium, Total Recoverable	2	1	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Sodium, Total Recoverable	10	1	mg/L
CFR-27H	Natural Sample	H16060430-007	6/20/2016	Zinc, Total Recoverable	0.010	0.008	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Solids, Total Suspended TSS @ 105 C	5	1	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Alkalinity, Total as CaCO3	130	4	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Bicarbonate Alkalinity as HCO3	130	4	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Sulfate	46	1	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Chloride	5	1	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Hardness as CaCO3	167	1	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Organic Carbon, Dissolved	3.1	0.5	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	N-Total, mg/L	0.29	0.05	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Phosphorus, Total as P, mg/L	0.028	0.003	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Arsenic, Dissolved	0.018	0.001	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Cadmium, Dissolved	0.00005	0.00003	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Copper, Dissolved	0.008	0.001	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Arsenic, Total Recoverable	0.02	0.001	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Cadmium, Total Recoverable	0.00008	0.00003	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Calcium, Total Recoverable	49	1	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Copper, Total Recoverable	0.015	0.001	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Lead, Total Recoverable	0.0012	0.0003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-34	Natural Sample	H16060430-006	6/20/2016	Magnesium, Total Recoverable	11	1	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Potassium, Total Recoverable	2	1	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Sodium, Total Recoverable	12	1	mg/L
CFR-34	Natural Sample	H16060430-006	6/20/2016	Zinc, Total Recoverable	0.011	0.008	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Solids, Total Suspended TSS @ 105 $\rm C$	1	1	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Alkalinity, Total as CaCO3	110	4	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Bicarbonate Alkalinity as HCO3	130	4	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Sulfate	11	1	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Chloride	2	1	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Hardness as CaCO3	115	1	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Organic Carbon, Dissolved	2.6	0.5	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	N-Total, mg/L	0.12	0.05	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Phosphorus, Total as P, mg/L	0.018	0.003	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Arsenic, Dissolved	0.004	0.001	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Cadmium, Dissolved	ND	0.00003	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Copper, Dissolved	ND	0.001	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Lead, Dissolved	ND	0.0003	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Zinc, Dissolved	ND	0.008	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Arsenic, Total Recoverable	0.005	0.001	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Cadmium, Total Recoverable	0.00004	0.00003	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Calcium, Total Recoverable	34	1	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Copper, Total Recoverable	0.001	0.001	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Lead, Total Recoverable	ND	0.0003	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Magnesium, Total Recoverable	8	1	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Potassium, Total Recoverable	2	1	mg/L
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Sodium, Total Recoverable	6	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
LBR-CFR-02	Natural Sample	H16060430-005	6/20/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Solids, Total Suspended TSS @ 105 C	6	2	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Alkalinity, Total as CaCO3	200	4	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Bicarbonate Alkalinity as HCO3	240	4	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Sulfate	18	1	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Chloride	3	1	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Hardness as CaCO3	209	1	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Organic Carbon, Dissolved	4.3	0.5	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	N-Total, mg/L	0.31	0.05	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Phosphorus, Total as P, mg/L	0.051	0.003	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Arsenic, Dissolved	0.009	0.001	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Copper, Dissolved	0.001	0.001	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Lead, Dissolved	ND	0.0003	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Zinc, Dissolved	ND	0.008	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Arsenic, Total Recoverable	0.01	0.001	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Calcium, Total Recoverable	58	1	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Copper, Total Recoverable	0.002	0.001	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Lead, Total Recoverable	0.0013	0.0003	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Magnesium, Total Recoverable	16	1	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Potassium, Total Recoverable	4	1	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Sodium, Total Recoverable	10	1	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Mercury, Total	0.000057	0.000005	mg/L
FC-CFR	Natural Sample	H16060430-003	6/20/2016	Mercury, Methyl	0.997	0.054	ng/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-84F	Natural Sample	H16060430-019	6/20/2016	Mercury, Total	0.000007	0.000005	mg/L
CFR-84F	Natural Sample	H16060430-019	6/20/2016	Mercury, Methyl	0.180	0.057	ng/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Solids, Total Suspended TSS @ 105 $ m C$	3	1	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Alkalinity, Total as CaCO3	100	4	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Bicarbonate Alkalinity as HCO3	130	4	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Sulfate	29	1	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Chloride	2	1	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Hardness as CaCO3	129	1	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Organic Carbon, Dissolved	2.7	0.5	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	N-Total, mg/L	0.13	0.05	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Phosphorus, Total as P, mg/L	0.017	0.003	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Arsenic, Dissolved	0.006	0.001	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Cadmium, Dissolved	0.00003	0.00003	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Copper, Dissolved	0.004	0.001	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Zinc, Dissolved	0.010	0.008	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Arsenic, Total Recoverable	0.006	0.001	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Cadmium, Total Recoverable	0.00003	0.00003	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Calcium, Total Recoverable	37	1	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Copper, Total Recoverable	0.005	0.001	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Lead, Total Recoverable	0.0004	0.0003	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Magnesium, Total Recoverable	9	1	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Potassium, Total Recoverable	2	1	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Sodium, Total Recoverable	7	1	mg/L
CFR-116A	Natural Sample	H16060430-001	6/20/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Solids, Total Suspended TSS @ 105 C	6	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Alkalinity, Total as CaCO3	200	4	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Bicarbonate Alkalinity as HCO3	240	4	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Sulfate	18	1	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Chloride	3	1	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Hardness as CaCO3	212	1	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Organic Carbon, Dissolved	4.3	0.5	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	N-Total, mg/L	0.32	0.05	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Phosphorus, Total as P, mg/L	0.054	0.003	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Arsenic, Dissolved	0.009	0.001	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Copper, Dissolved	ND	0.001	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Lead, Dissolved	ND	0.0003	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Zinc, Dissolved	ND	0.008	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Arsenic, Total Recoverable	0.009	0.001	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Cadmium, Total Recoverable	0.00003	0.00003	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Calcium, Total Recoverable	58	1	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Copper, Total Recoverable	0.002	0.001	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Lead, Total Recoverable	0.0014	0.0003	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Magnesium, Total Recoverable	16	1	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Potassium, Total Recoverable	4	1	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Sodium, Total Recoverable	10	1	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Mercury, Total	0.000057	0.000005	mg/L
FC-CFR	Duplicate Sample	H16060430-004	6/20/2016	Mercury, Methyl	0.882	0.054	ng/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Solids, Total Suspended TSS @ 105 C	5	1	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Alkalinity, Total as CaCO3	87	4	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Bicarbonate Alkalinity as HCO3	110	4	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Sulfate	41	1	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Chloride	3	1	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Hardness as CaCO3	126	1	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Organic Carbon, Dissolved	2.6	0.5	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	N-Total, mg/L	0.23	0.05	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Phosphorus, Total as P, mg/L	0.028	0.003	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Arsenic, Dissolved	0.017	0.001	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Copper, Dissolved	0.005	0.001	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Arsenic, Total Recoverable	0.019	0.001	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Cadmium, Total Recoverable	0.00007	0.00003	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Calcium, Total Recoverable	37	1	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Copper, Total Recoverable	0.013	0.001	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Lead, Total Recoverable	0.0013	0.0003	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Magnesium, Total Recoverable	8	1	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Potassium, Total Recoverable	2	1	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Sodium, Total Recoverable	7	1	mg/L
CFR-07D	Duplicate Sample	H16060430-010	6/21/2016	Zinc, Total Recoverable	0.010	0.008	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Solids, Total Suspended TSS @ 105 C	ND	1	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Alkalinity, Total as CaCO3	ND	4	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Bicarbonate Alkalinity as HCO3	ND	4	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Sulfate	ND	1	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Chloride	ND	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Hardness as CaCO3	ND	1	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Organic Carbon, Dissolved	ND	0.5	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	N-Total, mg/L	ND	0.05	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Phosphorus, Total as P, mg/L	ND	0.003	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Arsenic, Dissolved	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Copper, Dissolved	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Lead, Dissolved	ND	0.0003	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Zinc, Dissolved	0.012	0.008	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Arsenic, Total Recoverable	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Calcium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Copper, Total Recoverable	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Lead, Total Recoverable	ND	0.0003	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Magnesium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Potassium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Sodium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Mercury, Total	ND	0.000005	mg/L
FC-CFR	Field Blank 1	H16060430-002	6/20/2016	Mercury, Methyl	ND	0.053	ng/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Solids, Total Suspended TSS @ 105 C	ND	1	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Alkalinity, Total as CaCO3	ND	4	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Bicarbonate Alkalinity as HCO3	ND	4	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Sulfate	ND	1	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Chloride	ND	1	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Hardness as CaCO3	ND	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Organic Carbon, Dissolved	ND	0.5	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	N-Total, mg/L	ND	0.05	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Phosphorus, Total as P, mg/L	ND	0.003	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Arsenic, Dissolved	ND	0.001	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Cadmium, Dissolved	ND	0.00003	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Copper, Dissolved	ND	0.001	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Lead, Dissolved	ND	0.0003	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Zinc, Dissolved	0.012	0.008	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Arsenic, Total Recoverable	ND	0.001	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Calcium, Total Recoverable	ND	1	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Copper, Total Recoverable	ND	0.001	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Lead, Total Recoverable	ND	0.0003	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Magnesium, Total Recoverable	ND	1	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Potassium, Total Recoverable	ND	1	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Sodium, Total Recoverable	ND	1	mg/L
WSC-SBC	Field Blank 2	H16060430-012	6/21/2016	Zinc, Total Recoverable	ND	0.008	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Solids, Total Suspended TSS @ 105 C	4	1	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Alkalinity, Total as CaCO3	110	4	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Bicarbonate Alkalinity as HCO3	130	4	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Sulfate	24	1	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Chloride	2	1	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Hardness as CaCO3	111	1	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Organic Carbon, Dissolved	1.7	0.5	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	N-Total, mg/L	0.14	0.05	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Phosphorus, Total as P, mg/L	0.014	0.003	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Arsenic, Dissolved	0.016	0.001	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Cadmium, Dissolved	ND	0.00003	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Copper, Dissolved	0.002	0.001	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Lead, Dissolved	ND	0.0003	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Zinc, Dissolved	ND	0.008	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Arsenic, Total Recoverable	0.016	0.001	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Cadmium, Total Recoverable	0.00004	0.00003	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Calcium, Total Recoverable	31	1	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Copper, Total Recoverable	0.004	0.001	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Lead, Total Recoverable	0.0013	0.0003	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Magnesium, Total Recoverable	8	1	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Potassium, Total Recoverable	1	1	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Sodium, Total Recoverable	9	1	mg/L
MCWC-MWB	Natural Sample	H16090340-017	9/13/2016	Zinc, Total Recoverable	ND	0.008	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Solids, Total Suspended TSS @ 105 C	1	1	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Alkalinity, Total as CaCO3	120	4	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Bicarbonate Alkalinity as HCO3	140	4	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Sulfate	133	1	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Chloride	5	1	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Hardness as CaCO3	223	1	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Organic Carbon, Dissolved	2	0.5	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	N-Total, mg/L	0.13	0.05	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Phosphorus, Total as P, mg/L	0.017	0.003	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Arsenic, Dissolved	0.018	0.001	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Cadmium, Dissolved	ND	0.00003	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Copper, Dissolved	0.001	0.001	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Lead, Dissolved	ND	0.0003	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Zinc, Dissolved	ND	0.008	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Arsenic, Total Recoverable	0.018	0.001	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Calcium, Total Recoverable	65	1	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Copper, Total Recoverable	0.002	0.001	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Lead, Total Recoverable	0.0004	0.0003	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Magnesium, Total Recoverable	15	1	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Potassium, Total Recoverable	3	1	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Sodium, Total Recoverable	12	1	mg/L
MWB-SBC	Natural Sample	H16090340-015	9/13/2016	Zinc, Total Recoverable	0.008	0.008	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Solids, Total Suspended TSS @ 105 C	2	1	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Alkalinity, Total as CaCO3	80	4	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Bicarbonate Alkalinity as HCO3	47	4	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Sulfate	95	1	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Chloride	26	1	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Hardness as CaCO3	152	1	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Organic Carbon, Dissolved	6	0.5	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	N-Total, mg/L	0.61	0.05	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Phosphorus, Total as P, mg/L	0.129	0.003	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Arsenic, Dissolved	0.037	0.001	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Cadmium, Dissolved	ND	0.00003	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Copper, Dissolved	0.003	0.001	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Lead, Dissolved	ND	0.0003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Zinc, Dissolved	ND	0.008	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Arsenic, Total Recoverable	0.035	0.001	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Cadmium, Total Recoverable	0.00004	0.00003	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Calcium, Total Recoverable	41	1	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Copper, Total Recoverable	0.004	0.001	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Lead, Total Recoverable	0.0004	0.0003	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Magnesium, Total Recoverable	12	1	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Potassium, Total Recoverable	4	1	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Sodium, Total Recoverable	25	1	mg/L
SBC-P2	Natural Sample	H16090340-016	9/13/2016	Zinc, Total Recoverable	ND	0.008	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Solids, Total Suspended TSS @ 105 $ m C$	2	1	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Alkalinity, Total as CaCO3	100	4	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Bicarbonate Alkalinity as HCO3	91	4	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Sulfate	114	1	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Chloride	15	1	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Hardness as CaCO3	189	1	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Organic Carbon, Dissolved	4.3	0.5	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	N-Total, mg/L	0.35	0.05	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Phosphorus, Total as P, mg/L	0.076	0.003	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Arsenic, Dissolved	0.027	0.001	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Cadmium, Dissolved	ND	0.00003	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Copper, Dissolved	0.003	0.001	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Lead, Dissolved	ND	0.0003	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Zinc, Dissolved	ND	0.008	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Arsenic, Total Recoverable	0.026	0.001	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Cadmium, Total Recoverable	0.00003	0.00003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
SS-25	Natural Sample	H16090340-014	9/13/2016	Calcium, Total Recoverable	53	1	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Copper, Total Recoverable	0.003	0.001	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Lead, Total Recoverable	ND	0.0003	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Magnesium, Total Recoverable	14	1	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Potassium, Total Recoverable	3	1	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Sodium, Total Recoverable	19	1	mg/L
SS-25	Natural Sample	H16090340-014	9/13/2016	Zinc, Total Recoverable	ND	0.008	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Solids, Total Suspended TSS @ 105 C	ND	2	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Alkalinity, Total as CaCO3	140	4	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Bicarbonate Alkalinity as HCO3	170	4	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Sulfate	46	1	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Chloride	1	1	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Hardness as CaCO3	176	1	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Organic Carbon, Dissolved	0.9	0.5	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	N-Total, mg/L	ND	0.05	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Phosphorus, Total as P, mg/L	ND	0.003	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Arsenic, Dissolved	0.006	0.001	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Cadmium, Dissolved	ND	0.00003	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Copper, Dissolved	0.002	0.001	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Lead, Dissolved	ND	0.0003	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Zinc, Dissolved	ND	0.008	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Arsenic, Total Recoverable	0.006	0.001	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Cadmium, Total Recoverable	0.00027	0.00003	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Calcium, Total Recoverable	53	1	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Copper, Total Recoverable	0.004	0.001	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Lead, Total Recoverable	ND	0.0003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Magnesium, Total Recoverable	10	1	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Potassium, Total Recoverable	2	1	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Sodium, Total Recoverable	4	1	mg/L
WSC-SBC	Natural Sample	H16090340-013	9/13/2016	Zinc, Total Recoverable	ND	0.008	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Solids, Total Suspended TSS @ 105 C	ND	1	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Alkalinity, Total as CaCO3	120	4	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Bicarbonate Alkalinity as HCO3	140	4	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Sulfate	91	1	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Chloride	10	1	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Hardness as CaCO3	193	1	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Organic Carbon, Dissolved	2.7	0.5	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	N-Total, mg/L	0.2	0.05	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Phosphorus, Total as P, mg/L	0.038	0.003	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Arsenic, Dissolved	0.017	0.001	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Copper, Dissolved	0.003	0.001	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Arsenic, Total Recoverable	0.016	0.001	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Cadmium, Total Recoverable	0.00004	0.00003	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Calcium, Total Recoverable	56	1	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Copper, Total Recoverable	0.004	0.001	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Lead, Total Recoverable	ND	0.0003	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Magnesium, Total Recoverable	13	1	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Potassium, Total Recoverable	2	1	mg/L
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Sodium, Total Recoverable	13	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-03A	Natural Sample	H16090340-010	9/13/2016	Zinc, Total Recoverable	ND	0.008	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Solids, Total Suspended TSS @ 105 C	ND	1	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Alkalinity, Total as CaCO3	140	4	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Bicarbonate Alkalinity as HCO3	170	4	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Sulfate	112	1	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Chloride	8	1	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Hardness as CaCO3	225	1	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Organic Carbon, Dissolved	2.4	0.5	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	N-Total, mg/L	0.18	0.05	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Phosphorus, Total as P, mg/L	0.019	0.003	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Arsenic, Dissolved	0.015	0.001	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Copper, Dissolved	0.014	0.001	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Zinc, Dissolved	0.011	0.008	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Arsenic, Total Recoverable	0.014	0.001	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Cadmium, Total Recoverable	0.00004	0.00003	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Calcium, Total Recoverable	65	1	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Copper, Total Recoverable	0.006	0.001	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Lead, Total Recoverable	ND	0.0003	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Magnesium, Total Recoverable	15	1	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Sodium, Total Recoverable	14	1	mg/L
CFR-07D	Natural Sample	H16090340-009	9/13/2016	Zinc, Total Recoverable	ND	0.008	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Solids, Total Suspended TSS @ 105 C	1	1	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Alkalinity, Total as CaCO3	160	4	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Bicarbonate Alkalinity as HCO3	200	4	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Sulfate	116	1	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Chloride	8	1	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Hardness as CaCO3	253	1	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Organic Carbon, Dissolved	2.7	0.5	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	N-Total, mg/L	0.19	0.05	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Phosphorus, Total as P, mg/L	0.018	0.003	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Arsenic, Dissolved	0.017	0.001	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Copper, Dissolved	0.005	0.001	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Arsenic, Total Recoverable	0.016	0.001	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Calcium, Total Recoverable	72	1	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Copper, Total Recoverable	0.007	0.001	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Lead, Total Recoverable	ND	0.0003	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Magnesium, Total Recoverable	18	1	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Sodium, Total Recoverable	15	1	mg/L
CFR-11F	Natural Sample	H16090340-008	9/13/2016	Zinc, Total Recoverable	ND	0.008	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Solids, Total Suspended TSS @ 105 C	2	1	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Alkalinity, Total as CaCO3	170	4	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Bicarbonate Alkalinity as HCO3	200	4	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Sulfate	85	1	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Chloride	10	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Hardness as CaCO3	224	1	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Organic Carbon, Dissolved	2.3	0.5	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	NO3+NO2 as N, mg/L	0.16	0.02	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	N-Total, mg/L	0.35	0.05	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Phosphorus, Total as P, mg/L	0.013	0.003	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Arsenic, Dissolved	0.015	0.001	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Cadmium, Dissolved	0.00004	0.00003	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Copper, Dissolved	0.008	0.001	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Arsenic, Total Recoverable	0.013	0.001	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Cadmium, Total Recoverable	0.00004	0.00003	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Calcium, Total Recoverable	66	1	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Copper, Total Recoverable	0.01	0.001	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Lead, Total Recoverable	0.0004	0.0003	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Magnesium, Total Recoverable	14	1	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Potassium, Total Recoverable	4	1	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Sodium, Total Recoverable	19	1	mg/L
CFR-27H	Natural Sample	H16090340-007	9/12/2016	Zinc, Total Recoverable	ND	0.008	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Solids, Total Suspended TSS @ 105 C	1	1	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Alkalinity, Total as CaCO3	180	4	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Bicarbonate Alkalinity as HCO3	200	4	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Sulfate	74	1	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Chloride	11	1	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Hardness as CaCO3	194	1	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Organic Carbon, Dissolved	2.5	0.5	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-34	Natural Sample	H16090340-006	9/12/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	N-Total, mg/L	0.21	0.05	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Phosphorus, Total as P, mg/L	0.026	0.003	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Arsenic, Dissolved	0.016	0.001	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Copper, Dissolved	0.007	0.001	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Arsenic, Total Recoverable	0.012	0.001	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Calcium, Total Recoverable	56	1	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Copper, Total Recoverable	0.007	0.001	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Lead, Total Recoverable	ND	0.0003	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Magnesium, Total Recoverable	13	1	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Potassium, Total Recoverable	4	1	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Sodium, Total Recoverable	18	1	mg/L
CFR-34	Natural Sample	H16090340-006	9/12/2016	Zinc, Total Recoverable	ND	0.008	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Solids, Total Suspended TSS @ 105 $ m C$	2	1	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Alkalinity, Total as CaCO3	140	4	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Bicarbonate Alkalinity as HCO3	170	4	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Sulfate	13	1	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Chloride	2	1	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Hardness as CaCO3	135	1	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Organic Carbon, Dissolved	1.6	0.5	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	N-Total, mg/L	0.09	0.05	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Phosphorus, Total as P, mg/L	0.023	0.003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Arsenic, Dissolved	0.005	0.001	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Cadmium, Dissolved	ND	0.00003	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Copper, Dissolved	ND	0.001	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Lead, Dissolved	ND	0.0003	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Zinc, Dissolved	ND	0.008	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Arsenic, Total Recoverable	0.005	0.001	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Calcium, Total Recoverable	39	1	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Copper, Total Recoverable	ND	0.001	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Lead, Total Recoverable	ND	0.0003	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Magnesium, Total Recoverable	9	1	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Potassium, Total Recoverable	2	1	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Sodium, Total Recoverable	7	1	mg/L
LBR-CFR-02	Natural Sample	H16090340-005	9/12/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Solids, Total Suspended TSS @ 105 $\rm C$	3	2	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Alkalinity, Total as CaCO3	230	4	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Bicarbonate Alkalinity as HCO3	270	4	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Sulfate	33	1	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Chloride	5	1	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Hardness as CaCO3	229	1	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Organic Carbon, Dissolved	3.3	0.5	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	N-Total, mg/L	0.21	0.05	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Phosphorus, Total as P, mg/L	0.056	0.003	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Arsenic, Dissolved	0.008	0.001	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Copper, Dissolved	ND	0.001	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Lead, Dissolved	ND	0.0003	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Zinc, Dissolved	ND	0.008	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Arsenic, Total Recoverable	0.008	0.001	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Calcium, Total Recoverable	62	1	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Copper, Total Recoverable	ND	0.001	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Lead, Total Recoverable	0.0004	0.0003	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Magnesium, Total Recoverable	18	1	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Potassium, Total Recoverable	5	1	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Sodium, Total Recoverable	15	1	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Mercury, Total	0.000012	0.000005	mg/L
FC-CFR	Natural Sample	H16090340-003	9/12/2016	Mercury, Methyl	0.414	0.049	ng/L
CFR-84F	Natural Sample	H16090340-018	9/12/2016	Mercury, Total	0.000023	0.000005	mg/L
CFR-84F	Natural Sample	H16090340-018	9/12/2016	Mercury, Methyl	0.443	0.050	ng/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Solids, Total Suspended TSS @ $105~\mathrm{C}$	10	1	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Alkalinity, Total as CaCO3	140	4	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Bicarbonate Alkalinity as HCO3	170	4	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Sulfate	54	1	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Chloride	4	1	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Hardness as CaCO3	171	1	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Organic Carbon, Dissolved	1.6	0.5	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	N-Total, mg/L	0.17	0.05	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Phosphorus, Total as P, mg/L	0.017	0.003	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Arsenic, Dissolved	0.006	0.001	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Cadmium, Dissolved	ND	0.00003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Copper, Dissolved	0.002	0.001	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Arsenic, Total Recoverable	0.006	0.001	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Cadmium, Total Recoverable	0.00003	0.00003	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Calcium, Total Recoverable	48	1	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Copper, Total Recoverable	0.004	0.001	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Lead, Total Recoverable	0.0006	0.0003	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Magnesium, Total Recoverable	13	1	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Sodium, Total Recoverable	10	1	mg/L
CFR-116A	Natural Sample	H16090340-001	9/12/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Solids, Total Suspended TSS @ 105 C	2	1	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Alkalinity, Total as CaCO3	230	4	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Bicarbonate Alkalinity as HCO3	270	4	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Sulfate	33	1	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Chloride	5	1	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Hardness as CaCO3	231	1	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Organic Carbon, Dissolved	2.9	0.5	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	N-Total, mg/L	0.22	0.05	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Phosphorus, Total as P, mg/L	0.056	0.003	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Arsenic, Dissolved	0.009	0.001	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Copper, Dissolved	ND	0.001	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Lead, Dissolved	ND	0.0003	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Zinc, Dissolved	ND	0.008	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Arsenic, Total Recoverable	0.008	0.001	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Calcium, Total Recoverable	63	1	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Copper, Total Recoverable	0.001	0.001	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Lead, Total Recoverable	0.0004	0.0003	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Magnesium, Total Recoverable	18	1	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Potassium, Total Recoverable	6	1	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Sodium, Total Recoverable	15	1	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Mercury, Total	0.000014	0.000005	mg/L
FC-CFR	Duplicate Sample	H16090340-004	9/12/2016	Mercury, Methyl	0.480	0.049	ng/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Solids, Total Suspended TSS @ 105 $ m C$	1	1	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Alkalinity, Total as CaCO3	160	4	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Bicarbonate Alkalinity as HCO3	200	4	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Sulfate	116	1	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Chloride	7	1	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Hardness as CaCO3	243	1	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Organic Carbon, Dissolved	2.6	0.5	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	N-Total, mg/L	0.18	0.05	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Phosphorus, Total as P, mg/L	0.033	0.003	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Arsenic, Dissolved	0.017	0.001	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Copper, Dissolved	0.005	0.001	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Arsenic, Total Recoverable	0.015	0.001	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Calcium, Total Recoverable	69	1	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Copper, Total Recoverable	0.007	0.001	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Lead, Total Recoverable	ND	0.0003	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Magnesium, Total Recoverable	17	1	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Sodium, Total Recoverable	15	1	mg/L
CFR-11F	Duplicate Sample	H16090340-011	9/13/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Solids, Total Suspended TSS @ 105 $ m C$	ND	2	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Alkalinity, Total as CaCO3	ND	4	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Bicarbonate Alkalinity as HCO3	ND	4	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Sulfate	ND	1	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Chloride	ND	1	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Hardness as CaCO3	ND	1	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Organic Carbon, Dissolved	ND	0.5	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	N-Total, mg/L	ND	0.05	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Phosphorus, Total as P, mg/L	0.004	0.003	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Arsenic, Dissolved	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Copper, Dissolved	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Lead, Dissolved	ND	0.0003	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Zinc, Dissolved	ND	0.008	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Arsenic, Total Recoverable	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Calcium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Copper, Total Recoverable	ND	0.001	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Lead, Total Recoverable	ND	0.0003	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Magnesium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Potassium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Sodium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Mercury, Total	ND	0.000005	mg/L
FC-CFR	Field Blank 1	H16090340-002	9/12/2016	Mercury, Methyl	ND	0.049	ng/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Solids, Total Suspended TSS @ 105 $ m C$	ND	2	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Alkalinity, Total as CaCO3	ND	4	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Bicarbonate Alkalinity as HCO3	ND	4	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Sulfate	ND	1	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Chloride	ND	1	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Hardness as CaCO3	ND	1	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Organic Carbon, Dissolved	ND	0.5	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	N-Total, mg/L	ND	0.05	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Phosphorus, Total as P, mg/L	ND	0.003	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Arsenic, Dissolved	ND	0.001	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Copper, Dissolved	ND	0.001	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Arsenic, Total Recoverable	ND	0.001	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Calcium, Total Recoverable	ND	1	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Copper, Total Recoverable	ND	0.001	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Lead, Total Recoverable	ND	0.0003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Magnesium, Total Recoverable	ND	1	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Potassium, Total Recoverable	ND	1	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Sodium, Total Recoverable	ND	1	mg/L
CFR-11F	Field Blank 2	H16090340-012	9/13/2016	Zinc, Total Recoverable	ND	0.008	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Solids, Total Suspended TSS @ 105 C	21	2	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Alkalinity, Total as CaCO3	100	4	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Bicarbonate Alkalinity as HCO3	130	4	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Sulfate	26	1	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Chloride	1.8	1	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Hardness as CaCO3	120	1	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Organic Carbon, Dissolved	1.1	0.5	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	NO3+NO2 as N, mg/L	0.14	0.02	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	N-Total, mg/L	0.38	0.05	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Phosphorus, Total as P, mg/L	0.038	0.003	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Arsenic, Dissolved	0.009	0.001	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Cadmium, Dissolved	ND	0.00003	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Copper, Dissolved	ND	0.001	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Lead, Dissolved	ND	0.0003	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Zinc, Dissolved	0.009	0.008	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Arsenic, Total Recoverable	0.013	0.001	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Cadmium, Total Recoverable	0.00018	0.00003	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Calcium, Total Recoverable	34	1	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Copper, Total Recoverable	0.017	0.001	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Lead, Total Recoverable	0.0060	0.0003	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Magnesium, Total Recoverable	9	1	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Potassium, Total Recoverable	1	1	mg/L
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Sodium, Total Recoverable	9	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
MCWC-MWB	Natural Sample	H16120270-016	12/13/2016	Zinc, Total Recoverable	0.024	0.008	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Solids, Total Suspended TSS @ 105 C	3	1	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Alkalinity, Total as CaCO3	120	4	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Bicarbonate Alkalinity as HCO3	150	4	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Sulfate	140	1	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Chloride	6.9	1	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Hardness as CaCO3	248	1	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Organic Carbon, Dissolved	1.3	0.5	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	NO3+NO2 as N, mg/L	0.13	0.02	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	N-Total, mg/L	0.22	0.05	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Phosphorus, Total as P, mg/L	0.016	0.003	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Arsenic, Dissolved	0.01	0.001	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Cadmium, Dissolved	ND	0.00003	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Copper, Dissolved	ND	0.001	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Lead, Dissolved	ND	0.0003	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Zinc, Dissolved	ND	0.008	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Arsenic, Total Recoverable	0.012	0.001	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Cadmium, Total Recoverable	0.00004	0.00003	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Calcium, Total Recoverable	72	1	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Copper, Total Recoverable	0.002	0.001	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Lead, Total Recoverable	0.0006	0.0003	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Magnesium, Total Recoverable	17	1	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Potassium, Total Recoverable	2	1	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Sodium, Total Recoverable	13	1	mg/L
MWB-SBC	Natural Sample	H16120270-014	12/13/2016	Zinc, Total Recoverable	ND	0.008	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Solids, Total Suspended TSS @ 105 C	3	1	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Alkalinity, Total as CaCO3	130	4	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Bicarbonate Alkalinity as HCO3	160	4	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Sulfate	120	1	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Chloride	39	1	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Hardness as CaCO3	246	1	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Organic Carbon, Dissolved	4.6	0.5	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	N-Total, mg/L	0.4	0.05	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Phosphorus, Total as P, mg/L	0.029	0.003	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Arsenic, Dissolved	0.006	0.001	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Cadmium, Dissolved	0.00006	0.00003	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Copper, Dissolved	0.005	0.001	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Lead, Dissolved	ND	0.0003	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Zinc, Dissolved	0.01	0.008	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Arsenic, Total Recoverable	0.008	0.001	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Cadmium, Total Recoverable	0.00011	0.00003	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Calcium, Total Recoverable	70	1	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Copper, Total Recoverable	0.007	0.001	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Lead, Total Recoverable	0.0009	0.0003	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Magnesium, Total Recoverable	17	1	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Potassium, Total Recoverable	6	1	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Sodium, Total Recoverable	32	1	mg/L
SBC-P2	Natural Sample	H16120270-013	12/13/2016	Zinc, Total Recoverable	0.016	0.008	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Solids, Total Suspended TSS @ 105 C	4	1	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Alkalinity, Total as CaCO3	130	4	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Bicarbonate Alkalinity as HCO3	150	4	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Sulfate	130	1	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Chloride	26	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
SS-25	Natural Sample	H16120270-012	12/13/2016	Hardness as CaCO3	247	1	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Organic Carbon, Dissolved	3.1	0.5	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	NO3+NO2 as N, mg/L	0.06	0.02	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	N-Total, mg/L	0.33	0.05	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Phosphorus, Total as P, mg/L	0.029	0.003	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Arsenic, Dissolved	0.008	0.001	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Cadmium, Dissolved	0.00004	0.00003	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Copper, Dissolved	0.003	0.001	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Lead, Dissolved	ND	0.0003	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Zinc, Dissolved	ND	0.008	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Arsenic, Total Recoverable	0.009	0.001	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Cadmium, Total Recoverable	0.00008	0.00003	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Calcium, Total Recoverable	71	1	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Copper, Total Recoverable	0.005	0.001	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Lead, Total Recoverable	0.0008	0.0003	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Magnesium, Total Recoverable	17	1	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Potassium, Total Recoverable	5	1	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Sodium, Total Recoverable	24	1	mg/L
SS-25	Natural Sample	H16120270-012	12/13/2016	Zinc, Total Recoverable	0.011	0.008	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Solids, Total Suspended TSS @ 105 C	4	1	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Alkalinity, Total as CaCO3	140	4	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Bicarbonate Alkalinity as HCO3	170	4	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Sulfate	39	1	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Chloride	1.4	1	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Hardness as CaCO3	175	1	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Organic Carbon, Dissolved	0.7	0.5	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	NO3+NO2 as N, mg/L	0.14	0.02	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	N-Total, mg/L	0.14	0.05	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Phosphorus, Total as P, mg/L	0.014	0.003	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Arsenic, Dissolved	0.004	0.001	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Cadmium, Dissolved	ND	0.00003	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Copper, Dissolved	0.002	0.001	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Lead, Dissolved	ND	0.0003	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Zinc, Dissolved	ND	0.008	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Arsenic, Total Recoverable	0.005	0.001	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Cadmium, Total Recoverable	0.00005	0.00003	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Calcium, Total Recoverable	52	1	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Copper, Total Recoverable	0.007	0.001	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Lead, Total Recoverable	0.0006	0.0003	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Magnesium, Total Recoverable	11	1	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Potassium, Total Recoverable	2	1	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Sodium, Total Recoverable	4	1	mg/L
WSC-SBC	Natural Sample	H16120270-011	12/13/2016	Zinc, Total Recoverable	ND	0.008	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Solids, Total Suspended TSS @ $105~\mathrm{C}$	4	1	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Alkalinity, Total as CaCO3	140	4	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Bicarbonate Alkalinity as HCO3	170	4	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Sulfate	97	1	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Chloride	14	1	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Hardness as CaCO3	228	1	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Organic Carbon, Dissolved	2.2	0.5	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	NO3+NO2 as N, mg/L	0.09	0.02	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	N-Total, mg/L	0.23	0.05	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Phosphorus, Total as P, mg/L	0.02	0.003	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Arsenic, Dissolved	0.007	0.001	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Copper, Dissolved	0.003	0.001	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Arsenic, Total Recoverable	0.008	0.001	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Cadmium, Total Recoverable	0.00006	0.00003	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Calcium, Total Recoverable	66	1	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Copper, Total Recoverable	0.006	0.001	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Lead, Total Recoverable	0.0007	0.0003	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Magnesium, Total Recoverable	15	1	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Potassium, Total Recoverable	4	1	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Sodium, Total Recoverable	16	1	mg/L
CFR-03A	Natural Sample	H16120270-010	12/13/2016	Zinc, Total Recoverable	0.009	0.008	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Solids, Total Suspended TSS @ 105 C	4	1	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Alkalinity, Total as CaCO3	160	4	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Bicarbonate Alkalinity as HCO3	190	4	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Sulfate	110	1	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Chloride	11	1	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Hardness as CaCO3	251	1	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Organic Carbon, Dissolved	1.8	0.5	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	NO3+NO2 as N, mg/L	0.27	0.02	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	N-Total, mg/L	0.36	0.05	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Phosphorus, Total as P, mg/L	0.016	0.003	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Arsenic, Dissolved	0.008	0.001	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Cadmium, Dissolved	0.00003	0.00003	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Copper, Dissolved	0.003	0.001	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Arsenic, Total Recoverable	0.009	0.001	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Cadmium, Total Recoverable	0.00007	0.00003	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Calcium, Total Recoverable	73	1	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Copper, Total Recoverable	0.008	0.001	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Lead, Total Recoverable	0.0008	0.0003	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Magnesium, Total Recoverable	17	1	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Sodium, Total Recoverable	15	1	mg/L
CFR-07D	Natural Sample	H16120270-009	12/13/2016	Zinc, Total Recoverable	0.011	0.008	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Solids, Total Suspended TSS @ 105 C	5	1	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Alkalinity, Total as CaCO3	160	4	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Bicarbonate Alkalinity as HCO3	200	4	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Sulfate	110	1	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Chloride	11	1	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Hardness as CaCO3	265	1	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Organic Carbon, Dissolved	1.9	0.5	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	NO3+NO2 as N, mg/L	0.3	0.02	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	N-Total, mg/L	0.38	0.05	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Phosphorus, Total as P, mg/L	0.021	0.003	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Arsenic, Dissolved	0.008	0.001	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Cadmium, Dissolved	0.00003	0.00003	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Copper, Dissolved	0.003	0.001	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Zinc, Dissolved	0.008	0.008	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Arsenic, Total Recoverable	0.009	0.001	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Cadmium, Total Recoverable	0.00007	0.00003	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Calcium, Total Recoverable	77	1	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Copper, Total Recoverable	0.009	0.001	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Lead, Total Recoverable	0.001	0.0003	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Magnesium, Total Recoverable	18	1	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Sodium, Total Recoverable	16	1	mg/L
CFR-11F	Natural Sample	H16120270-008	12/13/2016	Zinc, Total Recoverable	0.013	0.008	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Solids, Total Suspended TSS @ 105 $\rm C$	19	1	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Alkalinity, Total as CaCO3	170	4	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Bicarbonate Alkalinity as HCO3	200	4	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Sulfate	100	1	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Chloride	11	1	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Hardness as CaCO3	251	1	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Organic Carbon, Dissolved	2	0.5	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	NO3+NO2 as N, mg/L	0.46	0.02	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	N-Total, mg/L	0.64	0.05	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Phosphorus, Total as P, mg/L	0.032	0.003	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Arsenic, Dissolved	0.008	0.001	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Cadmium, Dissolved	0.00003	0.00003	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Copper, Dissolved	0.005	0.001	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Zinc, Dissolved	0.011	0.008	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Arsenic, Total Recoverable	0.011	0.001	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Cadmium, Total Recoverable	0.00015	0.00003	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Calcium, Total Recoverable	74	1	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Copper, Total Recoverable	0.028	0.001	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Lead, Total Recoverable	0.0035	0.0003	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Magnesium, Total Recoverable	16	1	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Potassium, Total Recoverable	4	1	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Sodium, Total Recoverable	17	1	mg/L
CFR-27H	Natural Sample	H16120270-007	12/12/2016	Zinc, Total Recoverable	0.031	0.008	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Solids, Total Suspended TSS @ 105 C	53	2	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Alkalinity, Total as CaCO3	170	4	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Bicarbonate Alkalinity as HCO3	210	4	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Sulfate	98	1	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Chloride	11	1	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Hardness as CaCO3	250	1	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Organic Carbon, Dissolved	2	0.5	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Nitrogen, Ammonia as N, mg/L	0.12	0.05	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	NO3+NO2 as N, mg/L	0.46	0.02	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	N-Total, mg/L	0.91	0.05	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Phosphorus, Total as P, mg/L	0.069	0.003	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Arsenic, Dissolved	0.009	0.001	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Cadmium, Dissolved	0.00004	0.00003	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Copper, Dissolved	0.005	0.001	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Zinc, Dissolved	0.01	0.008	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Arsenic, Total Recoverable	0.015	0.001	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Cadmium, Total Recoverable	0.00037	0.00003	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Calcium, Total Recoverable	73	1	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Copper, Total Recoverable	0.07	0.001	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Lead, Total Recoverable	0.0097	0.0003	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Magnesium, Total Recoverable	16	1	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Potassium, Total Recoverable	4	1	mg/L
Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
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CFR-34	Natural Sample	H16120270-006	12/12/2016	Sodium, Total Recoverable	18	1	mg/L
CFR-34	Natural Sample	H16120270-006	12/12/2016	Zinc, Total Recoverable	0.069	0.008	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Solids, Total Suspended TSS @ 105 C	3	1	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Alkalinity, Total as CaCO3	120	4	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Bicarbonate Alkalinity as HCO3	150	4	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Sulfate	13	1	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Chloride	2.4	1	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Hardness as CaCO3	128	1	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Organic Carbon, Dissolved	1.1	0.5	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	N-Total, mg/L	ND	0.05	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Phosphorus, Total as P, mg/L	0.021	0.003	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Arsenic, Dissolved	0.003	0.001	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Cadmium, Dissolved	ND	0.00003	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Copper, Dissolved	ND	0.001	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Lead, Dissolved	ND	0.0003	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Zinc, Dissolved	ND	0.008	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Arsenic, Total Recoverable	0.004	0.001	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Calcium, Total Recoverable	37	1	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Copper, Total Recoverable	ND	0.001	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Lead, Total Recoverable	ND	0.0003	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Magnesium, Total Recoverable	9	1	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Potassium, Total Recoverable	2	1	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Sodium, Total Recoverable	6	1	mg/L
LBR-CFR-02	Natural Sample	H16120270-005	12/12/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Solids, Total Suspended TSS @ 105 C	3	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Alkalinity, Total as CaCO3	160	4	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Bicarbonate Alkalinity as HCO3	190	4	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Sulfate	18	1	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Chloride	4	1	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Hardness as CaCO3	165	1	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Organic Carbon, Dissolved	1.3	0.5	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	NO3+NO2 as N, mg/L	0.25	0.02	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	N-Total, mg/L	0.29	0.05	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Phosphorus, Total as P, mg/L	0.035	0.003	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Arsenic, Dissolved	0.007	0.001	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	/12/2016 Copper, Dissolved		0.001	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Lead, Dissolved	ND	0.0003	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Zinc, Dissolved	ND	0.008	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Arsenic, Total Recoverable	0.007	0.001	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Calcium, Total Recoverable	44	1	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Copper, Total Recoverable	ND	0.001	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Lead, Total Recoverable	0.0009	0.0003	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Magnesium, Total Recoverable	13	1	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Potassium, Total Recoverable	3	1	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Sodium, Total Recoverable	10	1	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Mercury, Total	0.000018	0.000005	mg/L
FC-CFR	Natural Sample	H16120270-003	12/12/2016	Mercury, Methyl	0.413	0.050	ng/L
CFR-84F	Natural Sample	H16120270-018	12/12/2016	Mercury, Total	0.000008	0.000005	mg/L
CFR-84F	Natural Sample	H16120270-018	12/12/2016	Mercury, Methyl	0.234	0.050	ng/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Solids, Total Suspended TSS @ 105 C	15	1	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Alkalinity, Total as CaCO3	150	4	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Bicarbonate Alkalinity as HCO3	180	4	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Sulfate	62	1	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Chloride	5.7	1	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Hardness as CaCO3	197	1	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Organic Carbon, Dissolved	1.5	0.5	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	NO3+NO2 as N, mg/L	0.11	0.02	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	N-Total, mg/L	0.23	0.05	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Phosphorus, Total as P, mg/L	0.025	0.003	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Arsenic, Dissolved	0.006	0.001	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Cadmium, Dissolved	ND	0.00003	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Copper, Dissolved	0.002	0.001	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Lead, Dissolved	ND	0.0003	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Zinc, Dissolved	ND	0.008	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Arsenic, Total Recoverable	0.007	0.001	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Cadmium, Total Recoverable	0.0001	0.00003	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Calcium, Total Recoverable	55	1	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Copper, Total Recoverable	0.01	0.001	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Lead, Total Recoverable	0.0016	0.0003	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Magnesium, Total Recoverable	14	1	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Potassium, Total Recoverable	3	1	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Sodium, Total Recoverable	12	1	mg/L
CFR-116A	Natural Sample	H16120270-001	12/12/2016	Zinc, Total Recoverable	0.017	0.008	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Solids, Total Suspended TSS @ 105 C	3	1	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Alkalinity, Total as CaCO3	160	4	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Bicarbonate Alkalinity as HCO3	200	4	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Sulfate	18	1	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Chloride	3.9	1	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Hardness as CaCO3	163	1	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Organic Carbon, Dissolved	1.4	0.5	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	NO3+NO2 as N, mg/L	0.25	0.02	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	N-Total, mg/L	0.29	0.05	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Phosphorus, Total as P, mg/L	0.035	0.003	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Arsenic, Dissolved	0.007	0.001	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Copper, Dissolved	ND	0.001	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Lead, Dissolved	ND	0.0003	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Zinc, Dissolved	ND	0.008	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Arsenic, Total Recoverable	0.007	0.001	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Calcium, Total Recoverable	44	1	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Copper, Total Recoverable	ND	0.001	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Lead, Total Recoverable	0.0009	0.0003	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Magnesium, Total Recoverable	13	1	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Potassium, Total Recoverable	3	1	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Sodium, Total Recoverable	10	1	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Mercury, Total	0.000015	0.000005	mg/L
FC-CFR	Duplicate Sample	H16120270-004	12/12/2016	Mercury, Methyl	0.421	0.049	ng/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Solids, Total Suspended TSS @ 105 C	3	1	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Alkalinity, Total as CaCO3	120	4	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Bicarbonate Alkalinity as HCO3	150	4	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Sulfate	140	1	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Chloride	7.1	1	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Hardness as CaCO3	249	1	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Organic Carbon, Dissolved	1.3	0.5	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	NO3+NO2 as N, mg/L	0.13	0.02	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	N-Total, mg/L	0.22	0.05	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Phosphorus, Total as P, mg/L	0.019	0.003	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Arsenic, Dissolved	0.01	0.001	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Cadmium, Dissolved	ND	0.00003	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Copper, Dissolved	ND	0.001	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Lead, Dissolved	ND	0.0003	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Zinc, Dissolved	ND	0.008	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	016 Arsenic, Total Recoverable		0.001	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Cadmium, Total Recoverable	0.00003	0.00003	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Calcium, Total Recoverable	72	1	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Copper, Total Recoverable	0.002	0.001	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Lead, Total Recoverable	0.0006	0.0003	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Magnesium, Total Recoverable	17	1	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Potassium, Total Recoverable	2	1	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Sodium, Total Recoverable	13	1	mg/L
MWB-SBC	Duplicate Sample	H16120270-015	12/13/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Solids, Total Suspended TSS @ $105~\mathrm{C}$	ND	1	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Alkalinity, Total as CaCO3	ND	4	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Bicarbonate Alkalinity as HCO3	ND	4	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Sulfate	ND	1	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Chloride	ND	1	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Hardness as CaCO3	ND	1	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Organic Carbon, Dissolved	ND	0.5	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	N-Total, mg/L	ND	0.05	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Phosphorus, Total as P, mg/L	ND	0.003	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Arsenic, Dissolved	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Cadmium, Dissolved	ND	0.00003	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Copper, Dissolved	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Lead, Dissolved	ND	0.0003	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Zinc, Dissolved	0.009	0.008	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Arsenic, Total Recoverable	ND	0.001	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Calcium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16120270-002	70-002 12/12/2016 Copper, Total Recoverable		ND	0.001	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Lead, Total Recoverable	ND	0.0003	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Magnesium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Potassium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Sodium, Total Recoverable	ND	1	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Zinc, Total Recoverable	ND	0.008	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Mercury, Total	ND	0.000005	mg/L
FC-CFR	Field Blank 1	H16120270-002	12/12/2016	Mercury, Methyl	ND	0.050	ng/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Solids, Total Suspended TSS @ 105 $ m C$	ND	1	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Alkalinity, Total as CaCO3	ND	4	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Bicarbonate Alkalinity as HCO3	ND	4	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Sulfate	ND	1	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Chloride	ND	1	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Hardness as CaCO3	ND	1	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Organic Carbon, Dissolved	ND	0.5	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Nitrogen, Ammonia as N, mg/L	ND	0.05	mg/L

Site	Туре	Lab ID	Collected Date	Parameter	Results	Reporting Limit	Units
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	NO3+NO2 as N, mg/L	ND	0.02	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	N-Total, mg/L	ND	0.05	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Phosphorus, Total as P, mg/L	0.008	0.003	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Arsenic, Dissolved	ND	0.001	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Cadmium, Dissolved	ND	0.00003	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Copper, Dissolved	ND	0.001	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Lead, Dissolved	ND	0.0003	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Zinc, Dissolved	0.011	0.008	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Arsenic, Total Recoverable	ND	0.001	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Cadmium, Total Recoverable	ND	0.00003	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Calcium, Total Recoverable	ND	1	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Copper, Total Recoverable	ND	0.001	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Lead, Total Recoverable	ND	0.0003	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Magnesium, Total Recoverable	ND	1	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Potassium, Total Recoverable	ND	1	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Sodium, Total Recoverable	ND	1	mg/L
MCWC-MWB	Field Blank 2	H16120270-017	12/13/2016	Zinc, Total Recoverable	ND	0.008	mg/L

Site	Date	Time	Air temp (F)	рН	Water Temp (C)	Dissolved Oxygen (mg/L)	Conductivity (µS/cm)	Turbidity (NTU)	Streamflow (ft³/s)	Weather	Field Observations
MCWC- MWB	3/15/2016	1600	40	8.34	3.7	11.7	218.5	3.46	17.83	Partly cloudy, breezy, cool.	Flow similar to last year, pre-runoff base flow, very clear, moderately heavy periphyton layer on gravel/cobble substrate.
MWB- SBC	3/15/2016	1445	40	8.58	3.9	12.5	429.9	2.36	21.57	Partly cloudy, breezy, cool.	Sampled usual reach; flow similar to 2015; heavy diatom layer over 90% of cobble; collected sediment in reach 1-50 m above water/gauge section.
SBC-P2	3/15/2016	1430	40	9.13	4.3	11.8	429.4	5.72		Partly cloudy, breezy, pleasant.	Fish cages in place immediately below sample site, ~ 25 m below lower cascade of spillway; very dark bottom, heavy Cladophora growth over most of susbstrate.
SS-25	3/15/2016	1330	35	8.96	3.9	12.1	426.0	5.28	86 (A)	Partly cloudy, breezy.	Sampled usual reach; flow similar to past Q1 events.
WSC- SBC	3/15/2016	1230	35	8.41	2.4	12.0	313.5	1.20	30 (A)	Mostly cloudy, windy, chilly.	Good flow, very clear, pre- runoff conditions.
CFR- 03A	3/15/2016	1115	40	8.58	2.5	11.6	408.3	8.68	135 (A)	Windy, partly cloudy, chilly.	Flwo about average for period; sampled usual reach.
CFR- 07D	3/15/2016	1015	35	8.31	1.9	11.9	453.9	6.39	183.70	Overcast, calm, light snow.	Sampled usual reach; easily wadeable, flow about average.
CFR- 11F	3/15/2016	845	25	8.20	1.9	11.2	458.9	7.18	195.45	Overcast, calm, snow showers.	Sampled usual reach; flow about average for period; active work on remediation just

Table C2. Field parameter measurements in the Clark Fork River Operable Unit, 2016.

Site	Date	Time	Air temp (F)	рН	Water Temp (C)	Dissolved Oxygen (mg/L)	Conductivity (µS/cm)	Turbidity (NTU)	Streamflow (ft³/s)	Weather	Field Observations
											upstream.
											Flow about average for
CFR- 27H	3/14/2016	1600	40	8.51	5.2	14.4	417.5	7.73	254 (A)	Mostly calm, partly cloudy, sunny.	period, off-color due to sloughing diatoms; collected sediment in reach upstream of sample section, in slower run, difficult to see bottom mid-stream.
CFR-34	3/14/2016	1430	35	8.65	5.4	15.9	417.9	8.54		Partly cloudy, mostly calm.	Flow about average; sampled usual cross- section.
LBR- CFR-02	3/14/2016	1315	35	8.19	4.1	14.1	212.2	2.80	104.31	Heavy snow, moderately windy.	
FC- CFR	3/14/2016	1130	35	8.45	4.1	14.1	264.3	9.40	112 (A)	Windy, moderately heavy snowfall.	Collected duplicate samples side by side with paired DH-81s; flow moderately high.
CFR- 84F	3/14/2016	1000	40	8.38	6.9	12.3	388.2	9.48	600 (A)	Overcast, snow, calm.	Flow about average, similar to last year; waded usual section.
CFR- 116A	3/14/2016	845	40	8.10	5.9	13.2	285.4	8.10	1080 (A)	Overcast, misty, calm.	Flow about at median for date; rain and snow overnight, will continue today. Collected water sampes by wading section ~ 40 m below bridge; sediment from above and below bar on right bank, out to maximum depth possible with arm-length glove.

Site	Date	Time	Air temp (F)	рН	Water Temp (C)	Dissolved Oxygen (mg/L)	Conductivity (µS/cm)	Turbidity (NTU)	Streamflow (ft³/s)	Weather	Field Observations
SS-19	4/28/2016	1600	40	8.47	6.1	11.9	297.5	11.30	90.32	Overcast, windy, chilly.	Sampled midway between frontage bridge and RR; good flow, fairly dirty.
MCWC- MWB	4/28/2016	1500	40	7.96	6.7	11.2	131.7	6.46	53.44	Overcast, breezy, light snow.	Flow appears up about 0.5' since last month, fairly clear with some brown staining.
MWB- SBC	4/28/2016	1415	45	8.75	9.6	10.4	414.6	4.11	60.21	Overcast, windy, snow showers.	Flow moderately high, up from last month, very clear.
SBC-P2	4/28/2016	1400	45	8.10	7.6	11.5	222.2	7.79		Overcast, windy, cool.	Flow up slightly from last month? Quite clear.
SS-25	4/28/2016	1315	45	8.56	8.6	11.4	334.5	4.68	165 (A)	Overcast, windy, cool.	Flow up somewhat from last month, quite clear.
WSC- SBC	4/28/2016	1200	40	8.12	6.1	11.1	249.5	3.27	79 (A)	Overcast, breezy, cool.	Flow up slightly from last month, quite clear.
CFR- 03A	4/28/2016	1115	40	8.44	7.4	10.5	317.5	4.98	249 (P)	Mostly cloudy, breezy, cool.	Flow up some from last month, but not noticeable runoff conditions, quite clear.
CFR- 07D	4/28/2016	1015	35	8.14	7.2	10.8	367.6	7.58	278.80	Overcast, windy, cold.	Flow up some from last month, but wadeable at usual site; quite clear compared to downstream sites, especially below Deer Lodge.
CFR- 11F	4/28/2016	900	34	8.02	7.0	10.6	369.6	8.70	282.39	High clouds, windy, flurries.	Flow up slightly from last month, but down some from previous week; quite clear compared to downstream stations.

Site	Date	Time	Air temp (F)	рН	Water Temp (C)	Dissolved Oxygen (mg/L)	Conductivity (µS/cm)	Turbidity (NTU)	Streamflow (ft³/s)	Weather	Field Observations
CFR- 27H	4/27/2016	1615	50	8.19	11.0	9.6	351.6	17.10	397 (P)	Mostly cloudy, breezy.	Flow up, runoff conditions, but not as dirty looking as downstream; channel easily wadeable at usual site.
CFR-34	4/27/2016	1500	50	8.15	10.2	9.7	347.1	21.60		Mostly cloudy, windy, cool.	Flow up to bottom of grass on banks upstream of the W-T Bridge, sampled from bridge with crane and D- 95; small amount of flow in east channel, est'd well < 10%, not sampled there.
LBR- CFR-02	4/27/2016	1400	45	7.68	5.6	11.1	135.1	10.50		Overcast, light wind, showers.	Too deep to wade, flow well above last month, runoff conditions.
FC- CFR	4/27/2016	1215	45	8.00	7.6	10.4	184.7	27.80	246 (A)	Overcast, breezy, cool.	Flow up, runoff conditions, quite dirty; sampled from bridge.
CFR- 84F	4/27/2016	1030	50	7.89	8.9	10.6	287.2	29.30	1070 (A)	Mostly cloudy, calm.	Flow up, runoff conditions; quite dirty.
CFR- 116A	4/27/2016	900	45	7.76	8.1	10.5	174.4	19.60	2550 (A)	Cool, clear, calm.	Flow up, runoff conditions.
MCWC- MWB	6/1/2016	1345	70	8.11	13.3	11.1	100.9	5.11	88.58	High clouds, calm, warm.	Flow moderately high, probably up a little from last run, fairly clear with brown stain.
MWB- SBC	6/1/2016	1230	65	8.23	12.5	11.8	164.3	5.76	97.01	High clouds, breezy, warm.	Flow moderately high, similar to last run, fairly clear.
SBC-P2	6/1/2016	1245	70	9.64	16.3	10.3	299.2	1.86		High clouds, calm, warm.	Flow high, up some from last run; very slight blue- grey tint, noticeable mineral odor; Cladophora heavy but somewhat decadent.

Site	Date	Time	Air temp (F)	рН	Water Temp (C)	Dissolved Oxygen (mg/L)	Conductivity (µS/cm)	Turbidity (NTU)	Streamflow (ft³/s)	Weather	Field Observations
SS-25	6/1/2016	1145	60	9.32	14.0	11.0	237.6	3.51	182 (P)	High clouds, breezy, warm.	Flow up from last run by about 0.25 ft,, fairly clear; fly fisherman upstream ~ 30 m near left bank, sampled full section as usual.
WSC- SBC	6/1/2016	1100	55	8.10	8.9	11.4	134.6	3.46	130 (P)	High clouds, breezy, pleasant.	Flow moderately high, up from last run, slightly off- color.
CFR- 03A	6/1/2016	1015	55	8.92	11.5	11.1	193.5	8.47	331 (P)	High clouds, breezy, warm.	Flow moderately high, up from last run; off-color; sampled from upper side of bridge deck.
CFR- 07D	6/1/2016	915		8.74	11.8	10.5	222.2	6.16		Clear, calm, warming up.	Flow high, up about half a foot from last run, swift and deep but (barely) wadeable; slightly off- color.
CFR- 11F	6/1/2016	815	45	8.57	11.8	10.1	236.0	6.60	303.14	Clear, calm, cool.	Flow moderately high, up a little from last run, but not major runoff.
CFR- 27H	5/31/2016	1600	65	8.64	16.3	13.0	274.7	8.83	400 (P)	Partly cloudy, breezy, warm.	Flow moderately high, similar to last run.
CFR-34	5/31/2016	1500	70	8.58	16.2	12.2	277.3	10.70		Partly cloudy, breezy, warm.	Flow moderately high, up from last run, just at bottom of grasses along both banks below bridge; sampled from bridge with crane.
LBR- CFR-02	5/31/2016	1345	70	8.02	13.0	8.7	138.7	3.36		Partly cloudy, light breeze, warm.	Sampled with bridge crane; flow moderately high, similar to last run?; fairly clear.

Site	Date	Time	Air temp (F)	рН	Water Temp (C)	Dissolved Oxygen (mg/L)	Conductivity (µS/cm)	Turbidity (NTU)	Streamflow (ft³/s)	Weather	Field Observations
FC- CFR	5/31/2016	1200	65	8.42	12.3	9.5	192.5	10.00	106 (A)	Partly cloudy, breezy, warm.	Flow moderately high, similar to last run, fairly turbid.
CFR- 84F	5/31/2016	1045	50	8.23	13.5	8.4	271.0	10.70	1030 (A)	Mostly cloudy, breezy, warming up.	Flow up from last run, near-peak for runoff, into bank grasses on right bank under bridge.
CFR- 116A	5/31/2016	900	42	8.07	11.5	9.0	158.8	8.67	2430 (A)	Clear, breezy, cool.	Flow near peak for year, but dropping from highest values to date on 5/10 and 5/23, water up to bank grasses on left bank above bridge.
SS-19	06/21/16	1545	75	9.31	20.2	13.1	350.2	1.78	41.38	Clear, windy, warm.	Heavy aquatic macrophytes (buttercup) through much of reach, little filamentous algae.
MCWC- MWB	06/21/16	1445	75	8.47	16.7	10.1	133.6	3.38	58.86	Mostly clear, windy, warm.	Flow down ~30% from last run on June 1, clear; cobble quite clean, little periphyton evident.
MWB- SBC	06/21/16	1330	75	8.56	16.6	10.7	197.9	3.31	65.98	Mostly clear, windy, warm.	Flow down slightly from June 1, fairly clear; patchy macrophytes and filamentous green algae.
SBC-P2	06/21/16	1340	78	8.94	19.5	8.6	346.3	1.38		Mostly clear, breezy, warm.	Flow much lower than on June 1, clear; very heavy periphyton layer, heavy diatoms on Cladophora, deep golden green color.
SS-25	06/21/16	1300	80	8.72	17.0	10.7	239.7	2.55	87 (P)	Mostly clear, windy, warm.	Flow down ~30% from June 1, quite clear; filamentous algae sparse, aquatic macrophytes relatively small and dispersed.

Site	Date	Time	Air temp (F)	рН	Water Temp (C)	Dissolved Oxygen (mg/L)	Conductivity (µS/cm)	Turbidity (NTU)	Streamflow (ft³/s)	Weather	Field Observations
WSC- SBC	06/21/16	1200	75	8.03	12.6	9.9	153.2	3.50	120 (P)	Suddenly windy, partly cloudy.	Flow similar to June 1, slightly off-color.
CFR- 03A	06/21/16	1045	75	8.36	14.1	10.6	191.9	3.24	220 (P)	Clear, breezy, warm.	Sampled upstream of iron bridge ~60 m, ~15 m below construction bridge, due to riprap work underway on USGS station apron causing visible turbidity downstream of usual section; flow down considerably from June 1.
CFR- 07D	06/21/16	930	70	8.26	14.3	10.3	208.0	3.46	205.20	Clear, calm, warm.	Flow well below June 1, stage ~ 1 foot lower at cross-section, slightly off- color; good diatom periphyton, filamentous algae.
CFR- 11F	06/21/16	830	60	8.20	14.4	9.8	229.7	2.99	156.52	Clear, calm, warm.	Flow down significantly from June 1, fairly clear; Cladophora patchy, much less than at CFR-27H and CFR-34, no sloughing.
CFR- 27H	06/20/16	1530	80	8.86	18.7	12.9	271.9	3.13	255 (P)	High clouds, breezy, very warm.	Flow down significantly from May 31, quite clear except for sloughing algae; Cladophora not so heavy as downstream; mosquitoes troublesome.
CFR-34	06/20/16	1430	78	8.98	18.3	13.3	299.1	4.03	205.57	High clouds, breezy, warm.	Flow down from May 31, wadeable at usual site; heavy Cladophora on substrate and sloughing in water column, slightly off-color; moderately heavy caddisfly hatch.

Site	Date	Time	Air temp (F)	рН	Water Temp (C)	Dissolved Oxygen (mg/L)	Conductivity (µS/cm)	Turbidity (NTU)	Streamflow (ft³/s)	Weather	Field Observations
LBR- CFR-02	06/20/16	1315	76	8.13	15.0	9.6	186.3	1.35	105.34	High clouds, calm, warm.	Flow about half that of May 31, very clear; waded and gaged flow at usual section immediately below bridge.
FC- CFR	06/20/16	1130	70	8.35	13.7	10.8	316.8	3.84	70 (A)	High clouds, breezy, nice.	Flow down considerably from May 31, quite clear; waded at usual section ~ 50m above bridge.
CFR- 84F	06/20/16	1030	65	8.47	15.3	10.5	345.8	2.04	695 (A)	Clear, breezy, warm.	Flow down significantly from May 31, wadeable at usual cross-section; very heavy Cladophora across entire channel, somewhat chlorotic, lime green.
CFR- 116A	06/20/16	900	55	8.24	13.1	9.4	202.7	1.91	1400 (A)	Clear, breezy, cool.	Flow down ~ 1000 cfs from last run on May 31; water clear, significant Cladophora on bottom and sloughing off.
MCWC- MWB	09/13/16	1445	65	8.60	12.4	12.1	202.6	3.28	11.51	High clouds, calm, warm.	Flow low, near seasonal minimum and similar to late Q2; slight staining/fine turbidity; moderate periphyton growth.
MWB- SBC	09/13/16	1330	60	8.72	12.1	12.9	294.0	1.09	15.49	Mostly sunny, breezy, warm.	Flow moderately low, but above seasonal minimum; heavy buttercup and periphyton throughout.
SBC-P2	09/13/16	1345	65	9.95	12.7	10.2	337.9	1.85		Mostly clear, calm, warm.	Good flow, similar to late Q2 level, clear with brown stain; heavy periphyton growth.
SS-25	09/13/16	1300	60	9.40	11.6	14.0	361.7	1.06	48 (P)	High overcast, calm, warm.	Flow near seasonal low, considerable exposed cobble on left bank at sample site; extremely

Site	Date	Time	Air temp (F)	рН	Water Temp (C)	Dissolved Oxygen (mg/L)	Conductivity (µS/cm)	Turbidity (NTU)	Streamflow (ft³/s)	Weather	Field Observations
											heavy diatom periphyton layer.
WSC- SBC	09/13/16	1200	55	8.30	7.6	11.7	189.1	0.91	19 (P)	High clouds, calm, warm.	Flow at seasonal low, clear.
CFR- 03A	09/13/16	1100	50	8.77	9.5	11.4	343.6	0.86	56 (P)	Mostly clear, breezy, warming.	Flow near seasonal low level; moved site upstream of bridge in new channel; heavy aquatic buttercup throughout, large clumps up to 1.5 m long and 0.5-1 m wide; ~ 1 m of exposed cobble below coir wrap on LB, less on RB; sediment collected within macrophyte clumps/roots.
CFR- 07D	09/13/16	1000	45	8.53	8.3	11.3	392.6	0.86	66.76	Scattered high clouds, calm, nice!	Flow moderately low but seasonal, not as extreme as CFR-11F; less periphyton than downstream; very clear water.
CFR- 11F	09/13/16	845	35	8.36	7.8	10.4	430.3	1.14	43.79	High overcast, calm, cool.	Flow extremely low, major exposed gravel bars on both banks; heavy periphtyon throughout channel, also macrophytes heavy with diatom growth.
CFR- 27H	09/12/16	1500	50	8.40	11.9		458.0	1.35	110 (P)	Mostly cloudy, windy, cool.	Flows very low, near seasonal minimum seen in recent years; heavy macrophytes and periphyton over > 75% of

Site	Date	Time	Air temp (F)	рН	Water Temp (C)	Dissolved Oxygen (mg/L)	Conductivity (µS/cm)	Turbidity (NTU)	Streamflow (ft³/s)	Weather	Field Observations
											channel, windrows of Cladophora from upstream sloughing.
CFR-34	09/12/16	1400	50	8.71	11.5		469.0	0.85	80.18	Partly cloudy, windy, cool.	Flow low, near seasonal minimum; considerable macrophytes with emergent beds on left 1/3 of channel; sampled near usual section.
LBR- CFR-02	09/12/16	1245	45	7.88	11.0		267.0	0.72	22.80	Partly cloudy, windy, chilly.	Flow very low, but probably within seasonal range; very heavy periphyton and macrophytes throughout channel.
FC- CFR	09/12/16	1115	50	8.31	9.7		455.0	1.74	44 (P)	Mostly cloudy, breezy, cool.	Flow up from very low levels of last few weeks, looks quite good for the season.
CFR- 84F	09/12/16	1000	50	8.11	12.5		535.0	3.11	256 (P)	Party cloudy, breezy, cool.	Flow seasonably low, ~ 1 m width of gravel exposed on RB upstream of USGS, considerable aquatic moss and macrophytes.
CFR- 116A	09/12/16	845	45	7.93	11.0		344.0	4.19	464 (P)	Mostly clear, breezy, cool.	Flow seasonal, up slightly from lows of mid-late August.
MCWC- MWB	12/13/16	1500	22	7.97	1.1	13.4	142.5	13.80	11.04	Mostly cloudy, windy, cold.	Channel partially open, shelf ice cleared from usual section; flow appears at seasonal low.
MWB- SBC	12/13/16	1345	24	8.16	0.2	14.2	280.5	2.33	16.35	Overcast, windy, flurries.	Shelf ice on both banks, too thick at usual site to open channel; collected samples and gauged flow

Site	Date	Time	Air temp (F)	рН	Water Temp (C)	Dissolved Oxygen (mg/L)	Conductivity (µS/cm)	Turbidity (NTU)	Streamflow (ft³/s)	Weather	Field Observations
											downstream ~80m from usual section.
SBC-P2	12/13/16	1300	25	8.51	3.2	13.4	364.4	2.42		Mostly cloudy, light flurries.	Open channel, flow at seasonal levels.
SS-25	12/13/16	1245	20	8.27	1.7	14.2	322.2	2.67		Mostly cloudy, flurries, cold.	Largely open channel, flow down a bit, exposed cobble on both banks at usual section.
WSC- SBC	12/13/16	1145	25	7.97	0.0	13.5	181.9	2.59		Partly cloudy, breezy, chilly.	Channel 100% ice-covered below bridge, open slot ~30% of channel width upstream; collected grab samples with churn.
CFR- 03A	12/13/16	1045	20	8.16	0.4	13.7	279.5	2.61		Mostly cloudy, windy, cold.	Channel ~75% ice covered just below bridge, > 75% iced over upstream; collected ~100 m downstream in swift run to hopefully provide some mixing of LB side channel/return flow.
CFR- 07D	12/13/16	1000	15	7.97	0.0	12.7	283.0	2.05		Mostly cloudy, calm, cold.	Heavy shelf ice on RB, out 1/3 to 3/4 the channel width, lesser amount on LB, all too thick to break out, flow not gaugeable; collected water in open section at usual point.
CFR- 11F	12/13/16	845	14	7.92	0.0	12.7	294.7	2.92	118.65	Mostly cloudy, calm, cold.	Good flow, very clear; shelf ice on RB, not able to break out for flow gauging, but were able to collect water at usual site; gauged flow in more open

Site	Date	Time	Air temp (F)	рН	Water Temp (C)	Dissolved Oxygen (mg/L)	Conductivity (µS/cm)	Turbidity (NTU)	Streamflow (ft³/s)	Weather	Field Observations
											channel on first bend upstream of bridge.
CFR- 27H	12/12/16	1600	20	8.03	0.3	11.6	286.2	10.40	181 (P)	Mostly cloudy, breezy, chilly.	Mostly open channel with small shelf ice rim on both banks; water appears much less turbid than CFR-34, flow may be up slightly recently.
CFR-34	12/12/16	1500	24	8.10	0.1	12.2	287.4	22.70		Partly cloudy, windy, brisk.	Flow moderatley high for season, rotten shelf ice on RB, broad (3-5 m) shelf on LB, not gauged; water extremely turbid, considerable dirty ice/slush chunks with heavy amounts of fine dirt/silt incorporated.
LBR- CFR-02	12/12/16	1330	22	7.98	0.1	12.1	141.2	1.81	48.36	Mostly cloudy, windy, chilly.	Ice over ~75% of channel at usual section, moved downstream ~50 m to section nearly free of ice, collected width/depth integrated sample and gauged flow.
FC- CFR	12/12/16	1200	24	8.14	0.0	12.7	183.4	2.91		Mostly cloudy, light breeze.	Channel completely closed by pack ice upstream of bridge, almost closed below, with only a narrow open channel < 1m wide ~10-50 m downstream of bridge; dipped churns to collect grab sample.
CFR- 84F	12/12/16	1030	25	8.14	3.1	13.2	311.1	2.03	410 (P)	Partly cloudy, calm, cool.	Flow seasonal, channel open and floating ice/slush absent; ~ 2" of

Site	Date	Time	Air temp (F)	рН	Water Temp (C)	Dissolved Oxygen (mg/L)	Conductivity (µS/cm)	Turbidity (NTU)	Streamflow (ft³/s)	Weather	Field Observations
											new snow overnight.
CFR- 116A	12/12/16	900	22	8.14	0.2	13.0	225.2	7.94	557 (P)	Overcast, calm, recent snow.	Flow seasonal, near median for date; 1-2 m wide shelf ice on RB, more on LB, small amount of floating slab ice but no appreciable slush in river; waded to collect sample ~ 75m downstream of bridge, were able to wade ~ 3/4 of channel width from RB.

A Streamflow measured by USGS; measurement has been approved.

P Streamflow measured by USGS; measurement is provisional upon quality control evaluation.

**APPENDIX D** 

**SEDIMENT DATA** 

Site	Sieve Size	Туре	Lab ID	Collected Date	Parameter	Results	Practical Quantification Limit	Units
MCWC-MWB	<0.063 mm	Natural Sample	H16030296-030	3/15/2016	Arsenic, Total	130	1	mg/kg-dry
MCWC-MWB	<0.063 mm	Natural Sample	H16030296-030	3/15/2016	Cadmium, Total	7.1	0.5	mg/kg-dry
MCWC-MWB	<0.063 mm	Natural Sample	H16030296-030	3/15/2016	Copper, Total	541	5	mg/kg-dry
MCWC-MWB	<0.063 mm	Natural Sample	H16030296-030	3/15/2016	Lead, Total	184	5	mg/kg-dry
MCWC-MWB	<0.063 mm	Natural Sample	H16030296-030	3/15/2016	Zinc, Total	746	40	mg/kg-dry
MWB-SBC	<0.063 mm	Natural Sample	H16030296-029	3/15/2016	Arsenic, Total	314	1	mg/kg-dry
MWB-SBC	<0.063 mm	Natural Sample	H16030296-029	3/15/2016	Cadmium, Total	8.8	0.6	mg/kg-dry
MWB-SBC	<0.063 mm	Natural Sample	H16030296-029	3/15/2016	Copper, Total	374	5	mg/kg-dry
MWB-SBC	<0.063 mm	Natural Sample	H16030296-029	3/15/2016	Lead, Total	214	5	mg/kg-dry
MWB-SBC	<0.063 mm	Natural Sample	H16030296-029	3/15/2016	Zinc, Total	1360	40	mg/kg-dry
SS-25	<0.063 mm	Natural Sample	H16030296-028	3/15/2016	Arsenic, Total	191	1	mg/kg-dry
SS-25	<0.063 mm	Natural Sample	H16030296-028	3/15/2016	Cadmium, Total	10.6	0.6	mg/kg-dry
SS-25	<0.063 mm	Natural Sample	H16030296-028	3/15/2016	Copper, Total	485	5	mg/kg-dry
SS-25	<0.063 mm	Natural Sample	H16030296-028	3/15/2016	Lead, Total	471	5	mg/kg-dry
SS-25	<0.063 mm	Natural Sample	H16030296-028	3/15/2016	Zinc, Total	1610	40	mg/kg-dry
WSC-SBC	<0.063 mm	Natural Sample	H16030296-027	3/15/2016	Arsenic, Total	129	1	mg/kg-dry
WSC-SBC	<0.063 mm	Natural Sample	H16030296-027	3/15/2016	Cadmium, Total	5.5	0.5	mg/kg-dry
WSC-SBC	<0.063 mm	Natural Sample	H16030296-027	3/15/2016	Copper, Total	1160	5	mg/kg-dry
WSC-SBC	<0.063 mm	Natural Sample	H16030296-027	3/15/2016	Lead, Total	154	5	mg/kg-dry
WSC-SBC	<0.063 mm	Natural Sample	H16030296-027	3/15/2016	Zinc, Total	535	40	mg/kg-dry
CFR-03A	<0.063 mm	Natural Sample	H16030296-026	3/15/2016	Arsenic, Total	192	1	mg/kg-dry
CFR-03A	<0.063 mm	Natural Sample	H16030296-026	3/15/2016	Cadmium, Total	10.1	0.5	mg/kg-dry
CFR-03A	<0.063 mm	Natural Sample	H16030296-026	3/15/2016	Copper, Total	1550	5	mg/kg-dry
CFR-03A	<0.063 mm	Natural Sample	H16030296-026	3/15/2016	Lead, Total	274	5	mg/kg-dry
CFR-03A	<0.063 mm	Natural Sample	H16030296-026	3/15/2016	Zinc, Total	1570	5	mg/kg-dry
CFR-07D	<0.063 mm	Natural Sample	H16030296-025	3/15/2016	Arsenic, Total	206	1	mg/kg-dry

Table D1. Instream sediment metal concentrations in the Clark Fork River Operable Unit, 2016.

Site	Sieve Size	Туре	Lab ID	Collected Date	Parameter	Results	Practical Quantification Limit	Units
CFR-07D	<0.063 mm	Natural Sample	H16030296-025	3/15/2016	Cadmium, Total	9.4	0.5	mg/kg-dry
CFR-07D	<0.063 mm	Natural Sample	H16030296-025	3/15/2016	Copper, Total	1790	5	mg/kg-dry
CFR-07D	<0.063 mm	Natural Sample	H16030296-025	3/15/2016	Lead, Total	270	5	mg/kg-dry
CFR-07D	<0.063 mm	Natural Sample	H16030296-025	3/15/2016	Zinc, Total	1570	5	mg/kg-dry
CFR-11F	<0.063 mm	Natural Sample	H16030296-024	3/15/2016	Arsenic, Total	136	1	mg/kg-dry
CFR-11F	<0.063 mm	Natural Sample	H16030296-024	3/15/2016	Cadmium, Total	5.9	0.4	mg/kg-dry
CFR-11F	<0.063 mm	Natural Sample	H16030296-024	3/15/2016	Copper, Total	1150	5	mg/kg-dry
CFR-11F	<0.063 mm	Natural Sample	H16030296-024	3/15/2016	Lead, Total	206	5	mg/kg-dry
CFR-11F	<0.063 mm	Natural Sample	H16030296-024	3/15/2016	Zinc, Total	1150	30	mg/kg-dry
LC-7.5	<0.063 mm	Natural Sample	H16030296-033	3/15/2016	Arsenic, Total	76	1	mg/kg-dry
LC-7.5	<0.063 mm	Natural Sample	H16030296-033	3/15/2016	Cadmium, Total	2.9	0.4	mg/kg-dry
LC-7.5	<0.063 mm	Natural Sample	H16030296-033	3/15/2016	Copper, Total	390	5	mg/kg-dry
LC-7.5	<0.063 mm	Natural Sample	H16030296-033	3/15/2016	Lead, Total	74	5	mg/kg-dry
LC-7.5	<0.063 mm	Natural Sample	H16030296-033	3/15/2016	Zinc, Total	292	30	mg/kg-dry
RTC-1.5	<0.063 mm	Natural Sample	H16030296-034	3/15/2016	Arsenic, Total	39	1	mg/kg-dry
RTC-1.5	<0.063 mm	Natural Sample	H16030296-034	3/15/2016	Cadmium, Total	2.5	0.5	mg/kg-dry
RTC-1.5	<0.063 mm	Natural Sample	H16030296-034	3/15/2016	Copper, Total	122	5	mg/kg-dry
RTC-1.5	<0.063 mm	Natural Sample	H16030296-034	3/15/2016	Lead, Total	251	5	mg/kg-dry
RTC-1.5	<0.063 mm	Natural Sample	H16030296-034	3/15/2016	Zinc, Total	198	40	mg/kg-dry
CFR-27H	<0.063 mm	Natural Sample	H16030296-023	3/14/2016	Arsenic, Total	157	1	mg/kg-dry
CFR-27H	<0.063 mm	Natural Sample	H16030296-023	3/14/2016	Cadmium, Total	7.1	0.4	mg/kg-dry
CFR-27H	<0.063 mm	Natural Sample	H16030296-023	3/14/2016	Copper, Total	1470	5	mg/kg-dry
CFR-27H	<0.063 mm	Natural Sample	H16030296-023	3/14/2016	Lead, Total	238	5	mg/kg-dry
CFR-27H	<0.063 mm	Natural Sample	H16030296-023	3/14/2016	Zinc, Total	1310	5	mg/kg-dry
CFR-34	<0.063 mm	Natural Sample	H16030296-022	3/14/2016	Arsenic, Total	178	1	mg/kg-dry
CFR-34	<0.063 mm	Natural Sample	H16030296-022	3/14/2016	Cadmium, Total	10.5	0.4	mg/kg-dry
CFR-34	<0.063 mm	Natural Sample	H16030296-022	3/14/2016	Copper, Total	1770	5	mg/kg-dry

Site	Sieve Size	Туре	Lab ID	Collected Date	Parameter	Results	Practical Quantification Limit	Units
CFR-34	<0.063 mm	Natural Sample	H16030296-022	3/14/2016	Lead, Total	278	5	mg/kg-dry
CFR-34	<0.063 mm	Natural Sample	H16030296-022	3/14/2016	Zinc, Total	1710	5	mg/kg-dry
LBR-CFR-02	<0.063 mm	Natural Sample	H16030296-021	3/14/2016	Arsenic, Total	27	1	mg/kg-dry
LBR-CFR-02	<0.063 mm	Natural Sample	H16030296-021	3/14/2016	Cadmium, Total	1.7	0.4	mg/kg-dry
LBR-CFR-02	<0.063 mm	Natural Sample	H16030296-021	3/14/2016	Copper, Total	55	5	mg/kg-dry
LBR-CFR-02	<0.063 mm	Natural Sample	H16030296-021	3/14/2016	Lead, Total	69	5	mg/kg-dry
LBR-CFR-02	<0.063 mm	Natural Sample	H16030296-021	3/14/2016	Zinc, Total	203	30	mg/kg-dry
CFR-116A	<0.063 mm	Natural Sample	H16030296-020	3/14/2016	Arsenic, Total	110	1	mg/kg-dry
CFR-116A	<0.063 mm	Natural Sample	H16030296-020	3/14/2016	Cadmium, Total	6.8	0.8	mg/kg-dry
CFR-116A	<0.063 mm	Natural Sample	H16030296-020	3/14/2016	Copper, Total	1010	5	mg/kg-dry
CFR-116A	<0.063 mm	Natural Sample	H16030296-020	3/14/2016	Lead, Total	211	5	mg/kg-dry
CFR-116A	<0.063 mm	Natural Sample	H16030296-020	3/14/2016	Zinc, Total	1510	50	mg/kg-dry
CFR-27H	<0.063 mm	Duplicate Sample	H16030296-031	3/14/2016	Arsenic, Total	156	1	mg/kg-dry
CFR-27H	<0.063 mm	Duplicate Sample	H16030296-031	3/14/2016	Cadmium, Total	6.8	0.4	mg/kg-dry
CFR-27H	<0.063 mm	Duplicate Sample	H16030296-031	3/14/2016	Copper, Total	1370	5	mg/kg-dry
CFR-27H	<0.063 mm	Duplicate Sample	H16030296-031	3/14/2016	Lead, Total	280	5	mg/kg-dry
CFR-27H	<0.063 mm	Duplicate Sample	H16030296-031	3/14/2016	Zinc, Total	1320	5	mg/kg-dry
CFR-11F	<0.063 mm	Duplicate Sample	H16030296-032	3/15/2016	Arsenic, Total	145	1	mg/kg-dry
CFR-11F	<0.063 mm	Duplicate Sample	H16030296-032	3/15/2016	Cadmium, Total	5.9	0.4	mg/kg-dry
CFR-11F	<0.063 mm	Duplicate Sample	H16030296-032	3/15/2016	Copper, Total	1150	5	mg/kg-dry
CFR-11F	<0.063 mm	Duplicate Sample	H16030296-032	3/15/2016	Lead, Total	223	5	mg/kg-dry
CFR-11F	<0.063 mm	Duplicate Sample	H16030296-032	3/15/2016	Zinc, Total	1200	30	mg/kg-dry
MCWC-MWB	<0.063 mm	Natural Sample	H16090340-030	9/13/2016	Arsenic, Total	135	1	mg/kg-dry
MCWC-MWB	<0.063 mm	Natural Sample	H16090340-030	9/13/2016	Cadmium, Total	8	1	mg/kg-dry
MCWC-MWB	<0.063 mm	Natural Sample	H16090340-030	9/13/2016	Copper, Total	554	5	mg/kg-dry
MCWC-MWB	<0.063 mm	Natural Sample	H16090340-030	9/13/2016	Lead, Total	268	5	mg/kg-dry
MCWC-MWB	<0.063 mm	Natural Sample	H16090340-030	9/13/2016	Zinc, Total	830	10	mg/kg-dry

Site	Sieve Size	Туре	Lab ID	Collected Date	Parameter	Results	Practical Quantification Limit	Units
MWB-SBC	<0.063 mm	Natural Sample	H16090340-029	9/13/2016	Arsenic, Total	285	1	mg/kg-dry
MWB-SBC	<0.063 mm	Natural Sample	H16090340-029	9/13/2016	Cadmium, Total	6.9	0.6	mg/kg-dry
MWB-SBC	<0.063 mm	Natural Sample	H16090340-029	9/13/2016	Copper, Total	285	5	mg/kg-dry
MWB-SBC	<0.063 mm	Natural Sample	H16090340-029	9/13/2016	Lead, Total	241	5	mg/kg-dry
MWB-SBC	<0.063 mm	Natural Sample	H16090340-029	9/13/2016	Zinc, Total	1030	6	mg/kg-dry
SS-25	<0.063 mm	Natural Sample	H16090340-028	9/13/2016	Arsenic, Total	153	1	mg/kg-dry
SS-25	<0.063 mm	Natural Sample	H16090340-028	9/13/2016	Cadmium, Total	10.6	0.7	mg/kg-dry
SS-25	<0.063 mm	Natural Sample	H16090340-028	9/13/2016	Copper, Total	892	5	mg/kg-dry
SS-25	<0.063 mm	Natural Sample	H16090340-028	9/13/2016	Lead, Total	376	5	mg/kg-dry
SS-25	<0.063 mm	Natural Sample	H16090340-028	9/13/2016	Zinc, Total	2020	7	mg/kg-dry
WSC-SBC	<0.063 mm	Natural Sample	H16090340-027	9/13/2016	Arsenic, Total	115	1	mg/kg-dry
WSC-SBC	<0.063 mm	Natural Sample	H16090340-027	9/13/2016	Cadmium, Total	6.8	0.7	mg/kg-dry
WSC-SBC	<0.063 mm	Natural Sample	H16090340-027	9/13/2016	Copper, Total	1320	5	mg/kg-dry
WSC-SBC	<0.063 mm	Natural Sample	H16090340-027	9/13/2016	Lead, Total	175	5	mg/kg-dry
WSC-SBC	<0.063 mm	Natural Sample	H16090340-027	9/13/2016	Zinc, Total	789	7	mg/kg-dry
CFR-03A	<0.063 mm	Natural Sample	H16090340-026	9/13/2016	Arsenic, Total	302	1	mg/kg-dry
CFR-03A	<0.063 mm	Natural Sample	H16090340-026	9/13/2016	Cadmium, Total	8.5	0.4	mg/kg-dry
CFR-03A	<0.063 mm	Natural Sample	H16090340-026	9/13/2016	Copper, Total	2330	5	mg/kg-dry
CFR-03A	<0.063 mm	Natural Sample	H16090340-026	9/13/2016	Lead, Total	335	5	mg/kg-dry
CFR-03A	<0.063 mm	Natural Sample	H16090340-026	9/13/2016	Zinc, Total	1900	5	mg/kg-dry
CFR-07D	<0.063 mm	Natural Sample	H16090340-025	9/13/2016	Arsenic, Total	218	1	mg/kg-dry
CFR-07D	<0.063 mm	Natural Sample	H16090340-025	9/13/2016	Cadmium, Total	7.3	0.4	mg/kg-dry
CFR-07D	<0.063 mm	Natural Sample	H16090340-025	9/13/2016	Copper, Total	1950	5	mg/kg-dry
CFR-07D	<0.063 mm	Natural Sample	H16090340-025	9/13/2016	Lead, Total	323	5	mg/kg-dry
CFR-07D	<0.063 mm	Natural Sample	H16090340-025	9/13/2016	Zinc, Total	1530	5	mg/kg-dry
CFR-11F	<0.063 mm	Natural Sample	H16090340-024	9/13/2016	Arsenic, Total	191	1	mg/kg-dry
CFR-11F	<0.063 mm	Natural Sample	H16090340-024	9/13/2016	Cadmium, Total	9.1	0.5	mg/kg-dry

Site	Sieve Size	Туре	Lab ID	Collected Date	Parameter	Results	Practical Quantification Limit	Units
CFR-11F	<0.063 mm	Natural Sample	H16090340-024	9/13/2016	Copper, Total	1450	5	mg/kg-dry
CFR-11F	<0.063 mm	Natural Sample	H16090340-024	9/13/2016	Lead, Total	312	5	mg/kg-dry
CFR-11F	<0.063 mm	Natural Sample	H16090340-024	9/13/2016	Zinc, Total	1670	5	mg/kg-dry
LC-7.5	<0.063 mm	Natural Sample	H16090340-033	9/12/2016	Arsenic, Total	88	1	mg/kg-dry
LC-7.5	<0.063 mm	Natural Sample	H16090340-033	9/12/2016	Cadmium, Total	2.6	0.7	mg/kg-dry
LC-7.5	<0.063 mm	Natural Sample	H16090340-033	9/12/2016	Copper, Total	551	5	mg/kg-dry
LC-7.5	<0.063 mm	Natural Sample	H16090340-033	9/12/2016	Lead, Total	152	5	mg/kg-dry
LC-7.5	<0.063 mm	Natural Sample	H16090340-033	9/12/2016	Zinc, Total	375	7	mg/kg-dry
RTC-1.5	<0.063 mm	Natural Sample	H16090340-034	9/12/2016	Arsenic, Total	34	1	mg/kg-dry
RTC-1.5	<0.063 mm	Natural Sample	H16090340-034	9/12/2016	Cadmium, Total	1.8	0.6	mg/kg-dry
RTC-1.5	<0.063 mm	Natural Sample	H16090340-034	9/12/2016	Copper, Total	72	5	mg/kg-dry
RTC-1.5	<0.063 mm	Natural Sample	H16090340-034	9/12/2016	Lead, Total	136	5	mg/kg-dry
RTC-1.5	<0.063 mm	Natural Sample	H16090340-034	9/12/2016	Zinc, Total	174	5	mg/kg-dry
CFR-27H	<0.063 mm	Natural Sample	H16090340-023	9/12/2016	Arsenic, Total	169	1	mg/kg-dry
CFR-27H	<0.063 mm	Natural Sample	H16090340-023	9/12/2016	Cadmium, Total	5.9	0.4	mg/kg-dry
CFR-27H	<0.063 mm	Natural Sample	H16090340-023	9/12/2016	Copper, Total	1270	5	mg/kg-dry
CFR-27H	<0.063 mm	Natural Sample	H16090340-023	9/12/2016	Lead, Total	345	5	mg/kg-dry
CFR-27H	<0.063 mm	Natural Sample	H16090340-023	9/12/2016	Zinc, Total	1260	5	mg/kg-dry
CFR-34	<0.063 mm	Natural Sample	H16090340-022	9/12/2016	Arsenic, Total	127	1	mg/kg-dry
CFR-34	<0.063 mm	Natural Sample	H16090340-022	9/12/2016	Cadmium, Total	12.6	0.5	mg/kg-dry
CFR-34	<0.063 mm	Natural Sample	H16090340-022	9/12/2016	Copper, Total	1760	5	mg/kg-dry
CFR-34	<0.063 mm	Natural Sample	H16090340-022	9/12/2016	Lead, Total	313	5	mg/kg-dry
CFR-34	<0.063 mm	Natural Sample	H16090340-022	9/12/2016	Zinc, Total	1600	5	mg/kg-dry
LBR-CFR-02	<0.063 mm	Natural Sample	H16090340-021	9/12/2016	Arsenic, Total	26	1	mg/kg-dry
LBR-CFR-02	<0.063 mm	Natural Sample	H16090340-021	9/12/2016	Cadmium, Total	2.4	0.4	mg/kg-dry
LBR-CFR-02	<0.063 mm	Natural Sample	H16090340-021	9/12/2016	Copper, Total	71	5	mg/kg-dry
LBR-CFR-02	<0.063 mm	Natural Sample	H16090340-021	9/12/2016	Lead, Total	137	5	mg/kg-dry

Site	Sieve Size	Туре	Lab ID	Collected Date	Parameter	Results	Practical Quantification Limit	Units
LBR-CFR-02	<0.063 mm	Natural Sample	H16090340-021	9/12/2016	Zinc, Total	161	5	mg/kg-dry
CFR-116A	<0.063 mm	Natural Sample	H16090340-020	9/12/2016	Arsenic, Total	37	1	mg/kg-dry
CFR-116A	<0.063 mm	Natural Sample	H16090340-020	9/12/2016	Cadmium, Total	3.7	0.8	mg/kg-dry
CFR-116A	<0.063 mm	Natural Sample	H16090340-020	9/12/2016	Copper, Total	412	5	mg/kg-dry
CFR-116A	<0.063 mm	Natural Sample	H16090340-020	9/12/2016	Lead, Total	139	5	mg/kg-dry
CFR-116A	<0.063 mm	Natural Sample	H16090340-020	9/12/2016	Zinc, Total	932	8	mg/kg-dry
CFR-27H	<0.063 mm	Duplicate Sample	H16090340-031	9/12/2016	Arsenic, Total	165	1	mg/kg-dry
CFR-27H	<0.063 mm	Duplicate Sample	H16090340-031	9/12/2016	Cadmium, Total	8.2	0.4	mg/kg-dry
CFR-27H	<0.063 mm	Duplicate Sample	H16090340-031	9/12/2016	Copper, Total	1390	5	mg/kg-dry
CFR-27H	<0.063 mm	Duplicate Sample	H16090340-031	9/12/2016	Lead, Total	397	5	mg/kg-dry
CFR-27H	<0.063 mm	Duplicate Sample	H16090340-031	9/12/2016	Zinc, Total	1570	5	mg/kg-dry
SS-25	<0.063 mm	Duplicate Sample	H16090340-032	9/13/2016	Arsenic, Total	108	1	mg/kg-dry
SS-25	<0.063 mm	Duplicate Sample	H16090340-032	9/13/2016	Cadmium, Total	8.5	0.6	mg/kg-dry
SS-25	<0.063 mm	Duplicate Sample	H16090340-032	9/13/2016	Copper, Total	642	5	mg/kg-dry
SS-25	<0.063 mm	Duplicate Sample	H16090340-032	9/13/2016	Lead, Total	354	5	mg/kg-dry
SS-25	<0.063 mm	Duplicate Sample	H16090340-032	9/13/2016	Zinc, Total	1620	5	mg/kg-dry

**APPENDIX E** 

**PERIPHYTON DATA** 

Site	Date Sampled	Date Analyzed	Taxon	Algal Division	Estimated Relative Abundance	Estimated Biovolume Rank
MCWC-MWB	9/19/2016	10/18/2016	diatoms (all genera)	Bacillariophyta	dominant	1
MCWC-MWB	9/19/2016	10/18/2016	Nostoc	Cyanophyta	abundant	2
MCWC-MWB	9/19/2016	10/18/2016	Cladophora	Chlorophyta	common	3
MCWC-MWB	9/19/2016	10/18/2016	Tolypothrix	Cyanophyta	frequent	4
MCWC-MWB	9/19/2016	10/18/2016	Phormidium	Cyanophyta	frequent	5
MCWC-MWB	9/19/2016	10/18/2016	Closterium	Chlorophyta	common	6
MCWC-MWB	9/19/2016	10/18/2016	Chamaesiphon	Cyanophyta	abundant	7
MCWC-MWB	9/19/2016	10/18/2016	Cosmarium	Chlorophyta	occasional	8
MCWC-MWB	9/19/2016	10/18/2016	Staurastrum	Chlorophyta	rare	9
MWB-SBC	9/19/2016	10/18/2016	Phormidium	Cyanophyta	dominant	1
MWB-SBC	9/19/2016	10/18/2016	Oedogonium	Chlorophyta	abundant	2
MWB-SBC	9/19/2016	10/18/2016	diatoms (all genera)	Bacillariophyta	dominant	3
MWB-SBC	9/19/2016	10/18/2016	Cladophora	Chlorophyta	frequent	4
MWB-SBC	9/19/2016	10/18/2016	Tolypothrix	Cyanophyta	frequent	5
MWB-SBC	9/19/2016	10/18/2016	Nostoc	Cyanophyta	abundant	6
MWB-SBC	9/19/2016	10/18/2016	Pleurocladia	Phaeophyta	common	7
MWB-SBC	9/19/2016	10/18/2016	Chamaesiphon	Cyanophyta	frequent	8
MWB-SBC	9/19/2016	10/18/2016	Mougeotia	Chlorophyta	occasional	9
MWB-SBC	9/19/2016	10/18/2016	Heteroleibleinia	Cyanophyta	common	10
MWB-SBC	9/19/2016	10/18/2016	Closterium	Chlorophyta	occasional	11
MWB-SBC	9/19/2016	10/18/2016	Scenedesmus	Chlorophyta	occasional	12
MWB-SBC	9/19/2016	10/18/2016	Dactylococcopsis	Cyanophyta	occasional	13
MWB-SBC	9/19/2016	10/18/2016	Asterocystis	Rhodophyta	rare	14
MWB-SBC	9/19/2016	10/18/2016	Ankistrodesmus	Chlorophyta	rare	15
SS-25	9/19/2016	10/18/2016	diatoms (all genera)	Bacillariophyta	dominant	1
SS-25	9/19/2016	10/18/2016	Oedogonium	Chlorophyta	abundant	2
SS-25	9/19/2016	10/18/2016	Cladophora	Chlorophyta	frequent	3
SS-25	9/19/2016	10/18/2016	Phormidium	Cyanophyta	common	4
SS-25	9/19/2016	10/18/2016	Anabaena	Cyanophyta	occasional	5
SS-25	9/19/2016	10/18/2016	Dactylococcopsis	Cyanophyta	common	6
SS-25	9/19/2016	10/18/2016	Scenedesmus	Chlorophyta	occasional	7
SS-25	9/19/2016	10/18/2016	Leptolyngbya	Cyanophyta	occasional	8
SS-25	9/19/2016	10/18/2016	Closterium	Chlorophyta	rare	9
SS-25	9/19/2016	10/18/2016	Cosmarium	Chlorophyta	rare	10
SS-25	9/19/2016	10/18/2016	Ankistrodesmus	Chlorophyta	rare	11
WSC-SBC	9/19/2016	10/18/2016	diatoms (all genera)	Bacillariophyta	dominant	1
WSC-SBC	9/19/2016	10/18/2016	Phormidium	Cyanophyta	abundant	2
WSC-SBC	9/19/2016	10/18/2016	Ulothrix	Chlorophyta	abundant	3

Table E1. Relative abundance of non-diatom taxa in samples from the Clark Fork River Operable Unit, 2016.

Site	Date Sampled	Date Analyzed	Taxon	Algal Division	Estimated Relative Abundance	Estimated Biovolume Rank
WSC-SBC	9/19/2016	10/18/2016	Audouinella	Rhodophyta	frequent	4
WSC-SBC	9/19/2016	10/18/2016	Nostoc	Cyanophyta	frequent	5
WSC-SBC	9/19/2016	10/18/2016	Cladophora	Chlorophyta	common	6
WSC-SBC	9/19/2016	10/18/2016	Staurastrum	Chlorophyta	common	7
WSC-SBC	9/19/2016	10/18/2016	Closterium	Chlorophyta	occasional	8
WSC-SBC	9/19/2016	10/18/2016	Cosmarium	Chlorophyta	occasional	9
WSC-SBC	9/19/2016	10/18/2016	Mougeotia	Chlorophyta	rare	10
WSC-SBC	9/19/2016	10/18/2016	Heteroleibleinia	Cyanophyta	common	11
WSC-SBC	9/19/2016	10/18/2016	Stigeoclonium	Chlorophyta	rare	12
LC-7.5	9/19/2016	11/7/2016	diatoms (all genera)	Bacillariophyta	dominant	1
LC-7.5	9/19/2016	11/7/2016	Cladophora	Chlorophyta	abundant	2
LC-7.5	9/19/2016	11/7/2016	Mougeotia	Chlorophyta	abundant	3
LC-7.5	9/19/2016	11/7/2016	Vaucheria	Xanthophyta	common	4
LC-7.5	9/19/2016	11/7/2016	Oedogonium	Chlorophyta	frequent	5
LC-7.5	9/19/2016	11/7/2016	Microspora	Chlorophyta	occasional	6
LC-7.5	9/19/2016	11/7/2016	Tribonema	Xanthophyta	frequent	7
LC-7.5	9/19/2016	11/7/2016	Closterium	Chlorophyta	occasional	8
LC-7.5	9/19/2016	11/7/2016	Chamaesiphon	Cyanophyta	frequent	9
LC-7.5	9/19/2016	11/7/2016	Heteroleibleinia	Cyanophyta	frequent	10
LC-7.5	9/19/2016	11/7/2016	Pediastrum	Chlorophyta	occasional	11
LC-7.5	9/19/2016	11/7/2016	Spirogyra	Chlorophyta	rare	12
LC-7.5	9/19/2016	11/7/2016	Ulothrix	Chlorophyta	rare	13
LC-7.5	9/19/2016	11/7/2016	Asterocystis	Rhodophyta	rare	14
LC-7.5	9/19/2016	11/7/2016	Gloeocystis	Chlorophyta	rare	15
LC-7.5	9/19/2016	11/7/2016	Cosmarium	Chlorophyta	rare	16
RTC-1.5	9/20/2016	11/7/2016	diatoms (all genera)	Bacillariophyta	dominant	1
RTC-1.5	9/20/2016	11/7/2016	Vaucheria	Xanthophyta	abundant	2
RTC-1.5	9/20/2016	11/7/2016	Spirogyra	Chlorophyta	abundant	3
RTC-1.5	9/20/2016	11/7/2016	Microspora	Chlorophyta	abundant	4
RTC-1.5	9/20/2016	11/7/2016	Closterium	Chlorophyta	frequent	5
RTC-1.5	9/20/2016	11/7/2016	Oedogonium	Chlorophyta	frequent	6
RTC-1.5	9/20/2016	11/7/2016	Phormidium	Cyanophyta	frequent	7
RTC-1.5	9/20/2016	11/7/2016	Scenedesmus	Chlorophyta	abundant	8
RTC-1.5	9/20/2016	11/7/2016	Dactylococcopsis	Cyanophyta	abundant	9
RTC-1.5	9/20/2016	11/7/2016	Ankistrodesmus	Chlorophyta	occasional	10
RTC-1.5	9/20/2016	11/7/2016	Audouinella	Rhodophyta	rare	11
RTC-1.5	9/20/2016	11/7/2016	Stigeoclonium	Chlorophyta	rare	12
LBR-CFR-02	9/20/2016	11/10/2016	Tolypothrix	Cyanophyta	dominant	1
LBR-CFR-02	9/20/2016	11/10/2016	Spirogyra	Chlorophyta	abundant	2
LBR-CFR-02	9/20/2016	11/10/2016	Oedogonium	Chlorophyta	abundant	3
LBR-CFR-02	9/20/2016	11/10/2016	diatoms (all genera)	Bacillariophyta	abundant	4

Site	Date Sampled	Date Analyzed	Taxon	Algal Division	Estimated Relative Abundance	Estimated Biovolume Rank
LBR-CFR-02	9/20/2016	11/10/2016	Vaucheria	Xanthophyta	frequent	5
LBR-CFR-02	9/20/2016	11/10/2016	Closterium	Chlorophyta	frequent	6
LBR-CFR-02	9/20/2016	11/10/2016	Cladophora	Chlorophyta	common	7
LBR-CFR-02	9/20/2016	11/10/2016	Nostoc	Cyanophyta	common	8
LBR-CFR-02	9/20/2016	11/10/2016	Scenedesmus	Chlorophyta	frequent	9
LBR-CFR-02	9/20/2016	11/10/2016	Mougeotia	Chlorophyta	occasional	10
LBR-CFR-02	9/20/2016	11/10/2016	Pediastrum	Chlorophyta	common	11
LBR-CFR-02	9/20/2016	11/10/2016	Cosmarium	Chlorophyta	common	12
LBR-CFR-02	9/20/2016	11/10/2016	Ankistrodesmus	Chlorophyta	common	13
LBR-CFR-02	9/20/2016	11/10/2016	Tribonema	Xanthophyta	occasional	14
LBR-CFR-02	9/20/2016	11/10/2016	Coelastrum	Chlorophyta	occasional	15
LBR-CFR-02	9/20/2016	11/10/2016	Dactylococcopsis	Cyanophyta	occasional	16
LBR-CFR-02	9/20/2016	11/10/2016	Oocystis	Chlorophyta	rare	17
CFR-03A	9/19/2016	10/28/2016	Nostoc	Cyanophyta	dominant	1
CFR-03A	9/19/2016	10/28/2016	Cladophora	Chlorophyta	abundant	2
CFR-03A	9/19/2016	10/28/2016	diatoms (all genera)	Bacillariophyta	abundant	3
CFR-03A	9/19/2016	10/28/2016	Dichothrix	Cyanophyta	abundant	4
CFR-03A	9/19/2016	10/28/2016	Chamaesiphon	Cyanophyta	abundant	5
CFR-03A	9/19/2016	10/28/2016	Heteroleibleinia	Cyanophyta	frequent	6
CFR-03A	9/19/2016	10/28/2016	Stigeoclonium	Chlorophyta	occasional	7
CFR-03A	9/19/2016	10/28/2016	Closterium	Chlorophyta	occasional	8
CFR-03A	9/19/2016	10/28/2016	Dactylococcopsis	Cyanophyta	occasional	9
CFR-03A	9/19/2016	10/28/2016	Microcystis	Cyanophyta	rare	10
CFR-07D	9/19/2016	11/7/2016	Nostoc	Cyanophyta	abundant	1
CFR-07D	9/19/2016	11/7/2016	diatoms (all genera)	Bacillariophyta	dominant	2
CFR-07D	9/19/2016	11/7/2016	Phormidium	Cyanophyta	abundant	3
CFR-07D	9/19/2016	11/7/2016	Cladophora	Chlorophyta	frequent	4
CFR-07D	9/19/2016	11/7/2016	Oedogonium	Chlorophyta	common	5
CFR-07D	9/19/2016	11/7/2016	Chamaesiphon	Cyanophyta	abundant	6
CFR-07D	9/19/2016	11/7/2016	Tolypothrix	Cyanophyta	common	7
CFR-07D	9/19/2016	11/7/2016	Stigeoclonium	Chlorophyta	common	8
CFR-07D	9/19/2016	11/7/2016	Heteroleibleinia	Cyanophyta	frequent	9
CFR-07D	9/19/2016	11/7/2016	Closterium	Chlorophyta	occasional	10
CFR-07D	9/19/2016	11/7/2016	Pediastrum	Chlorophyta	rare	11
CFR-11F	9/19/2016	11/8/2016	diatoms (all genera)	Bacillariophyta	dominant	1
CFR-11F	9/19/2016	11/8/2016	Cladophora	Chlorophyta	abundant	2
CFR-11F	9/19/2016	11/8/2016	Tolypothrix	Cyanophyta	abundant	3
CFR-11F	9/19/2016	11/8/2016	Mougeotia	Chlorophyta	abundant	4
CFR-11F	9/19/2016	11/8/2016	Nostoc	Cyanophyta	frequent	5
CFR-11F	9/19/2016	11/8/2016	Heteroleibleinia	Cyanophyta	abundant	6
CFR-11F	9/19/2016	11/8/2016	Vaucheria	Xanthophyta	occasional	7

Site	Date Sampled	Date Analyzed	Taxon	Algal Division	Estimated Relative Abundance	Estimated Biovolume Rank
CFR-11F	9/19/2016	11/8/2016	Dactylococcopsis	Cyanophyta	frequent	8
CFR-11F	9/19/2016	11/8/2016	Scenedesmus	Chlorophyta	common	9
CFR-11F	9/19/2016	11/8/2016	Closterium	Chlorophyta	occasional	10
CFR-11F	9/19/2016	11/8/2016	Pediastrum	Chlorophyta	occasional	11
CFR-11F	9/19/2016	11/8/2016	Spirogyra	Chlorophyta	rare	12
CFR-11F	9/19/2016	11/8/2016	Ulothrix	Chlorophyta	rare	13
CFR-27H	9/19/2016	11/8/2016	diatoms (all genera)	Bacillariophyta	dominant	1
CFR-27H	9/19/2016	11/8/2016	Cladophora	Chlorophyta	frequent	2
CFR-27H	9/19/2016	11/8/2016	Phormidium	Cyanophyta	abundant	3
CFR-27H	9/19/2016	11/8/2016	Nostoc	Cyanophyta	abundant	4
CFR-27H	9/19/2016	11/8/2016	Oedogonium	Chlorophyta	abundant	5
CFR-27H	9/19/2016	11/8/2016	Tolypothrix	Cyanophyta	frequent	6
CFR-27H	9/19/2016	11/8/2016	Scenedesmus	Chlorophyta	common	7
CFR-27H	9/19/2016	11/8/2016	Pediastrum	Chlorophyta	occasional	8
CFR-27H	9/19/2016	11/8/2016	Chamaesiphon	Cyanophyta	frequent	9
CFR-27H	9/19/2016	11/8/2016	Dactylococcopsis	Cyanophyta	common	10
CFR-27H	9/19/2016	11/8/2016	Cosmarium	Chlorophyta	occasional	11
CFR-27H	9/19/2016	11/8/2016	Closterium	Chlorophyta	rare	12
CFR-27H	9/19/2016	11/8/2016	Ankistrodesmus	Chlorophyta	rare	13
CFR-34	9/20/2016	11/10/2016	Nostoc	Cyanophyta	dominant	1
CFR-34	9/20/2016	11/10/2016	Oedogonium	Chlorophyta	abundant	2
CFR-34	9/20/2016	11/10/2016	diatoms (all genera)	Bacillariophyta	dominant	3
CFR-34	9/20/2016	11/10/2016	Cladophora	Chlorophyta	frequent	4
CFR-34	9/20/2016	11/10/2016	Vaucheria	Xanthophyta	common	5
CFR-34	9/20/2016	11/10/2016	Tolypothrix	Cyanophyta	frequent	6
CFR-34	9/20/2016	11/10/2016	Scenedesmus	Chlorophyta	abundant	7
CFR-34	9/20/2016	11/10/2016	Pediastrum	Chlorophyta	common	8
CFR-34	9/20/2016	11/10/2016	Chamaesiphon	Cyanophyta	frequent	9
CFR-34	9/20/2016	11/10/2016	Coelastrum	Chlorophyta	common	10
CFR-34	9/20/2016	11/10/2016	Closterium	Chlorophyta	occasional	11
CFR-34	9/20/2016	11/10/2016	Ankistrodesmus	Chlorophyta	frequent	12
CFR-34	9/20/2016	11/10/2016	Dactylococcopsis	Cyanophyta	common	13
CFR-34	9/20/2016	11/10/2016	Zygnema	Chlorophyta	rare	14
CFR-34	9/20/2016	11/10/2016	Klebsormidium	Chlorophyta	rare	15
CFR-34	9/20/2016	11/10/2016	Gloeocystis	Chlorophyta	rare	16
CFR-116A	9/20/2016	11/10/2016	diatoms (all genera)	Bacillariophyta	dominant	1
CFR-116A	9/20/2016	11/10/2016	Cladophora	Chlorophyta	abundant	2
CFR-116A	9/20/2016	11/10/2016	Vaucheria	Xanthophyta	frequent	3
CFR-116A	9/20/2016	11/10/2016	Ulothrix	Chlorophyta	common	4
CFR-116A	9/20/2016	11/10/2016	Audouinella	Rhodophyta	common	5
CFR-116A	9/20/2016	11/10/2016	Closterium	Chlorophyta	occasional	6

Site	Date Sampled	Date Analyzed	Taxon	Algal Division	Estimated Relative Abundance	Estimated Biovolume Rank
CFR-116A	9/20/2016	11/10/2016	Scenedesmus	Chlorophyta	frequent	7
CFR-116A	9/20/2016	11/10/2016	Chamaesiphon	Cyanophyta	frequent	8
CFR-116A	9/20/2016	11/10/2016	Cosmarium	Chlorophyta	occasional	9
CFR-116A	9/20/2016	11/10/2016	Tribonema	Xanthophyta	occasional	10
CFR-116A	9/20/2016	11/10/2016	Tolypothrix	Cyanophyta	occasional	11
CFR-116A	9/20/2016	11/10/2016	Oedogonium	Chlorophyta	rare	12
CFR-116A	9/20/2016	11/10/2016	Stigeoclonium	Chlorophyta	rare	13
CFR-116A	9/20/2016	11/10/2016	Phormidium	Cyanophyta	rare	14
CFR-116A	9/20/2016	11/10/2016	Calothrix	Cyanophyta	rare	15
SS-19	9/14/2016	10/17/2016	Cladophora	Chlorophyta	abundant	1
SS-19	9/14/2016	10/17/2016	Protococcus	Chlorophyta	dominant	2
SS-19	9/14/2016	10/17/2016	diatoms (all genera)	Bacillariophyta	abundant	3
SS-19	9/14/2016	10/17/2016	Leptolyngbya	Cyanophyta	abundant	4
SS-19	9/14/2016	10/17/2016	Stigeoclonium	Chlorophyta	common	5
SS-19	9/14/2016	10/17/2016	Chamaesiphon	Cyanophyta	frequent	6
SS-19	9/14/2016	10/17/2016	Heteroleibleinia	Cyanophyta	common	7
SS-19	9/14/2016	10/17/2016	Scenedesmus	Chlorophyta	occasional	8

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
MCWC-MWB	9/19/2016	1/5/2017	Achnanthidium exiguum	3	0.38	
MCWC-MWB	9/19/2016	1/5/2017	Achnanthidium minutissimum	83	10.38	
MCWC-MWB	9/19/2016	1/5/2017	Amphipleura pellucida	1	0.13	
MCWC-MWB	9/19/2016	1/5/2017	Cocconeis disculus	1	0.13	
MCWC-MWB	9/19/2016	1/5/2017	Cocconeis pediculus	9	1.13	
MCWC-MWB	9/19/2016	1/5/2017	Cocconeis placentula	106	13.25	0.88
MCWC-MWB	9/19/2016	1/5/2017	Cymatopleura solea	2	0.25	
MCWC-MWB	9/19/2016	1/5/2017	Cymbella mexicana	1	0.13	
MCWC-MWB	9/19/2016	1/5/2017	Diatoma moniliformis	1	0.13	
MCWC-MWB	9/19/2016	1/5/2017	Diatoma vulgaris	17	2.13	0.25
MCWC-MWB	9/19/2016	1/5/2017	Encyonema cespitosum	4	0.5	
MCWC-MWB	9/19/2016	1/5/2017	Encyonema leibleinii	1	0.13	
MCWC-MWB	9/19/2016	1/5/2017	Encyonema minutum	4	0.5	
MCWC-MWB	9/19/2016	1/5/2017	Encyonema silesiacum	7	0.88	
MCWC-MWB	9/19/2016	1/5/2017	Encyonema ventricosum	35	4.38	
MCWC-MWB	9/19/2016	1/5/2017	Eolimna minima	7	0.88	
MCWC-MWB	9/19/2016	1/5/2017	Epithemia sorex	8	1	
MCWC-MWB	9/19/2016	1/5/2017	Fragilaria capucina var. gracilis	1	0.13	
MCWC-MWB	9/19/2016	1/5/2017	Fragilaria capucina var. rumpens	4	0.5	
MCWC-MWB	9/19/2016	1/5/2017	Fragilaria vaucheriae	12	1.5	
MCWC-MWB	9/19/2016	1/5/2017	Frustulia amphipleuroides	1	0.13	
MCWC-MWB	9/19/2016	1/5/2017	Gomphoneis eriense	8	1	
MCWC-MWB	9/19/2016	1/5/2017	Gomphonema acuminatum	2	0.25	
MCWC-MWB	9/19/2016	1/5/2017	Gomphonema innocens	4	0.5	
MCWC-MWB	9/19/2016	1/5/2017	Gomphonema minutum	4	0.5	
MCWC-MWB	9/19/2016	1/5/2017	Gomphonema parvulum	6	0.75	
MCWC-MWB	9/19/2016	1/5/2017	Gomphonema parvulum var. exilissimum	5	0.63	
MCWC-MWB	9/19/2016	1/5/2017	Gomphonema pumilum	2	0.25	
MCWC-MWB	9/19/2016	1/5/2017	Hippodonta capitata	2	0.25	
MCWC-MWB	9/19/2016	1/5/2017	Melosira varians	49	6.13	
MCWC-MWB	9/19/2016	1/5/2017	Meridion circulare	7	0.88	
MCWC-MWB	9/19/2016	1/5/2017	Navicula antonii	6	0.75	
MCWC-MWB	9/19/2016	1/5/2017	Navicula capitatoradiata	43	5.38	
MCWC-MWB	9/19/2016	1/5/2017	Navicula caterva	11	1.38	
MCWC-MWB	9/19/2016	1/5/2017	Navicula cryptocephala	2	0.25	

Table E1. Diatom taxa abundance in samples from the Clark Fork River Operable Unit, 2016.

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
MCWC-MWB	9/19/2016	1/5/2017	Navicula cryptotenella	40	5	
MCWC-MWB	9/19/2016	1/5/2017	Navicula cryptotenelloides	8	1	
MCWC-MWB	9/19/2016	1/5/2017	Navicula lanceolata	4	0.5	
MCWC-MWB	9/19/2016	1/5/2017	Navicula reichardtiana	20	2.5	
MCWC-MWB	9/19/2016	1/5/2017	Navicula tripunctata	5	0.63	
MCWC-MWB	9/19/2016	1/5/2017	Navicula trivialis	1	0.13	
MCWC-MWB	9/19/2016	1/5/2017	Nitzschia agnita	2	0.25	
MCWC-MWB	9/19/2016	1/5/2017	Nitzschia archibaldii	6	0.75	
MCWC-MWB	9/19/2016	1/5/2017	Nitzschia dissipata	72	9	
MCWC-MWB	9/19/2016	1/5/2017	Nitzschia fonticola	7	0.88	
MCWC-MWB	9/19/2016	1/5/2017	Nitzschia heufleriana	7	0.88	
MCWC-MWB	9/19/2016	1/5/2017	Nitzschia inconspicua	4	0.5	
MCWC-MWB	9/19/2016	1/5/2017	Nitzschia linearis	12	1.5	
MCWC-MWB	9/19/2016	1/5/2017	Nitzschia palea	2	0.25	
MCWC-MWB	9/19/2016	1/5/2017	Nitzschia palea var. tenuirostris	6	0.75	
MCWC-MWB	9/19/2016	1/5/2017	Nitzschia paleacea	16	2	
MCWC-MWB	9/19/2016	1/5/2017	Nitzschia recta	2	0.25	
MCWC-MWB	9/19/2016	1/5/2017	Planothidium dubium	1	0.13	
MCWC-MWB	9/19/2016	1/5/2017	Planothidium frequentissimum	17	2.13	
MCWC-MWB	9/19/2016	1/5/2017	Planothidium lanceolatum	8	1	
MCWC-MWB	9/19/2016	1/5/2017	Psammothidium subatomoides	4	0.5	
MCWC-MWB	9/19/2016	1/5/2017	Reimeria sinuata	4	0.5	
MCWC-MWB	9/19/2016	1/5/2017	Rhoicosphenia abbreviata	10	1.25	
MCWC-MWB	9/19/2016	1/5/2017	Rhopalodia gibba	1	0.13	
MCWC-MWB	9/19/2016	1/5/2017	Sellaphora pupula	1	0.13	
MCWC-MWB	9/19/2016	1/5/2017	Staurosira construens var pumila	12	1.5	
MCWC-MWB	9/19/2016	1/5/2017	Staurosira construens var. binodus	13	1.63	
MCWC-MWB	9/19/2016	1/5/2017	Staurosirella leptostauron	6	0.75	0.13
MCWC-MWB	9/19/2016	1/5/2017	Staurosirella leptostauron var. dubia	4	0.5	
MCWC-MWB	9/19/2016	1/5/2017	Staurosirella rhomboides	14	1.75	
MCWC-MWB	9/19/2016	1/5/2017	Stephanocyclus meneghiniana	6	0.75	
MCWC-MWB	9/19/2016	1/5/2017	Surirella angusta	3	0.38	
MCWC-MWB	9/19/2016	1/5/2017	Surirella minuta	11	1.38	
MCWC-MWB	9/19/2016	1/5/2017	Ulnaria ulna	10	1.25	
MWB-SBC	9/19/2016	1/23/2017	Achnanthidium exiguum	2	0.25	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
MWB-SBC	9/19/2016	1/23/2017	Achnanthidium minutissimum	16	2	
MWB-SBC	9/19/2016	1/23/2017	Cocconeis pediculus	154	19.25	0.25
MWB-SBC	9/19/2016	1/23/2017	Cocconeis placentula	130	16.25	1.5
MWB-SBC	9/19/2016	1/23/2017	Cymbella affinis	27	3.38	
MWB-SBC	9/19/2016	1/23/2017	Cymbella compacta	1	0.13	
MWB-SBC	9/19/2016	1/23/2017	Diatoma vulgaris	55	6.88	
MWB-SBC	9/19/2016	1/23/2017	Encyonema minutum	3	0.38	
MWB-SBC	9/19/2016	1/23/2017	Eolimna minima	2	0.25	
MWB-SBC	9/19/2016	1/23/2017	Epithemia sorex	27	3.38	
MWB-SBC	9/19/2016	1/23/2017	Gomphoneis eriense	3	0.38	
MWB-SBC	9/19/2016	1/23/2017	Gomphoneis minuta	1	0.13	
MWB-SBC	9/19/2016	1/23/2017	Gomphonema micropumilum	2	0.25	
MWB-SBC	9/19/2016	1/23/2017	Gomphonema parvulum	3	0.38	
MWB-SBC	9/19/2016	1/23/2017	Gomphonema parvulum var. exilissimum	14	1.75	
MWB-SBC	9/19/2016	1/23/2017	Gomphonema pumilum	2	0.25	
MWB-SBC	9/19/2016	1/23/2017	Gomphonema subclavatum	1	0.13	
MWB-SBC	9/19/2016	1/23/2017	Gomphonema truncatum	5	0.63	
MWB-SBC	9/19/2016	1/23/2017	Mayamaea atomus	4	0.5	
MWB-SBC	9/19/2016	1/23/2017	Melosira varians	21	2.63	
MWB-SBC	9/19/2016	1/23/2017	Navicula capitatoradiata	30	3.75	
MWB-SBC	9/19/2016	1/23/2017	Navicula caterva	5	0.63	
MWB-SBC	9/19/2016	1/23/2017	Navicula cryptocephala	5	0.63	
MWB-SBC	9/19/2016	1/23/2017	Navicula cryptotenella	25	3.13	
MWB-SBC	9/19/2016	1/23/2017	Navicula leistikowii	2	0.25	
MWB-SBC	9/19/2016	1/23/2017	Navicula reichardtiana	14	1.75	
MWB-SBC	9/19/2016	1/23/2017	Navicula tripunctata	7	0.88	
MWB-SBC	9/19/2016	1/23/2017	Nitzschia agnita	2	0.25	
MWB-SBC	9/19/2016	1/23/2017	Nitzschia archibaldii	18	2.25	
MWB-SBC	9/19/2016	1/23/2017	Nitzschia dissipata	20	2.5	
MWB-SBC	9/19/2016	1/23/2017	Nitzschia fonticola	64	8	
MWB-SBC	9/19/2016	1/23/2017	Nitzschia inconspicua	3	0.38	
MWB-SBC	9/19/2016	1/23/2017	Nitzschia linearis	4	0.5	
MWB-SBC	9/19/2016	1/23/2017	Nitzschia palea	4	0.5	
MWB-SBC	9/19/2016	1/23/2017	Nitzschia palea var. tenuirostris	11	1.38	
MWB-SBC	9/19/2016	1/23/2017	Nitzschia paleacea	13	1.63	
MWB-SBC	9/19/2016	1/23/2017	Nitzschia pumila	6	0.75	
MWB-SBC	9/19/2016	1/23/2017	Nitzschia pusilla	5	0.63	
Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
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MWB-SBC	9/19/2016	1/23/2017	Planothidium frequentissimum	2	0.25	
MWB-SBC	9/19/2016	1/23/2017	Pseudostaurosira brevistriata	6	0.75	
MWB-SBC	9/19/2016	1/23/2017	Rhoicosphenia abbreviata	3	0.38	
MWB-SBC	9/19/2016	1/23/2017	Staurosira construens var pumila	17	2.13	
MWB-SBC	9/19/2016	1/23/2017	Staurosira construens var. binodus	12	1.5	0.25
MWB-SBC	9/19/2016	1/23/2017	Staurosirella leptostauron	7	0.88	
MWB-SBC	9/19/2016	1/23/2017	Staurosirella leptostauron var. dubia	2	0.25	
MWB-SBC	9/19/2016	1/23/2017	Stephanocyclus meneghiniana	16	2	
MWB-SBC	9/19/2016	1/23/2017	Ulnaria acus	1	0.13	
MWB-SBC	9/19/2016	1/23/2017	Ulnaria contracta	6	0.75	
MWB-SBC	9/19/2016	1/23/2017	Ulnaria oxyrhynchus	1	0.13	
MWB-SBC	9/19/2016	1/23/2017	Ulnaria ulna	16	2	
SS-25	9/19/2016	1/23/2017	Achnanthidium minutissimum	3	0.38	
SS-25	9/19/2016	1/23/2017	Cocconeis pediculus	72	9	0.25
SS-25	9/19/2016	1/23/2017	Cocconeis placentula	101	12.63	1.13
SS-25	9/19/2016	1/23/2017	Diatoma moniliformis	1	0.13	
SS-25	9/19/2016	1/23/2017	Diatoma vulgaris	42	5.25	
SS-25	9/19/2016	1/23/2017	Encyonema minutum	1	0.13	
SS-25	9/19/2016	1/23/2017	Epithemia adnata	1	0.13	
SS-25	9/19/2016	1/23/2017	Epithemia sorex	9	1.13	
SS-25	9/19/2016	1/23/2017	Fragilaria capucina	21	2.63	
SS-25	9/19/2016	1/23/2017	Fragilaria capucina var. mesolepta	8	1	
SS-25	9/19/2016	1/23/2017	Fragilaria vaucheriae	26	3.25	
SS-25	9/19/2016	1/23/2017	Geissleria decussis	2	0.25	
SS-25	9/19/2016	1/23/2017	Gomphoneis eriense	3	0.38	
SS-25	9/19/2016	1/23/2017	Gomphoneis minuta	80	10	
SS-25	9/19/2016	1/23/2017	Gomphonema angustatum	2	0.25	
SS-25	9/19/2016	1/23/2017	Gomphonema minusculum	2	0.25	
SS-25	9/19/2016	1/23/2017	Gomphonema minutum	12	1.5	
SS-25	9/19/2016	1/23/2017	Gomphonema parvulum var. exilissimum	8	1	
SS-25	9/19/2016	1/23/2017	Gomphonema subclavatum	49	6.13	
SS-25	9/19/2016	1/23/2017	Gomphonema truncatum	18	2.25	
SS-25	9/19/2016	1/23/2017	Halamphora veneta	3	0.38	
SS-25	9/19/2016	1/23/2017	Navicula antonii	1	0.13	
SS-25	9/19/2016	1/23/2017	Navicula capitatoradiata	28	3.5	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
SS-25	9/19/2016	1/23/2017	Navicula caterva	2	0.25	
SS-25	9/19/2016	1/23/2017	Navicula cryptotenella	9	1.13	
SS-25	9/19/2016	1/23/2017	Encyonema minutum	1	0.13	
SS-25	9/19/2016	1/23/2017	Epithemia adnata	1	0.13	
SS-25	9/19/2016	1/23/2017	Epithemia sorex	9	1.13	
SS-25	9/19/2016	1/23/2017	Fragilaria capucina	21	2.63	
SS-25	9/19/2016	1/23/2017	Fragilaria capucina var. mesolepta	8	1	
SS-25	9/19/2016	1/23/2017	Navicula gregaria	2	0.25	
SS-25	9/19/2016	1/23/2017	Navicula reichardtiana	2	0.25	
SS-25	9/19/2016	1/23/2017	Navicula tripunctata	1	0.13	
SS-25	9/19/2016	1/23/2017	Nitzschia alpina	5	0.63	
SS-25	9/19/2016	1/23/2017	Nitzschia amphibia	23	2.88	
SS-25	9/19/2016	1/23/2017	Nitzschia archibaldii	8	1	
SS-25	9/19/2016	1/23/2017	Nitzschia dissipata	4	0.5	
SS-25	9/19/2016	1/23/2017	Nitzschia fonticola	46	5.75	
SS-25	9/19/2016	1/23/2017	Nitzschia incognita	6	0.75	
SS-25	9/19/2016	1/23/2017	Nitzschia palea	1	0.13	
SS-25	9/19/2016	1/23/2017	Nitzschia palea var. tenuirostris	1	0.13	
SS-25	9/19/2016	1/23/2017	Nitzschia paleacea	30	3.75	
SS-25	9/19/2016	1/23/2017	Planothidium dubium	1	0.13	
SS-25	9/19/2016	1/23/2017	Rhoicosphenia abbreviata	8	1	
SS-25	9/19/2016	1/23/2017	Sellaphora pupula	1	0.13	
SS-25	9/19/2016	1/23/2017	Staurosira construens var pumila	4	0.5	
SS-25	9/19/2016	1/23/2017	Staurosirella leptostauron var. dubia	2	0.25	
SS-25	9/19/2016	1/23/2017	Stephanocyclus meneghiniana	12	1.5	
SS-25	9/19/2016	1/23/2017	Stephanodiscus hantzschii	1	0.13	
SS-25	9/19/2016	1/23/2017	Ulnaria acus	60	7.5	0.13
SS-25	9/19/2016	1/23/2017	Ulnaria contracta	41	5.13	0.38
SS-25	9/19/2016	1/23/2017	Ulnaria oxyrhynchus	1	0.13	
SS-25	9/19/2016	1/23/2017	Ulnaria spathulifera	1	0.13	
SS-25	9/19/2016	1/23/2017	Ulnaria ulna	35	4.38	0.5
WSC-SBC	9/19/2016	1/24/2016	Achnanthidium minutissimum	72	9	
WSC-SBC	9/19/2016	1/24/2016	Achnanthidium pyrenaicum	2	0.25	
WSC-SBC	9/19/2016	1/24/2016	Adlafia minuscula	4	0.5	
WSC-SBC	9/19/2016	1/24/2016	Adlafia suchlandtii	1	0.13	
WSC-SBC	9/19/2016	1/24/2016	Amphipleura pellucida	6	0.75	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
WSC-SBC	9/19/2016	1/24/2016	Amphora pediculus	4	0.5	
WSC-SBC	9/19/2016	1/24/2016	Aulacoseira alpigena	3	0.38	
WSC-SBC	9/19/2016	1/24/2016	Cocconeis pediculus	7	0.88	
WSC-SBC	9/19/2016	1/24/2016	Cocconeis placentula	13	1.63	
WSC-SBC	9/19/2016	1/24/2016	Cymbella affinis	54	6.75	
WSC-SBC	9/19/2016	1/24/2016	Cymbella compacta	9	1.13	
WSC-SBC	9/19/2016	1/24/2016	Diatoma moniliformis	8	1	0.13
WSC-SBC	9/19/2016	1/24/2016	Diatoma vulgaris	98	12.25	1.53
WSC-SBC	9/19/2016	1/24/2016	Encyonema minutum	18	2.25	
WSC-SBC	9/19/2016	1/24/2016	Encyonema reichardtii	5	0.63	
WSC-SBC	9/19/2016	1/24/2016	Encyonema silesiacum	9	1.13	
WSC-SBC	9/19/2016	1/24/2016	Encyonema ventricosum	11	1.38	
WSC-SBC	9/19/2016	1/24/2016	Fragilaria capucina var. gracilis	12	1.5	
WSC-SBC	9/19/2016	1/24/2016	Fragilaria vaucheriae	6	0.75	
WSC-SBC	9/19/2016	1/24/2016	Geissleria acceptata	2	0.25	
WSC-SBC	9/19/2016	1/24/2016	Geissleria decussis	2	0.25	
WSC-SBC	9/19/2016	1/24/2016	Gomphoneis eriense	3	0.38	
WSC-SBC	9/19/2016	1/24/2016	Gomphoneis minuta	6	0.75	
WSC-SBC	9/19/2016	1/24/2016	Gomphoneis olivaceum	5	0.63	
WSC-SBC	9/19/2016	1/24/2016	Gomphonema micropus	1	0.13	
WSC-SBC	9/19/2016	1/24/2016	Gomphonema parvulum var. exilissimum	2	0.25	
WSC-SBC	9/19/2016	1/24/2016	Melosira varians	66	8.25	
WSC-SBC	9/19/2016	1/24/2016	Navicula antonii	1	0.13	
WSC-SBC	9/19/2016	1/24/2016	Navicula caterva	2	0.25	
WSC-SBC	9/19/2016	1/24/2016	Navicula cryptotenella	27	3.38	
WSC-SBC	9/19/2016	1/24/2016	Navicula gregaria	2	0.25	
WSC-SBC	9/19/2016	1/24/2016	Navicula reichardtiana	22	2.75	
WSC-SBC	9/19/2016	1/24/2016	Navicula tripunctata	27	3.38	
WSC-SBC	9/19/2016	1/24/2016	Nitzschia agnita	2	0.25	
WSC-SBC	9/19/2016	1/24/2016	Nitzschia archibaldii	5	0.63	
WSC-SBC	9/19/2016	1/24/2016	Nitzschia dissipata	47	5.88	
WSC-SBC	9/19/2016	1/24/2016	Nitzschia fonticola	101	12.63	
WSC-SBC	9/19/2016	1/24/2016	Nitzschia linearis	5	0.63	
WSC-SBC	9/19/2016	1/24/2016	Nitzschia palea var. tenuirostris	2	0.25	
WSC-SBC	9/19/2016	1/24/2016	Nitzschia paleacea	2	0.25	
WSC-SBC	9/19/2016	1/24/2016	Nitzschia pura	9	1.13	
WSC-SBC	9/19/2016	1/24/2016	Nitzschia recta	4	0.5	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
WSC-SBC	9/19/2016	1/24/2016	Nitzschia sociabilis	13	1.63	
WSC-SBC	9/19/2016	1/24/2016	Staurosira construens	2	0.25	
WSC-SBC	9/19/2016	1/24/2016	Staurosira construens var pumila	5	0.63	
WSC-SBC	9/19/2016	1/24/2016	Staurosira construens var. venter	29	3.63	
WSC-SBC	9/19/2016	1/24/2016	Staurosirella leptostauron	19	2.38	
WSC-SBC	9/19/2016	1/24/2016	Staurosirella leptostauron var. dubia	4	0.5	
WSC-SBC	9/19/2016	1/24/2016	Staurosirella pinnata	10	1.25	
WSC-SBC	9/19/2016	1/24/2016	Stephanocyclus meneghiniana	1	0.13	
WSC-SBC	9/19/2016	1/24/2016	Ulnaria contracta	11	1.38	
WSC-SBC	9/19/2016	1/24/2016	Ulnaria oxyrhynchus	1	0.13	
WSC-SBC	9/19/2016	1/24/2016	Ulnaria ulna	18	2.25	
LC-7.5	9/19/2016	1/25/2017	Achnanthidium minutissimum	78	9.75	
LC-7.5	9/19/2016	1/25/2017	Amphora pediculus	6	0.75	
LC-7.5	9/19/2016	1/25/2017	Cocconeis pediculus	6	0.75	
LC-7.5	9/19/2016	1/25/2017	Cocconeis placentula	6	0.75	
LC-7.5	9/19/2016	1/25/2017	Craticula buderi	1	0.13	
LC-7.5	9/19/2016	1/25/2017	Cyclotella distinguenda	1	0.13	
LC-7.5	9/19/2016	1/25/2017	Diatoma moniliformis	100	12.5	1.75
LC-7.5	9/19/2016	1/25/2017	Diatoma tenuis	29	3.63	
LC-7.5	9/19/2016	1/25/2017	Diatoma vulgaris	257	32.13	0.38
LC-7.5	9/19/2016	1/25/2017	Encyonema minutum	2	0.25	
LC-7.5	9/19/2016	1/25/2017	Encyonopsis minuta	21	2.63	
LC-7.5	9/19/2016	1/25/2017	Encyonopsis subminuta	6	0.75	
LC-7.5	9/19/2016	1/25/2017	Fragilaria capucina	43	5.38	
LC-7.5	9/19/2016	1/25/2017	Fragilaria capucina var. gracilis	19	2.38	
LC-7.5	9/19/2016	1/25/2017	Fragilaria capucina var. rumpens	12	1.5	
LC-7.5	9/19/2016	1/25/2017	Fragilaria crotonensis	10	1.25	
LC-7.5	9/19/2016	1/25/2017	Fragilaria delicatissima	5	0.63	
LC-7.5	9/19/2016	1/25/2017	Fragilaria nanana	11	1.38	
LC-7.5	9/19/2016	1/25/2017	Gomphoneis olivaceum	11	1.38	
LC-7.5	9/19/2016	1/25/2017	Gomphonema minutum	20	2.5	
LC-7.5	9/19/2016	1/25/2017	Gomphonema parvulum var. exilissimum	2	0.25	
LC-7.5	9/19/2016	1/25/2017	Gomphonema truncatum	2	0.25	
LC-7.5	9/19/2016	1/25/2017	Melosira varians	2	0.25	
LC-7.5	9/19/2016	1/25/2017	Navicula capitatoradiata	2	0.25	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
LC-7.5	9/19/2016	1/25/2017	Navicula cryptotenella	2	0.25	
LC-7.5	9/19/2016	1/25/2017	Navicula cryptotenelloides	2	0.25	
LC-7.5	9/19/2016	1/25/2017	Navicula lanceolata	2	0.25	
LC-7.5	9/19/2016	1/25/2017	Navicula reichardtiana	3	0.38	
LC-7.5	9/19/2016	1/25/2017	Navicula tripunctata	1	0.13	
LC-7.5	9/19/2016	1/25/2017	Navicula veneta	6	0.75	
LC-7.5	9/19/2016	1/25/2017	Nitzschia amphibia	4	0.5	
LC-7.5	9/19/2016	1/25/2017	Nitzschia archibaldii	3	0.38	
LC-7.5	9/19/2016	1/25/2017	Nitzschia dissipata	5	0.63	
LC-7.5	9/19/2016	1/25/2017	Nitzschia fonticola	2	0.25	
LC-7.5	9/19/2016	1/25/2017	Nitzschia graciliformis	2	0.25	
LC-7.5	9/19/2016	1/25/2017	Nitzschia inconspicua	2	0.25	
LC-7.5	9/19/2016	1/25/2017	Nitzschia lacuum	2	0.25	
LC-7.5	9/19/2016	1/25/2017	Nitzschia palea	3	0.38	
LC-7.5	9/19/2016	1/25/2017	Nitzschia paleacea	2	0.25	
LC-7.5	9/19/2016	1/25/2017	Nitzschia perminuta	2	0.25	
LC-7.5	9/19/2016	1/25/2017	Rhoicosphenia abbreviata	11	1.38	
LC-7.5	9/19/2016	1/25/2017	Staurosira construens var pumila	39	4.88	
LC-7.5	9/19/2016	1/25/2017	Staurosira construens var. venter	8	1	
LC-7.5	9/19/2016	1/25/2017	Ulnaria contracta	8	1	
LC-7.5	9/19/2016	1/25/2017	Ulnaria spathulifera	6	0.75	
LC-7.5	9/19/2016	1/25/2017	Ulnaria ulna	33	4.13	
RTC-1.5	9/19/2016	1/25/2017	Achnanthidium minutissimum	78	9.75	
RTC-1.5	9/19/2016	1/25/2017	Amphora pediculus	6	0.75	
RTC-1.5	9/19/2016	1/25/2017	Cocconeis pediculus	6	0.75	
RTC-1.5	9/19/2016	1/25/2017	Cocconeis placentula	6	0.75	
RTC-1.5	9/19/2016	1/25/2017	Craticula buderi	1	0.13	
RTC-1.5	9/19/2016	1/25/2017	Cyclotella distinguenda	1	0.13	
RTC-1.5	9/19/2016	1/25/2017	Diatoma moniliformis	100	12.5	1.75
RTC-1.5	9/19/2016	1/25/2017	Diatoma tenuis	29	3.63	
RTC-1.5	9/19/2016	1/25/2017	Diatoma vulgaris	257	32.13	0.38
RTC-1.5	9/19/2016	1/25/2017	Encyonema minutum	2	0.25	
RTC-1.5	9/19/2016	1/25/2017	Encyonopsis minuta	21	2.63	
RTC-1.5	9/19/2016	1/25/2017	Encyonopsis subminuta	6	0.75	
RTC-1.5	9/19/2016	1/25/2017	Fragilaria capucina	43	5.38	
RTC-1.5	9/19/2016	1/25/2017	Fragilaria capucina var. gracilis	19	2.38	
RTC-1.5	9/19/2016	1/25/2017	Fragilaria capucina var.	12	1.5	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
			rumpens			
RTC-1.5	9/19/2016	1/25/2017	Fragilaria crotonensis	10	1.25	
RTC-1.5	9/19/2016	1/25/2017	Fragilaria delicatissima	5	0.63	
RTC-1.5	9/19/2016	1/25/2017	Fragilaria nanana	11	1.38	
RTC-1.5	9/19/2016	1/25/2017	Gomphoneis olivaceum	11	1.38	
RTC-1.5	9/19/2016	1/25/2017	Gomphonema minutum	20	2.5	
RTC-1.5	9/19/2016	1/25/2017	Gomphonema parvulum var. exilissimum	2	0.25	
RTC-1.5	9/19/2016	1/25/2017	Gomphonema truncatum	2	0.25	
RTC-1.5	9/19/2016	1/25/2017	Melosira varians	2	0.25	
RTC-1.5	9/19/2016	1/25/2017	Navicula capitatoradiata	2	0.25	
RTC-1.5	9/19/2016	1/25/2017	Navicula cryptotenella	2	0.25	
RTC-1.5	9/19/2016	1/25/2017	Navicula cryptotenelloides	2	0.25	
RTC-1.5	9/19/2016	1/25/2017	Navicula lanceolata	2	0.25	
RTC-1.5	9/19/2016	1/25/2017	Navicula reichardtiana	3	0.38	
RTC-1.5	9/19/2016	1/25/2017	Navicula tripunctata	1	0.13	
RTC-1.5	9/19/2016	1/25/2017	Navicula veneta	6	0.75	
RTC-1.5	9/19/2016	1/25/2017	Nitzschia amphibia	4	0.5	
RTC-1.5	9/19/2016	1/25/2017	Nitzschia archibaldii	3	0.38	
RTC-1.5	9/19/2016	1/25/2017	Nitzschia dissipata	5	0.63	
RTC-1.5	9/19/2016	1/25/2017	Nitzschia fonticola	2	0.25	
RTC-1.5	9/19/2016	1/25/2017	Nitzschia graciliformis	2	0.25	
RTC-1.5	9/19/2016	1/25/2017	Nitzschia inconspicua	2	0.25	
RTC-1.5	9/19/2016	1/25/2017	Nitzschia lacuum	2	0.25	
RTC-1.5	9/19/2016	1/25/2017	Nitzschia palea	3	0.38	
RTC-1.5	9/19/2016	1/25/2017	Nitzschia paleacea	2	0.25	
RTC-1.5	9/19/2016	1/25/2017	Nitzschia perminuta	2	0.25	
RTC-1.5	9/19/2016	1/25/2017	Rhoicosphenia abbreviata	11	1.38	
RTC-1.5	9/19/2016	1/25/2017	Staurosira construens var pumila	39	4.88	
RTC-1.5	9/19/2016	1/25/2017	Staurosira construens var. venter	8	1	
RTC-1.5	9/19/2016	1/25/2017	Ulnaria contracta	8	1	
RTC-1.5	9/19/2016	1/25/2017	Ulnaria spathulifera	6	0.75	
RTC-1.5	9/19/2016	1/25/2017	Ulnaria ulna	33	4.13	
LBR-CFR-02	9/10/2015	2/3/2016	Achnanthidium minutissimum	8	1	
LBR-CFR-02	9/10/2015	2/3/2016	Adlafia minuscula	2	0.25	
LBR-CFR-02	9/10/2015	2/3/2016	Amphora pediculus	2	0.25	
LBR-CFR-02	9/10/2015	2/3/2016	Aulacoseira italica	2	0.25	
LBR-CFR-02	9/10/2015	2/3/2016	Cocconeis pediculus	17	2.13	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
LBR-CFR-02	9/10/2015	2/3/2016	Cocconeis placentula	136	17	0.25
LBR-CFR-02	9/10/2015	2/3/2016	Diatoma moniliformis	12	1.5	
LBR-CFR-02	9/10/2015	2/3/2016	Diatoma vulgaris	3	0.38	
LBR-CFR-02	9/10/2015	2/3/2016	Ellerbeckia arenaria	29	3.63	
LBR-CFR-02	9/10/2015	2/3/2016	Encyonema leibleinii	2	0.25	
LBR-CFR-02	9/10/2015	2/3/2016	Encyonema minutum	2	0.25	
LBR-CFR-02	9/10/2015	2/3/2016	Encyonema silesiacum	8	1	
LBR-CFR-02	9/10/2015	2/3/2016	Encyonema ventricosum	2	0.25	
LBR-CFR-02	9/10/2015	2/3/2016	Eolimna minima	9	1.13	
LBR-CFR-02	9/10/2015	2/3/2016	Epithemia adnata	10	1.25	
LBR-CFR-02	9/10/2015	2/3/2016	Epithemia sorex	126	15.75	
LBR-CFR-02	9/10/2015	2/3/2016	Epithemia turgida	7	0.88	
LBR-CFR-02	9/10/2015	2/3/2016	Fragilaria capucina	18	2.25	0.5
LBR-CFR-02	9/10/2015	2/3/2016	Fragilaria capucina var. gracilis	16	2	
LBR-CFR-02	9/10/2015	2/3/2016	Fragilaria capucina var. mesolepta	2	0.25	
LBR-CFR-02	9/10/2015	2/3/2016	Fragilaria capucina var. rumpens	24	3	
LBR-CFR-02	9/10/2015	2/3/2016	Fragilaria vaucheriae	6	0.75	
LBR-CFR-02	9/10/2015	2/3/2016	Geissleria acceptata	2	0.25	
LBR-CFR-02	9/10/2015	2/3/2016	Gomphoneis eriense	5	0.63	
LBR-CFR-02	9/10/2015	2/3/2016	Gomphonema mexicanum	2	0.25	
LBR-CFR-02	9/10/2015	2/3/2016	Gomphonema minutum	8	1	
LBR-CFR-02	9/10/2015	2/3/2016	Gomphonema truncatum	6	0.75	
LBR-CFR-02	9/10/2015	2/3/2016	Hippodonta capitata	2	0.25	
LBR-CFR-02	9/10/2015	2/3/2016	Melosira varians	2	0.25	
LBR-CFR-02	9/10/2015	2/3/2016	Navicula antonii	3	0.38	
LBR-CFR-02	9/10/2015	2/3/2016	Navicula capitatoradiata	24	3	
LBR-CFR-02	9/10/2015	2/3/2016	Navicula cryptotenella	17	2.13	
LBR-CFR-02	9/10/2015	2/3/2016	Navicula reichardtiana	19	2.38	
LBR-CFR-02	9/10/2015	2/3/2016	Navicula tripunctata	15	1.88	
LBR-CFR-02	9/10/2015	2/3/2016	Nitzschia acicularis	2	0.25	
LBR-CFR-02	9/10/2015	2/3/2016	Nitzschia archibaldii	33	4.13	
LBR-CFR-02	9/10/2015	2/3/2016	Nitzschia dissipata	15	1.88	
LBR-CFR-02	9/10/2015	2/3/2016	Nitzschia fonticola	10	1.25	
LBR-CFR-02	9/10/2015	2/3/2016	Nitzschia hantzschiana	21	2.63	
LBR-CFR-02	9/10/2015	2/3/2016	Nitzschia innominata	4	0.5	
LBR-CFR-02	9/10/2015	2/3/2016	Nitzschia lacuum	8	1	
LBR-CFR-02	9/10/2015	2/3/2016	Nitzschia palea var. tenuirostris	12	1.5	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
LBR-CFR-02	9/10/2015	2/3/2016	Nitzschia paleacea	6	0.75	
LBR-CFR-02	9/10/2015	2/3/2016	Nitzschia perminuta	6	0.75	
LBR-CFR-02	9/10/2015	2/3/2016	Nitzschia pusilla	6	0.75	
LBR-CFR-02	9/10/2015	2/3/2016	Planothidium dubium	1	0.13	
LBR-CFR-02	9/10/2015	2/3/2016	Planothidium frequentissimum	7	0.88	
LBR-CFR-02	9/10/2015	2/3/2016	Reimeria sinuata	4	0.5	
LBR-CFR-02	9/10/2015	2/3/2016	Rhoicosphenia abbreviata	2	0.25	
LBR-CFR-02	9/10/2015	2/3/2016	Rhopalodia gibba	2	0.25	
LBR-CFR-02	9/10/2015	2/3/2016	Staurosira construens var pumila	42	5.25	
LBR-CFR-02	9/10/2015	2/3/2016	Staurosira construens var. binodus	4	0.5	
LBR-CFR-02	9/10/2015	2/3/2016	Staurosira construens var. venter	4	0.5	
LBR-CFR-02	9/10/2015	2/3/2016	Staurosirella leptostauron	1	0.13	
LBR-CFR-02	9/10/2015	2/3/2016	Staurosirella leptostauron var. dubia	4	0.5	
LBR-CFR-02	9/10/2015	2/3/2016	Staurosirella pinnata	30	3.75	
LBR-CFR-02	9/10/2015	2/3/2016	Stephanocyclus meneghiniana	16	2	
LBR-CFR-02	9/10/2015	2/3/2016	Ulnaria acus	7	0.88	
LBR-CFR-02	9/10/2015	2/3/2016	Ulnaria contracta	1	0.13	
LBR-CFR-02	9/10/2015	2/3/2016	Ulnaria ulna	4	0.5	
CFR-03A	9/19/2016	1/25/2017	Achnanthidium minutissimum	14	1.75	
CFR-03A	9/19/2016	1/25/2017	Adlafia suchlandtii	2	0.25	
CFR-03A	9/19/2016	1/25/2017	Amphora copulata	1	0.13	
CFR-03A	9/19/2016	1/25/2017	Amphora ovalis	4	0.5	
CFR-03A	9/19/2016	1/25/2017	Amphora pediculus	16	2	
CFR-03A	9/19/2016	1/25/2017	Cocconeis pediculus	29	3.63	
CFR-03A	9/19/2016	1/25/2017	Cocconeis placentula	117	14.63	1.83
CFR-03A	9/19/2016	1/25/2017	Diatoma moniliformis	27	3.38	0.42
CFR-03A	9/19/2016	1/25/2017	Diatoma vulgaris	12	1.5	
CFR-03A	9/19/2016	1/25/2017	Encyonema leibleinii	1	0.13	
CFR-03A	9/19/2016	1/25/2017	Encyonema reichardtii	2	0.25	
CFR-03A	9/19/2016	1/25/2017	Eolimna minima	6	0.75	
CFR-03A	9/19/2016	1/25/2017	Epithemia sorex	199	24.88	
CFR-03A	9/19/2016	1/25/2017	Fragilaria vaucheriae	1	0.13	
CFR-03A	9/19/2016	1/25/2017	Gomphoneis olivaceum	4	0.5	
CFR-03A	9/19/2016	1/25/2017	Gomphonema minutum	1	0.13	
CFR-03A	9/19/2016	1/25/2017	Gomphonema parvulum var. exilissimum	1	0.13	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
CFR-03A	9/19/2016	1/25/2017	Gomphonema pumilum	2	0.25	
CFR-03A	9/19/2016	1/25/2017	Gyrosigma acuminatum	1	0.13	
CFR-03A	9/19/2016	1/25/2017	Mayamaea atomus	3	0.38	
CFR-03A	9/19/2016	1/25/2017	Navicula antonii	2	0.25	
CFR-03A	9/19/2016	1/25/2017	Navicula capitatoradiata	7	0.88	
CFR-03A	9/19/2016	1/25/2017	Navicula caterva	1	0.13	
CFR-03A	9/19/2016	1/25/2017	Navicula cryptotenella	37	4.63	
CFR-03A	9/19/2016	1/25/2017	Navicula cryptotenelloides	20	2.5	
CFR-03A	9/19/2016	1/25/2017	Navicula reichardtiana	5	0.63	
CFR-03A	9/19/2016	1/25/2017	Navicula tripunctata	9	1.13	
CFR-03A	9/19/2016	1/25/2017	Navicula veneta	1	0.13	
CFR-03A	9/19/2016	1/25/2017	Nitzschia acicularis	2	0.25	
CFR-03A	9/19/2016	1/25/2017	Nitzschia amphibia	4	0.5	
CFR-03A	9/19/2016	1/25/2017	Nitzschia archibaldii	17	2.13	
CFR-03A	9/19/2016	1/25/2017	Nitzschia bacillum	3	0.38	
CFR-03A	9/19/2016	1/25/2017	Nitzschia dissipata	9	1.13	
CFR-03A	9/19/2016	1/25/2017	Nitzschia fonticola	33	4.13	
CFR-03A	9/19/2016	1/25/2017	Nitzschia hantzschiana	13	1.63	
CFR-03A	9/19/2016	1/25/2017	Nitzschia inconspicua	18	2.25	
CFR-03A	9/19/2016	1/25/2017	Nitzschia lacuum	1	0.13	
CFR-03A	9/19/2016	1/25/2017	Nitzschia linearis	1	0.13	
CFR-03A	9/19/2016	1/25/2017	Nitzschia palea	2	0.25	
CFR-03A	9/19/2016	1/25/2017	Nitzschia paleacea	105	13.13	1.64
CFR-03A	9/19/2016	1/25/2017	Achnanthidium minutissimum	14	1.75	
CFR-03A	9/19/2016	1/25/2017	Nitzschia pumila	1	0.13	
CFR-03A	9/19/2016	1/25/2017	Nitzschia sociabilis	4	0.5	
CFR-03A	9/19/2016	1/25/2017	Nitzschia supralitorea	1	0.13	
CFR-03A	9/19/2016	1/25/2017	Planothidium frequentissimum	3	0.38	
CFR-03A	9/19/2016	1/25/2017	Reimeria sinuata	1	0.13	
CFR-03A	9/19/2016	1/25/2017	Rhoicosphenia abbreviata	4	0.5	
CFR-03A	9/19/2016	1/25/2017	Rhopalodia gibba	2	0.25	
CFR-03A	9/19/2016	1/25/2017	Sellaphora pupula	2	0.25	
CFR-03A	9/19/2016	1/25/2017	Staurosira construens var pumila	7	0.88	
CFR-03A	9/19/2016	1/25/2017	Staurosira construens var. venter	5	0.63	
CFR-03A	9/19/2016	1/25/2017	Staurosirella leptostauron var. dubia	1	0.13	
CFR-03A	9/19/2016	1/25/2017	Stephanocyclus meneghiniana	17	2.13	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
CFR-03A	9/19/2016	1/25/2017	Stephanodiscus hantzschii	2	0.25	
CFR-03A	9/19/2016	1/25/2017	Ulnaria acus	1	0.13	
CFR-03A	9/19/2016	1/25/2017	Ulnaria contracta	11	1.38	
CFR-03A	9/19/2016	1/25/2017	Ulnaria spathulifera	1	0.13	
CFR-03A	9/19/2016	1/25/2017	Ulnaria ulna	4	0.5	
CFR-07D	9/19/2016	1/27/2017	Achnanthidium minutissimum	17	2.13	
CFR-07D	9/19/2016	1/27/2017	Adlafia suchlandtii	2	0.25	
CFR-07D	9/19/2016	1/27/2017	Amphora pediculus	8	1	
CFR-07D	9/19/2016	1/27/2017	Cocconeis pediculus	33	4.13	
CFR-07D	9/19/2016	1/27/2017	Cocconeis placentula	51	6.38	0.38
CFR-07D	9/19/2016	1/27/2017	Cymbella affinis	21	2.63	
CFR-07D	9/19/2016	1/27/2017	Diatoma moniliformis	17	2.13	0.13
CFR-07D	9/19/2016	1/27/2017	Diatoma vulgaris	16	2	
CFR-07D	9/19/2016	1/27/2017	Encyonema minutum	2	0.25	
CFR-07D	9/19/2016	1/27/2017	Encyonopsis minuta	2	0.25	
CFR-07D	9/19/2016	1/27/2017	Eolimna minima	10	1.25	
CFR-07D	9/19/2016	1/27/2017	Epithemia sorex	215	26.88	
CFR-07D	9/19/2016	1/27/2017	Fragilaria capucina	14	1.75	
CFR-07D	9/19/2016	1/27/2017	Gomphoneis eriense	6	0.75	
CFR-07D	9/19/2016	1/27/2017	Gomphoneis minuta	1	0.13	
CFR-07D	9/19/2016	1/27/2017	Gomphoneis olivaceum	7	0.88	
CFR-07D	9/19/2016	1/27/2017	Gomphonema parvulum var. exilissimum	1	0.13	
CFR-07D	9/19/2016	1/27/2017	Gomphonema subclavatum	4	0.5	
CFR-07D	9/19/2016	1/27/2017	Gyrosigma acuminatum	1	0.13	
CFR-07D	9/19/2016	1/27/2017	Navicula capitatoradiata	5	0.63	
CFR-07D	9/19/2016	1/27/2017	Navicula cryptotenella	35	4.38	
CFR-07D	9/19/2016	1/27/2017	Navicula cryptotenelloides	17	2.13	
CFR-07D	9/19/2016	1/27/2017	Navicula reichardtiana	3	0.38	
CFR-07D	9/19/2016	1/27/2017	Navicula tripunctata	16	2	
CFR-07D	9/19/2016	1/27/2017	Nitzschia agnita	2	0.25	
CFR-07D	9/19/2016	1/27/2017	Nitzschia archibaldii	53	6.63	
CFR-07D	9/19/2016	1/27/2017	Nitzschia dissipata	28	3.5	
CFR-07D	9/19/2016	1/27/2017	Nitzschia fonticola	24	3	
CFR-07D	9/19/2016	1/27/2017	Nitzschia hantzschiana	5	0.63	
CFR-07D	9/19/2016	1/27/2017	Nitzschia incognita	8	1	
CFR-07D	9/19/2016	1/27/2017	Nitzschia inconspicua	6	0.75	
CFR-07D	9/19/2016	1/27/2017	Nitzschia lacuum	3	0.38	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
CFR-07D	9/19/2016	1/27/2017	Nitzschia linearis var. subtilis	2	0.25	
CFR-07D	9/19/2016	1/27/2017	Nitzschia palea	6	0.75	
CFR-07D	9/19/2016	1/27/2017	Nitzschia palea var. tenuirostris	7	0.88	
CFR-07D	9/19/2016	1/27/2017	Nitzschia paleacea	30	3.75	0.25
CFR-07D	9/19/2016	1/27/2017	Nitzschia perminuta	2	0.25	
CFR-07D	9/19/2016	1/27/2017	Nitzschia pusilla	4	0.5	
CFR-07D	9/19/2016	1/27/2017	Nitzschia sociabilis	10	1.25	
CFR-07D	9/19/2016	1/27/2017	Planothidium lanceolatum	2	0.25	
CFR-07D	9/19/2016	1/27/2017	Rhoicosphenia abbreviata	4	0.5	
CFR-07D	9/19/2016	1/27/2017	Sellaphora pupula	2	0.25	
CFR-07D	9/19/2016	1/27/2017	Simonsenia delognei	4	0.5	
CFR-07D	9/19/2016	1/27/2017	Staurosira construens var pumila	4	0.5	
CFR-07D	9/19/2016	1/27/2017	Stephanocyclus meneghiniana	8	1	
CFR-07D	9/19/2016	1/27/2017	Ulnaria acus	9	1.13	
CFR-07D	9/19/2016	1/27/2017	Ulnaria contracta	39	4.88	
CFR-07D	9/19/2016	1/27/2017	Ulnaria oxyrhynchus	8	1	
CFR-07D	9/19/2016	1/27/2017	Ulnaria spathulifera	2	0.25	
CFR-07D	9/19/2016	1/27/2017	Ulnaria ulna	24	3	
CFR-11F	9/19/2016	1/30/2017	Achnanthidium minutissimum	6	0.75	
CFR-11F	9/19/2016	1/30/2017	Adlafia minuscula	2	0.25	
CFR-11F	9/19/2016	1/30/2017	Amphora pediculus	12	1.5	
CFR-11F	9/19/2016	1/30/2017	Cocconeis pediculus	10	1.25	
CFR-11F	9/19/2016	1/30/2017	Cocconeis placentula	40	5	
CFR-11F	9/19/2016	1/30/2017	Cymbella affinis	2	0.25	
CFR-11F	9/19/2016	1/30/2017	Diatoma moniliformis	26	3.25	0.25
CFR-11F	9/19/2016	1/30/2017	Diatoma tenuis	1	0.13	
CFR-11F	9/19/2016	1/30/2017	Diatoma vulgaris	129	16.13	0.25
CFR-11F	9/19/2016	1/30/2017	Eolimna minima	6	0.75	
CFR-11F	9/19/2016	1/30/2017	Epithemia sorex	293	36.63	
CFR-11F	9/19/2016	1/30/2017	Fragilaria capucina	31	3.88	
CFR-11F	9/19/2016	1/30/2017	Fragilaria capucina var. mesolepta	3	0.38	
CFR-11F	9/19/2016	1/30/2017	Fragilaria tenera	2	0.25	
CFR-11F	9/19/2016	1/30/2017	Geissleria acceptata	1	0.13	
CFR-11F	9/19/2016	1/30/2017	Geissleria decussis	2	0.25	
CFR-11F	9/19/2016	1/30/2017	Gomphoneis eriense	6	0.75	
CFR-11F	9/19/2016	1/30/2017	Gomphoneis olivaceum	10	1.25	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
CFR-11F	9/19/2016	1/30/2017	Gomphonema subclavatum	2	0.25	
CFR-11F	9/19/2016	1/30/2017	Melosira varians	3	0.38	
CFR-11F	9/19/2016	1/30/2017	Navicula antonii	2	0.25	
CFR-11F	9/19/2016	1/30/2017	Navicula capitatoradiata	6	0.75	
CFR-11F	9/19/2016	1/30/2017	Navicula cryptotenella	26	3.25	
CFR-11F	9/19/2016	1/30/2017	Navicula cryptotenelloides	12	1.5	
CFR-11F	9/19/2016	1/30/2017	Navicula reichardtiana	4	0.5	
CFR-11F	9/19/2016	1/30/2017	Navicula tripunctata	6	0.75	
CFR-11F	9/19/2016	1/30/2017	Navicula veneta	1	0.13	
CFR-11F	9/19/2016	1/30/2017	Nitzschia agnita	2	0.25	
CFR-11F	9/19/2016	1/30/2017	Nitzschia archibaldii	26	3.25	
CFR-11F	9/19/2016	1/30/2017	Nitzschia dissipata	11	1.38	
CFR-11F	9/19/2016	1/30/2017	Nitzschia fonticola	15	1.88	
CFR-11F	9/19/2016	1/30/2017	Nitzschia hantzschiana	2	0.25	
CFR-11F	9/19/2016	1/30/2017	Nitzschia heufleriana	1	0.13	
CFR-11F	9/19/2016	1/30/2017	Nitzschia inconspicua	2	0.25	
CFR-11F	9/19/2016	1/30/2017	Nitzschia lacuum	2	0.25	
CFR-11F	9/19/2016	1/30/2017	Nitzschia linearis var. subtilis	1	0.13	
CFR-11F	9/19/2016	1/30/2017	Nitzschia palea	8	1	
CFR-11F	9/19/2016	1/30/2017	Nitzschia palea var. tenuirostris	4	0.5	
CFR-11F	9/19/2016	1/30/2017	Nitzschia paleacea	10	1.25	
CFR-11F	9/19/2016	1/30/2017	Nitzschia pusilla	1	0.13	
CFR-11F	9/19/2016	1/30/2017	Nitzschia sigmoidea	1	0.13	
CFR-11F	9/19/2016	1/30/2017	Nitzschia sociabilis	12	1.5	
CFR-11F	9/19/2016	1/30/2017	Nitzschia subtilioides	1	0.13	
CFR-11F	9/19/2016	1/30/2017	Planothidium frequentissimum	6	0.75	
CFR-11F	9/19/2016	1/30/2017	Planothidium lanceolatum	1	0.13	
CFR-11F	9/19/2016	1/30/2017	Rhoicosphenia abbreviata	4	0.5	
CFR-11F	9/19/2016	1/30/2017	Rhopalodia gibba	3	0.38	
CFR-11F	9/19/2016	1/30/2017	Staurosira construens var pumila	4	0.5	
CFR-11F	9/19/2016	1/30/2017	Staurosirella leptostauron var. dubia	1	0.13	
CFR-11F	9/19/2016	1/30/2017	Staurosirella pinnata	4	0.5	
CFR-11F	9/19/2016	1/30/2017	Stephanocyclus meneghiniana	6	0.75	
CFR-11F	9/19/2016	1/30/2017	Ulnaria contracta	2	0.25	
CFR-11F	9/19/2016	1/30/2017	Ulnaria spathulifera	22	2.75	
CFR-11F	9/19/2016	1/30/2017	Ulnaria ulna	4	0.5	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
CFR-27H	9/19/2016	1/30/2017	Achnanthidium minutissimum	324	40.5	
CFR-27H	9/19/2016	1/30/2017	Amphora pediculus	9	1.13	
CFR-27H	9/19/2016	1/30/2017	Caloneis bacillum	2	0.25	
CFR-27H	9/19/2016	1/30/2017	Cocconeis pediculus	3	0.38	
CFR-27H	9/19/2016	1/30/2017	Cocconeis placentula	12	1.5	
CFR-27H	9/19/2016	1/30/2017	Cymatopleura solea	2	0.25	
CFR-27H	9/19/2016	1/30/2017	Cymbella affinis	15	1.88	
CFR-27H	9/19/2016	1/30/2017	Cymbella compacta	5	0.63	
CFR-27H	9/19/2016	1/30/2017	Diatoma moniliformis	39	4.88	0.38
CFR-27H	9/19/2016	1/30/2017	Diatoma vulgaris	59	7.38	0.5
CFR-27H	9/19/2016	1/30/2017	Encyonema silesiacum	6	0.75	
CFR-27H	9/19/2016	1/30/2017	Encyonopsis minuta	13	1.63	
CFR-27H	9/19/2016	1/30/2017	Eolimna minima	4	0.5	
CFR-27H	9/19/2016	1/30/2017	Fragilaria capucina 5		0.63	
CFR-27H	9/19/2016	1/30/2017	Fragilaria capucina var. gracilis	3 0.38		
CFR-27H	9/19/2016	1/30/2017	Fragilaria capucina var. rumpens	11	1.38	
CFR-27H	9/19/2016	1/30/2017	Fragilariforma nitzschioides 4		0.5	
CFR-27H	9/19/2016	1/30/2017	Gomphoneis olivaceum 8		1	
CFR-27H	9/19/2016	1/30/2017	Gomphonema innocens	5	0.63	
CFR-27H	9/19/2016	1/30/2017	Gomphonema parvulum	2	0.25	
CFR-27H	9/19/2016	1/30/2017	Gomphonema parvulum var. exilissimum	2	0.25	
CFR-27H	9/19/2016	1/30/2017	Gomphonema subclavatum	3	0.38	
CFR-27H	9/19/2016	1/30/2017	Gomphonema truncatum	3	0.38	
CFR-27H	9/19/2016	1/30/2017	Navicula cryptotenella	7	0.88	
CFR-27H	9/19/2016	1/30/2017	Navicula cryptotenelloides	10	1.25	
CFR-27H	9/19/2016	1/30/2017	Navicula tripunctata	3	0.38	
CFR-27H	9/19/2016	1/30/2017	Navicula trivialis	2	0.25	
CFR-27H	9/19/2016	1/30/2017	Nitzschia dissipata	15	1.88	
CFR-27H	9/19/2016	1/30/2017	Nitzschia flexoides	1	0.13	
CFR-27H	9/19/2016	1/30/2017	Nitzschia intermedia	2	0.25	
CFR-27H	9/19/2016	1/30/2017	Nitzschia linearis	1	0.13	
CFR-27H	9/19/2016	1/30/2017	Nitzschia palea 16		2	
CFR-27H	9/19/2016	1/30/2017	Nitzschia palea var. tenuirostris 3 0.38		0.38	
CFR-27H	9/19/2016	1/30/2017	Nitzschia sociabilis	1	0.13	
CFR-27H	9/19/2016	1/30/2017	Pseudostaurosira brevistriata	4	0.5	
CFR-27H	9/19/2016	1/30/2017	Rhoicosphenia abbreviata	2	0.25	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
CFR-27H	9/19/2016	1/30/2017	Sellaphora pupula	2	0.25	
CFR-27H	9/19/2016	1/30/2017	Staurosira construens var pumila	5	0.63	
CFR-27H	9/19/2016	1/30/2017	Staurosira construens var. venter	2	0.25	
CFR-27H	9/19/2016	1/30/2017	Stephanocyclus meneghiniana	1	0.13	
CFR-27H	9/19/2016	1/30/2017	Ulnaria acus	4	0.5	
CFR-27H	9/19/2016	1/30/2017	Ulnaria contracta	173	21.63	0.38
CFR-27H	9/19/2016	1/30/2017	Ulnaria ulna	7	0.88	
CFR-34	9/20/2016	1/31/2017	Achnanthidium minutissimum	24	3	
CFR-34	9/20/2016	1/31/2017	Amphora pediculus	31	3.88	
CFR-34	9/20/2016	1/31/2017	Caloneis bacillum	10	1.25	
CFR-34	9/20/2016	1/31/2017	Cocconeis pediculus	83	10.38	
CFR-34	9/20/2016	1/31/2017	Cocconeis placentula	39	4.88	
CFR-34	9/20/2016	1/31/2017	Cymatopleura elliptica	2	0.25	
CFR-34	9/20/2016	1/31/2017	Cymbella affinis	4	0.5	
CFR-34	9/20/2016	1/31/2017	Cymbella compacta	6	0.75	
CFR-34	9/20/2016	1/31/2017	Diatoma moniliformis	5	0.63	0.13
CFR-34	9/20/2016	1/31/2017	Diatoma vulgaris	44	5.5	0.13
CFR-34	9/20/2016	1/31/2017	Encyonema ventricosum	6	0.75	
CFR-34	9/20/2016	1/31/2017	Encyonopsis minuta	6	0.75	
CFR-34	9/20/2016	1/31/2017	Eolimna minima	14	1.75	
CFR-34	9/20/2016	1/31/2017	Epithemia sorex	38	4.75	
CFR-34	9/20/2016	1/31/2017	Fragilaria capucina var. gracilis	2	0.25	
CFR-34	9/20/2016	1/31/2017	Fragilaria capucina var. rumpens	5	0.63	
CFR-34	9/20/2016	1/31/2017	Geissleria decussis	2	0.25	
CFR-34	9/20/2016	1/31/2017	Gomphoneis eriense	1	0.13	
CFR-34	9/20/2016	1/31/2017	Gomphoneis olivaceum	5	0.63	
CFR-34	9/20/2016	1/31/2017	Gomphonema innocens	8	1	
CFR-34	9/20/2016	1/31/2017	Gomphonema mexicanum	2	0.25	
CFR-34	9/20/2016	1/31/2017	Gomphonema parvulum	26	3.25	
CFR-34	9/20/2016	1/31/2017	Gomphonema parvulum var. exilissimum 2 0.25		0.25	
CFR-34	9/20/2016	1/31/2017	Gomphonema subclavatum	6	0.75	
CFR-34	9/20/2016	1/31/2017	Gomphonema truncatum	2	0.25	
CFR-34	9/20/2016	1/31/2017	Luticola mutica 2 0.25		0.25	
CFR-34	9/20/2016	1/31/2017	Navicula antonii	5	0.63	
CFR-34	9/20/2016	1/31/2017	Navicula cryptotenella	16	2	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
CFR-34	9/20/2016	1/31/2017	Navicula cryptotenelloides	11	1.38	
CFR-34	9/20/2016	1/31/2017	Navicula reichardtiana	2	0.25	
CFR-34	9/20/2016	1/31/2017	Navicula tripunctata	7	0.88	
CFR-34	9/20/2016	1/31/2017	Nitzschia archibaldii	22	2.75	
CFR-34	9/20/2016	1/31/2017	Nitzschia dissipata	21	2.63	
CFR-34	9/20/2016	1/31/2017	Nitzschia fonticola	14	1.75	
CFR-34	9/20/2016	1/31/2017	Nitzschia hantzschiana	2	0.25	
CFR-34	9/20/2016	1/31/2017	Nitzschia heufleriana	2	0.25	
CFR-34	9/20/2016	1/31/2017	Nitzschia inconspicua	5	0.63	
CFR-34	9/20/2016	1/31/2017	Nitzschia innominata	1	0.13	
CFR-34	9/20/2016	1/31/2017	Nitzschia linearis	1	0.13	
CFR-34	9/20/2016	1/31/2017	Nitzschia palea	3	0.38	
CFR-34	9/20/2016	1/31/2017	Nitzschia palea var. tenuirostris	2	0.25	
CFR-34	9/20/2016	1/31/2017	Nitzschia paleacea	14	1.75	
CFR-34	9/20/2016	1/31/2017	Nitzschia pusilla	a pusilla 7 0.88		
CFR-34	9/20/2016	1/31/2017	Nitzschia sociabilis	4 0.5		
CFR-34	9/20/2016	1/31/2017	Nitzschia sublinearis	Nitzschia sublinearis 2 0.		
CFR-34	9/20/2016	1/31/2017	Nitzschia subtilioides	1 0.13		
CFR-34	9/20/2016	1/31/2017	Planothidium frequentissimum	4	0.5	
CFR-34	9/20/2016	1/31/2017	Reimeria sinuata	3	0.38	
CFR-34	9/20/2016	1/31/2017	Rhoicosphenia abbreviata	14	1.75	
CFR-34	9/20/2016	1/31/2017	Sellaphora pupula	5	0.63	
CFR-34	9/20/2016	1/31/2017	Staurosira construens var pumila	2	0.25	
CFR-34	9/20/2016	1/31/2017	Staurosira construens var. venter	1	0.13	
CFR-34	9/20/2016	1/31/2017	Stephanocyclus meneghiniana	13	1.63	
CFR-34	9/20/2016	1/31/2017	Surirella minuta	2	0.25	
CFR-34	9/20/2016	1/31/2017	Ulnaria acus	9	1.13	
CFR-34	9/20/2016	1/31/2017	Ulnaria contracta	152	19	0.63
CFR-34	9/20/2016	1/31/2017	Ulnaria oxyrhynchus	18	2.25	0.25
CFR-34	9/20/2016	1/31/2017	Ulnaria ulna	60	7.5	0.25
CFR-116A	9/20/2016	2/1/2017	Achnanthidium exiguum 2 0.25		0.25	
CFR-116A	9/20/2016	2/1/2017	Achnanthidium minutissimum	anthidium 39 4.88		
CFR-116A	9/20/2016	2/1/2017	Amphora pediculus	1	1 0.13	
CFR-116A	9/20/2016	2/1/2017	Cocconeis pediculus	pediculus 13 1.63		
CFR-116A	9/20/2016	2/1/2017	Cocconeis placentula	14	1.75	
CFR-116A	9/20/2016	2/1/2017	Cymbella affinis	80	10	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
CFR-116A	9/20/2016	2/1/2017	Cymbella compacta	10	1.25	
CFR-116A	9/20/2016	2/1/2017	Diatoma moniliformis	237	29.63	1.38
CFR-116A	9/20/2016	2/1/2017	Diatoma vulgaris	43	5.38	0.13
CFR-116A	9/20/2016	2/1/2017	Encyonema cespitosum	4	0.5	
CFR-116A	9/20/2016	2/1/2017	Encyonema minutum	12	1.5	
CFR-116A	9/20/2016	2/1/2017	Encyonema reichardtii	2	0.25	
CFR-116A	9/20/2016	2/1/2017	Encyonema silesiacum	3	0.38	
CFR-116A	9/20/2016	2/1/2017	Encyonopsis subminuta	5	0.63	
CFR-116A	9/20/2016	2/1/2017	Epithemia sorex	27	3.38	
CFR-116A	9/20/2016	2/1/2017	Fragilaria capucina var. gracilis 2		0.25	
CFR-116A	9/20/2016	2/1/2017	Fragilaria vaucheriae	1	0.13	
CFR-116A	9/20/2016	2/1/2017	Gomphoneis eriense	3	0.38	
CFR-116A	9/20/2016	2/1/2017	Gomphoneis olivaceum	4	0.5	
CFR-116A	9/20/2016	2/1/2017	Gomphoneis pseudokunoi 3		0.38	
CFR-116A	9/20/2016	2/1/2017	Gomphonema gracile 1		0.13	
CFR-116A	9/20/2016	2/1/2017	Gomphonema micropumilum	1	0.13	
CFR-116A	9/20/2016	2/1/2017	Gomphonema minutum	nonema minutum 2		
CFR-116A	9/20/2016	2/1/2017	Gomphonema parvulum var. exilissimum	nema parvulum exilissimum 6		
CFR-116A	9/20/2016	2/1/2017	Gomphonema pumilum	2	0.25	
CFR-116A	9/20/2016	2/1/2017	Mayamaea atomus	2	0.25	
CFR-116A	9/20/2016	2/1/2017	Navicula antonii	8	1	
CFR-116A	9/20/2016	2/1/2017	Navicula capitatoradiata	17	2.13	
CFR-116A	9/20/2016	2/1/2017	Navicula cryptotenella	3	0.38	
CFR-116A	9/20/2016	2/1/2017	Navicula cryptotenelloides	3	0.38	
CFR-116A	9/20/2016	2/1/2017	Navicula radiosa	2	0.25	
CFR-116A	9/20/2016	2/1/2017	Navicula reichardtiana	14	1.75	
CFR-116A	9/20/2016	2/1/2017	Navicula tripunctata	1	0.13	
CFR-116A	9/20/2016	2/1/2017	Navicula wildii	2	0.25	
CFR-116A	9/20/2016	2/1/2017	Nitzschia archibaldii	54	6.75	0.38
CFR-116A	9/20/2016	2/1/2017	Nitzschia dissipata	28	3.5	
CFR-116A	9/20/2016	2/1/2017	Nitzschia fonticola	30	3.75	
CFR-116A	9/20/2016	2/1/2017	Nitzschia fonticoloides 25		3.13	
CFR-116A	9/20/2016	2/1/2017	Nitzschia hantzschiana 7 0		0.88	
CFR-116A	9/20/2016	2/1/2017	Nitzschia heufleriana 2 0.25			
CFR-116A	9/20/2016	2/1/2017	Nitzschia incognita 2 0.25			
CFR-116A	9/20/2016	2/1/2017	Nitzschia inconspicua	3	0.38	
CFR-116A	9/20/2016	2/1/2017	Nitzschia paleacea	6	0.75	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
CFR-116A	9/20/2016	2/1/2017	Nitzschia pusilla	3	0.38	
CFR-116A	9/20/2016	2/1/2017	Nitzschia supralitorea	6	0.75	
CFR-116A	9/20/2016	2/1/2017	Planothidium dubium	2	0.25	
CFR-116A	9/20/2016	2/1/2017	Pseudostaurosira brevistriata	4	0.5	
CFR-116A	9/20/2016	2/1/2017	Rhoicosphenia abbreviata	2	0.25	
CFR-116A	9/20/2016	2/1/2017	Sellaphora pupula	1	0.13	
CFR-116A	9/20/2016	2/1/2017	Staurosira construens	4	0.5	
CFR-116A	9/20/2016	2/1/2017	Staurosira construens var pumila	13	1.63	
CFR-116A	9/20/2016	2/1/2017	Staurosira construens var. venter	Staurosira construens var. venter 12		
CFR-116A	9/20/2016	2/1/2017	Staurosirella leptostauron	3	0.38	
CFR-116A	9/20/2016	2/1/2017	Staurosirella leptostauron var. dubia	6	0.75	
CFR-116A	9/20/2016	2/1/2017	Staurosirella pinnata	9	1.13	
CFR-116A	9/20/2016	2/1/2017	Stephanocyclus meneghiniana	Stephanocyclus 2 meneghiniana		
CFR-116A	9/20/2016	2/1/2017	Synedra mazamaensis 2		0.25	
CFR-116A	9/20/2016	2/1/2017	Ulnaria contracta 3		0.38	
CFR-116A	9/20/2016	2/1/2017	Ulnaria spathulifera 2		0.25	
SS-19	9/14/2016	1/4/2017	Adlafia minuscula	1	0.13	
SS-19	9/14/2016	1/4/2017	Cocconeis placentula	6	0.75	
SS-19	9/14/2016	1/4/2017	Encyonema minutum	2	0.25	
SS-19	9/14/2016	1/4/2017	Encyonema silesiacum	9	1.13	
SS-19	9/14/2016	1/4/2017	Eolimna minima	5	0.63	
SS-19	9/14/2016	1/4/2017	Fragilaria vaucheriae	3	0.38	
SS-19	9/14/2016	1/4/2017	Geissleria acceptata	1	0.13	
SS-19	9/14/2016	1/4/2017	Gomphonema gracile	1	0.13	
SS-19	9/14/2016	1/4/2017	Gomphonema minutum	1	0.13	
SS-19	9/14/2016	1/4/2017	Gomphonema parvulum	26	3.25	
SS-19	9/14/2016	1/4/2017	Halamphora veneta	8	1	
SS-19	9/14/2016	1/4/2017	Mayamaea atomus	455	56.88	
SS-19	9/14/2016	1/4/2017	Nitzschia amphibia	7	0.88	
SS-19	9/14/2016	1/4/2017	Nitzschia archibaldii	34	4.25	0.63
SS-19	9/14/2016	1/4/2017	Nitzschia balcanica	2	0.25	
SS-19	9/14/2016	1/4/2017	Nitzschia dissipata	2	0.25	
SS-19	9/14/2016	1/4/2017	Nitzschia fonticola 6 0.'		0.75	
SS-19	9/14/2016	1/4/2017	Nitzschia inconspicua 11		1.38	
SS-19	9/14/2016	1/4/2017	Nitzschia linearis	2	0.25	
SS-19	9/14/2016	1/4/2017	Nitzschia palea	11	1.38	

Site	Date Sampled	Date Analyzed	Species	Count	Percent Relative Abundance	Abnormal Cells (%)
SS-19	9/14/2016	1/4/2017	Nitzschia palea var. tenuirostris	4	0.5	
SS-19	9/14/2016	1/4/2017	Nitzschia paleacea 171		21.38	5.13
SS-19	9/14/2016	1/4/2017	Nitzschia supralitorea 8		1	
SS-19	9/14/2016	1/4/2017	Planothidium frequentissimum	hidium 2 zissimum 2		
SS-19	9/14/2016	1/4/2017	Reimeria sinuata	7	0.88	
SS-19	9/14/2016	1/4/2017	Staurosira construens var pumila	7	0.88	
SS-19	9/14/2016	1/4/2017	Stephanocyclus meneghiniana	1	0.13	
SS-19	9/14/2016	1/4/2017	Surirella brebissonii	4	0.5	
SS-19	9/14/2016	1/4/2017	Surirella minuta	1	0.13	
SS-19	9/14/2016	1/4/2017	Ulnaria ulna	2	0.25	

### **APPENDIX F**

### MACROINVERTEBRATES: QUALITY ASSURANCE AND QUALITY CONTROL

Rhithron Sample ID	Rep. No.	Site ID	Sorting efficiency	Bray-Curtis similarity	PTD	PDE
PBSJ16CFR001	1	MCWC- MWB				
PBSJ16CFR002	2	MCWC- MWB	99.55%			
PBSJ16CFR003	3	MCWC- MWB				
PBSJ16CFR004	4	MCWC- MWB				
PBSJ16CFR005	1	MWB-SBC				
PBSJ16CFR006	2	MWB-SBC				
PBSJ16CFR007	3	MWB-SBC				
PBSJ16CFR008	4	MWB-SBC				
PBSJ16CFR009	1	WSC-SBC				
PBSJ16CFR010	2	WSC-SBC				
PBSJ16CFR011	3	WSC-SBC	96.38%	99.28%	1.43%	0.72%
PBSJ16CFR012	4	WSC-SBC				
PBSJ16CFR013	1	SS-25				
PBSJ16CFR014	2	SS-25				
PBSJ16CFR015	3	SS-25				
PBSJ16CFR016	4	SS-25				
PBSJ16CFR017	1	CFR-03A				
PBSJ16CFR018	2	CFR-03A				
PBSJ16CFR019	3	CFR-03A				
PBSJ16CFR020	4	CFR-03A				
PBSJ16CFR021	1	CFR-07D				
PBSJ16CFR022	2	CFR-07D				
PBSJ16CFR023	3	CFR-07D				
PBSJ16CFR024	4	CFR-07D				
PBSJ16CFR025	1	CFR-11F				
PBSJ16CFR026	2	CFR-11F		100.00%	0.00%	0.00%
PBSJ16CFR027	3	CFR-11F				
PBSJ16CFR028	4	CFR-11F				
PBSJ16CFR029	1	CFR-34				
PBSJ16CFR030	2	CFR-34				
PBSJ16CFR031	3	CFR-34				
PBSJ16CFR032	4	CFR-34				
PBSJ16CFR033	1	CFR-116A				
PBSJ16CFR034	2	CFR-116A				
PBSJ16CFR035	3	CFR-116A				
PBSJ16CFR036	4	CFR-116A				

Table F1. Quality assurance and quality control parameters: Clark Fork River basin, September 19-20, 2016.

Rhithron Sample ID	Rep. No.	Site ID	Sorting efficiency	Bray-Curtis similarity	PTD	PDE
PBSJ16CFR037	1	LC-7.5				
PBSJ16CFR038	2	LC-7.5				
PBSJ16CFR039	3	LC-7.5				
PBSJ16CFR040	4	LC-7.5				
PBSJ16CFR041	1	RTC-1.5				
PBSJ16CFR042	2	RTC-1.5				
PBSJ16CFR043	3	RTC-1.5				
PBSJ16CFR044	4	RTC-1.5		98.11%	2.50%	0.63%
PBSJ16CFR045	1	LBR-CFR- 02				
PBSJ16CFR046	2	LBR-CFR- 02				
PBSJ16CFR047	3	LBR-CFR- 02				
PBSJ16CFR048	4	LBR-CFR- 02				

### **APPENDIX G**

## MACROINVERTEBRATES: MCGUIRE [2010] INDEX SCORES

		McGuire [2010] Index						
Site ID	rep	Bie	ointegrity	Metals	Sensitivity	Nutrie	ent Sensitivity	
	no.	score	impairment class	score	impairment class	score	impairment class	
MCWC-MWB	1	86.67	slightly impaired	88.89	nonimpaired	100	nonimpaired	
MCWC-MWB	2	86.67	slightly impaired	88.89	nonimpaired	100	nonimpaired	
MCWC-MWB	3	86.67	slightly impaired	88.89	nonimpaired	94.44	nonimpaired	
MCWC-MWB	4	93.33	nonimpaired	94.44	nonimpaired	100	nonimpaired	
MWB-SBC	1	70	slightly impaired	77.78	slightly impaired	94.44	nonimpaired	
MWB-SBC	2	96.67	nonimpaired	83.33	nonimpaired	83.33	nonimpaired	
MWB-SBC	3	93.33	nonimpaired	83.33	nonimpaired	94.44	nonimpaired	
MWB-SBC	4	80	nonimpaired	77.78	nonimpaired	100	nonimpaired	
WSC-SBC	1	100	nonimpaired	94.44	nonimpaired	100	nonimpaired	
WSC-SBC	2	90	slightly impaired	72.22	slightly impaired	94.44	nonimpaired	
WSC-SBC	3	96.67	nonimpaired	88.89	nonimpaired	100	nonimpaired	
WSC-SBC	4	90	slightly impaired	83.33	nonimpaired	94.44	nonimpaired	
$SS-19^1$	1	56.66	moderately impaired	61.11	slightly impaired	94.44	nonimpaired	
SS-25	1	93.33	nonimpaired	66.67	slightly impaired	83.33	nonimpaired	
SS-25	2	93.33	nonimpaired	72.22	slightly impaired	72.22	slightly impaired	
SS-25	3	73.33	slightly impaired	72.22	slightly impaired	83.33	nonimpaired	
SS-25	4	76.67	slightly impaired	61.11	slightly impaired	77.78	slightly impaired	
CFR-03A	1	96.67	nonimpaired	83.33	nonimpaired	88.89	nonimpaired	
CFR-03A	2	96.67	nonimpaired	83.33	nonimpaired	88.89	nonimpaired	
CFR-03A	3	83.33	slightly impaired	88.89	nonimpaired	94.44	nonimpaired	
CFR-03A	4	93.33	nonimpaired	83.33	nonimpaired	94.44	nonimpaired	
CFR-07D	1	73.33	slightly impaired	88.89	nonimpaired	100	nonimpaired	
CFR-07D	2	96.67	nonimpaired	88.89	nonimpaired	100	nonimpaired	
CFR-07D	3	90	nonimpaired	77.78	slightly impaired	94.44	nonimpaired	
CFR-07D	4	86.67	slightly impaired	88.89	nonimpaired	100	nonimpaired	
CFR-11F	1	96.67	nonimpaired	83.33	nonimpaired	88.89	nonimpaired	

Table G1. Raw scores for replicate samples: McGuire indices Clark Fork River basin, September 19-20, 2016.

<sup>&</sup>lt;sup>1</sup> This site is represented by a single replicate, collected with a traveling kick-net method, on September 14, 2017. The sample was processed using a different method, as well. See text.

				McGuire	[2010] Index		
Site ID	rep	Bie	ointegrity	Metals	Sensitivity	Nutrie	ent Sensitivity
	no.	score	impairment class	score	impairment class	score	impairment class
CFR-11F	2	100	nonimpaired	88.89	nonimpaired	83.33	nonimpaired
CFR-11F	3	93.33	nonimpaired	83.33	nonimpaired	88.89	nonimpaired
CFR-11F	4	100	nonimpaired	83.33	nonimpaired	88.89	nonimpaired
CFR-34	1	100	nonimpaired	88.89	nonimpaired	83.33	nonimpaired
CFR-34	2	93.33	nonimpaired	94.44	nonimpaired	94.44	nonimpaired
CFR-34	3	100	nonimpaired	94.44	nonimpaired	88.89	nonimpaired
CFR-34	4	96.67	nonimpaired	88.89	nonimpaired	94.44	nonimpaired
CFR-116A	1	96.67	nonimpaired	94.44	nonimpaired	77.78	slightly impaired
CFR-116A	2	100	nonimpaired	94.44	nonimpaired	94.44	nonimpaired
CFR-116A	3	96.67	nonimpaired	94.44	nonimpaired	72.22	slightly impaired
CFR-116A	4	100	nonimpaired	94.44	nonimpaired	83.33	nonimpaired
LC-7.5	1	73.33	slightly impaired	72.22	slightly impaired	88.89	nonimpaired
LC-7.5	2	70	moderately impaired	55.56	moderately impaired	77.78	slightly impaired
LC-7.5	3	73.33	slightly impaired	72.22	slightly impaired	83.33	nonimpaired
LC-7.5	4	90	slightly impaired	72.22	slightly impaired	83.33	nonimpaired
RTC-1.5	1	70	moderately impaired	83.33	nonimpaired	100	nonimpaired
RTC-1.5	2	73.33	slightly impaired	66.67	slightly impaired	100	nonimpaired
RTC-1.5	3	80	slightly impaired	88.89	nonimpaired	100	nonimpaired
RTC-1.5	4	80	slightly impaired	83.33	nonimpaired	88.89	nonimpaired
LBR-CFR-02	1	100	nonimpaired	88.89	nonimpaired	88.89	nonimpaired
LBR-CFR-02	2	83.33	slightly impaired	66.67	slightly impaired	100	nonimpaired
LBR-CFR-02	3	83.33	slightly impaired	77.78	slightly impaired	100	nonimpaired
LBR-CFR-02	4	96.67	nonimpaired	83.33	nonimpaired	100	nonimpaired

### **APPENDIX H**

MACROINVERTEBRATES: ALTERNATE BIOASSESSMENT SCORES Table H1. Results of alternative bioassessment indices and tools: Clark Fork River basin, September 19-20, 2016. Mean macroinvertebrate bioassessment scores and impairment classifications for alternative indices. Scores are mean values over 4 replicate samples except in the case of site SS-19, which is represented by a single replicate (see note). MMI, B-IBI, and MVFP are expressed as a percentage of the maximum score. O/E is expressed as a proportion.

Site ID	MMI [MDEQ, 2006]		O/E (RIVPACS: MDEQ [2006])		B-IBI (http://pugetsoundstre ambenthos.org)		MVFP [Bollman, 1998]	
	score	impairment class	score	impairment class	score	impairment class	score	impairment class
MCWC-MWB	59.25%	Unimpaired	0.269	Impaired	58.00%	Fair	58.33%	Slightly impaired
MWB-SBC	45.90%	Impaired	0.276	Impaired	53.00%	Fair	43.06%	Moderately impaired
WSC-SBC	55.63%	Unimpaired	0.495	Impaired	68.00%	Good	61.11%	Slightly impaired
$SS-19^1$	78.90%	Unimpaired	0.696	Impaired	36.00%	Poor	22.22%	Moderately impaired
SS-25	54.93%	Unimpaired	0.156	Impaired	52.00%	Fair	41.67%	Moderately impaired
CFR-03A	66.63%	Unimpaired	0.465	Impaired	61.00%	Good	58.33%	Slightly impaired
CFR-07D	58.75%	Unimpaired	0.436	Impaired	53.00%	Fair	45.83%	Moderately impaired
CFR-11F	64.90%	Unimpaired	0.407	Impaired	63.00%	Good	50.00%	Moderately impaired
CFR-34	65.93%	Unimpaired	0.922	Unimpaired	54.00%	Fair	51.39%	Slightly impaired
CFR-116A	46.90%	Impaired	0.314	Impaired	70.00%	Good	61.11%	Slightly impaired
LC-7.5	49.53%	Unimpaired	0.261	Impaired	39.00%	Poor	43.06%	Moderately impaired
RTC-1.5	68.68%	Unimpaired	0.525	Impaired	67.00%	Good	76.39%	Slightly impaired
LBR-CFR-02	60.85%	Unimpaired	0.732	Impaired	63.00%	Good	58.33%	Slightly impaired

<sup>&</sup>lt;sup>1</sup> This site is represented by a single replicate, collected with a traveling kick-net method, on September 14, 2017. The sample was processed using a different method, as well. See text.

Table H2. Macroinvertebrate bioassessment scores and impairment classifications for individual replicates using alternative indices. Scores are mean values over 4 replicate samples, except in the case of site SS-19, which is represented by a single replicate (see note). MMI, B-IBI, and MVFP are expressed as the percentage of the maximum score. O/E is expressed as a proportion. Clark Fork River basin, September 19-20, 2016.

Site ID rep		MI	MMI [MDEQ, 2006]		O/E (RIVPACS: MDEQ [2006])		B-IBI ugetsoundstr enthos.org)	MVFP [Bollman, 1998]		
	по.	score	impairment class	score	impairment class	score	impairment class	score	impairment class	
MCWC-MWB	1	62.90%	unimpaired	0.2691	impaired	60.00%	fair	61.11%	slightly impaired	
MCWC-MWB	2	66.20%	unimpaired	0.1794	impaired	60.00%	fair	61.11%	slightly impaired	
MCWC-MWB	3	55.70%	unimpaired	0.2691	impaired	52.00%	fair	55.56%	slightly impaired	
MCWC-MWB	4	52.20%	unimpaired	0.3588	impaired	60.00%	fair	55.56%	slightly impaired	
MWB-SBC	1	45.50%	moderately impaired	0.3008	impaired	52.00%	fair	38.89%	moderately impaired	
MWB-SBC	2	37.80%	moderately impaired	0.3008	impaired	64.00%	good	50.00%	moderately impaired	
MWB-SBC	3	51.30%	unimpaired	0.2005	impaired	48.00%	fair	38.89%	moderately impaired	
MWB-SBC	4	49.00%	unimpaired	0.3008	impaired	48.00%	fair	44.44%	moderately impaired	
WSC-SBC	1	54.50%	unimpaired	0.625	impaired	84.00%	excellent	66.67%	slightly impaired	
WSC-SBC	2	57.00%	unimpaired	0.5209	impaired	64.00%	good	55.56%	slightly impaired	
WSC-SBC	3	59.80%	unimpaired	0.5209	impaired	68.00%	good	66.67%	slightly impaired	
WSC-SBC	4	51.20%	unimpaired	0.3125	impaired	56.00%	fair	55.56%	slightly impaired	
$SS-19^{2}$	1	78.90%	unimpaired	0.6963	impaired	36.00%	poor	22.22%	moderately impaired	
SS-25	1	55.10%	unimpaired	0.1389	impaired	48.00%	fair	33.33%	moderately impaired	
SS-25	2	46.60%	moderately impaired	0.2084	impaired	52.00%	fair	50.00%	moderately impaired	
SS-25	3	61.00%	unimpaired	0.1389	impaired	56.00%	fair	33.33%	moderately impaired	
SS-25	4	57.00%	unimpaired	0.1389	impaired	52.00%	fair	50.00%	moderately impaired	
CFR-03A	1	65.50%	unimpaired	0.3486	impaired	60.00%	fair	55.56%	slightly impaired	
CFR-03A	2	64.10%	unimpaired	0.5811	impaired	60.00%	fair	61.11%	slightly impaired	

<sup>&</sup>lt;sup>2</sup> This site is represented by a single replicate, collected with a traveling kick-net method, on September 14, 2017. The sample was processed using a different method, as well. See text.

Site ID	rep	MMI [MDEQ, 2006]		O/E (RIV	PACS: MDEQ 2006])	(http://p eambe	B-IBI ugetsoundstr enthos.org)	MVFP [Bollman, 1998]		
	по.	score	impairment class	score	impairment class	score	impairment class	score	impairment class	
CFR-03A	3	67.00%	unimpaired	0.5811	impaired	64.00%	good	66.67%	slightly impaired	
CFR-03A	4	69.90%	unimpaired	0.3486	impaired	60.00%	fair	50.00%	moderately impaired	
CFR-07D	1	60.50%	unimpaired	0.4649	impaired	52.00%	fair	50.00%	moderately impaired	
CFR-07D	2	60.30%	unimpaired	0.4649	impaired	56.00%	fair	50.00%	moderately impaired	
CFR-07D	3	55.80%	unimpaired	0.3486	impaired	52.00%	fair	38.89%	moderately impaired	
CFR-07D	4	58.40%	unimpaired	0.4649	impaired	52.00%	fair	44.44%	moderately impaired	
CFR-11F	1	63.90%	unimpaired	0.2324	impaired	56.00%	fair	55.56%	slightly impaired	
CFR-11F	2	66.60%	unimpaired	0.4649	impaired	68.00%	good	50.00%	moderately impaired	
CFR-11F	3	64.10%	unimpaired	0.4649	impaired	64.00%	good	44.44%	moderately impaired	
CFR-11F	4	65.00%	unimpaired	0.4649	impaired	64.00%	good	50.00%	moderately impaired	
CFR-34	1	63.00%	unimpaired	0.8513	unimpaired	56.00%	fair	44.44%	moderately impaired	
CFR-34	2	62.60%	unimpaired	0.9932	unimpaired	48.00%	fair	55.56%	slightly impaired	
CFR-34	3	72.50%	unimpaired	0.8513	unimpaired	60.00%	fair	55.56%	slightly impaired	
CFR-34	4	65.60%	unimpaired	0.9932	unimpaired	52.00%	fair	50.00%	moderately impaired	
CFR-116A	1	50.30%	unimpaired	0.2691	impaired	72.00%	good	61.11%	slightly impaired	
CFR-116A	2	48.30%	unimpaired	0.2691	impaired	76.00%	good	61.11%	slightly impaired	
CFR-116A	3	44.30%	moderately impaired	0.3588	impaired	64.00%	good	61.11%	slightly impaired	
CFR-116A	4	44.70%	moderately impaired	0.3588	impaired	68.00%	good	61.11%	slightly impaired	
LC-7.5	1	39.30%	moderately impaired	0.2606	impaired	40.00%	fair	50.00%	moderately impaired	
LC-7.5	2	56.40%	unimpaired	0.2606	impaired	44.00%	fair	38.89%	moderately impaired	
LC-7.5	3	49.10%	unimpaired	0.2606	impaired	32.00%	poor	38.89%	moderately impaired	
LC-7.5	4	53.30%	unimpaired	0.2606	impaired	40.00%	fair	44.44%	moderately impaired	
RTC-1.5	1	66.40%	unimpaired	0.5482	impaired	60.00%	fair	66.67%	slightly impaired	
RTC-1.5	2	67.70%	unimpaired	0.5482	impaired	60.00%	fair	77.78%	slightly impaired	
RTC-1.5	3	74.50%	unimpaired	0.5482	impaired	84.00%	excellent	77.78%	slightly impaired	

Site ID	rep	MMI [MDEQ, 2006]		O/E (RIVPACS: MDEQ [2006])		B-IBI (http://pugetsoundstr eambenthos.org)		MVFP [Bollman, 1998]	
	110.	score	score impairment class	score	impairment class	score	impairment class	score	impairment class
RTC-1.5	4	66.10%	unimpaired	0.4569	impaired	64.00%	good	83.33%	unimpaired
LBR-CFR-02	1	70.80%	unimpaired	0.9248	unimpaired	72.00%	good	66.67%	slightly impaired
LBR-CFR-02	2	52.00%	unimpaired	0.6165	impaired	52.00%	fair	55.56%	slightly impaired
LBR-CFR-02	3	60.90%	unimpaired	0.6165	impaired	64.00%	good	55.56%	slightly impaired
LBR-CFR-02	4	59.70%	unimpaired	0.7707	impaired	64.00%	good	55.56%	slightly impaired

**APPENDIX I** 

MACROINVERTEBRATE DATA

### Project ID: PBSJ16CFRC

#### RAI No.: PBSJ16CFRC001

RAI No.: PBSJ16CFRC001

Sta. Name: Mill-Willow C

Mill-Willow Cr. at Frontage Rd. - Composite

Client ID:	MCWC-MWB							
Date Coll.:	9/19/2016	No. Jars: 1		STORET I	D:			
Taxonomic Nam	ne	Count	PRA	Unique	Stage	Qualifier	BI	Function
Other Non-Inse	ct							
Trepaxoner	mata							
Trepax	xonemata	2	0.05%	Yes	Unknown		5	PR
Naididae								
Naidin	ae	33	0.83%	Yes	Unknown		8	CG
Sphaeriida	e							
Pisidiu	um sp.	1	0.03%	Yes	Unknown		8	CF
Lymnaeida	e							
Galba	sp.	1	0.03%	Yes	Unknown		6	SC
Physidae								
Physe	ella sp.	3	0.08%	Yes	Unknown		8	SC
Planorbida	e							
Gyrau	lus sp.	2	0.05%	Yes	Unknown		8	SC
Ephemeroptera	0							
Baetidae								
Baetid	lae	1	0.03%	No	Larva	Damaged	11	CG
Baetis	tricaudatus complex	62	1.56%	Yes	Larva		4	CG
Diphet	tor hageni	6	0.15%	Yes	Larva		5	CG
Ephemerel	llidae							
Drune	lla grandis	7	0.18%	Yes	Larva		2	PR
Heptagenii	dae							
Cinygi	mula sp.	1	0.03%	Yes	Larva		0	SC
Rhithr	ogena sp.	2	0.05%	Yes	Larva		0	SC
Leptophleb	biidae							
Leptor	phlebiidae	11	0.28%	Yes	Larva	Damaged	11	CG
Leptohyphi	idae							
Tricory	ythodes sp.	8	0.20%	Yes	Larva		4	CG
Plecoptera								
Chloroperli	idae							
Chloro	operlidae	1	0.03%	Yes	Larva	Early Instar	1	PR
Perlidae								
Hespe	eroperla pacifica	5	0.13%	Yes	Larva		11	PR
Periodidae								
Perlod	lidae	17	0.43%	No	Larva	Early Instar	11	PR
Skwal	a sp.	4	0.10%	Yes	Larva		3	PR

#### Project ID: PBSJ16CFRC

#### RAI No.: PBSJ16CFRC001

RAI No.: PBSJ16CFRC001

Sta. Name: Mill-Willow

Mill-Willow Cr. at Frontage Rd. - Composite

Client ID:	MCWC-MWB							
Date Coll.:	9/19/2016	No. Jars: 1	1	STORET	ID:			
Taxonomic Nar	me	Count	PRA	Unique	Stage	Qualifier	BI	Function
Trichoptera								
Brachycen	ntridae							
Amioo	centrus aspilus	1	0.03%	Yes	Larva		3	CG
Brach	nycentrus americanus	1	0.03%	Yes	Larva		1	CF
Brach	nycentrus occidentalis	138	3.46%	Yes	Larva		2	CF
Glossoson	natidae							
Gloss	osoma sp.	14	0.35%	Yes	Larva		0	SC
Gloss	osomatidae	4	0.10%	No	Pupa		11	SC
Proto	ptila sp.	53	1.33%	Yes	Larva		1	SC
Helicopsyd	chidae							
Helico	opsyche sp.	52	1.30%	Yes	Larva		3	SC
Hydropsyc	chidae							
Arcto	psyche sp.	26	0.65%	Yes	Larva		2	PR
Cerat	opsyche bronta	44	1.10%	Yes	Larva		6	CF
Cerat	opsyche cockerelli	4	0.10%	Yes	Larva		4	CF
Cerat	opsyche slossonae	10	0.25%	Yes	Larva		4	CF
Hydro	opsyche sp.	160	4.01%	No	Larva	Early Instar	5	CF
Hydro	opsyche occidentalis	604	15.15%	Yes	Larva		5	CF
Hydro	psychidae	109	2.73%	No	Larva	Early Instar	11	CF
Lepidostor	matidae							
Lepid	lostoma sp.	954	23.93%	Yes	Larva		1	SH
Leptocerid	lae							
Oece	tis sp.	9	0.23%	Yes	Larva		8	PR
Rhyacophi	ilidae							
Rhya	cophila Brunnea/Vemna Gr.	61	1.53%	Yes	Larva		2	PR
Coleoptera								
Elmidae								
Clepte	elmis addenda	2	0.05%	Yes	Larva		4	CG
Elmid	lae	3	0.08%	No	Larva	Early Instar	11	CG
Optio	servus sp.	342	8.58%	No	Larva		5	SC
Optio	servus sp.	172	4.32%	Yes	Adult		5	SC
Zaitze	evia sp.	20	0.50%	Yes	Adult		4	CG
Zaitze	evia sp.	27	0.68%	No	Larva		4	CG
Diptera								
Empididae								
Heme	erodromia sp.	1	0.03%	Yes	Larva		6	PR
Neop	lasta sp.	14	0.35%	Yes	Larva		5	PR
Simuliidae								
Simul	lium sp.	5	0.13%	Yes	Larva		6	CF
Simul	lium sp.	2	0.05%	No	Pupa		6	CF
Tipulidae								
Antoc	cha monticola	12	0.30%	Yes	Larva		3	CG
Hexai	toma sp.	20	0.50%	Yes	Larva		2	PR

### Project ID: PBSJ16CFRC

#### RAI No.: PBSJ16CFRC001

 RAI No.:
 PBSJ16CFRC001
 Sta. Name:
 Mill-Willow Cr. at Frontage Rd. - Composite

 Client ID:
 MCWC-MWB

 Date Coll.:
 9/19/2016
 No. Jars: 1
 STORET ID:

Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Chironomidae							
Chironominae							
Microtendipes sp.	34	0.85%	Yes	Larva		6	CF
Chironominae							
Rheotanytarsus sp.	1	0.03%	Yes	Larva		11	CF
Diamesinae							
Pagastia sp.	4	0.10%	No	Pupa		1	CG
Pagastia sp.	8	0.20%	Yes	Larva		1	CG
Orthocladiinae							
Cricotopus sp.	2	0.05%	No	Pupa		7	SH
Cricotopus (Nostococladius) sp.	787	19.74%	Yes	Larva		6	SH
Eukiefferiella sp.	19	0.48%	Yes	Larva		8	CG
Orthocladiinae	4	0.10%	No	Pupa	Damaged	11	CG
Orthocladius sp.	57	1.43%	Yes	Larva		6	CG
Orthocladius sp.	2	0.05%	No	Pupa		6	CG
Parametriocnemus sp.	2	0.05%	Yes	Pupa		5	CG
Tvetenia sp.	5	0.13%	No	Pupa		5	CG
Tvetenia sp.	30	0.75%	Yes	Larva		5	CG
Sample Count	3986						

#### Project ID: PBSJ16CFRC

#### RAI No.: PBSJ16CFRC002

RAI No .:	PBSJ16CFRC002		5	Sta. Name	e: Mill-W	/illow Bypass near I	mouth - Compo	osite
Client ID:	MWB-SBC					0.000	5.763	
Date Coll.:	9/19/2016	No. Jars: 1	:	STORET	ID:			
Taxonomic Nan	ne	Count	PRA	Unique	Stage	Qualifier	BI	Function
Other Non-Inse	ct							
Trepaxone	mata							
Trepa	xonemata	430	12.18%	Yes	Unknown		5	PR
Nemata								
Nema	ta	2	0.06%	Yes	Unknown		5	UN
Naididae								
Naidid	lae	5	0.14%	No	Immature		8	CG
Naididae								
Naidin	nae	10	0.28%	Yes	Unknown		8	CG
Naididae								
Tubific	cinae	6	0.17%	Yes	Unknown		10	CG
Sphaeriida	e							
Sphae	eriidae	1	0.03%	Yes	Immature		8	CF
Planorbida	e							
Gyrau	ilus sp.	1	0.03%	Yes	Unknown		8	SC
Asellidae								
Caeci	dotea sp.	204	5.78%	Yes	Unknown		8	CG
Ephemeroptera								
Baetidae								
Baetic	lae	4	0.11%	No	Larva	Damaged	11	CG
Baetis	s tricaudatus complex	38	1.08%	Yes	Larva		4	CG
Diphe	tor hageni	2	0.06%	Yes	Larva		5	CG
Ephemerel	llidae							
Drune	lla grandis	1	0.03%	Yes	Larva		2	PR
Epher	nerella sp.	1	0.03%	Yes	Larva	Early Instar	11	SC
Heptagenii	idae							
Hepta	genia sp.	2	0.06%	Yes	Larva		4	SC
Leptophleb	biidae							
Lepto	phlebiidae	1	0.03%	Yes	Larva	Damaged	11	CG

1

3

27

4

0.03%

0.08%

0.76%

0.11%

Yes

No

Yes

Yes

Larva

Larva

Larva

Larva

Early Instar

4

11

3

3

CG

PR

PR

SH

Leptohyphidae

Perlodidae

Skwala sp.

Pteronarcella sp.

Pteronarcyidae

Perlodidae

Plecoptera

Tricorythodes sp.

#### Project ID: PBSJ16CFRC

#### RAI No .: PBSJ16CFRC002

RAI No .: PBSJ16CFRC002

Sta. Name:

Mill-Willow Bypass near mouth - Composite

Client ID:	MWB-SBC							
Date Coll.:	9/19/2016	No. Jars: 1		STORET	ID:			
Taxonomic Nar	me	Count	PRA	Unique	Stage	Qualifier	BI	Function
Trichoptera								
Trichopter	a							
Tricho	optera	1	0.03%	No	Pupa	Damaged	11	UN
Brachycen	ntridae					•		
Brach	nycentridae	3	0.08%	No	Pupa		11	CF
Brach	ycentrus occidentalis	494	13.99%	Yes	Larva		2	CF
Glossoson	natidae							
Proto	ptila sp.	5	0.14%	Yes	Larva		1	SC
Helicopsvo	chidae			0.000			-	
Helico	opsyche sp.	61	1.73%	Yes	Larva		3	SC
Hydropsyc	hidae							
Cerat	opsyche sp.	3	0.08%	No	Larva	Early Instar	5	CF
Cerat	opsyche bronta	8	0 23%	Yes	Larva		6	CE
Cheu	matopsyche sp.	186	5 27%	Yes	Larva		5	CF
Hvdro	opsyche occidentalis	77	2 18%	Yes	Larva		5	CE
Hydro	opsychidae	24	0.68%	No	Larva	Farly Instar	11	CE
Hydroptilid	lae						12.0	
Hvdro	optila sp.	1	0.03%	Yes	Larva		6	PH
Hydro	optilidae	9	0.25%	No	Pupa		11	PH
Lepidostor	matidae							1.1.1.1
Lepid	lostoma sp.	44	1 25%	Yes	Larva		1	SH
Leptocerid	lae	10.05		1.000				1000
Necto	opsyche sp.	46	1 30%	Yes	Larva		3	SH
Oece	tis sp.	109	3 09%	Yes	Larva		8	PR
Lepidoptera			0.0070		Luitu			1.2.1.1
Crambidae	-							
Petro	phila sp.	49	1 39%	Yes	Larva		5	SC
Coleontera			1.0070	100	Luiva		•	
Elmidae								
Clepte	elmis addenda	20	0 57%	Yes	larva		4	CG
Flmid	ae	7	0.20%	No	Lanva	Farly Instar	11	CG
Optio	Servus SD.	625	17 71%	No	Larva	Early moun	5	SC
Optio	servus sp.	76	2 15%	Yes	Adult		5	SC
Zaitze	evia sp.	286	8 10%	No	Larva		4	CG
Zaitze	evia sp.	106	3.00%	Yes	Adult		4	CG
Haliplidae		100	0.0070	103	Addit		-	00
Brych	ius SD	6	0 17%	Vec	Adult		11	SC
Diptera			0.1170	105	Addit		it sets a	00
Empididae								
Heme	erodromia sp	33	0 93%	Vec	lanva		6	PR
Neon	lasta sp.	2	0.08%	Vee	l anva		5	PR
Simuliidae	1.111	v	0.0070	103	Laiva		v	1 K
Simul	lium sp.	7	0 20%	Ves	larva		6	CF
Simul	lium sp.	2	0.08%	No	Puna		8	CE
Tipulidae		v	0.0070		i upu		v	51
Antoc	cha monticola	3	0.08%	Vec	an/a		3	CG
Hexat	toma sp.	2	0.06%	Vec	anva		2	PR
i i onut			W. WW /**				-	

Thursday, November 17, 2016

#### Project ID: PBSJ16CFRC

#### RAI No.: PBSJ16CFRC002

RAI No.:	PBSJ16CFRC002			Sta. Name	e: Mill-	Willow Bypass near r	mouth - Compo	osite
Client ID:	MWB-SBC							
Date Coll.:	9/19/2016	No. Jars: 1		STORET	ID:			
Taxonomic Name	e	Count	PRA	Unique	Stage	Qualifier	BI	Function
Chironomidae								
Chironomina	ae							
Microte	endipes sp.	88	2.49%	Yes	Larva		6	CF
Chironomina	ae							
Rheota	nytarsus sp.	1	0.03%	Yes	Larva		11	CF
Orthocladiin	ae							
Cricoto	pus sp.	2	0.06%	No	Pupa		7	SH
Cricoto	pus sp.	159	4.50%	Yes	Larva		7	SH
Cricoto	pus (Nostococladius) sp.	55	1.56%	Yes	Larva		6	SH
Eukieffe	ieriella sp.	1	0.03%	No	Pupa		8	CG
Eukieffe	ieriella sp.	8	0.23%	Yes	Larva		8	CG
Nanocl	adius sp.	2	0.06%	Yes	Larva		3	CG
Orthocl	ladiinae	1	0.03%	No	Pupa	Damaged	11	CG
Orthocl	ladius sp.	1	0.03%	No	Pupa		6	CG
Orthocl	ladius sp.	89	2.52%	Yes	Larva		6	CG
Parame	etriocnemus sp.	3	0.08%	Yes	Larva		5	CG
Thiene	manniella sp.	2	0.06%	Yes	Larva		6	CG
Thiene	manniella sp.	1	0.03%	No	Pupa		6	CG
Tveteni	ia sp.	9	0.25%	Yes	Larva		5	CG
Tanypodina	e							
Thiener	mannimyia Gr.	68	1.93%	Yes	Larva	Early Instar	11	PR
	Sample C	ount 3530						
#### Project ID: PBSJ16CFRC

#### RAI No .: PBSJ16CFRC003

RAI No.:	PBSJ16CFRC003			Sta. Name	e: W	/arm Springs Cr. near	mouth - Compo	site
Client ID:	WSC-SBC						N	
Date Coll.:	9/19/2016	No. Jars: 1		STORET I	ID:			
Taxonomic Nan	ne	Count	PRA	Unique	Stage	Qualifier	BI	Function
Other Non-Inse Trepaxone	ct mata							

Trepaxonemata	1	0.04%	Yes	Unknown		5	PR
Nemata							
Nemata	1	0.04%	Yes	Unknown		5	UN
Enchytraeidae							
Enchytraeidae	1	0.04%	Yes	Unknown		4	CG
Naididae							
Naidinae	31	1.24%	Yes	Unknown		8	CG
Sphaeriidae							
Sphaeriidae	1	0.04%	Yes	Immature		8	CF
Physidae							
Physella sp.	1	0.04%	Yes	Unknown		8	SC
Ephemeroptera							
Baetidae							
Acentrella sp.	1	0.04%	No	Larva	Damaged	4	CG
Acentrella insignificans	1	0.04%	Yes	Larva		4	CG
Baetis tricaudatus complex	98	3.92%	Yes	Larva		4	CG
Diphetor hageni	2	0.08%	Yes	Larva		5	CG
Ephemerellidae							
Caudatella sp.	1	0.04%	Yes	Larva	Early Instar	0	CG
Drunella grandis	6	0.24%	Yes	Larva		2	PR
Heptageniidae							
Cinygmula sp.	65	2.60%	Yes	Larva		0	SC
Rhithrogena sp.	7	0.28%	Yes	Larva		0	SC
Plecoptera							
Nemouridae							
Malenka sp.	1	0.04%	Yes	Larva		2	SH
Zapada cinctipes	1	0.04%	Yes	Larva		2	SH
Perlidae							
Hesperoperla pacifica	52	2.08%	Yes	Larva		11	PR
Periodidae							
Isoperla sp.	4	0.16%	Yes	Larva		2	PR
Skwala sp.	11	0.44%	Yes	Larva		3	PR
Pteronarcyidae							
Pteronarcella sp.	3	0.12%	Yes	Larva		3	SH

## Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC003

 RAI No.:
 PBSJ16CFRC003
 Sta. Name:
 Warm Springs Cr. near mouth - Composite

 Client ID:
 WSC-SBC

 Date Coll.:
 9/19/2016
 No. Jars: 1
 STORET ID:

Trichoptera           Brachycentridae           Brachycentridae           Brachycentridae           Brachycentridae           Glossosomasp:           14         0.65%           Glossosomatidae           Glossosomatidae           Glossosomatidae           Chicasosomatidae           Glossosomatidae           Protoptin sp.           Protoptin sp.           Protoptin sp.           Protoptin sp.           Helicogychidae           Helicogychidae           Arctopsychidae           Helicogychidae           Arctopsychidae           Arctopsychidae           Hydropsychidae           Thydroptilidae           Hydropsychidae           Hydropsychidae           Lapidostoma sp.           P           Hydropsychidae           Lapidostoma sp.           P           Hydropsychidae           Lapidostoma sp.           P           Hydropsychidae           Lapidostoma sp.           P           Rhyacophilae           Cipoteridae           Oecelis sp.           PR	Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Brachycentridae         74         2.96%         Yes         Larva         1         CF           Brachycentrus occidentalis         5         0.20%         Yes         Larva         1         CF           Micrasenra sp.         14         0.66%         Yes         Larva         1         SF           Glossosonatidae         222         8.87%         Yes         Larva         0         SC           Glossosonatidae         222         8.87%         Yes         Larva         0         SC           Glossosonatidae         3         0.36%         Yes         Larva         1         SC           Pricoptilas p.         9         0.36%         Yes         Larva         3         SC           Helicopsychide         -         -         -         SC         PR           Cheuratopsyche sp.         105         4.19%         Yes         Larva         2         PR           Cheuratopsyche sp.         13         0.52%         Yes         Larva         1         CF           Hydropsychidae         1         0.41%         Yes         Larva         1         CF           Hydropsychidae         1         0.41%         Yes	Trichoptera							
Brachycentrus encidentalis         74         2.96%         Yes         Larva         1         CF           Brachycentrus encidentalis         5         0.20%         Yes         Larva         1         SH           Glessessenatsp.         14         0.56%         Yes         Larva         0         SC           Glessessenatsp.         22         8.87%         Yes         Larva         0         SC           Glessessenatsp.         22         8.87%         Yes         Larva         0         SC           Glessessenatsp.         22         8.87%         Yes         Larva         0         SC           Glessessenatsp.         22         0.86%         Yes         Larva         0         SC           Helicopsychtalsp.         1         0.04%         Yes         Larva         2         PR           Caratopsyche sp.         4         0.16%         Yes         Larva         5         CF           Hydropsychidae         1         0.04%         Yes         Larva         5         CF           Hydropsychidae         1         0.16%         Yes         Larva         5         CF           Hydropsychidae         1	Brachycentridae							
Brachycentrus occidentalis         5         0.20%         Yes         Larva         2         CF           Micrasema sp.         14         0.56%         Yes         Larva         1         SH           Glosscoomatidae         U         Larva         0         SC2           Glosscoomatidae         222         8.87%         Yes         Larva         0         SC2           Glosscoomatidae         2         0.86%         No         Pupa         1         SC           Protoptila sp.         9         0.36%         Yes         Larva         3         SC           Helicopsychidae         T         0.04%         Yes         Larva         3         SC           Hydropsychidae         1         0.04%         Yes         Larva         4         CF           Cheumatopsyche sp.         4         0.16%         Yes         Larva         5         CF           Hydropsychidae         1         0.04%         No         Pupa         11         CF           Hydropsychidae         1         0.04%         Yes         Larva         5         CF           Hydropsychidae         1         0.04%         Yes         Larva	Brachycentrus americanus	74	2.96%	Yes	Larva		1	CF
Micrasema sp.         14         0.56%         Yes         Larva         1         SH           Glossosomatidae	Brachycentrus occidentalis	5	0.20%	Yes	Larva		2	CF
Glossoomatide         Cilossoomatide         222         8.87%         Yes         Larva         0         SC           Glossoomatide         2         0.08%         No         Pupa         1         SC           Protoptila sp.         9         0.38%         Yes         Larva         1         SC           Heitoopsychide         1         0.04%         Yes         Larva         3         SC           Hydropsychide         1         0.04%         Yes         Larva         3         SC           Cheumatopsyche sp.         10         0.04%         Yes         Larva         3         SC           Cheumatopsyche sp.         10         0.04%         Yes         Larva         2         PR           Choumatopsyche sp.         1         0.04%         Yes         Larva         4         CF           Hydropsychide         1         0.04%         Yes         Larva         5         CF           Hydropsychide         1         0.04%         Yes         Larva         1         SH           Lepidodoma sp.         97         3.88%         Yes         Larva         1         SH           Lepidodoma sp.         97	Micrasema sp.	14	0.56%	Yes	Larva		1	SH
Glossosoma sp.         22         8.7%         Yes         Larva         0         SC           Glossosomatidae         2         0.08%         No         Pupa         11         SC           Pridopulla sp.         9         0.36%         Yes         Larva         1         SC           Helicopsychidae	Glossosomatidae							
Glossosomalidae         2         0.08%         No         Pupa         11         SC           Protoptila sp.         9         0.38%         Yes         Larva         1         SC           Helicopsychide         3         SC         SC         SC         SC         SC           Hydropsychide         1         0.04%         Yes         Larva         3         SC           Chradpsyche sp.         105         4.19%         Yes         Larva         2         PR           Caratopsyche sp.         105         4.19%         Yes         Larva         2         PR           Cheumatopsyche sp.         1         0.04%         Yes         Larva         5         CF           Hydroptilidae         1         0.04%         Yes         Larva         5         CF           Hydroptilidae         4         0.16%         Yes         Larva         11         PH           Lepidostomatidae         1         0.04%         Yes         Larva         8         PR           Rhyacophila sp.         3         0.12%         No         Larva         1         PR           Coleoptera         Thyacophila sp.         3         0.	Glossosoma sp.	222	8.87%	Yes	Larva		0	SC
Protoptila sp.         9         0.36%         Yes         Larva         1         SC           Helicopsychida	Glossosomatidae	2	0.08%	No	Pupa		11	SC
Helicopsychidae         3         SC           Hydropsychidae         2         PR           Arctopsyche sp.         105         4.19%         Yes         Lava         2         PR           Caratopsyche sp.         13         0.52%         Yes         Lava         2         PR           Cheumatopsyche sp.         4         0.16%         Yes         Lava         5         CF           Hydropsyche occidentalis         379         15.14%         Yes         Lava         5         CF           Hydropsyche occidentalis         379         15.14%         Yes         Lava         5         CF           Hydropsyche occidentalis         379         15.14%         Yes         Lava         5         CF           Hydropsychidae         1         0.04%         No         Pupa         11         PH           Lepidostoma sp.         97         3.88%         Yes         Lava         8         PR           Coleoptera         2         0.08%         Yes         Lava         2 and         2         PR           Coleoptera         1         1.64%         Yes         Lava         2 and         2         CG           Cle	Protoptila sp.	9	0.36%	Yes	Larva		1	SC
Halicopsyche sp.         1         0.04%         Yes         Larva         3         SC           Hydropsychidae	Helicopsychidae							
Hydropsychildae         2         PR           Arctopsyche sp.         105         4.19%         Yes         Larva         2         PR           Caratopsyche sp.         4         0.16%         Yes         Larva         5         CF           Hydropsyche occidentalis         379         15.14%         Yes         Larva         5         CF           Hydropsyche occidentalis         379         15.14%         Yes         Larva         5         CF           Hydropsyche occidentalis         379         0.16%         Yes         Larva         5         CF           Hydroptilidae         1         0.04%         No         Pupa         11         CF           Hydroptilidae         -	Helicopsyche sp.	1	0.04%	Yes	Larva		3	SC
Arctopsyche sp.         105         4.19%         Yes         Larva         2         PR           Caratopsyche slossonae         13         0.62%         Yes         Larva         4         CF           Cheuntaposyche sp.         4         0.61%         Yes         Larva         5         CF           Hydropsychidae         1         0.04%         No         Pupa         11         CF           Hydropsychidae         1         0.04%         No         Pupa         11         CF           Hydropsychidae         1         0.04%         No         Pupa         11         CF           Hydropsychidae         4         0.16%         Yes         Larva         11         PH           Lepidostomatidae	Hydropsychidae							
Ceratopsyche slossonae         13         0.52%         Yes         Larva         4         CF           Cheumatopsyche sp.         4         0.16%         Yes         Larva         5         CF           Hydropsyche ocidentalis         379         1.0.04%         No         Pupa         11         CF           Hydropsychidae         1         0.04%         No         Pupa         11         CF           Hydropsychidae         4         0.16%         Yes         Larva         11         PH           Lepidostomatidae	Arctopsyche sp.	105	4.19%	Yes	Larva		2	PR
Cheumatopsyche sp.         4         0.16%         Yes         Larva         5         CF           Hydropsyche occidentalis         379         15.14%         Yes         Larva         5         CF           Hydropsychidae         1         0.04%         Yes         Larva         11         CF           Hydroptilidae         4         0.16%         Yes         Pupa         11         PH           Lepidostomatidae         3         0.16%         Yes         Larva         1         SH           Lepidostoma sp.         97         3.88%         Yes         Larva         1         SH           Leptoceridae           A         0.08%         Yes         Larva         8         PR           Rhyacophilia sp.         2         0.08%         Yes         Larva         2         PR           Coleoptera         1         1.64%         Yes         Larva         2         PR           Coleoptera         1         0.04%         Yes         Larva         2         CG           Coleptelmis addenda         10         0.40%         Yes         Larva         2         CG           Optioservus sp. <td< td=""><td>Ceratopsyche slossonae</td><td>13</td><td>0.52%</td><td>Yes</td><td>Larva</td><td></td><td>4</td><td>CF</td></td<>	Ceratopsyche slossonae	13	0.52%	Yes	Larva		4	CF
Hydropsyche occidentalis         379         15.14%         Yes         Larva         5         CF           Hydropsychidae         1         0.04%         No         Pupa         11         CF           Hydropsychidae         1         0.04%         No         Pupa         11         CF           Hydropsychidae         4         0.16%         Yes         Pupa         11         PH           Lepidostomatidae          1         0.16%         Yes         Larva         1         SH           Lepidostomatidae           3.88%         Yes         Larva         8         PR           Rhyacophilidae           1.04%         Yes         Larva         Early Instar         11         PR           Rhyacophilida Brunnea/Vernna Gr.         41         0.64%         Yes         Larva         2         PR           Coleoptera          Cleptelmis addenda         18         0.72%         No         Larva         1         SH           Lara avara         1         0.44%         Yes         Larva         1         SH           Optioservus sp.         206         8.23%         Yes         La	Cheumatopsyche sp.	4	0.16%	Yes	Larva		5	CF
Hydropsychidae         1         0.04%         No         Pupa         11         CF           Hydroptilidae         4         0.16%         Yes         Pupa         11         PH           Lepidostomatidae           1         SH          SH           Lepidostoma sp.         97         3.88%         Yes         Larva         1         SH           Decetis sp.         0         0.08%         Yes         Larva         8         PR           Oecetis sp.         2         0.08%         Yes         Larva         Early Instar         11         PR           Rhyacophildae           1.04%         Yes         Larva         Early Instar         11         PR           Rhyacophilda Brunnea/Vemna Gr.         41         1.64%         Yes         Larva         2         PR           Coleoptera         Eimidae         10         0.40%         Yes         Adut         4         CG           Cleptelmis addenda         18         0.72%         No         Larva         2         CG           Optioservus sp.         259         10.04%         Yes         Larva         5         SC	Hydropsyche occidentalis	379	15.14%	Yes	Larva		5	CF
Hydroptilidae         4         0.16%         Yes         Pupa         11         PH           Lepidostomatidae         -	Hydropsychidae	1	0.04%	No	Pupa		11	CF
Hydroptilidae         4         0.16%         Yes         Pupa         11         PH           Lepidostomatiae         1         SH         1         SH           Lepidostoma sp.         97         3.88%         Yes         Larva         1         SH           Leptoceridae         0ecetis sp.         2         0.08%         Yes         Larva         8         PR           Rhyacophilidae         1         1.64%         Yes         Larva         Early Instar         11         PR           Rhyacophilia Brunnea/Venna Gr.         3         0.12%         No         Larva         Early Instar         11         PR           Coleoptera         Eimidae         0         0.40%         Yes         Larva         2         PR           Cleptelmis addenda         10         0.40%         Yes         Larva         4         CG           Cleptelmis addenda         10         0.40%         Yes         Larva         1         SH           Narpus concolor         1         0.04%         Yes         Larva         2         CG           Optioservus sp.         266         8.23%         Yes         Larva         5         SC	Hydroptilidae				IN OTHER DATES			
Lepidostomatidae         1         SH           Lepidostoma sp.         97         3.88%         Yes         Larva         1         SH           Leptoceritae         -	Hydroptilidae	4	0.16%	Yes	Pupa		11	PH
Lapidostoma sp.         97         3.88%         Yes         Larva         1         SH           Leptoceridae	Lepidostomatidae				100000			
Leptoceridae         2         0.08%         Yes         Larva         8         PR           Rhyacophildae	Lepidostoma sp.	97	3.88%	Yes	Larva		1	SH
Oecetis sp.20.08%YesLarvaBPRRhyacophilida	Leptoceridae							
Rhyacophilia sp. Rhyacophila Sp.30.12%NoLarvaEarly Instar11PRRhyacophila Brunnea/Vemna Gr.411.64%YesLarva2PRColeoptera	Oecetis sp.	2	0.08%	Yes	Larva		8	PR
Rhyacophila sp. Rhyacophila Brunnea/Vemna Gr.30.12% 41NoLarvaEarly Instar11PRRhyacophila Brunnea/Vemna Gr.411.64%YesLarva2PRColeoptera2PR2PRElmidae100.40%YesAdult4CGCleptelmis addenda100.40%YesAdut4CGLara avara10.04%YesLarva4CGLara avara10.04%YesLarva2CGOptioservus sp.2068.23%YesAdult5SCOptioservus sp.2068.23%YesLarva4CGDiptera20.08%YesLarva5SCDiptera20.08%YesLarva5PRSimulidae150.60%YesLarva5PRSimulium sp.130.52%NoPupa6CFSimulium sp.130.52%NoPupa6CFTipulidae10.40%YesLarva3CGDicranota sp.160.64%YesLarva3CGDicranota sp.110.04%YesLarva3CGDicranota sp.160.64%YesLarva3CGDicranota sp.50.20%YesLarva3CGDicranota sp.50.20%YesLar	Rhyacophilidae							
Rhyacophila Brunnea/Venna Gr.         41         1.64%         Yes         Larva         2         PR           Coleoptera         Elmidae                       Coleoptera <td>Rhyacophila sp.</td> <td>3</td> <td>0.12%</td> <td>No</td> <td>Larva</td> <td>Early Instar</td> <td>11</td> <td>PR</td>	Rhyacophila sp.	3	0.12%	No	Larva	Early Instar	11	PR
ColeopteraElmidaeCleptelmis addenda100.40%YesAdult4CGCleptelmis addenda180.72%NoLarva4CGLara avara10.04%YesLarva1SHNarpus concolor10.04%YesLarva2CGOptioservus sp.2068.23%YesAdult5SCOptioservus sp.25910.35%NoLarva5SCZatzevia sp.20.08%YesLarva4CGDiptera20.08%YesLarva5PRSimuliidae210.84%YesLarva5PRSimuliim sp.130.52%NoPupa6CFSimuliim sp.140.56%YesLarva3CGDiptara160.64%YesLarva3PRHexatoma sp.50.20%YesLarva2PR	Rhyacophila Brunnea/Vemna Gr.	41	1.64%	Yes	Larva	Profession - In 1995 Internation	2	PR
Elmidae           Cleptelmis addenda         10         0.40%         Yes         Adult         4         CG           Cleptelmis addenda         18         0.72%         No         Larva         4         CG           Lara avara         1         0.04%         Yes         Larva         1         SH           Narpus concolor         1         0.04%         Yes         Larva         2         CG           Optioservus sp.         206         8.23%         Yes         Adult         5         SC           Optioservus sp.         259         10.35%         No         Larva         4         CG           Zaitzevia sp.         2         0.08%         Yes         Larva         4         CG           Diptera         2         0.08%         Yes         Larva         5         PR           Meoplasta sp.         21         0.84%         Yes         Larva         5         PR           Simulium sp.         13         0.52%         No         Pupa         6         CF           Simulium sp.         14         0.56%         Yes         Larva         6         CF           Simulium sp.         16	Coleoptera							
Cleptelmis addenda100.40%YesAdult4CGCleptelmis addenda180.72%NoLarva4CGLara avara10.04%YesLarva1SHNarpus concolor10.04%YesLarva2CGOptioservus sp.2068.23%YesAdult5SCOptioservus sp.25910.35%NoLarva5SCZaitzevia sp.20.08%YesLarva4CGDipteraEmpididaeChelifera / Metachela sp.150.60%YesLarva5PRNeoplasta sp.210.84%YesLarva5PRSimulium sp.130.52%NoPupa6CFSimulium sp.140.66%YesLarva3CGDicranota sp.160.64%YesLarva3PRHexatoma sp.50.20%YesLarva2PR	Elmidae							
Cleptelmis addenda180.72%NoLarva4CGLara avara10.04%YesLarva1SHNarpus concolor10.04%YesLarva2CGOptioservus sp.2068.23%YesAdult5SCOptioservus sp.25910.35%NoLarva5SCZaitzevia sp.20.08%YesLarva4CGDipteraEmpididaeChelifera / Metachela sp.150.60%YesLarva5PRSimuliidaeSimuliidaeSimuliidaeSimuliida sp.130.52%NoPupa6CFTipulidaeAntocha monticola160.64%YesLarva3CGDicranota sp.10.04%YesLarva3PRAntocha monticola160.64%YesLarva3PRHexatoma sp.50.20%YesLarva3PRDicranota sp.10.04%YesLarva3PRDicranota sp.10.04%YesLarva3PRDicranota sp.10.04%YesLarva3PRDicranota sp.10.04%YesLarva3PRDicranota sp.10.04%YesLarva3PRDicranota sp.10.04%YesLarva3PR <t< td=""><td>Cleptelmis addenda</td><td>10</td><td>0.40%</td><td>Yes</td><td>Adult</td><td></td><td>4</td><td>CG</td></t<>	Cleptelmis addenda	10	0.40%	Yes	Adult		4	CG
Lara avara10.04%YesLarva1SHNarpus concolor10.04%YesLarva2CGOptioservus sp.2068.23%YesAdult5SCOptioservus sp.25910.35%NoLarva5SCZaitzevia sp.20.08%YesLarva4CGDipteraEmpididaeChelifera / Metachela sp.150.60%YesLarva5PRNeoplasta sp.210.84%YesLarva5PRSimuliidae30.52%NoPupa6CFSimulium sp.140.56%YesLarva6CFTipulidae10.04%YesLarva3CGDicranota sp.160.64%YesLarva3PRAntocha monticola160.64%YesLarva3PRHexatoma sp.50.20%YesLarva2PR	Cleptelmis addenda	18	0.72%	No	Larva		4	CG
Narpus concolor10.04%YesLarva2CGOptioservus sp.2068.23%YesAdult5SCOptioservus sp.25910.35%NoLarva5SCZaitzevia sp.20.08%YesLarva4CGDipteraChelifera / Metachela sp.150.60%YesLarva5PRNeoplasta sp.210.84%YesLarva5PRSimulium sp.130.52%NoPupa6CFSimulium sp.140.56%YesLarva3CGTipulidaeI0.04%YesLarva3CGMatcha monticola160.64%YesLarva3CGDicranota sp.10.04%YesLarva3PRHexatoma sp.50.20%YesLarva2PR	Lara avara	1	0.04%	Yes	Larva		1	SH
Optioservus sp.2068.23%YesAdult5SCOptioservus sp.25910.35%NoLarva5SCZaitzevia sp.20.08%YesLarva4CGDipteraEmpididaeChelifera / Metachela sp.150.60%YesLarva5PRNeoplasta sp.210.84%YesLarva5PRSimuliidae30.52%NoPupa6CFSimulium sp.130.52%NoPupa6CFTipulidae140.56%YesLarva3CGDicranota sp.160.64%YesLarva3PRAntocha monticola160.64%YesLarva3PRHexatoma sp.50.20%YesLarva2PR	Narpus concolor	1	0.04%	Yes	Larva		2	CG
Optioservus sp. Zaitzevia sp.25910.35%NoLarva5SCZaitzevia sp.20.08%YesLarva4CGDipteraEmpididaeChelifera / Metachela sp.150.60%YesLarva5PRNeoplasta sp.210.84%YesLarva5PRSimuliidae30.52%NoPupa6CFSimulium sp.130.52%NoPupa6CFSimulium sp.140.56%YesLarva6CFTipulidae160.64%YesLarva3CGDicranota sp.10.04%YesLarva3PRHexatoma sp.50.20%YesLarva2PR	Optioservus sp.	206	8.23%	Yes	Adult		5	SC
Zaitzevia sp.         2         0.08%         Yes         Larva         4         CG           Diptera         Empididae         -	Optioservus sp.	259	10.35%	No	Larva		5	SC
DipteraEmpididaeChelifera / Metachela sp.150.60%YesLarva5PRNeoplasta sp.210.84%YesLarva5PRSimuliidaeSimulium sp.130.52%NoPupa6CFSimulium sp.140.56%YesLarva6CFTipulidaeAntocha monticola160.64%YesLarva3CGDicranota sp.10.04%YesLarva3PRHexatoma sp.50.20%YesLarva2PR	Zaitzevia sp.	2	0.08%	Yes	Larva		4	CG
EmpididaeChelifera / Metachela sp.150.60%YesLarva5PRNeoplasta sp.210.84%YesLarva5PRSimuliidaeSimulium sp.130.52%NoPupa6CFSimulium sp.140.56%YesLarva6CFTipulidae160.64%YesLarva3CGDicranota sp.10.04%YesLarva3PRHexatoma sp.50.20%YesLarva2PR	Diptera							
Chelifera / Metachela sp.150.60%YesLarva5PRNeoplasta sp.210.84%YesLarva5PRSimuliidae30.52%NoPupa6CFSimulium sp.130.56%YesLarva6CFSimulium sp.140.56%YesLarva6CFTipulidae160.64%YesLarva3CGDicranota sp.10.04%YesLarva3PRHexatoma sp.50.20%YesLarva2PR	Empididae							
Neoplasta sp.210.84%YesLarva5PRSimuliidae	Chelifera / Metachela sp.	15	0.60%	Yes	Larva		5	PR
SimuliidaeSimulium sp.130.52%NoPupa6CFSimulium sp.140.56%YesLarva6CFTipulidaeAntocha monticola160.64%YesLarva3CGDicranota sp.10.04%YesLarva3PRHexatoma sp.50.20%YesLarva2PR	Neoplasta sp.	21	0.84%	Yes	Larva		5	PR
Simulium sp.         13         0.52%         No         Pupa         6         CF           Simulium sp.         14         0.56%         Yes         Larva         6         CF           Tipulidae         Image: Comparison of the sp.         16         0.64%         Yes         Larva         3         CG           Dicranota sp.         1         0.04%         Yes         Larva         3         PR           Hexatoma sp.         5         0.20%         Yes         Larva         2         PR	Simuliidae							
Simulium sp.         14         0.56%         Yes         Larva         6         CF           Tipulidae	Simulium sp.	13	0.52%	No	Pupa		6	CF
Antocha monticola         16         0.64%         Yes         Larva         3         CG           Dicranota sp.         1         0.04%         Yes         Larva         3         PR           Hexatoma sp.         5         0.20%         Yes         Larva         2         PR	Simulium sp.	14	0.56%	Yes	Larva		6	CF
Antocha monticola         16         0.64%         Yes         Larva         3         CG           Dicranota sp.         1         0.04%         Yes         Larva         3         PR           Hexatoma sp.         5         0.20%         Yes         Larva         2         PR	Tipulidae							
Dicranota sp.         1         0.04%         Yes         Larva         3         PR           Hexatoma sp.         5         0.20%         Yes         Larva         2         PR	Antocha monticola	16	0.64%	Yes	Larva		3	CG
Hexatoma sp. 5 0.20% Yes Larva 2 PR	Dicranota sp.	1	0.04%	Yes	Larva		3	PR
	Hexatoma sp.	5	0.20%	Yes	Larva		2	PR

## Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC003

RAI No.:	PBSJ16CFRC003			Sta. Name	e: Wa	rm Springs Cr. near	mouth - Compo	site
Date Coll.:	9/19/2016	No. Jars: 1		STORET	ID:			
Taxonomic Name	e	Cour	t PRA	Unique	Stage	Qualifier	BI	Function
Chironomidae								~
Chirono	omidae	1	0.04%	No	Pupa	Damaged	11	CG
Chironomina	ae							
Rheota	nytarsus sp.	6	0.24%	Yes	Larva		11	CF
Diamesinae								
Diames	sinae	1	0.04%	No	Pupa	Damaged	11	CG
Pagasti	ia sp.	5	0.20%	No	Pupa		1	CG
Pagasti	ia sp.	26	1.04%	Yes	Larva		1	CG
Orthocladiin	ae							
Brillia s	p.	1	0.04%	Yes	Larva		4	SH
Cricoto	pus sp.	4	0.16%	No	Pupa		7	SH
Cricoto	pus sp.	33	1.32%	No	Larva		7	SH
Cricoto	pus (Nostococladius) sp.	390	15.58%	Yes	Larva		6	SH
Eukieffe	eriella sp.	11	0.44%	Yes	Larva		8	CG
Eukieffe	eriella sp.	1	0.04%	No	Pupa		8	CG
Orthock	adiinae	4	0.16%	No	Pupa	Damaged	11	CG
Orthock	adius sp.	5	0.20%	No	Pupa		6	CG
Orthock	adius sp.	159	6.35%	Yes	Larva		6	CG
Parame	etriocnemus sp.	2	0.08%	Yes	Larva		5	CG
Thiener	manniella sp.	1	0.04%	Yes	Pupa		6	CG
Tveteni	ia sp.	5	0.20%	Yes	Larva		5	CG
Tveteni	ia sp.	1	0.04%	No	Pupa		5	CG
	Sample	Count 2503	3					

PBSJ16CFRC004

RAI No .:

## Project ID: PBSJ16CFRC

Sta. Name:

### RAI No.: PBSJ16CFRC004

Silver Bow Cr. at Warm Springs - Composite

PR

3

Client ID:	SS-25							
Date Coll.:	9/19/2016	No. Jars: 1	\$	STORET	D:			
Taxonomic Narr	ne	Count	PRA	Unique	Stage	Qualifier	BI	Function
Other Non-Inse	ct							
Hydrozoa								
Hydroz	zoa	1	0.02%	Yes	Unknown		8	PR
Trepaxoner	mata							
Trepax	konemata	645	10.14%	Yes	Unknown		5	PR
Nemata								
Nemat	a	4	0.06%	Yes	Unknown		5	UN
Glossiphon	iidae							
Glossi	phoniidae	1	0.02%	Yes	Unknown	Damaged	9	PR
Enchytraeid	dae							
Enchy	traeidae	3	0.05%	Yes	Unknown		4	CG
Naididae								
Naidid	ae	3	0.05%	No	Immature		8	CG
Naididae								
Naidin	ae	7	0.11%	Yes	Unknown		8	CG
Naididae								
Tubific	cinae	3	0.05%	Yes	Unknown		10	CG
Sphaeriidae	e							
Sphae	riidae	25	0.39%	Yes	Immature		8	CF
Sphaeriidae	e							
Pisidiu	im sp.	38	0.60%	Yes	Unknown		8	CF
Physidae								
Physe	lla sp.	1	0.02%	Yes	Unknown		8	SC
Gammarida	ae							
Gamm	arus sp.	19	0.30%	Yes	Unknown		4	SH
Hyalellidae								
Hyalel	la sp.	450	7.07%	Yes	Unknown		8	CG
Asellidae								
Caecio	lotea sp.	20	0.31%	Yes	Unknown		8	CG
Odonata								
Gomphidae	•							
Gompl	hidae	1	0.02%	Yes	Larva	Early Instar	11	PR
phemeroptera								
Baetidae								
Baetis	tricaudatus complex	118	1.86%	Yes	Larva		4	CG
Iswaed	on sp.	1	0.02%	Yes	Larva		6	UN
Caenidae								
Caenis	s sp.	1	0.02%	Yes	Larva		11	CG
Ephemerel	lidae							
Ephen	nerella excrucians	21	0.33%	Yes	Larva		4	SH

1

0.02%

Yes

Larva

Plecoptera

Periodidae

Skwala sp.

## Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC004

RAI No.:	PBSJ16CFRC004			Sta. Name	e: Silv	er Bow Cr. at Warm	Springs - Comp	oosite
Client ID:	SS-25							
Date Coll.:	9/19/2016	No. Jars: 1		STORET	ID:			
Taxonomic Nar	me	Count	PRA	Unique	Stage	Qualifier	BI	Function
Trichoptera								
Brachycen	tridae							
Amioo	centrus aspilus	1	0.02%	Yes	Larva		3	CG
Brach	nycentrus occidentalis	10	0.16%	Yes	Larva		2	CF

Brachycentrus occidentalis	10	0.16%	Yes	Larva		2	CF
Glossosomatidae							
Protoptila sp.	1	0.02%	Yes	Larva		1	SC
Helicopsychidae							
Helicopsyche sp.	9	0.14%	Yes	Larva		3	SC
Hydropsychidae							
Ceratopsyche sp.	2	0.03%	No	Larva	Early Instar	5	CF
Ceratopsyche bronta	14	0.22%	Yes	Larva		6	CF
Cheumatopsyche sp.	478	7.51%	Yes	Larva		5	CF
Hydropsyche occidentalis	84	1.32%	Yes	Larva		5	CF
Hydroptilidae							
Hydroptilidae	15	0.24%	Yes	Pupa		11	PH
Lepidostomatidae				-			
Lepidostoma sp.	4	0.06%	Yes	Larva		1	SH
Leptoceridae							
Nectopsyche sp.	28	0.44%	Yes	Larva		3	SH
Oecetis sp.	170	2.67%	Yes	Larva		8	PR
Lepidoptera							
Crambidae							
Petrophila sp.	8	0.13%	Yes	Larva		5	SC
Coleoptera							
Elmidae							
Cleptelmis addenda	5	0.08%	No	Larva		4	CG
Cleptelmis addenda	1	0.02%	Yes	Adult		4	CG
Optioservus sp.	507	7.97%	No	Larva		5	SC
Optioservus sp.	82	1.29%	Yes	Adult		5	SC
Zaitzevia sp.	47	0.74%	Yes	Adult		4	CG
Zaitzevia sp.	471	7.40%	No	Larva		4	CG
Diptera							
Empididae							
Hemerodromia sp.	14	0.22%	Yes	Larva		6	PR
Simuliidae							
Simulium sp.	24	0.38%	No	Pupa		6	CF
Simulium sp.	34	0.53%	Yes	Larva		6	CF
Tipulidae							
Antocha monticola	2	0.03%	Yes	Larva		3	CG

#### Project ID: PBSJ16CFRC

#### RAI No .: PBSJ16CFRC004

RAI No .: PBSJ16CFRC004 Client ID: CC.25

Sta. Name:

Silver Bow Cr. at Warm Springs - Composite

Client ID:	55-20							
Date Coll.:	9/19/2016	No. Jars: 1		STORET	ID:			
Taxonomic Nan	ne	Count	PRA	Unique	Stage	Qualifier	BI	Function
Chironomidae								
Chironomir	nae							
Chiron	nomini	1	0.02%	No	Larva	Damaged	6	CG
Crypto	ochironomus sp.	1	0.02%	Yes	Larva		8	PR
Glypto	otendipes sp.	1	0.02%	Yes	Larva		10	SH
Microt	tendipes sp.	176	2.77%	Yes	Larva		6	CF
Chironomir	nae							
Pseud	lochironomus sp.	3	0.05%	Yes	Larva		11	CG
Chironomir	nae							
Microp	osectra sp.	14	0.22%	Yes	Larva		11	CG
Diamesina	e							
Pottha	astia Longimanus Gr.	6	0.09%	Yes	Larva		2	CG
Orthocladii	nae							
Cricot	opus sp.	95	1.49%	No	Pupa		7	SH
Cricot	opus sp.	2227	35.01%	No	Larva		7	SH
Cricot	opus (Nostococladius) sp.	9	0.14%	Yes	Larva		6	SH
Eukiet	fferiella sp.	2	0.03%	No	Pupa		8	CG
Eukiet	fferiella sp.	5	0.08%	Yes	Larva		8	CG
Orthoo	cladiinae	1	0.02%	No	Larva	Damaged	11	CG
Orthoo	cladiinae	63	0.99%	No	Pupa	Damaged	11	CG
Orthod	cladius sp.	171	2.69%	Yes	Larva		6	CG
Orthod	cladius sp.	7	0.11%	No	Pupa		6	CG
Tveter	nia sp.	1	0.02%	No	Pupa		5	CG
Tveter	nia sp.	11	0.17%	Yes	Larva		5	CG
Tanypodina	ae							
Thiene	emannimyia Gr.	193	3.03%	Yes	Larva	Early Instar	11	PR
	Sample C	Count 6361						

# Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC005

RAI No.:	PBSJ16CFRC005			Sta. Name	e: Clark	Fork near Galen - C	Composite	
Client ID:	CFR-03A							
Date Coll.:	9/19/2016	No. Jars: 1		STORET	ID:			
Taxonomic Nan	ne	Count	PRA	Unique	Stage	Qualifier	BI	Function
Other Non-Inse	ct							
Trepaxone	mata							
Trepa	xonemata	81	1.37%	Yes	Unknown		5	PR
Nemata								
Nema	ta	3	0.05%	Yes	Unknown		5	UN
Enchytraei	dae							
Enchy	traeidae	6	0.10%	Yes	Unknown		4	CG
Naididae								
Naidin	ae	11	0.19%	Yes	Unknown		8	CG
Sphaeriida	e							
Sphae	eriidae	1	0.02%	Yes	Immature		8	CF
Odonata								
Gomphidae	e							
Gomp	hidae	1	0.02%	Yes	Larva	Early Instar	11	PR
Ephemeroptera								
Baetidae								
Baetis	tricaudatus complex	117	1.98%	Yes	Larva		4	CG
Diphe	tor hageni	4	0.07%	Yes	Larva		5	CG
Ephemerel	llidae							
Drune	lla grandis	2	0.03%	Yes	Larva		2	PR
Epher	merella sp.	59	1.00%	No	Larva	Early Instar	11	SC
Ephen	merella excrucians	9	0.15%	Yes	Larva		4	SH
Heptagenii	dae							
Cinygi	mula sp.	1	0.02%	Yes	Larva		0	SC
Hepta	genia sp.	14	0.24%	Yes	Larva		4	SC
Rhithr	ogena sp.	106	1.79%	Yes	Larva		0	SC
Plecoptera								
Perlidae								
Hespe	eroperla pacifica	6	0.10%	Yes	Larva		11	PR
Periodidae								
Perloc	lidae	26	0.44%	No	Larva	Early Instar	11	PR
Skwal	a sp.	71	1.20%	Yes	Larva		3	PR
Pteronarcy	ridae							
Pteror	narcella sp.	2	0.03%	Yes	Larva		3	SH

RAI No .:

Client ID:

Date Coll .:

## Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC005

PBSJ16CFRC005 Sta. Name: Clark Fork near Galen - Composite CFR-03A 9/19/2016 No. Jars: 1 STORET ID:

Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Trichoptera							
Trichoptera							
Trichoptera	2	0.03%	No	Pupa	Damaged	11	UN
Brachycentridae				-			
Brachycentrus occidentalis	200	3.38%	Yes	Larva		2	CF
Glossosomatidae							
Glossosoma sp.	25	0.42%	Yes	Larva		0	SC
Protoptila sp.	1345	22.76%	Yes	Larva		1	SC
Helicopsychidae							
Helicopsyche sp.	68	1.15%	Yes	Larva		3	SC
Hydropsychidae							
Ceratopsyche sp.	70	1.18%	No	Larva	Early Instar	5	CF
Ceratopsyche cockerelli	142	2.40%	Yes	Larva		4	CF
Ceratopsyche slossonae	2	0.03%	Yes	Larva		4	CF
Cheumatopsyche sp.	5	0.08%	Yes	Larva		5	CF
Hydropsyche occidentalis	74	1.25%	Yes	Larva		5	CF
Hydropsychidae	351	5.94%	No	Larva	Early Instar	11	CF
Lepidostomatidae					Post-skie - to standarding		
Lepidostoma sp.	178	3.01%	Yes	Larva		1	SH
Leptoceridae							
Oecetis sp.	15	0.25%	Yes	Larva		8	PR
Psychomyiidae							
Psychomyia sp.	3	0.05%	Yes	Larva		2	CG
Lepidoptera							
Crambidae							
Petrophila sp.	1	0.02%	Yes	Larva		5	SC
Coleoptera							
Elmidae							
Cleptelmis addenda	100	1.69%	No	Larva		4	CG
Cleptelmis addenda	3	0.05%	Yes	Adult		4	CG
Optioservus sp.	340	5.75%	No	Larva		5	SC
Optioservus sp.	175	2.96%	Yes	Adult		5	SC
Zaitzevia sp.	89	1.51%	Yes	Adult		4	CG
Zaitzevia sp.	139	2.35%	No	Larva		4	CG
Diptera							
Athericidae							
Atherix sp.	72	1.22%	Yes	Larva		4	PR
Empididae							
Chelifera / Metachela sp.	3	0.05%	Yes	Larva		5	PR
Hemerodromia sp.	15	0.25%	Yes	Larva		6	PR
Simuliidae							
Simulium sp.	11	0.19%	Yes	Larva		6	CF
Tipulidae							
Antocha monticola	23	0.39%	Yes	Larva		3	CG
Hexatoma sp.	12	0.20%	Yes	Larva		2	PR
1283							

## Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC005

Early Instar

PR

11

RAI No.:	PBSJ16CFRC005			Sta. Name	e: Clar	k Fork near Galen -	Composite	
Client ID:	CFR-03A							
Date Coll.:	9/19/2016	No. Jars: 1		STORET	ID:			
Taxonomic Nan	ne	Count	PRA	Unique	Stage	Qualifier	BI	Function
Chironomidae								
Chironomir	nae							
Microt	endipes sp.	153	2.59%	Yes	Larva		6	CF
Polype	edilum sp.	1	0.02%	Yes	Larva		6	SH
Chironomir	nae							
Microp	osectra sp.	2	0.03%	Yes	Larva		11	CG
Diamesina	e							
Pagas	stia sp.	2	0.03%	Yes	Larva		1	CG
Orthocladii	nae							
Cricote	opus sp.	32	0.54%	No	Pupa		7	SH
Cricote	opus sp.	274	4.64%	No	Larva		7	SH
Cricote	opus (Nostococladius) sp.	1138	19.26%	Yes	Larva		6	SH
Eukief	fferiella sp.	7	0.12%	No	Pupa		8	CG
Eukief	fferiella sp.	85	1.44%	Yes	Larva		8	CG
Nanoc	cladius sp.	1	0.02%	Yes	Larva		3	CG
Orthoo	cladiinae	3	0.05%	No	Pupa	Damaged	11	CG
Orthod	cladius sp.	2	0.03%	No	Pupa		6	CG
Orthod	cladius sp.	172	2.91%	Yes	Larva		6	CG
Param	netriocnemus sp.	2	0.03%	Yes	Larva		5	CG
Param	netriocnemus sp.	3	0.05%	No	Pupa		5	CG
Tveter	nia sp.	37	0.63%	Yes	Larva		5	CG
Tveter	nia sp.	5	0.08%	No	Pupa		5	CG
Tanypodina	ae							

7

5909

Sample Count

0.12%

Yes

Larva

Thienemannimyia Gr.

# Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC006

RAI No .:	PBSJ16CFRC006			Sta. Name	e: Clark	Fork at Galen Road	- Composite	
Client ID:	CFR-07D							
Date Coll.:	9/19/2016	No. Jars: 1		STORET	ID:			
Taxonomic Nan	ne	Count	PRA	Unique	Stage	Qualifier	BI	Function
Other Non-Inse	ct							
Trepaxone	mata							
Trepax	xonemata	89	1.95%	Yes	Unknown		5	PR
Nemata								
Nemat	ta	3	0.07%	Yes	Unknown		5	UN
Enchytraei	dae							
Enchy	traeidae	4	0.09%	Yes	Unknown		4	CG
Naididae								
Naidid	ae	7	0.15%	No	Immature		8	CG
Naididae								
Naidin	ae	2	0.04%	Yes	Unknown		8	CG
Naididae								
Tubific	cinae	7	0.15%	Yes	Unknown		10	CG
Planorbida	e							
Gyrau	lus sp.	1	0.02%	Yes	Unknown		8	SC
Odonata								
Gomphidae	e							
Gomp	hidae	4	0.09%	Yes	Larva	Early Instar	11	PR
Ephemeroptera								
Baetidae								
Baetis	Rhodani Gr.	2	0.04%	Yes	Larva	Damaged	11	CG
Baetis	tricaudatus complex	16	0.35%	Yes	Larva		4	CG
Calliba	aetis sp.	1	0.02%	Yes	Larva		9	CG
Diphet	tor hageni	1	0.02%	Yes	Larva		5	CG
Iswaed	on sp.	2	0.04%	Yes	Larva		6	UN
Ephemerel	lidae							
Drune	lla sp.	1	0.02%	Yes	Larva	Damaged	11	SC
Ephen	nerella sp.	32	0.70%	Yes	Larva	Early Instar	11	SC
Heptagenii	dae							
Hepta	genia sp.	3	0.07%	Yes	Larva		4	SC
Rhithr	ogena sp.	41	0.90%	Yes	Larva		0	SC
Plecoptera								
Periodidae								
Period	lidae	7	0.15%	No	Larva	Early Instar	11	PR
Skwal	a sp.	79	1.73%	Yes	Larva		3	PR
Pteronarcy	idae							

1

0.02% Yes

Larva

3

SH

Pteronarcella sp.

### Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC006

RAI No .: PBSJ16CFRC006 Sta. Name: Clark Fork at Galen Road - Composite Client ID: CFR-07D Date Coll .: 9/19/2016 STORET ID: No. Jars: 1 Taxonomic Name PRA BI Count Qualifier Function Unique Stage Trichoptera Brachycentridae Brachycentrus occidentalis 191 2 CF 4.19% Yes Larva Glossosomatidae Glossosoma sp. SC 7 0.15% Yes 0 Larva Glossosomatidae 7 0.15% Pupa 11 SC No Protoptila sp. 1118 24.54% Yes Larva 1 SC Helicopsychidae Helicopsyche sp. 3 0.07% No Pupa 3 SC Helicopsyche sp. 667 14.64% Yes Larva 3 SC Hydropsychidae Ceratopsyche sp. 98 2.15% No Early Instar 5 CF Larva Ceratopsyche cockerelli 43 0.94% Yes Larva 4 CF Cheumatopsyche sp. 6 0.13% Yes Larva 5 CF Hydropsyche occidentalis 249 5.47% Yes Larva 5 CF Hydropsychidae 81 1.78% No 11 CF Larva Early Instar Lepidostomatidae Lepidostoma sp. 94 2.06% Yes SH Larva 1 Leptoceridae Nectopsyche sp. 2 0.04% Yes SH Larva 3 Oecetis sp. 77 1.69% Yes 8 PR Larva Lepidoptera Crambidae Petrophila sp. 82 1.80% 5 SC Yes Larva Coleoptera Elmidae Cleptelmis addenda 0.02% Yes Adult 4 CG 1 Cleptelmis addenda 57 1.25% No Larva 4 CG Optioservus sp. 488 10.71% No Larva 5 SC Optioservus sp. 5 272 5.97% Yes Adult SC Zaitzevia sp. 4 59 1.29% CG No Larva Zaitzevia sp. 67 1.47% Yes Adult 4 CG Diptera

Empididae Hemerodromia sp. PR 14 0.31% Yes Larva 6 Neoplasta sp. 5 1 0.02% Yes Larva PR Simuliidae Simulium sp. 3 0.07% Yes Pupa 6 CF Stratiomyidae Stratiomyidae 2 7 CG 0.04% Yes Damaged Larva Tipulidae Antocha monticola 15 0.33% Yes 3 CG Larva Hexatoma sp. 1 0.02% Yes Larva 2 PR

## Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC006

RAI No.:	PBSJ16CFRC006				Sta. Name: Clark Fork at Galen Road - Composite							
Client ID:	CFR-07D											
Date Coll.:	9/19/2016	No. Jars: 1			STORET ID:							
Taxonomic Nan	ne		Count	PRA	Unique	Stage	Qualifier	BI	Function			
Chironomidae												
Chironomi	nae											
Microt	tendipes sp.		167	3.67%	Yes	Larva		6	CF			
Diamesina	e											
Pagas	stia sp.		1	0.02%	Yes	Larva		1	CG			
Orthocladii	inae											
Coryn	oneura sp.		1	0.02%	Yes	Pupa		7	CG			
Cricot	topus sp.		10	0.22%	No	Pupa		7	SH			
Cricot	topus sp.		51	1.12%	No	Larva		7	SH			
Cricot	topus (Nostococladius) sp.		238	5.22%	Yes	Larva		6	SH			
Eukiei	fferiella sp.		1	0.02%	No	Pupa		8	CG			
Eukiei	fferiella sp.		25	0.55%	Yes	Larva		8	CG			
Nanoo	cladius sp.		1	0.02%	Yes	Larva		3	CG			
Ortho	cladiinae		2	0.04%	No	Pupa	Damaged	11	CG			
Ortho	cladius sp.		26	0.57%	Yes	Larva		6	CG			
Paran	netriocnemus sp.		1	0.02%	Yes	Pupa		5	CG			
Tveter	nia sp.		19	0.42%	Yes	Larva		5	CG			
Tveter	nia sp.		1	0.02%	No	Pupa		5	CG			
Tanypodina	ae											
Thiene	emannimyia Gr.		4	0.09%	Yes	Larva	Early Instar	11	PR			
	Sample	e Count	4556									

## Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC007

RAI No .: PBSJ16CFRC007 Sta. Name: Clark Fork at Gem Backroad - Composite Client ID: CFR-11F Date Coll .: 9/19/2016 STORET ID: No. Jars: 1 Taxonomic Name Count PRA Qualifier BI Function Unique Stage Other Non-Insect Trepaxonemata Trepaxonemata 225 Yes Unknown 5 PR 3.71% Nemata Nemata UN 3 0.05% Unknown 5 Yes Enchytraeidae Enchytraeidae 14 0.23% Yes Unknown 4 CG Naididae Naididae 0.07% Immature 8 CG 4 No Naididae Naidinae 0.49% CG 30 Yes Unknown 8 Naididae Tubificinae 0 21% 13 Yes Unknown 10 CG

Tubilicitide	15	0.21%	res	Unknown	1	10	CG
Sphaeriidae							
Pisidium sp.	6	0.10%	Yes	Unknown	1	8	CF
Physidae							
Physella sp.	2	0.03%	Yes	Unknown	n	8	SC
Odonata							
Gomphidae							
Gomphidae	1	0.02%	No	Larva	Early Instar	11	PR
Ophiogomphus sp.	7	0.12%	Yes	Larva		5	PR
Odonata							
Coenagrionidae							
Coenagrionidae	1	0.02%	Yes	Larva	Early Instar	8	PR
Ephemeroptera							
Baetidae							
Baetidae	1	0.02%	No	Larva	Damaged	11	CG
Baetis tricaudatus complex	7	0.12%	Yes	Larva		4	CG
Diphetor hageni	1	0.02%	Yes	Larva		5	CG
Iswaeon sp.	1	0.02%	Yes	Larva		6	UN
Ephemerellidae							
Ephemerella sp.	93	1.53%	Yes	Larva	Early Instar	11	SC
Heptageniidae							
Heptagenia sp.	1	0.02%	Yes	Larva		4	SC
Rhithrogena sp.	30	0.49%	Yes	Larva		0	SC
Leptophlebiidae							
Leptophlebiidae	1	0.02%	Yes	Larva	Early Instar	11	CG
Leptohyphidae							
Tricorythodes sp.	14	0.23%	Yes	Larva		4	CG
Plecoptera							
Perlidae							
Claassenia sabulosa	1	0.02%	Yes	Larva		11	PR
Periodidae							
Periodidae	6	0.10%	No	Larva	Early Instar	11	PR
Skwala sp.	35	0.58%	Yes	Larva		3	PR

### Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC007

RAI No.: PBSJ16CFRC007

Sta. Name: Clark Fork

Clark Fork at Gem Backroad - Composite

Client ID:	CFR-11F							
Date Coll.:	9/19/2016	No. Jars: 1		STORET	ID:			
Taxonomic Nan	ne	Count	PRA	Unique	Stage	Qualifier	BI	Function
Trichoptera								
Brachycen	tridae							
Amioc	centrus aspilus	1	0.02%	Yes	Larva		3	CG
Brach	ycentrus occidentalis	103	1.70%	Yes	Larva		2	CF
Glossosom	natidae							
Gloss	osoma sp.	5	0.08%	Yes	Larva		0	SC
Protop	otila sp.	423	6.98%	Yes	Larva		1	SC
Helicopsyc	hidae							
Helico	psyche sp.	505	8.33%	Yes	Larva		3	SC
Hydropsyc	hidae							
Cerato	opsyche sp.	22	0.36%	No	Larva	Early Instar	5	CF
Cerato	opsyche bronta	12	0.20%	Yes	Larva		6	CF
Cerato	opsyche cockerelli	145	2.39%	Yes	Larva		4	CF
Cheur	natopsyche sp.	227	3.74%	Yes	Larva		5	CF
Hydro	psyche occidentalis	310	5.11%	Yes	Larva		5	CF
Hydro	psychidae	1	0.02%	No	Pupa		11	CF
Hydro	psychidae	57	0.94%	No	Larva	Early Instar	11	CF
Hydroptilid	ae							
Hydro	ptila sp.	2	0.03%	Yes	Larva		6	PH
Hydro	ptilidae	1	0.02%	Yes	Larva	Damaged	11	РН
Hydro	ptilidae	12	0.20%	No	Pupa		11	РН
Oxyet	hira sp.	1	0.02%	Yes	Larva		3	РН
Lepidoston	natidae							
Lepido	ostoma sp.	297	4.90%	Yes	Larva		1	SH
Leptocerida	ae							
Necto	psyche sp.	8	0.13%	Yes	Larva		3	SH
Oecet	is sp.	355	5.86%	Yes	Larva		8	PR
Lepidoptera								
Crambidae	•							
Petrop	ohila sp.	31	0.51%	Yes	Larva		5	SC
Coleoptera								
Dytiscidae								
Boreo	nectes sp.	1	0.02%	Yes	Adult		11	PR
Elmidae								
Clepte	elmis addenda	23	0.38%	No	Larva		4	CG
Clepte	elmis addenda	6	0.10%	Yes	Adult		4	CG
Optios	servus sp.	227	3.74%	Yes	Adult		5	SC
Optios	servus sp.	976	16,10%	No	Larva		5	SC
Zaitze	via sp.	40	0.66%	Yes	Adult		4	CG
Zaitze	via sp.	119	1.96%	No	Larva		4	CG
		113	1.0070	110	Laiva		2.50	00

## Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC007

RAI No.: PBSJ16CFRC007 Sta. Name

Sta. Name: Clark For

Clark Fork at Gem Backroad - Composite

Client ID:	CFR-11F							
Date Coll.:	9/19/2016	No. Jars: 1		STORET	D:			
Taxonomic Na	ame	Count	PRA	Unique	Stage	Qualifier	BI	Function
Diptera								
Athericid	ae							
Athe	erix sp.	169	2.79%	Yes	Larva		4	PR
Empidida	e							
Hem	nerodromia sp.	12	0.20%	Yes	Larva		6	PR
Neo	plasta sp.	1	0.02%	Yes	Larva		5	PR
Simuliida	e							
Sim	ulium sp.	1	0.02%	Yes	Larva		6	CF
Strationy	vidae							
Stra	tiomyidae	1	0.02%	Yes	Larva	Early Instar	7	CG
Tipulidae								
Anto	ocha monticola	2	0.03%	Yes	Larva		3	CG
Hex	atoma sp.	7	0.12%	Yes	Larva		2	PR
Tipu	ıla sp.	26	0.43%	Yes	Larva		4	SH
Chironomidae	)							
Chironon	ninae							
Ape	dilum sp.	1	0.02%	Yes	Larva		11	CG
Dicr	otendipes sp.	1	0.02%	Yes	Larva		8	CG
Micr	rotendipes sp.	476	7.85%	Yes	Larva		6	CF
Pha	enopsectra sp.	1	0.02%	Yes	Larva		7	SC
Poly	pedilum sp.	2	0.03%	Yes	Larva		6	SH
Chironon	ninae							
Psei	udochironomus sp.	2	0.03%	Yes	Larva		11	CG
Chironon	ninae							
Micr	ropsectra sp.	7	0.12%	Yes	Larva		11	CG
Diamesir	nae							
Pott	hastia sp.	7	0.12%	Yes	Larva	Early Instar	2	CG
Orthoclas	diinae							
Cric	otopus sp.	19	0.31%	No	Pupa		7	SH
Cric	otopus sp.	319	5.26%	No	Larva		7	SH
Cric	otopus (Nostococladius) sp.	35	0.58%	Yes	Larva		6	SH
Euki	iefferiella sp.	33	0.54%	Yes	Larva		8	CG
Euki	iefferiella sp.	2	0.03%	No	Pupa		8	CG
Orth	ocladiinae	4	0.07%	No	Pupa	Damaged	11	CG
Orth	ocladius sp.	382	6.30%	Yes	Larva		6	CG
Orth	ocladius sp.	2	0.03%	No	Pupa		6	CG
Para	ametriocnemus sp.	2	0.03%	No	Pupa		5	CG
Para	ametriocnemus sp.	14	0.23%	Yes	Larva		5	CG
Thie	nemanniella sp.	1	0.02%	Yes	Larva		6	CG
Tvet	tenia sp.	67	1.11%	Yes	Larva		5	CG
Tvet	tenia sp.	5	0.08%	No	Pupa		5	CG
Tanypod	inae							
Thie	nemannimyia Gr.	54	0.89%	Yes	Larva	Early Instar	11	PR
	Sample	Count 6062						

## Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC008

RAI No .: PBSJ16CFRC008 Sta. Name: Clark Fork at Williams-Tavenner Br. - Composite CFR-34 Client ID: Date Coll .: 9/20/2016 No. Jars: 1 STORET ID: Taxonomic Name Count PRA Unique Stage Qualifier BI Function Other Non-Insect Trepaxonemata Trepaxonemata 11 0.12% Yes Unknown 5 PR Nemata Nemata UN 1 0.01% Unknown 5 Yes Enchytraeidae Enchytraeidae 3 0.03% Yes Unknown 4 CG Naididae Naididae 43 0.48% No Immature 8 CG Naididae Naidinae 2 0.02% Yes Unknown 8 CG Sphaeriidae

Pisidium sp.	51	0.57%	Yes	Unknown		8	CF
Lymnaeidae							
Lymnaeidae	3	0.03%	Yes	Immature		6	SC
Physidae							
Physella sp.	11	0.12%	Yes	Unknown		8	SC
Planorbidae							
Gyraulus sp.	3	0.03%	Yes	Unknown		8	SC
Odonata							
Gomphidae							
Ophiogomphus sp.	4	0.04%	Yes	Larva		5	PR
Odonata							
Coenagrionidae							
Amphiagrion sp.	1	0.01%	Yes	Larva		11	PR
Ephemeroptera							
Baetidae							
Acentrella sp.	1	0.01%	No	Larva	Damaged	4	CG
Acentrella insignificans	4	0.04%	Yes	Larva		4	CG
Baetis tricaudatus complex	73	0.82%	Yes	Larva		4	CG
Diphetor hageni	1	0.01%	Yes	Larva		5	CG
Iswaeon sp.	15	0.17%	Yes	Larva		6	UN
Ephemerellidae							
Drunella grandis	11	0.12%	Yes	Larva		2	PR
Ephemerella sp.	128	1.44%	No	Larva	Early Instar	11	SC
Ephemerella excrucians	163	1.83%	Yes	Larva		4	SH
Heptageniidae							
Cinygmula sp.	1	0.01%	Yes	Larva		0	SC
Heptagenia sp.	2	0.02%	Yes	Larva		4	SC
Leptohyphidae							
Tricorythodes sp.	1	0.01%	Yes	Larva		4	CG

## Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC008

RAI No.:	PBSJ16CFRC008			Sta. Name	e: Clar	k Fork at Williams-Ta	venner Br C	Composite
Client ID:	CFR-34							
Date Coll.:	9/20/2016	No. Jars: 1		STORET	ID:			
Taxonomic Nar	ne	Count	PRA	Unique	Stage	Qualifier	BI	Function
Plecoptera								
Chloroperl	idae							
Chlore	operlidae	1	0.01%	Yes	Larva	Early Instar	1	PR
Periodidae	1							
Isogei	noides sp.	2	0.02%	Yes	Larva		11	PR
Isopei	rla sp.	5	0.06%	Yes	Larva		2	PR
Skwal	la sp.	5	0.06%	Yes	Larva		3	PR
Trichoptera								
Brachycen	tridae							
Amioo	centrus aspilus	5	0.06%	Yes	Larva		3	CG
Brach	ycentrus occidentalis	779	8.76%	Yes	Larva		2	CF
Glossoson	natidae							
Proto	ptila sp.	36	0.40%	Yes	Larva		1	SC
Helicopsyc	chidae							
Helico	opsyche sp.	1	0.01%	No	Pupa		3	SC

00	0.40 /0	103	Laiva			00
1	0.01%	No	Pupa		3	SC
2477	27.86%	Yes	Larva		3	SC
4	0.04%	Yes	Larva		2	PR
34	0.38%	Yes	Larva		4	CF
1077	12.11%	Yes	Larva		5	CF
512	5.76%	Yes	Larva		5	CF
16	0.18%	No	Larva	Early Instar	11	CF
3	0.03%	Yes	Larva		6	PH
7	0.08%	No	Pupa		11	PH
3	0.03%	Yes	Larva		11	SH
230	2.59%	Yes	Larva		1	SH
315	3.54%	Yes	Larva		3	SH
472	5.31%	Yes	Larva		8	PR
1	0.01%	Yes	Larva		5	SC
3	0.03%	Yes	Larva		4	CG
132	1.48%	Yes	Adult		5	SC
478	5.38%	No	Larva		5	SC
156	1.75%	No	Larva		4	CG
29	0.33%	Yes	Adult		4	CG
	1 2477 4 34 1077 512 16 3 7 3 230 315 472 1 3 132 478 156 29	1         0.01%           2477         27.86%           4         0.04%           34         0.38%           1077         12.11%           512         5.76%           16         0.18%           3         0.03%           7         0.08%           3         0.03%           230         2.59%           315         3.54%           472         5.31%           1         0.01%           3         0.03%           132         1.48%           478         5.38%           156         1.75%           29         0.33%	1         0.01%         No           2477         27.86%         Yes           4         0.04%         Yes           34         0.38%         Yes           1077         12.11%         Yes           512         5.76%         Yes           16         0.18%         No           3         0.03%         Yes           7         0.08%         No           3         0.03%         Yes           230         2.59%         Yes           315         3.54%         Yes           472         5.31%         Yes           1         0.01%         Yes           3         0.03%         Yes           132         1.48%         Yes           478         5.38%         No           156         1.75%         No           29         0.33%	1         0.01%         No         Pupa           2477         27.86%         Yes         Larva           4         0.04%         Yes         Larva           34         0.38%         Yes         Larva           1077         12.11%         Yes         Larva           512         5.76%         Yes         Larva           16         0.18%         No         Larva           3         0.03%         Yes         Larva           230         2.59%         Yes         Larva           315         3.54%         Yes         Larva           1         0.01%         Yes         Larva           1         0.01%         Yes         Larva           3         0.03%         Yes         Larva           1         0.01%         Yes         Larva           3         0.03%         Yes         Larva           12	1       0.01%       No       Pupa         2477       27.86%       Yes       Larva         4       0.04%       Yes       Larva         34       0.38%       Yes       Larva         1077       12.11%       Yes       Larva         512       5.76%       Yes       Larva         16       0.18%       No       Larva         16       0.18%       No       Larva         3       0.03%       Yes       Larva         7       0.08%       No       Pupa         3       0.03%       Yes       Larva         230       2.59%       Yes       Larva         11       0.01%       Yes       Larva         1       0.01%       Yes       Larva         1       0.01%       Yes       Larva         1       0.01%       Yes       Larva         1       0.01%       Yes       Larva         132       1.48%       Yes       Adult         132       1.48%       Yes       Adult         135       3.38%       No       Larva         136       1.75%       No       La	1       0.01%       No       Pupa       3         2477       27.86%       Yes       Larva       3         4       0.04%       Yes       Larva       2         34       0.38%       Yes       Larva       4         1077       12.11%       Yes       Larva       5         512       5.76%       Yes       Larva       5         16       0.18%       No       Larva       Early Instar       11         3       0.03%       Yes       Larva       6       7       0.08%       No       Pupa       11         3       0.03%       Yes       Larva       11       11       230       2.59%       Yes       Larva       1         230       2.59%       Yes       Larva       3       3       3         1       0.01%       Yes       Larva       3       3       3         1       0.01%       Yes       Larva       4       3       3         1       0.01%       Yes       Larva       5       3       3       4       5         3       0.03%       Yes       Larva       5       5       5

### Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC008

RAI No .: PBSJ16CFRC008 Sta. Name: Clark Fork at Williams-Tavenner Br. - Composite Client ID: CFR-34 Date Coll .: STORET ID: 9/20/2016 No. Jars: 1 PRA Taxonomic Name Count Unique Stage Qualifier BI Function Diptera Empididae 

Hemerodromia sp.	26	0.29%	Yes	Larva		6	PR
Simuliidae							
Simulium sp.	103	1.16%	Yes	Larva		6	CF
Simulium sp.	23	0.26%	No	Pupa		6	CF
Tipulidae							
Hexatoma sp.	5	0.06%	Yes	Larva		2	PR
Tipula sp.	11	0.12%	Yes	Larva		4	SH
Chironomidae							
Chironominae							
Microtendipes sp.	1081	12.16%	Yes	Larva		6	CF
Polypedilum sp.	35	0.39%	Yes	Larva		6	SH
Polypedilum sp.	8	0.09%	No	Pupa		6	SH
Chironominae				-			
Pseudochironomus sp.	2	0.02%	Yes	Larva		11	CG
Diamesinae							
Diamesa sp.	1	0.01%	Yes	Larva		5	CG
Potthastia Gaedii Gr.	2	0.02%	Yes	Larva		2	CG
Orthocladiinae							
Cricotopus sp.	22	0.25%	No	Larva		7	SH
Cricotopus sp.	4	0.04%	No	Pupa		7	SH
Cricotopus (Nostococladius) sp.	45	0.51%	Yes	Larva		6	SH
Eukiefferiella sp.	1	0.01%	No	Pupa		8	CG
Eukiefferiella sp.	64	0.72%	Yes	Larva		8	CG
Orthocladiinae	1	0.01%	No	Pupa	Damaged	11	CG
Orthocladius sp.	36	0.40%	Yes	Larva		6	CG
Parametriocnemus sp.	2	0.02%	Yes	Larva		5	CG
Tvetenia sp.	3	0.03%	No	Pupa		5	CG
Tvetenia sp.	29	0.33%	Yes	Larva		5	CG
Tanypodinae							
Thienemannimyia Gr.	71	0.80%	Yes	Larva	Early Instar	11	PR
Sample Count	8891						

## Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC009

Function

UN

PA

CG

RAI No .: PBSJ16CFRC009 Sta. Name: Clark Fork at Turah - Composite Client ID: **CFR-116A** Date Coll .: 9/20/2016 No. Jars: 1 STORET ID: Taxonomic Name Count PRA Unique Stage Qualifier BI Other Non-Insect Nemata Nemata 2 0.05% Yes Unknown 5 Branchiobdellida Branchiobdellida 1 0.02% Yes Unknown 11 Enchytraeidae Enchytraeidae 1 0.02% Yes Unknown 4 Naididae Naidinae 1 0.02% Yes Unknown Q

1	0.02%	Yes	Unknown		8	CG
1	0.02%	Yes	Unknown		8	CF
8	0.19%	No	Larva	Damaged	4	CG
67	1.62%	Yes	Larva		4	CG
2	0.05%	No	Larva	Damaged	11	CG
7	0.17%	No	Larva	Damaged	11	CG
104	2.51%	Yes	Larva		4	CG
51	1.23%	Yes	Larva		2	PR
41	0.99%	No	Larva	Early Instar	11	SC
140	3.38%	Yes	Larva		4	SH
1	0.02%	No	Larva	Damaged	11	CG
1	0.02%	Yes	Larva		0	SC
55	1.33%	Yes	Larva		4	SC
1	0.02%	No	Larva	Early Instar	11	SC
106	2.56%	Yes	Larva		0	SC
2	0.05%	Yes	Larva		4	CG
6	0.15%	Yes	Larva		11	PR
26	0.63%	Yes	Larva		11	PR
14	0.34%	Yes	Larva		2	PR
27	0.65%	No	Larva	Early Instar	11	PR
18	0.44%	Yes	Larva		3	PR
1	0.02%	No	Larva	Early Instar	2	SH
4	0.10%	Yes	Larva		2	SH
	1 1 8 67 2 7 104 51 41 140 1 1 55 1 106 2 6 26 14 27 18 1 4	1         0.02%           1         0.02%           8         0.19%           67         1.62%           2         0.05%           7         0.17%           104         2.51%           51         1.23%           41         0.99%           140         3.38%           1         0.02%           55         1.33%           1         0.02%           106         2.56%           2         0.05%           6         0.15%           26         0.63%           14         0.34%           27         0.65%           18         0.44%           1         0.02%           4         0.10%	1         0.02%         Yes           1         0.02%         Yes           1         0.02%         Yes           8         0.19%         No           67         1.62%         Yes           2         0.05%         No           7         0.17%         No           104         2.51%         Yes           51         1.23%         Yes           41         0.99%         No           140         3.38%         Yes           1         0.02%         No           106         2.56%         Yes           2         0.05%         Yes           2         0.05%         Yes           2         0.05%         Yes           14         0.34%         Yes           14         0.34%         Yes           1         0.02%         No           18         0.44%         Yes           1         0.02%         No	1         0.02%         Yes         Unknown           1         0.02%         Yes         Unknown           8         0.19%         No         Larva           67         1.62%         Yes         Larva           2         0.05%         No         Larva           7         0.17%         No         Larva           104         2.51%         Yes         Larva           51         1.23%         Yes         Larva           41         0.99%         No         Larva           140         3.38%         Yes         Larva           1         0.02%         No         Larva           2         0.05%         Yes         Larva           2         0.05%         Yes         Larva           6         0.15%         Yes         Larva           14         0.34% </td <td>1       0.02%       Yes       Unknown         1       0.02%       Yes       Unknown         8       0.19%       No       Larva       Damaged         67       1.62%       Yes       Larva       Damaged         2       0.05%       No       Larva       Damaged         7       0.17%       No       Larva       Damaged         104       2.51%       Yes       Larva       Damaged         51       1.23%       Yes       Larva       Damaged         104       2.51%       Yes       Larva       Damaged         104       0.99%       No       Larva       Damaged         11       0.02%       No       Larva       Damaged         1       0.02%       No       Larva       Damaged         1       0.02%       No       Larva       Larva         1       0.02%       No       Larva       Early Instar         106       2.56%       Yes       Larva       Inva         1       0.05%       Yes       Larva       Inva         14       0.34%       Yes       Larva       Inva         14       0</td> <td>1       0.02%       Yes       Unknown       8         1       0.02%       Yes       Unknown       8         8       0.19%       No       Larva       Damaged       4         67       1.62%       Yes       Larva       Damaged       11         7       0.16%       No       Larva       Damaged       11         7       0.17%       No       Larva       Damaged       11         104       2.51%       Yes       Larva       Damaged       11         104       2.51%       Yes       Larva       Damaged       11         140       3.38%       Yes       Larva       Early Instar       11         140       3.38%       Yes       Larva       Damaged       11         1       0.02%       No       Larva       Damaged       11         1       0.02%       No       Larva       4       0       55         1       0.02%       Yes       Larva       4       1       0       2       0.05%       Yes       Larva       4       1         106       2.56%       Yes       Larva       Early Instar       11       <t< td=""></t<></td>	1       0.02%       Yes       Unknown         1       0.02%       Yes       Unknown         8       0.19%       No       Larva       Damaged         67       1.62%       Yes       Larva       Damaged         2       0.05%       No       Larva       Damaged         7       0.17%       No       Larva       Damaged         104       2.51%       Yes       Larva       Damaged         51       1.23%       Yes       Larva       Damaged         104       2.51%       Yes       Larva       Damaged         104       0.99%       No       Larva       Damaged         11       0.02%       No       Larva       Damaged         1       0.02%       No       Larva       Damaged         1       0.02%       No       Larva       Larva         1       0.02%       No       Larva       Early Instar         106       2.56%       Yes       Larva       Inva         1       0.05%       Yes       Larva       Inva         14       0.34%       Yes       Larva       Inva         14       0	1       0.02%       Yes       Unknown       8         1       0.02%       Yes       Unknown       8         8       0.19%       No       Larva       Damaged       4         67       1.62%       Yes       Larva       Damaged       11         7       0.16%       No       Larva       Damaged       11         7       0.17%       No       Larva       Damaged       11         104       2.51%       Yes       Larva       Damaged       11         104       2.51%       Yes       Larva       Damaged       11         140       3.38%       Yes       Larva       Early Instar       11         140       3.38%       Yes       Larva       Damaged       11         1       0.02%       No       Larva       Damaged       11         1       0.02%       No       Larva       4       0       55         1       0.02%       Yes       Larva       4       1       0       2       0.05%       Yes       Larva       4       1         106       2.56%       Yes       Larva       Early Instar       11 <t< td=""></t<>

## Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC009

RAI No .: PBSJ16CFRC009 Sta. Name: Clark Fork at Turah - Composite Client ID: **CFR-116A** Date Coll .: 9/20/2016 No. Jars: 1 STORET ID: PRA Taxonomic Name Count Unique Stage Qualifier BI Function Trichoptera Brachycentridae Brachycentrus occidentalis 70 1.69% Yes 2 CF Larva Glossosomatidae Glossosoma sp. 7 0 SC 0.17% Yes Larva Glossosomatidae 5 0.12% No Pupa 11 SC Protoptila sp. 32 0.77% Yes Larva 1 SC Helicopsychidae

Helicopsyche sp.	21	0.51%	Yes	Larva		3	SC
Hydropsychidae							
Arctopsyche sp.	6	0.15%	Yes	Larva		2	PR
Ceratopsyche cockerelli	203	4.91%	Yes	Larva		4	CF
Cheumatopsyche sp.	852	20.59%	Yes	Larva		5	CF
Hydropsyche occidentalis	1124	27.17%	Yes	Larva		5	CF
Hydropsychidae	43	1.04%	No	Larva	Early Instar	11	CF
Hydroptilidae							
Hydroptila sp.	1	0.02%	Yes	Larva		6	PH
Hydroptilidae	2	0.05%	No	Pupa		11	PH
Leucotrichia pictipes	5	0.12%	Yes	Larva		2	SC
Lepidostomatidae							
Lepidostoma sp.	33	0.80%	Yes	Larva		1	SH
Leptoceridae							
Ceraclea sp.	11	0.27%	Yes	Larva		3	CG
Oecetis sp.	142	3.43%	Yes	Larva		8	PR
Psychomviidae							
Psychomyia sp.	37	0.89%	Yes	Larva		2	CG
Rhvacophilidae							
Rhyacophila sp.	2	0.05%	Yes	Larva	Early Instar	11	PR
Lepidoptera	100		S. P. S. COLOR			e notal	10.00
Crambidae							
Petrophila sp.	253	6.12%	Yes	Larva		5	SC
Coleoptera		5.00000000	A PARTONNE.			1.554	3 <b>3 6 7 7</b> 7 7
Elmidae							
Cleptelmis addenda	1	0.02%	Yes	Larva		4	CG
Microcylloepus sp.	1	0.02%	Yes	Larva		5	CG
Optioservus sp.	47	1.14%	Yes	Adult		5	SC
Optioservus sp.	149	3.60%	No	Larva		5	SC
Zaitzevia sp.	11	0.27%	Yes	Adult		4	CG
Zaitzevia sp.	113	2 73%	No	larva		4	CG
		2.10/0	140	Laiva			00

## Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC009

Function

PR

RAI No .: PBSJ16CFRC009 Sta. Name: Clark Fork at Turah - Composite Client ID: **CFR-116A** Date Coll .: 9/20/2016 No. Jars: 1 STORET ID: PRA Taxonomic Name Count Unique Stage Qualifier BI Diptera Athericidae Atherix sp. 3 0.07% Yes Larva 4

Empididae							
Hemerodromia sp.	6	0.15%	Yes	Larva		6	PR
Simuliidae							
Simulium sp.	19	0.46%	No	Pupa		6	CF
Simulium sp.	11	0.27%	Yes	Larva		6	CF
Tipulidae							
Antocha monticola	6	0.15%	Yes	Larva		3	CG
Cryptolabis sp.	4	0.10%	Yes	Larva		11	SH
Hexatoma sp.	2	0.05%	Yes	Larva		2	PR
Chironomidae							
Chironominae							
Microtendipes sp.	70	1.69%	Yes	Larva		6	CF
Polypedilum sp.	6	0.15%	Yes	Larva		6	SH
Chironominae							
Cladotanytarsus sp.	1	0.02%	Yes	Larva		11	CG
Diamesinae							
Pagastia sp.	1	0.02%	Yes	Pupa		1	CG
Potthastia Gaedii Gr.	3	0.07%	Yes	Larva		2	CG
Orthocladiinae							
Brillia sp.	1	0.02%	Yes	Larva		4	SH
Cardiocladius sp.	8	0.19%	Yes	Larva		5	PR
Cardiocladius sp.	1	0.02%	No	Pupa		5	PR
Cricotopus sp.	10	0.24%	No	Pupa		7	SH
Cricotopus sp.	25	0.60%	No	Larva		7	SH
Cricotopus (Nostococladius) sp.	6	0.15%	Yes	Larva		6	SH
Eukiefferiella sp.	16	0.39%	Yes	Larva		8	CG
Orthocladius sp.	71	1.72%	Yes	Larva		6	CG
Orthocladius sp.	1	0.02%	No	Pupa		6	CG
Parametriocnemus sp.	1	0.02%	Yes	Larva		5	CG
Parametriocnemus sp.	1	0.02%	No	Pupa		5	CG
Tvetenia sp.	2	0.05%	Yes	Larva		5	CG
Tanypodinae							
Thienemannimyia Gr.	3	0.07%	Yes	Larva	Early Instar	11	PR
Sample Count	4137						

## Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC010

RAI No .: PBSJ16CFRC010 Sta. Name: Lost Creek at Frontage Road - Composite Client ID: LC-7.5 Date Coll .: 9/19/2016 No. Jars: 1 STORET ID: PRA Taxonomic Name Count Unique Stage Qualifier BI Function Other Non-Insect Trepaxonemata Trepaxonemata PR 107 3.05% Yes Unknown 5 Nemata Nemata UN 1 0.03% Yes Unknown 5 Erpobdellidae Erpobdellidae PR 4 0.11% Yes Unknown 8 Glossiphoniidae

Helobdella stagnalis	2	0.06%	Yes	Unknown		10	PR
Enchytraeidae							
Enchytraeidae	15	0.43%	Yes	Unknown		4	CG
Naididae							
Naididae	2	0.06%	No	Immature		8	CG
Naididae							
Naidinae	58	1.66%	Yes	Unknown		8	CG
Naididae							
Tubificinae	74	2.11%	Yes	Unknown		10	CG
Sphaeriidae							
Pisidium sp.	16	0.46%	Yes	Unknown		8	CF
Physidae							
Physella sp.	1	0.03%	Yes	Unknown		8	SC
Gammaridae							
Gammarus sp.	62	1.77%	Yes	Unknown		4	SH
Hyalellidae							
Hyalella sp.	16	0.46%	Yes	Unknown		8	CG
Ephemeroptera							
Baetidae							
Baetis tricaudatus complex	3	0.09%	Yes	Larva		4	CG
Diphetor hageni	6	0.17%	Yes	Larva		5	CG
Caenidae							
Caenis sp.	7	0.20%	Yes	Larva		11	CG
Ephemerellidae							
Ephemerella sp.	1	0.03%	Yes	Larva	Early Instar	11	SC
Leptophlebiidae							
Leptophlebiidae	3	0.09%	Yes	Larva	Damaged	11	CG
Plecoptera							
Nemouridae							
Malenka sp.	11	0.31%	Yes	Larva		2	SH

### Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC010

 RAI No.:
 PBSJ16CFRC010
 Sta. Name:
 Lost Creek at Frontage Road - Composite

 Client ID:
 LC-7.5

 Date Coll.:
 9/19/2016
 No. Jars: 1
 STORET ID:

Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Trichoptera							
Brachycentridae							
Brachycentrus occidentalis	7	0.20%	Yes	Larva		2	CF
Helicopsychidae							
Helicopsyche sp.	138	3.94%	Yes	Larva		3	SC
Hydropsychidae							
Ceratopsyche slossonae	4	0.11%	Yes	Larva		4	CF
Cheumatopsyche sp.	29	0.83%	Yes	Larva		5	CF
Hydroptilidae							
Hydroptila sp.	86	2.46%	Yes	Larva		6	PH
Hydroptilidae	5	0.14%	No	Pupa		11	PH
Lepidostomatidae				WEINLIGH TRACK			
Lepidostoma sp.	1	0.03%	No	Pupa		1	SH
Lepidostoma sp.	5	0.14%	Yes	Larva		1	SH
Leptoceridae							
Oecetis sp.	102	2.91%	Yes	Larva		8	PR
Coleoptera							
Elmidae							
Cleptelmis addenda	182	5.20%	No	Larva		4	CG
Cleptelmis addenda	28	0.80%	Yes	Adult		4	CG
Optioservus sp.	725	20.70%	No	Larva		5	SC
Optioservus sp.	76	2.17%	Yes	Adult		5	SC
Zaitzevia sp.	24	0.69%	Yes	Adult		4	CG
Zaitzevia sp.	96	2.74%	No	Larva		4	CG
Diptera							
Ceratopogonidae							
Dasyhelea sp.	2	0.06%	Yes	Larva		6	CG
Empididae							
Hemerodromia sp.	4	0.11%	Yes	Larva		6	PR
Psychodidae							
Pericoma / Telmatoscopus	10	0.29%	Yes	Larva		4	CG
Simuliidae							
Simulium sp.	50	1.43%	Yes	Larva		6	CF
Simulium sp.	2	0.06%	No	Pupa		6	CF
Stratiomvidae			1.2.4.5.9	The Part Sector			1077.02
Caloparyphus sp.	958	27.35%	Yes	Larva		11	CG
Tipulidae	8.515.51		Y STACFORT			0.500.0	1.701716
Hexatoma sp.	1	0.03%	Yes	Larva		2	PR
Tipula sp.	26	0.74%	Yes	Larva		4	SH

#### Project ID: PBSJ16CFRC

#### RAI No .: PBSJ16CFRC010

RAI No .: PBSJ16CFRC010 Sta. Name: Lost Creek at Frontage Road - Composite Client ID: LC-7.5 Date Coll .: 9/19/2016 STORET ID: No. Jars: 1 Taxonomic Name Qualifier Count PRA BI Function Unique Stage Chironomidae Chironor Mic Chironor

Tvetenia sp.

Pentaneura sp.

Thienemannimyia Gr.

Tanypodinae

Chironominae						
Microtendipes sp.	1	0.03%	Yes	Larva		6
Chironominae						
Pseudochironomus sp.	8	0.23%	Yes	Larva		11
Chironominae						
Micropsectra sp.	145	4.14%	Yes	Larva		11
Tanytarsus sp.	8	0.23%	Yes	Larva		11
Diamesinae						
Diamesa sp.	20	0.57%	Yes	Larva		5
Orthocladiinae						
Cricotopus sp.	3	0.09%	No	Pupa		7
Cricotopus sp.	79	2.26%	No	Larva		7
Cricotopus (Nostococladius) sp.	1	0.03%	Yes	Larva		6
Eukiefferiella sp.	3	0.09%	No	Pupa		8
Eukiefferiella sp.	21	0.60%	Yes	Larva		8
Orthocladiinae	4	0.11%	No	Pupa	Damaged	11
Orthocladius sp.	199	5.68%	Yes	Larva		6
Parametriocnemus sp.	3	0.09%	Yes	Larva		5
Rheocricotopus sp.	1	0.03%	Yes	Larva		4
Thienemanniella sp.	4	0.11%	No	Pupa		6
Thienemanniella sp.	6	0.17%	Yes	Larva		6

8

2

37

3503

Sample Count

0.23%

0.06%

1.06%

Yes

Yes

Yes

Larva

Larva

Larva

Early Instar

CF

CG

CG

CF

CG

SH

SH

SH

CG

CG

CG

CG

CG

CG

CG

CG

CG

PR

PR

5

6

11

# Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC011

RAI No .: PBSJ16CFRC011 Sta. Name: Racetrack Creek at Frontage Rd. - Composite Client ID: **RTC-1.5** Date Coll .: 9/20/2016 STORET ID: No. Jars: 1 PRA Taxonomic Name Count Unique Stage Qualifier BI Function Other Non-Insect Trepaxonemata

Trepaxonemata	41	1.47%	Yes	Unknown		5	PR
Nemata							
Nemata	1	0.04%	Yes	Unknown		5	UN
Enchytraeidae							
Enchytraeidae	45	1.61%	Yes	Unknown		4	CG
Naididae							
Naidinae	43	1.54%	Yes	Unknown		8	CG
Physidae							
Physella sp.	9	0.32%	Yes	Unknown		8	SC
Planorbidae							
Gyraulus sp.	4	0.14%	Yes	Unknown		8	SC
Ephemeroptera							
Baetidae							
Baetis tricaudatus complex	25	0.90%	Yes	Larva		4	CG
Ephemerellidae							
Drunella grandis	47	1.69%	Yes	Larva		2	PR
Ephemerella sp.	70	2.51%	Yes	Larva	Early Instar	11	SC
Heptageniidae							
Cinygmula sp.	232	8.32%	Yes	Larva		0	SC
Leptophlebiidae							
Leptophlebiidae	10	0.36%	Yes	Larva	Damaged	11	CG
Leptohyphidae							
Tricorythodes sp.	3	0.11%	Yes	Larva		4	CG
Plecoptera							
Capniidae							
Capniidae	1	0.04%	Yes	Larva	Early Instar	1	SH
Chloroperlidae							
Sweltsa sp.	52	1.87%	Yes	Larva		1	PR
Nemouridae							
Malenka sp.	1	0.04%	Yes	Larva		2	SH
Zapada cinctipes	49	1.76%	Yes	Larva		2	SH
Periodidae							
Kogotus sp.	7	0.25%	Yes	Larva		11	PR
Skwala sp.	185	6.64%	Yes	Larva		3	PR
Pteronarcyidae							
Pteronarcella sp.	18	0.65%	Yes	Larva		3	SH

#### Project ID: PBSJ16CFRC

#### RAI No .: PBSJ16CFRC011

RAI No .: PBSJ16CFRC011

Sta. Name:

Racetrack Creek at Frontage Rd. - Composite

Client ID:	RTC-1.5							
Date Coll.:	9/20/2016	No. Jars: 1		STORET I	D:			
Taxonomic Nan	ne	Count	PRA	Unique	Stage	Qualifier	ВІ	Function
Trichoptera								
Brachycen	tridae							
Brach	ycentrus americanus	2	0.07%	Yes	Larva		1	CF
Brach	ycentrus occidentalis	3	0.11%	Yes	Larva		2	CF
Micras	sema sp.	4	0.14%	Yes	Larva		1	SH
Glossosom	natidae							
Gloss	osoma sp.	14	0.50%	Yes	Larva		0	SC
Gloss	osomatidae	4	0.14%	No	Pupa		11	SC
Helicopsyc	hidae				and a constant			
Helico	psyche sp.	1	0.04%	Yes	Larva		3	SC
Hydropsyc	hidae							
Hydro	psychidae	2	0.07%	Yes	Pupa		11	CF
Hydroptilid	ae			0.000	5		10.01	
Hydro	ptila sp.	8	0.29%	Yes	Larva		6	РН
Hydro	ptilidae	13	0.47%	No	Pupa		11	PH
Lepidoston	natidae							
Lepido	ostoma sp.	4	0.14%	Yes	Larva		1	SH
Limnephilic	dae	100		1. And Postal				1.00
Limne	philidae	6	0 22%	Yes	Larva	Farly Instar	11	SH
Rhyacophi	lidae		0.2270		Laita	Lung moun		0
Rhyac	conhila sp	45	1 61%	Ves	larva	Farly Instar	11	PR
Rhyac	cophila Brunnea/Vemna Gr	149	5 34%	Ves	Larva	Early mouth	2	PR
Coleontera	opinia Brannoa ronnia or.	145	0.0470	103	Laiva		2	1 K
Dutiscidae								
Dytisc	idae	1	0.04%	Vec	l anva		11	PP
Elmidae			0.0470	165	Laiva			T K
Elmide	90	16	0 57%	No	Adult	Damaged	11	CC
Ontios		10	0.57%	No	Adult	Damageu		CG CC
Optios		16	2.13%	Vee	Laiva		5	30
Zaitzo	via en	154	0.02%	Tes	Adult		5	SC
Zaitze	via sp.	4	0.14%	res	Larva		4	CG
Latalida	via sp.	0	0.22%	Tes	Adult		4	CG
Halipiidae	iuo co		0.000/	N				00
Diycill	ius sp.	6	0.22%	Yes	Larva		11	SC
Diptera								
Empididae	lidaa				100			
Emplo		1	0.04%	No	Pupa		11	PR
Incho	ocilnocera sp.	1	0.04%	Yes	Larva		11	PR
Muscidae			2224838				53	
Musci	dae	67	2.40%	Yes	Larva		6	PR
Tipulidae								
Antoci	ha monticola	1	0.04%	Yes	Larva		3	CG
Hexat	oma sp.	10	0.36%	Yes	Larva		2	PR
Tipula	sp.	21	0.75%	Yes	Larva		4	SH

## Project ID: PBSJ16CFRC

### RAI No.: PBSJ16CFRC011

AI No.:	PBSJ16CFRC011				Sta. Name: Racetrack Creek at Frontage Rd Composite					
lient ID:	RTC-1.5									
ate Coll.:	9/20/2016	No. Jars: 1		STORET						
axonomic Nam	ne	Cou	nt PRA	Unique	Stage	Qualifier	BI	Function		
hironomidae										
Chiron	nomidae	3	0.11%	No	Pupa	Damaged	11	CG		
Chironomin	nae									
Dicrote	endipes sp.	1	0.04%	Yes	Larva		8	CG		
Microt	tendipes sp.	1	0.04%	Yes	Larva		6	CF		
Serger	ntia sp.	7	0.25%	Yes	Larva		5	CG		
Chironomin	nae									
Microp	osectra sp.	13	0.47%	No	Pupa		11	CG		
Microp	osectra sp.	71	2.55%	Yes	Larva		11	CG		
Tanyta	arsus sp.	8	0.29%	Yes	Larva		11	CF		
Diamesinae	e									
Pagas	stia sp.	13	<b>4.66%</b>	Yes	Larva		1	CG		
Pagas	stia sp.	48	1.72%	No	Pupa		1	CG		
Orthocladii	nae									
Cricoto	opus <mark>sp</mark> .	19	0.68%	No	Larva		7	SH		
Cricoto	opus sp.	28	1.00%	No	Pupa		7	SH		
Cricoto	opus (Nostococladius) sp.	1	0.04%	Yes	Larva		6	SH		
Diploc	ladius cultriger	8	0.29%	Yes	Larva		11	CG		
Eukief	fferiella sp.	85	3.05%	Yes	Larva		8	CG		
Eukief	fferiella sp.	20	0.72%	No	Pupa		8	CG		
Orthoo	cladiinae	10	0.36%	No	Pupa	Damaged	11	CG		
Orthod	cladius sp.	15	0.54%	No	Pupa		6	CG		
Orthod	cladius sp.	75	6 27.12%	Yes	Larva		6	CG		
Rheoc	cricotopus sp.	2	0.07%	Yes	Larva		4	CG		
Thiene	emanniella sp.	1	0.04%	Yes	Pupa		6	CG		
Tveter	nia sp.	69	2.47%	Yes	Larva		5	CG		
Tveter	nia sp.	7	0.25%	No	Pupa		5	CG		
Tanypodina	ae									
Thiene	emannimyia Gr.	23	0.82%	Yes	Larva	Early Instar	11	PR		
	Sample	e Count 278	8							

#### Project ID: PBSJ16CFRC

#### RAI No .: PBSJ16CFRC012

RAI No .: PBSJ16CFRC012

Sta. Name:

Little Blackfoor R. at Beck Hill Rd. - Composite

Client ID:	LBR-CFR-02							
Date Coll.:	9/20/2016	No. Jars: 1		STORET I				
Taxonomic Name	)	Count	PRA	Unique	Stage	Qualifier	BI	Function
Oligochaeta								
Enchytraeida	e							
Enchytra	aeidae	1	0.04%	Yes	Unknown		4	CG
Naididae								
Naididae	9	5	0.18%	No	Immature		8	CG
Naididae								
Naidinae	9	10	0.37%	Yes	Unknown		8	CG
Sphaeriidae								
Sphaerii	idae	2	0.07%	Yes	Immature		8	CF
Lymnaeidae								
Galba s	p.	23	0.85%	Yes	Unknown		6	SC
Physidae								
Physella	a sp.	23	0.85%	Yes	Unknown		8	SC
Planorbidae								
Gyraulu	s sp.	25	0.92%	Yes	Unknown		8	SC
Odonata								
Gomphidae								
Gomphi	dae	1	0.04%	Yes	Larva	Early Instar	11	PR
Ephemeroptera								
Baetidae								
Baetis tr	ricaudatus complex	4	0.15%	Yes	Larva		4	CG
Diphetor	r hageni	2	0.07%	Yes	Larva		5	CG
Ephemerellic	lae							
Drunella	a grandis	62	2.28%	Yes	Larva		2	PR
Epheme	erella sp.	27	0.99%	Yes	Larva	Early Instar	11	SC
Heptageniida	ae							
Rhithrog	gena sp.	6	0.22%	Yes	Larva		0	SC
Leptophlebiid	dae							
Leptoph	lebiidae	3	0.11%	Yes	Larva	Early Instar	11	CG
Leptohyphida	ae							
Tricorytl	hodes sp.	10	0.37%	Yes	Larva		4	CG
Plecoptera								
Chloroperlida	ae							
Sweltsa	sp.	15	0.55%	Yes	Larva		1	PR
Perlidae								
Claasse	enia sabulosa	2	0.07%	Yes	Larva		11	PR
Hespero	operla pacifica	62	2.28%	Yes	Larva		11	PR
Pteronarcyid	ae							
Pteronal	rcella sp.	13	0.48%	Yes	Larva		3	SH
Pteronal	rcys californica	9	0.33%	Yes	Larva		2	SH

#### Project ID: PBSJ16CFRC

#### RAI No .: PBSJ16CFRC012

RAI No .: PBSJ16CFRC012 Sta. Name:

Little Blackfoor R. at Beck Hill Rd. - Composite

Client ID:	LBR-CFR-02							
Date Coll.:	9/20/2016	No. Jars: 1	;	STORET	D:			
Taxonomic Nam	ne	Count	PRA	Unique	Stage	Qualifier	BI	Function
Trichoptera								
Brachycent	tridae							
Amioc	entrus aspilus	6	0.22%	Yes	Larva		3	CG
Brachy	ycentrus occidentalis	137	5.05%	Yes	Larva		2	CF
Glossosom	natidae							
Glosse	osoma sp.	2	0.07%	Yes	Larva		0	SC
Protop	otila sp.	6	0.22%	Yes	Larva		1	SC
Helicopsyc	hidae							
Helico	psyche sp.	196	7.22%	Yes	Larva		3	SC
Hydropsycl	hidae							
Arctop	osyche sp.	10	0.37%	Yes	Larva		2	PR
Cerato	opsyche sp.	59	2.17%	No	Larva	Early Instar	5	CF
Cerato	opsyche slossonae	27	0.99%	Yes	Larva		4	CF
Cheun	natopsyche sp.	2	0.07%	Yes	Larva		5	CF
Hydro	psyche sp.	15	0.55%	No	Larva	Damaged	5	CF
Hydro	psyche occidentalis	67	2.47%	Yes	Larva		5	CF
Hydro	psychidae	2	0.07%	No	Pupa		11	CF
Hydro	psychidae	113	4.16%	No	Larva	Early Instar	11	CF
Hydroptilida	ae							
Hydro	ptilidae	1	0.04%	Yes	Pupa		11	PH
Lepidostom	natidae				10000			
Lepido	ostoma sp.	367	13.52%	Yes	Larva		1	SH
Leptocerida	ae							
Oecet	is sp.	18	0.66%	Yes	Larva		8	PR
Psychomyi	idae							
Psych	omyiidae	1	0.04%	Yes	Larva	Damaged	2	CG
Rhyacophil	lidae							
Rhyac	ophila Hyalinata Gr.	12	0.44%	Yes	Larva		11	PR
Lepidoptera								
Crambidae								
Petrop	ohila sp.	3	0.11%	Yes	Larva		5	SC
Coleoptera								
Elmidae								
Clepte	elmis addenda	16	0.59%	No	Larva		4	CG
Clepte	elmis addenda	1	0.04%	Yes	Adult		4	CG
Lara a	vara	1	0.04%	Yes	Larva		1	SH
Optios	servus sp.	297	10.94%	No	Larva		5	SC
Optios	servus sp.	34	1.25%	Yes	Adult		5	SC
Zaitze	via sp.	20	0.74%	Yes	Adult		4	CG
Zaitze	via sp.	128	4.72%	No	Larva		4	CG

#### Project ID: PBSJ16CFRC

#### RAI No .: PBSJ16CFRC012

RAI No .: PBSJ16CFRC012

Sta. Name:

Little Blackfoor R. at Beck Hill Rd. - Composite

Client ID:	LBR-CFR-02							
Date Coll.:	9/20/2016	No. Jars: 1		STORET	D:			
Taxonomic Nan	ne	Count	PRA	Unique	Stage	Qualifier	BI	Function
Diptera								-
Athericidae								
Atherix	x sp.	143	5.27%	Yes	Larva		4	PR
Ceratopogo	onidae							
Cerato	pogoninae	4	0.15%	Yes	Larva		6	PR
Empididae								
Heme	rodromia sp.	18	0.66%	Yes	Larva		6	PR
Tipulidae								
Antocl	ha monticola	6	0.22%	Yes	Larva		3	CG
Crypto	olabis sp.	1	0.04%	Yes	Larva		11	SH
Hexate	oma sp.	8	0.29%	Yes	Larva		2	PR
Chironomidae								
Chironomir	nae							
Microt	endipes sp.	12	0.44%	Yes	Larva		6	CF
Polype	edilum sp.	74	2.73%	Yes	Larva		6	SH
Stenoo	chironomus sp.	1	0.04%	Yes	Larva		5	CG
Chironomir	nae							
Cladot	tanytarsus <mark>sp</mark> .	12	0.44%	Yes	Larva		11	CG
Tanyta	arsini	5	0.18%	No	Larva	Early Instar	11	CF
Diamesina	e							
Pagas	tia sp.	1	0.04%	No	Pupa		1	CG
Pagas	tia sp.	3	0.11%	Yes	Larva		1	CG
Pottha	istia Longimanus Gr.	12	0.44%	Yes	Larva		2	CG
Orthocladii	nae							
Cricote	opus sp.	49	1.81%	No	Larva		7	SH
Cricote	opus sp.	2	0.07%	No	Pupa		7	SH
Cricote	opus (Nostococladius) sp.	189	6.96%	Yes	Larva		6	SH
Eukief	fferiella sp.	6	0.22%	No	Pupa		8	CG
Eukief	feriella sp.	138	5.08%	Yes	Larva		8	CG
Lopes	cladius sp.	1	0.04%	Yes	Larva		11	CG
Orthoo	cladiinae	2	0.07%	No	Pupa	Damaged	11	CG
Orthod	cladius sp.	44	1.62%	Yes	Larva		6	CG
Param	netriocnemus sp.	1	0.04%	Yes	Pupa		5	CG
Synor	thocladius sp.	1	0.04%	Yes	Larva		2	CG
Thiene	emanniella sp.	1	0.04%	Yes	Larva		6	CG
Tveter	nia sp.	91	3.35%	Yes	Larva		5	CG
Tveter	nia sp.	11	0.41%	No	Pupa		5	CG
Tanypodina	ae							
Tanyp	odinae	1	0.04%	No	Pupa	Damaged	11	PR
Thiene	emannimyia Gr.	31	1.14%	Yes	Larva	Early Instar	11	PR
	Sample	e Count 2714						

RAI No .:

#### Project ID: CC16SBC

#### RAI No .: CC16SBC017

CC16SBC017 Sta. Name: Silver Bow Cr. at Frontage Rd. Client ID: **SS-19** Date Coll .: 9/14/2016 No. Jars: 1 STORET ID:

Taxonomic Name	Count	PRA	Unique	Stage	Qualifier	BI	Function
Oligochaeta							
Naididae							
Naididae	10	3.13%	Yes	Immature		8	CG
Naididae							
Tubificinae	7	2.19%	Yes	Immature		10	CG
Physidae							
Physella sp.	8	2.50%	Yes	Unknown		8	SC
Planorbidae							
Gyraulus sp.	1	0.31%	Yes	Unknown		8	SC
Hyalellidae							
Hyalella sp.	12	3.75%	Yes	Unknown		8	CG
Ephemeroptera							
Baetidae							
Baetis Rhodani Gr.	1	0.31%	Yes	Larva	Damaged	11	CG
Plecoptera					941042 (9424-9484) C		
Periodidae							
Skwala sp.	2	0.63%	Yes	Larva		3	PR
Trichoptera							
Brachycentridae							
Brachycentrus occidentalis	27	8.44%	Yes	Larva		2	CF
Helicopsychidae							
Helicopsyche sp.	92	28.75%	Yes	Larva		3	SC
Hydropsychidae							
Hydropsyche sp.	10	3.13%	Yes	Larva		5	CF
Lepidostomatidae							
Lepidostoma sp.	28	8.75%	Yes	Larva		1	SH
Leptoceridae							
Oecetis sp.	1	0.31%	Yes	Larva		8	PR
Coleoptera							
Elmidae							
Optioservus sp.	15	4.69%	No	Larva		5	SC
Optioservus sp.	2	0.63%	Yes	Adult		5	SC
Diptera							
Simuliidae							
Simulium sp.	1	0.31%	Yes	Larva		6	CF
Chironomidae							
Chironominae							
Microtendipes sp.	97	30.31%	Yes	Larva		6	CF
Diamesinae			the second second	and a second second second			0.000
Pagastia sp.	1	0.31%	Yes	Pupa		1	CG
Orthocladiinae			the first fighter.			n.	1.7.1
Parametriocnemus sp.	1	0.31%	No	Pupa		5	CG
Parametriocnemus sp.	1	0.31%	Yes	Larva		5	CG
Tvetenia Bavarica Gr.	1	0.31%	Yes	Larva		11	CG
Tvetenia tshernovskii	1	0.31%	Yes	Larva		11	CG
Tanypodinae	At						
Thienemannimyia Gr.	1	0.31%	Yes	Larva	Early Instar	11	PR
Friday, February 10, 2017		1 674 (FOZ 2008)	and of the co	UNITED DOM	Schennen - Stephall Reader	Actual in	

Таха	Listing			Project ID: RAI No.:	CC16SBC CC16SBC017		
RAI No.:	CC16SBC017			Sta. Name: Silve	r Bow Cr. at Frontage Rd.		
Date Coll.:	9/14/2016	No. Jars: 1		STORET ID:			
Taxonomic Name		Count	PRA	Unique Stage	Qualifier	BI	Function

Sample Count 320

Project ID	PBSJ16CFRC
RAI No.	PBSJ16CFRC001
Sta. Name	Mill-Willow Cr. at Frontage Rd Composite
Client ID	MCWC-MWB
STORET ID	
Coll. Date	9/19/2016
Latitude	Longitude

#### Abundance Measures

Sample Count	3986
Sample Abundance	
Coll. Procedure	
Sample Notes	

of sample used

#### **Taxonomic Composition**

Category	R	Α	PRA
Terrestrial			
Other Non-Insect	5	9	0 23%
Oligochaeta	1	33	0 83%
Odonata			
Ephemeroptera	7	98	2.46%
Plecoptera	3	27	0 68%
Heteroptera			
Megaloptera			
Neuroptera			
Trichoptera	14	2244	56.30%
Lepidoptera			
Coleoptera	3	566	14.20%
Diptera	5	54	1 35%
Chironomidae	8	955	23.96%



### **Dominant Taxa**

Category	Α	PRA
Lepidostoma	954	23.93%
Cricotopus (Nostococladius)	787	19.74%
Hydropsyche occidentalis	604	15.15%
Optioservus	514	12.90%
Hydropsyche	160	4 01%
Brachycentrus occidentalis	138	3.46%
Hydropsychidae	109	2.73%
Baetis tricaudatus complex	62	1 56%
Rhyacophila Brunnea/Vemna Gr.	61	1 53%
Orthocladius	59	1.48%
Protoptila	53	1 33%
Helicopsyche	52	1 30%
Zaitzevia	47	1.18%
Ceratopsyche bronta	44	1.10%
Tvetenia	35	0 88%

#### **Functional Composition**

Category	R	Α	PRA
Predator	11	167	4.19%
Parasite			
Collector Gatherer	14	317	7 95%
Collector Filterer	10	1113	27.929
Macrophyte Herbivore			
Piercer Herbivore			
Xylophage			
Scraper	9	646	16.219
Shredder	2	1743	43.739
Omnivore			
Unknown			



Metric	Value
Composition	
Taxa Richness E Richness P Richness	46 7 3
P Percent T Richness	0.68% 14
EPT Richness EPT Percent	24 59.43%
Diptera and Non-Insect Percent All Non-Insect Abundance All Non-Insect Richness	26 37% 42 6
All Non-Insect Percent	1.05%
Oligochaeta+Hirudinea Percent	0.83%
E (no Baetids) Percent	0.73%
Hydropsychidae/Trichoptera	0.426
I (no Hydropsychids) Percent	32 29%
Dominance	00.000
Dominant Taxa (2) Percent	23 93% 43 68%
Dominant Taxa (3) Percent	58 83%
Dominant Taxa (5) Percent	75.74%
	00 30 %
	0.000
Shannon H (loge) Shannon H (log2)	3.214
Shannon H (log10)	
Margalef D Simpson D	5.554
Evenness	0.069
Function	
Predator Richness	11
Predator Percent	4.19%
Filterer Percent	27 92%
Collector Percent	35 88%
Scraper Percent Scraper+Shredder Percent	16 21%
Scraper/Filterer	0.580
Scraper/Scraper+Filterer	0.367
Habit	
Burrower Richness Burrower Percent	3 20.60%
Swimmer Richness	1
Swimmer Percent	0.15%
Clinger Percent	32 29%
Characteristics	
Cold Stenotherm Richness	1
Cold Stenotherm Percent	19.74%
Hemoglobin Bearer Richness Hemoglobin Bearer Percent	0.90%
Air Breather Richness	2
Air Breather Percent	0.80%
Voltinism	
Univoltine Richness	22
Multivoltine Percent	24.18%
Tolerance	
Sediment Tolerant Richness	6
Sediment Tolerant Percent	1.15%
Sediment Sensitive Percent	20.75%
Metals Tolerance Index	3.716
Pollution Sensitive Richness Pollution Tolerant Percent	2
Pollution Tolerant Richness	10 00 /0
Hilsenhoff Biotic Index	3.941
Supertolerant Percent	32 30% 1.68%
CTQa	104 000

PBSJ16CFRC
PBSJ16CFRC002
Mill-Willow Bypass near mouth - Composite
MWB-SBC
9/19/2016
Longitude

#### Abundance Measures

Sample Count	3530
Sample Abundance	
Coll. Procedure	
Sample Notes	

of sample used

#### **Taxonomic Composition**

Category	R	Α	PRA
Terrestrial			
Other Non-Insect	5	638	18.07%
Oligochaeta	2	21	0 59%
Odonata			
Ephemeroptera	7	50	1.42%
Plecoptera	2	34	0 96%
Heteroptera			
Megaloptera			
Neuroptera			
Trichoptera	10	1071	30.34%
Lepidoptera	1	49	1 39%
Coleoptera	4	1126	31.90%
Diptera	5	51	1.44%
Chironomidae	11	490	13.88%



### Dominant Taxa

Category	Α	PRA
Optioservus	701	19.86%
Brachycentrus occidentalis	494	13.99%
Trepaxonemata	430	12.18%
Zaitzevia	392	11.10%
Caecidotea	204	5.78%
Cheumatopsyche	186	5 27%
Cricotopus	161	4 56%
Oecetis	109	3 09%
Orthocladius	90	2 55%
Microtendipes	88	2.49%
Hydropsyche occidentalis	77	2.18%
Thienemannimyia Gr.	68	1 93%
Helicopsyche	61	1.73%
Cricotopus (Nostococladius)	55	1 56%
Petrophila	49	1 39%

#### **Functional Composition**

Category	R	Α	PRA
Predator	8	676	19,159
Parasite			
Collector Gatherer	16	810	22.959
Collector Filterer	8	895	25.359
Macrophyte Herbivore			
Piercer Herbivore	1	10	0 28%
Xylophage			
Scraper	8	826	23.409
Shredder	5	310	8.78%
Omnivore			
Unknown	1	3	0 08%



Metric	Value
Composition	
Taxa Richness E Richness P Richness P Percent	47 7 2 0.96%
T Richness EPT Richness EPT Percent	10 19 32.72%
Diptera and Non-Insect Percent All Non-Insect Abundance All Non-Insect Richness	33 99% 659 7 19 67%
Oligochaeta+Hirudinea Percent Baetidae/Ephenemeroptera	0.59%
E (no Baetids) Percent Hydropsychidae/Trichoptera T (no Hydropsychids) Percent	0.17% 0.278 21 90%
Dominance	
Dominant Taxon Percent Dominant Taxa (2) Percent Dominant Taxa (3) Percent	19 86% 33 85% 46 03%
Dominant Taxa (5) Percent Dominant Taxa (10) Percent	62 92% 80 88%
Diversity	2.042
Shannon H (log2) Shannon H (log2) Shannon H (log10)	4.059
Margalef D Simpson D	5.864
Evenness	0.050
Function	
Predator Richness Predator Percent Filterer Richness	8 19.15% 8
Filterer Percent	25 35%
Scraper Percent	23.40%
Scraper+Shredder Percent Scraper/Filterer	32.18%
Scraper/Scraper+Filterer	0.480
Burrower Richness	3
Burrower Percent	1.70%
Swimmer Richness Swimmer Percent	2 1.36%
Clinger Richness	21
Characteristics	07.1770
Cold Stenotherm Richness	1
Hemoglobin Bearer Richness	1.56%
Hemoglobin Bearer Percent Air Breather Richness	2.52% 2
Air Breather Percent	0.14%
Voltinism	24
Semivoltine Richness Multivoltine Percent	6 26 52%
Tolerance	
Sediment Tolerant Richness Sediment Tolerant Percent	4 0.20%
Sediment Sensitive Richness Sediment Sensitive Percent	1
Metals Tolerance Index	4.397
Pollution Sensitive Richness Pollution Tolerant Percent	2 49.77%
Pollution Tolerant Richness	4 774
Intolerant Percent	4.774
Supertolerant Percent CTQa	9.77% 104 000

PBSJ16CFRC
PBSJ16CFRC003
Warm Springs Cr. near mouth - Composite
WSC-SBC
9/19/2016
Longitude

2503

#### Abundance Measures

Sample Count	
Sample Abundance	
Coll. Procedure	
Sample Notes	

of sample used

#### **Taxonomic Composition**

Category	R	Α	PRA
Terrestrial			
Other Non-Insect	4	4	0.16%
Oligochaeta	2	32	1 28%
Odonata			
Ephemeroptera	7	181	7 23%
Plecoptera	6	72	2 88%
Heteroptera			
Megaloptera			
Neuroptera			
Trichoptera	14	976	38.99%
Lepidoptera			
Coleoptera	5	497	19.86%
Diptera	6	85	3.40%
Chironomidae	9	656	26.21%



### **Dominant Taxa**

Category	Α	PRA
Optioservus	465	18.58%
Cricotopus (Nostococladius)	390	15.58%
Hydropsyche occidentalis	379	15.14%
Glossosoma	222	8 87%
Orthocladius	164	6 55%
Arctopsyche	105	4.19%
Baetis tricaudatus complex	98	3 92%
Lepidostoma	97	3 88%
Brachycentrus americanus	74	2 96%
Cinygmula	65	2 60%
Hesperoperla pacifica	52	2 08%
Rhyacophila Brunnea/Vemna Gr.	41	1 64%
Cricotopus	37	1.48%
Pagastia	31	1 24%
Naidinae	31	1 24%

#### **Functional Composition**

R	Α	PRA
12	267	10.679
16	404	16.149
8	510	20.389
1	4	0.16%
7	772	30.849
8	545	21.779
1	1	0 04%
	R 12 16 8 1 7 8 1	R         A           12         267           16         404           8         510           1         4           7         772           8         545           1         1



Metric	Value
Composition	
Taxa Richness E Richness	53 7
P Percent	2 88%
TRichness	14
EPT Richness	27
EPT Percent	49.10%
All Non-Insect Abundance	36
Diptera and Non-Insect Percent	31 04%
All Non-Insect Percent	1 4 4 %
Oligochaeta+Hirudinea Percent	1.28%
Baetidae/Ephemeroptera	0.564
E (no Baetids) Percent	3.16%
Hydropsychidae/Trichoptera	0.514
I (no Hydropsychias) Percent	18 94%
Dominance	
Dominant Taxon Percent	18 58%
Dominant Taxa (2) Percent	34.16%
Dominant Taxa (3) Percent	49 30% 64 72%
Dominant Taxa (10) Percent	82 26%
Diversity	
	0.700
Shannon H (loge)	2.729
Shannon H (log2)	3 937
Margalef D	6.776
Simpson D	0.099
Evenness	0.052
Function	
Predator Richness	12
Predator Percent	10 67%
Filterer Richness	8
Filterer Percent	20 38%
Scraper Percent	30 84%
Scraper+Shredder Percent	52 62%
Scraper/Filterer	1.514
Scraper/Scraper+Filterer	0.602
Habit	
Burrower Richness	4
Burrower Percent	16 66%
Swimmer Richness	2
Swimmer Percent	0.16%
Clinger Percent	48,78%
Characteristics	
Cold Stenotherm Percent	15.62%
Air Breather Richness	3
Air Breather Percent	0.88%
Voltinism	
Univoltine Richness	24
Semivoltine Richness	9
Multivoltine Percent	26 57%
Tolerance	
Sediment Tolerant Richness	4
Sediment Tolerant Percent	0.92%
Sediment Sensitive Richness	3
Sediment Sensitive Percent	28 65%
Metals Tolerance Index Pollution Sensitive Dichness	4.267
Pollution Tolerant Percent	18.98%
Pollution Tolerant Richness	
Hilsenhoff Biotic Index	4.054
Intolerant Percent	27 57%
CTO2	1.88%
o ruga	104 000

Project ID	PBSJ16CFRC
RAI No.	PBSJ16CFRC004
Sta. Name	Silver Bow Cr. at Warm Springs - Composite
Client ID	SS-25
STORET ID	
Coll. Date	9/19/2016
Latitude	Longitude

### Abundance Measures

Sample Count	6361
Sample Abundance	
Coll. Procedure	
Sample Notes	

of sample used

#### **Taxonomic Composition**

R	Α	PRA
10	1204	18.93%
3	16	0 25%
1	1	0 02%
4	141	2 22%
1	1	0 02%
11	816	12.83%
1	8	0.13%
3	1113	17.50%
3	74	1.16%
11	2987	46.96%
	R 10 3 1 4 1 1 3 3 11	R         A           10         1204           3         16           1         1           4         141           1         1           11         816           1         8           3         1113           3         74           11         2987



### **Dominant Taxa**

Category	Α	PRA
Cricotopus	2322	36.50%
Trepaxonemata	645	10.14%
Optioservus	589	9 26%
Zaitzevia	518	8.14%
Cheumatopsyche	478	7 51%
Hyalella	450	7 07%
Thienemannimyia Gr.	193	3 03%
Orthocladius	178	2 80%
Microtendipes	176	2.77%
Oecetis	170	2 67%
Baetis tricaudatus complex	118	1 86%
Hydropsyche occidentalis	84	1 32%
Orthocladiinae	64	1 01%
Simulium	58	0 91%
Pisidium	38	0 60%

#### **Functional Composition**

Category	R	Α	PRA
Predator	9	1027	16.159
Parasite			
Collector Gatherer	17	1417	22.289
Collector Filterer	8	885	13.919
Macrophyte Herbivore			
Piercer Herbivore	1	15	0 24%
Xylophage			
Scraper	5	608	9 56%
Shredder	6	2404	37.799
Omnivore			
Unknown	2	5	0 08%



Metric	Value
Composition	
Composition Taxa Richness E Richness P Richness P Percent T Richness EPT Richness EPT Percent Diptera and Non-Insect Percent All Non-Insect Abundance All Non-Insect Richness All Non-Insect Percent Oligochaeta+Hirudinea Percent Baetidae/Ephemeroptera E (no Baetids) Percent Hydropsychidae/Trichoptera	48 4 1 0.02% 11 16 15 06% 67 30% 67 30% 1220 13 19.18% 0.27% 0.844 0.35% 0.708
T (no Hydropsychids) Percent	3.74%
Dominant Taxon Percent Dominant Taxa (2) Percent Dominant Taxa (3) Percent Dominant Taxa (5) Percent Dominant Taxa (10) Percent Diversity	36 50% 46 64% 55 90% 71 56% 89 91%
Shannon H (loge) Shannon H (log2) Shannon H (log10) Margalef D Simpson D Evenness	2.587 3.732 5.882 0.116 0.057
Function	
Predator Richness Predator Percent Filterer Richness Filterer Percent Collector Percent Scraper Percent Scraper+Shredder Percent Scraper/Filterer	9 16.15% 8 13 91% 36.19% 9.56% 47 35% 0.687
Scraper/Scraper+Hiterer	0.407
Burrower Richness Burrower Percent Swimmer Richness Swimmer Percent Clinger Richness Clinger Percent	4 0.24% 1 0.44% 16 68 97%
Characteristics Cold Stenotherm Richness Cold Stenotherm Percent Hemoglobin Bearer Richness Hemoglobin Bearer Percent Air Breather Richness Air Breather Percent	1 0.14% 4 2.85% 1 0.03%
Voltinism	
Univoltine Richness Semivoltine Richness Multivoltine Percent	23 5 57 35%
Tolerance	
Sediment Tolerant Richness Sediment Tolerant Percent Sediment Sensitive Richness Sediment Sensitive Percent Metals Tolerance Index Pollution Sensitive Richness Pollution Tolerant Richness	2 0.05% 1 0.14% 6.070 2 28 96%
Intolerant Percent Supertolerant Percent CTQa	6.063 0.33% 11.44% 104 000
PBSJ16CFRC	
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PBSJ16CFRC005	
Clark Fork near Galen - Composite	
CFR-03A	
9/19/2016	
Longitude	

5909

### Abundance Measures

Sample Count	
Sample Abundance	
Coll. Procedure	
Sample Notes	

of sample used

### **Taxonomic Composition**

R	Α	PRA
3	85	1.44%
2	17	0 29%
1	1	0 02%
7	312	5 28%
3	105	1.78%
11	2480	41.97%
1	1	0 02%
3	846	14.32%
6	136	2 30%
11	1926	32.59%
	R 3 2 1 7 3 11 1 1 3 6 11	R A   3 85   2 17   1 1   7 312   3 105   11 2480   1 1   3 846   6 136   11 1926



## **Dominant Taxa**

Category	Α	PRA
Protoptila	1345	22.76%
Cricotopus (Nostococladius)	1138	19.26%
Optioservus	515	8.72%
Hydropsychidae	351	5 94%
Cricotopus	306	5.18%
Zaitzevia	228	3 86%
Brachycentrus occidentalis	200	3 38%
Lepidostoma	178	3 01%
Orthocladius	174	2 94%
Microtendipes	153	2 59%
Ceratopsyche cockerelli	142	2.40%
Baetis tricaudatus complex	117	1 98%
Rhithrogena	106	1.79%
Cleptelmis addenda	103	1.74%
Eukiefferiella	92	1 56%

#### **Functional Composition**

Category	R	Α	PRA
Predator	11	311	5 26%
Parasite			
Collector Gatherer	15	816	13.819
Collector Filterer	8	1009	17.089
Macrophyte Herbivore			
Piercer Herbivore			
Xylophage			
Scraper	8	2134	36.119
Shredder	5	1634	27.659
Omnivore			
Unknown	1	5	0 08%



Metric	Value
Composition	
Taxa Richness E Richness P Richness P Percent T Richness	48 7 3 1.78% 11
EPT Percent Diptera and Non-Insect Percent All Non-Insect Abundance All Non-Insect Richness All Non-Insect Percent	21 49 03% 36 62% 102 5 1 73%
Oligochaeta+Hirudinea Percent Baetidae/Ephemeroptera E (no Baetids) Percent Hydropsychidae/Trichoptera T (no Hydropsychids) Percent	0.29% 0.388 3.23% 0.260 31 07%
Dominance	010170
Dominant Taxon Percent Dominant Taxa (2) Percent Dominant Taxa (3) Percent Dominant Taxa (5) Percent Dominant Taxa (10) Percent	22.76% 42 02% 50.74% 61 85% 77 64%
Diversity	
Shannon H (loge) Shannon H (log2) Shannon H (log10)	2.423 3.496
Margalef D Simpson D Evenness	5.588 0.166 0.062
Function	
Predator Richness Predator Percent Filterer Richness Eitterer Percent	11 5.26% 8 17.08%
Collector Percent Scraper Percent Scraper/Shredder Percent Scraper/Filterer Scraper/Scraper+Filterer	30 89% 36.11% 63.77% 2.115 0.679
Habit	
Burrower Richness Burrower Percent Swimmer Richness Swimmer Percent Clinger Richness	3 19.48% 1 0.07% 21 62.97%
Characteristics	02 07 %
Cold Stenotherm Richness Cold Stenotherm Percent Hemoglobin Bearer Richness Hemoglobin Bearer Percent Air Breather Richness	1 19 26% 2 2.61% 2
Air Breather Percent	0.59%
Univoltine Richness Semivoltine Richness	21 7
Multivoltine Percent	34 03%
Sediment Tolerant Richness	2
Sediment Tolerant Percent Sediment Sensitive Richness Sediment Sensitive Percent Metals Tolerance Index Pollution Sensitive Richness Pollution Tolerant Percent	0.59% 3 19.73% 4.004 2 15.30%
Pollution Tolerant Richness Hilsenhoff Biotic Index	3 004
Intolerant Percent Supertolerant Percent	31.71% 2.01%
CIQa	104 000

Project ID	PBSJ16CFRC
RAI No.	PBSJ16CFRC006
Sta. Name	Clark Fork at Galen Road - Composite
Client ID	CFR-07D
STORET ID	
Coll. Date	9/19/2016
Latitude	Longitude

4556

### Abundance Measures

Sample Count	
Sample Abundance	
Coll. Procedure	
Sample Notes	

of sample used

### **Taxonomic Composition**

Category	R	Α	PRA
Terrestrial			
Other Non-Insect	3	93	2 04%
Oligochaeta	3	20	0.44%
Odonata	1	4	0 09%
Ephemeroptera	9	99	2.17%
Plecoptera	2	87	1 91%
Heteroptera			
Megaloptera			
Neuroptera			
Trichoptera	10	2643	58.01%
Lepidoptera	1	82	1 80%
Coleoptera	3	944	20.72%
Diptera	6	36	0.79%
Chironomidae	10	548	12.03%



## **Dominant Taxa**

Category	Α	PRA
Protoptila	1118	24.54%
Optioservus	760	16.68%
Helicopsyche	670	14.71%
Hydropsyche occidentalis	249	5.47%
Cricotopus (Nostococladius)	238	5 22%
Brachycentrus occidentalis	191	4.19%
Microtendipes	167	3 67%
Zaitzevia	126	2.77%
Ceratopsyche	98	2.15%
Lepidostoma	94	2 06%
Trepaxonemata	89	1 95%
Petrophila	82	1 80%
Hydropsychidae	81	1.78%
Skwala	79	1.73%
Oecetis	77	1 69%

#### **Functional Composition**

Category	R	Α	PRA
Predator	8	276	6 06%
Parasite			
Collector Gatherer	18	319	7 00%
Collector Filterer	6	838	18.399
Macrophyte Herbivore			
Piercer Herbivore			
Xylophage			
Scraper	10	2722	59.759
Shredder	4	396	8 69%
Omnivore			
Unknown	2	5	0.11%



Metric	Value
Composition	
Taxa Richness E Richness P Richness	48 9 2
P Percent T Richness EPT Richness	1.91% 10 21
EPT Percent	62 09%
Diptera and Non-Insect Percent All Non-Insect Abundance All Non-Insect Richness	15 30% 113 6
All Non-Insect Percent Oligochaeta+Higudinea Percent	2.48%
Baetidae/Ephemeroptera	0.222
E (no Baetids) Percent	1.69%
T (no Hydropsychids) Percent	47 54%
Dominance	
Dominant Taxon Percent	24 54%
Dominant Taxa (2) Percent	55 93%
Dominant Taxa (5) Percent	66 62%
Diversity	01.43%
Shannon H (loge)	2 448
Shannon H (log2)	3.532
Shannon H (log10) Margalef D	5,724
Simpson D	0.147
Evenness	0.060
Function	0
Predator Percent	6.06%
Filterer Richness	6
Collector Percent	25.40%
Scraper Percent	59.75%
Scraper/Filterer	3.248
Scraper/Scraper+Filterer	0.765
Habit	
Burrower Percent	4 5.36%
Swimmer Richness	3
Clinger Richness	19
Clinger Percent	81 01%
Characteristics	
Cold Stenotherm Richness Cold Stenotherm Percent	1 5.22%
Hemoglobin Bearer Richness	2
Air Breather Richness	3.09%
Air Breather Percent	0.40%
Voltinism	
Univoltine Richness Semivoltine Richness	21 6
Multivoltine Percent	14 07%
Tolerance	
Sediment Tolerant Richness Sediment Tolerant Percent	3 0.37%
Sediment Sensitive Richness	2
Sediment Sensitive Percent Metals Tolerance Index	5.38%
Pollution Sensitive Richness	1
Pollution Tolerant Percent Pollution Tolerant Richness	37 91%
Hilsenhoff Biotic Index	3.529
Supertolerant Percent	2.66%
CTQa	104 000

PBSJ16CFRC
PBSJ16CFRC007
Clark Fork at Gem Backroad - Composite
CFR-11F
9/19/2016
Longitude

6062

### Abundance Measures

Sample Count	
Sample Abundance	
Coll. Procedure	
Sample Notes	

of sample used

### **Taxonomic Composition**

	A	PRA
4	236	3 89%
3	61	1 01%
2	9	0.15%
8	149	2.46%
2	42	0 69%
15	2487	41.03%
1	31	0 51%
4	1392	22.96%
8	219	3 61%
15	1436	23.69%
	4 3 2 8 2 15 1 4 8 15	4 236 3 61 2 9 8 149 2 42 15 2487 1 31 4 1392 8 219 15 1436



## **Dominant Taxa**

Category	Α	PRA
Optioservus	1203	19.84%
Helicopsyche	505	8 33%
Microtendipes	476	7 85%
Protoptila	423	6 98%
Orthocladius	384	6 33%
Oecetis	355	5 86%
Cricotopus	338	5 58%
Hydropsyche occidentalis	310	5.11%
Lepidostoma	297	4 90%
Cheumatopsyche	227	3.74%
Trepaxonemata	225	3.71%
Atherix	169	2.79%
Zaitzevia	159	2 62%
Ceratopsyche cockerelli	145	2 39%
Brachycentrus occidentalis	103	1.70%

### **Functional Composition**

Category	R	Α	PRA
Predator	12	875	14.439
Parasite			
Collector Gatherer	22	807	13.319
Collector Filterer	8	1360	22.439
Macrophyte Herbivore			
Piercer Herbivore	3	16	0 26%
Xylophage			
Scraper	10	2294	37.849
Shredder	5	706	11.659
Omnivore			
Unknown	2	4	0 07%



Metric	Value
Composition Taxa Richness E Richness P Richness P Percent T Richness EPT Richness EPT Percent Diptera and Non-Insect Percent All Non-Insect Abundance All Non-Insect Richness All Non-Insect Percent	62 8 2 0.69% 15 25 44.18% 32 20% 297 7 7
Oligochaeta+Hirudinea Percent Baetidae/Ephemeroptera E (no Baetids) Percent Hydropsychidae/Trichoptera T (no Hydropsychids) Percent Dominance	1.01% 0.067 2.29% 0.311 28 26%
Dominant Taxon Percent Dominant Taxa (2) Percent Dominant Taxa (3) Percent Dominant Taxa (5) Percent Dominant Taxa (10) Percent	19 84% 28.18% 36 03% 49 34% 74 53%
Diversity	
Shannon H (loge) Shannon H (log2) Shannon H (log10) Margalef D Simpson D	2.979 4.298 7.254 0.067
Evenness	0.041
Function	
Predator Richness Predator Percent Filterer Richness Filterer Percent Collector Percent Scraper Percent Scraper-Shredder Percent	12 14.43% 8 22.43% 35.75% 37 84% 49 49%
Scraper/Filterer	1.687
Scraper/Scraper+Filterer	0.628
Habit Burrower Richness Burrower Percent Swimmer Richness Swimmer Percent Clinger Richness	7 1.32% 3 0.16% 21
Clinger Percent	67 95%
Characteristics Cold Stenotherm Richness Cold Stenotherm Percent Hemoglobin Bearer Richness Hemoglobin Bearer Percent Air Breather Richness Air Breather Richness	1 0.58% 6 7.97% 5 0.61%
Voltinism	
Univoltine Richness Semivoltine Richness Multivoltine Percent	27 7 27.71%
Tolerance	
Sediment Tolerant Richness Sediment Tolerant Percent Sediment Sensitive Richness Sediment Sensitive Percent Metals Tolerance Index Pollution Sensitive Richness Pollution Tolerant Percent Pollution Tolerant Richness Hilsenhoff Biotic Index	6 0.96% 2 0.66% 4.217 2 44 31% 4 639
Intolerant Percent	14 38%
Supertolerant Percent CTQa	7.37%

Project ID	PBSJ16CFRC
RAI No.	PBSJ16CFRC008
Sta. Name	Clark Fork at Williams-Tavenner Br Composite
Client ID	CFR-34
STORET ID	
Coll. Date	9/20/2016
Latitude	Longitude

## Abundance Measures

Sample Count	8891
Sample Abundance	
Coll. Procedure	
Sample Notes	

of sample used

### **Taxonomic Composition**

Category	R	Α	PRA
Terrestrial			
Other Non-Insect	6	80	0 90%
Oligochaeta	2	48	0 54%
Odonata	2	5	0 06%
Ephemeroptera	9	400	4 50%
Plecoptera	4	13	0.15%
Heteroptera			
Megaloptera			
Neuroptera			
Trichoptera	13	5971	67.16%
Lepidoptera	1	1	0 01%
Coleoptera	3	798	8 98%
Diptera	4	168	1 89%
Chironomidae	11	1407	15.82%



## **Dominant Taxa**

Category	Α	PRA
Helicopsyche	2478	27.87%
Microtendipes	1081	12.16%
Cheumatopsyche	1077	12.11%
Brachycentrus occidentalis	779	8.76%
Optioservus	610	6 86%
Hydropsyche occidentalis	512	5.76%
Oecetis	472	5 31%
Nectopsyche	315	3 54%
Lepidostoma	230	2 59%
Zaitzevia	185	2 08%
Ephemerella excrucians	163	1 83%
Ephemerella	128	1.44%
Simulium	126	1.42%
Baetis tricaudatus complex	73	0 82%
Thienemannimyia Gr.	71	0 80%

### **Functional Composition**

Category	R	Α	PRA
Predator	13	618	6 95%
Parasite			
Collector Gatherer	16	462	5 20%
Collector Filterer	7	3676	41.359
Macrophyte Herbivore			
Piercer Herbivore	1	10	0.119
Xylophage			
Scraper	9	3273	36.819
Shredder	7	836	9.40%
Omnivore			
Unknown	2	16	0.189



Metric	Value
Composition	
Taxa Richness E Richness P Richness	55 9 4
P Percent T Richness	0.15% 13
EPT Richness	26
EPT Percent	71 80%
All Non-Insect Abundance All Non-Insect Richness	128 8
All Non-Insect Percent	1.44%
Baetidae/Ephemeroptera	0.235
E (no Baetids) Percent	3.44%
Hydropsychidae/Trichoptera	0.275
	40 00%
Dominant Taxon Porcont	27 07%
Dominant Taxa (2) Percent	40 03%
Dominant Taxa (3) Percent	52.14%
Dominant Taxa (5) Percent	67.77% 87.04%
Diversity	01 0470
Shannon H (loge)	2 262
Shannon H (log2)	3.408
Shannon H (log10)	c 000
Simpson D	0.153
Evenness	0.060
Function	
Predator Richness	13
Predator Percent	6.95%
Filterer Percent	41 35%
Collector Percent	46 54%
Scraper Percent Scraper+Sbredder Percent	36 81%
Scraper/Filterer	0.890
Scraper/Scraper+Filterer	0.471
Habit	
Burrower Richness	5
Swimmer Richness	3
Swimmer Percent	3.61%
Clinger Richness Clinger Percent	22 81 27%
Characteristics	
Cold Stenotherm Richness	1
Cold Stenotherm Percent	0.51%
Hemoglobin Bearer Richness	4 40 700/
Air Breather Richness	2
Air Breather Percent	0.18%
Voltinism	
Univoltine Richness	27
Multivoltine Percent	16 33%
Tolerance	
Sediment Tolerant Richness	7
Sediment Tolerant Percent	0.43%
Sediment Sensitive Richness	2
Metals Tolerance Index	3.745
Pollution Sensitive Richness	3
Pollution Tolerant Richness	58 08%
Hilsenhoff Biotic Index	4.283
Intolerant Percent Supertolerant Percent	12 08%
CTQa	104 000

Project ID	PBSJ16CFRC
RAI No.	PBSJ16CFRC009
Sta. Name	Clark Fork at Turah - Composite
Client ID	CFR-116A
STORET ID	
Coll. Date	9/20/2016
Latitude	Longitude

4137

### Abundance Measures

Sample Count	
Sample Abundance	
Coll. Procedure	
Sample Notes	

of sample used

### **Taxonomic Composition**

Category	R	Α	PRA
Terrestrial			
Other Non-Insect	3	4	0.10%
Oligochaeta	2	2	0 05%
Odonata			
Ephemeroptera	8	586	14.16%
Plecoptera	5	96	2 32%
Heteroptera			
Megaloptera			
Neuroptera			
Trichoptera	15	2596	62.75%
Lepidoptera	1	253	6.12%
Coleoptera	4	322	7.78%
Diptera	6	51	1 23%
Chironomidae	13	227	5.49%



## **Dominant Taxa**

Category	Α	PRA
Hydropsyche occidentalis	1124	27.17%
Cheumatopsyche	852	20.59%
Petrophila	253	6.12%
Ceratopsyche cockerelli	203	4 91%
Optioservus	196	4.74%
Oecetis	142	3.43%
Ephemerella excrucians	140	3 38%
Zaitzevia	124	3 00%
Rhithrogena	106	2 56%
Baetis tricaudatus complex	104	2 51%
Orthocladius	72	1.74%
Microtendipes	70	1 69%
Brachycentrus occidentalis	70	1 69%
Acentrella insignificans	67	1 62%
Heptagenia	55	1 33%

#### **Functional Composition**

Category	R	Α	PRA
Predator	13	315	7 61%
Parasite	1	1	0 02%
Collector Gatherer	18	470	11.369
Collector Filterer	7	2393	57.849
Macrophyte Herbivore			
Piercer Herbivore	1	3	0 07%
Xylophage			
Scraper	9	723	17.489
Shredder	7	230	5 56%
Omnivore			
Unknown	1	2	0 05%



Metric	Value
Composition	
Taxa Richness E Richness P Richness P Percent T Richness EPT Percent Diptera and Non-Insect Percent All Non-Insect Abundance All Non-Insect Richness All Non-Insect Richness All Non-Insect Richness All Non-Insect Percent Oligochaeta+Hirudinea Percent Baetidae/Ephemeroptera E (no Baetids) Percent Hydropsychidae/Trichoptera T (no Hydropsychids) Percent Dominance Dominant Taxa (2) Percent Dominant Taxa (2) Percent	57 8 5 2.32% 15 28 79 24% 6.86% 6 5 0.15% 0.05% 0.321 9.62% 0.858 8.90% 27.17% 47.76% 53.884
Dominant Taxa (5) Percent Dominant Taxa (10) Percent	63 52% 78.41%
Diversity	
Shannon H (loge) Shannon H (log2) Shannon H (log10) Margalef D Simpson D	2.469 3.562 6.820 0.161
Evenness	0.058
Function	
Predator Richness Predator Percent Filterer Richness Filterer Percent Collector Percent Scraper Percent Scraper/Shredder Percent Scraper/Scraper+Filterer	13 7.61% 7 57 84% 69 20% 17.48% 23 04% 0.302 0.232
Habit	
Burrower Richness Burrower Percent Swimmer Richness Swimmer Percent Clinger Richness Clinger Percent	5 0.53% 1 1.98% 27 57.77%
Characteristics	
Cold Stenotherm Richness Cold Stenotherm Percent Hemoglobin Bearer Richness Hemoglobin Bearer Percent Air Breather Richness Air Breather Percent	1 0.15% 2 1.84% 3 0.29%
Voltinism	
Univoltine Richness Semivoltine Richness Multivoltine Percent	27 9 7.71%
Tolerance	
Sediment Tolerant Richness Sediment Tolerant Percent Sediment Sensitive Richness Sediment Sensitive Percent Metals Tolerance Index Pollution Sensitive Richness Pollution Tolerant Percent Pollution Tolerant Richness Hilsenhoff Biotic Index	3 0.24% 4 1.35% 4.263 3 38 58% 4.623
Intolerant Percent	9.02%
CTQa	3.87%

PBSJ16CFRC
PBSJ16CFRC010
Lost Creek at Frontage Road - Composite
LC-7.5
9/19/2016
Longitude

3503

#### Abundance Measures

Sample Count Sample Abundance Coll. Procedure Sample Notes

of sample used

### **Taxonomic Composition**

Category	R	Α	PRA
Terrestrial			
Other Non-Insect	8	209	5 97%
Oligochaeta	3	149	4 25%
Odonata			
Ephemeroptera	5	20	0 57%
Plecoptera	1	11	0 31%
Heteroptera			
Megaloptera			
Neuroptera			
Trichoptera	7	377	10.76%
Lepidoptera			
Coleoptera	3	1131	32.29%
Diptera	7	1053	30.06%
Chironomidae	14	553	15.79%



## **Dominant Taxa**

Category	Α	PRA
Caloparyphus	958	27.35%
Optioservus	801	22.87%
Cleptelmis addenda	210	5 99%
Orthocladius	199	5 68%
Micropsectra	145	4.14%
Helicopsyche	138	3 94%
Zaitzevia	120	3.43%
Trepaxonemata	107	3 05%
Oecetis	102	2 91%
Hydroptila	86	2.46%
Cricotopus	82	2 34%
Tubificinae	74	2.11%
Gammarus	62	1.77%
Naidinae	58	1 66%
Simulium	52	1.48%

#### **Functional Composition**

Category	R	Α	PRA
Predator	8	259	7 39%
Parasite			
Collector Gatherer	22	1906	54.419
Collector Filterer	7	117	3 34%
Macrophyte Herbivore			
Piercer Herbivore	1	91	2 60%
Xylophage			
Scraper	4	941	26.869
Shredder	5	188	5 37%
Omnivore			
Unknown	1	1	0 03%



Metric	Value
Composition	
Taxa Richness E Richness P Richness	48 5 1
P Percent T Richness	0.31%
EPT Richness	13
EPT Percent Diptera and Non-Insect Percent All Non-Insect Abundance All Non-Insect Richness	11 65% 56 07% 358 11
All Non-Insect Percent	10 22%
Baetidae/Ephemeroptera	0.450
E (no Baetids) Percent	0.31%
Hydropsychidae/Trichoptera T (no Hydropsychids) Percent	0.088
Dominance	5.02 %
Dominant Taxon Percent	27 35%
Dominant Taxa (2) Percent	50 21%
Dominant Taxa (3) Percent	56 21%
Dominant Taxa (5) Percent Dominant Taxa (10) Percent	81 82%
Diversity	
Shannon H (loge)	2.506
Shannon H (log2)	3.615
Shannon H (log10) Margalef D	6 040
Simpson D	0.183
Evenness	0.056
Function	
Predator Richness Brodator Percent	8
Filterer Richness	7.39%
Filterer Percent	3.34%
Collector Percent	57.75% 26.86%
Scraper+Shredder Percent	32 23%
Scraper/Filterer	8.043
Hahit	0.003
Rumower Richness	5
Burrower Percent	1.31%
Swimmer Richness	1
Clinger Richness	12
Clinger Percent	46 96%
Characteristics	
Cold Stenotherm Richness	1
Hemodobin Bearer Richness	0.03%
Hemoglobin Bearer Percent	0.26%
Air Breather Richness	3 28 12%
Voltinism	20.1270
Univoltine Richness	20
Semivoltine Richness	4
Multivoltine Percent	21 61%
Tolerance	
Sediment Tolerant Richness	3
Sediment Tolerant Percent Sediment Sensitive Richness	0.80%
Sediment Sensitive Percent	0.03%
Pollution Sensitive Richness	4.585
Pollution Tolerant Percent	65 83%
Pollution Tolerant Richness Hilsenhoff Biotic Index	5 227
Intolerant Percent	0.71%
Supertolerant Percent	8.54%
Ciua	104 000

Project ID	PBSJ16CFRC
RAI No.	PBSJ16CFRC011
Sta. Name	Racetrack Creek at Frontage Rd Composite
Client ID	RTC-1.5
STORET ID	
Coll. Date	9/20/2016
Latitude	Longitude

2788

### Abundance Measures

Sample Count Sample Abundance Coll. Procedure Sample Notes

of sample used

### **Taxonomic Composition**

Category	R	Α	PRA
Terrestrial			
Other Non-Insect	4	55	1 97%
Oligochaeta	2	88	3.16%
Odonata			
Ephemeroptera	6	387	13.88%
Plecoptera	7	313	11.23%
Heteroptera			
Megaloptera			
Neuroptera			
Trichoptera	11	255	9.15%
Lepidoptera			
Coleoptera	5	263	9.43%
Diptera	5	101	3 62%
Chironomidae	14	1326	47.56%



## **Dominant Taxa**

Category	Α	PRA
Orthocladius	771	27.65%
Cinygmula	232	8 32%
Optioservus	230	8 25%
Skwala	185	6 64%
Pagastia	178	6 38%
Rhyacophila Brunnea/Vemna Gr.	149	5 34%
Eukiefferiella	105	3.77%
Micropsectra	84	3 01%
Tvetenia	76	2.73%
Ephemerella	70	2 51%
Muscidae	67	2.40%
Sweltsa	52	1 87%
Zapada cinctipes	49	1.76%
Drunella grandis	47	1 69%
Cricotopus	47	1 69%

#### **Functional Composition**

Category	R	Α	PRA
Predator	12	629	22.569
Parasite			
Collector Gatherer	18	1399	50.189
Collector Filterer	5	16	0 57%
Macrophyte Herbivore			
Piercer Herbivore	1	21	0.75%
Xylophage			
Scraper	8	570	20.449
Shredder	9	152	5.45%
Omnivore			
Unknown	1	1	0 04%



Metric	Value
Composition	
Taxa Richness E Richness P Richness	54 6 7
P Percent T Richness EPT Richness	11 23% 11 24
EPT Percent	34 25%
All Non-Insect Abundance All Non-Insect Richness	143 6
All Non-Insect Percent Oligochaeta+Hirudinea Percent	3.16%
E (no Baetids) Percent	12 98%
T (no Hydropsychidae/ i richoptera T (no Hydropsychids) Percent	0.008 9.07%
Dominance	
Dominant Taxon Percent Dominant Taxa (2) Percent	27 65% 35 98%
Dominant Taxa (3) Percent Dominant Taxa (5) Percent	44 23% 57 25%
Dominant Taxa (10) Percent	74 61%
Diversity	2 700
Shannon H (log2) Shannon H (log2)	4.011
Margalef D	6.796
Simpson D Evenness	0.121 0.050
Function	
Predator Richness Predator Percent	12 22 56%
Filterer Richness Filterer Percent	5 0.57%
Collector Percent	50.75%
Scraper+Shredder Percent	25 90%
Scraper/Scraper+Filterer	0.973
Habit	
Burrower Richness Burrower Percent	4 1.18%
Swimmer Richness Swimmer Percent	1 0.04%
Clinger Richness	25
Characteristics	10 00 10
Cold Stenotherm Richness	1
Hemoglobin Bearer Richness	4
Hemoglobin Bearer Percent Air Breather Richness	0.47% 4
Air Breather Percent	1.18%
Univoltine Richness	25
Semivoltine Richness Multivoltine Percent	8 49 53%
Tolerance	
Sediment Tolerant Richness	6
Sediment Sensitive Richness	2
Metals Tolerance Index	4.311
Pollution Sensitive Richness Pollution Tolerant Percent	2 12 20%
Pollution Tolerant Richness Hilsenhoff Biotic Index	4,167
Intolerant Percent	26.76%
CTQa	104 000

Project ID	PBSJ16CFRC
RAI No.	PBSJ16CFRC012
Sta. Name	Little Blackfoor R. at Beck Hill Rd Composite
Client ID	LBR-CFR-02
STORET ID	
Coll. Date	9/20/2016
Latitude	Longitude

2714

### Abundance Measures

Sample Count Sample Abundance Coll. Procedure Sample Notes

of sample used

### **Taxonomic Composition**

Category	R	Α	PRA
Terrestrial			
Other Non-Insect	4	73	2 69%
Oligochaeta	2	16	0 59%
Odonata	1	1	0 04%
Ephemeroptera	7	114	4 20%
Plecoptera	5	101	3.72%
Heteroptera			
Megaloptera			
Neuroptera			
Trichoptera	14	1041	38.36%
Lepidoptera	1	3	0.11%
Coleoptera	4	497	18.31%
Diptera	6	180	6 63%
Chironomidae	15	688	25.35%



## **Dominant Taxa**

Category	Α	PRA
Lepidostoma	367	13.52%
Optioservus	331	12.20%
Helicopsyche	196	7 22%
Cricotopus (Nostococladius)	189	6 96%
Zaitzevia	148	5.45%
Eukiefferiella	144	5 31%
Atherix	143	5 27%
Brachycentrus occidentalis	137	5 05%
Hydropsychidae	115	4 24%
Tvetenia	102	3.76%
Polypedilum	74	2.73%
Hydropsyche occidentalis	67	2.47%
Hesperoperla pacifica	62	2 28%
Drunella grandis	62	2 28%
Ceratopsyche	59	2.17%

#### **Functional Composition**

Category	R	Α	PRA
Predator	13	387	14.269
Parasite			
Collector Gatherer	22	538	19.829
Collector Filterer	6	441	16.259
Macrophyte Herbivore			
Piercer Herbivore	1	1	0 04%
Xylophage			
Scraper	10	642	23.669
Shredder	7	705	25.989
Omnivore			
Unknown			



Metric	Value
Composition	
Taxa Richness E Richness P Richness P Percent T Richness	59 7 5 3.72%
EPT Richness EPT Percent Diptera and Non-Insect Percent All Non-Insect Abundance All Non-Insect Richness	26 46 28% 35 26% 89 6
All Non-Insect Percent Oligochaeta+Hirudinea Percent Baetidae/Ephemeroptera E (no Baetids) Percent Hydropsychidae/Trichoptera T (no Hydropsychids) Percent	3.28% 0.59% 0.053 3.98% 0.283 27.49%
Dominance	21.4370
Dominant Taxon Percent Dominant Taxa (2) Percent Dominant Taxa (3) Percent Dominant Taxa (5) Percent Dominant Taxa (10) Percent	13 52% 25.72% 32 94% 45 36% 68 98%
Diversity	
Shannon H (loge) Shannon H (log2) Shannon H (log10)	3.053 4.404
Margalef D Simpson D Evenness	7.630 0.075 0.042
Prodator Richness	13
Predator Percent Filterer Richness Filterer Percent	14 26% 6 16 25%
Collector Percent Scraper Percent Scraper-Shredder Percent Scraper/Filterer Scraper/Scraper+Filterer	36 07% 23 66% 49 63% 1.456 0.593
Habit	
Burrower Richness Burrower Percent Swimmer Richness Swimmer Percent Clinger Richness Clinger Percent	5 7.37% 1 0.07% 24 49.45%
Characteristics	
Cold Stenotherm Richness Cold Stenotherm Percent Hemoglobin Bearer Richness Hemoglobin Bearer Percent Air Breather Richness	1 6.96% 4 4.13% 3 0.55%
Voltinism	0.0070
Univoltine Richness Semivoltine Richness Multivoltine Percent	28 10 25.46%
Tolerance	
Sediment Tolerant Richness Sediment Tolerant Percent Sediment Sensitive Richness Sediment Sensitive Percent Metals Tolerance Index Pollution Sensitive Richness Pollution Tolerant Percent Pollution Tolerant Richness	6 3.50% 3 7.41% 3.918 3 34.41%
Hilsenhoff Biotic Index Intolerant Percent Supertolerant Percent	4.190 23 62% 8.36%
CIQa	104 000

CC16SBC
CC16SBC017
Silver Bow Cr. at Frontage Rd.
SS-19
9/14/2016
Longitude

### Abundance Measures

320 Sample Count Sample Abundance Coll. Procedure traveling kick Sample Notes

2,400.00 13 33% of sample used

## **Taxonomic Composition**

Category	R	Α	PRA
Terrestrial			
Other Non-Insect	3	21	6.56%
Oligochaeta	2	17	5.31%
Odonata			
Ephemeroptera	1	1	0.31%
Plecoptera	1	2	0.63%
Heteroptera			
Megaloptera			
Neuroptera			
Trichoptera	5	158	49 38%
Lepidoptera			
Coleoptera	1	17	5.31%
Diptera	1	1	0.31%
Chironomidae	6	103	32 19%



### **Dominant Taxa**

Category	Α	PRA
Microtendipes	97	30 31%
Helicopsyche	92	28.75%
Lepidostoma	28	8.75%
Brachycentrus occidentalis	27	8.44%
Optioservus	17	5.31%
Hyalella	12	3.75%
Naididae	10	3.13%
Hydropsyche	10	3.13%
Physella	8	2.50%
Tubificinae	7	2.19%
Skwala	2	0.63%
Parametriocnemus	2	0.63%
Tvetenia Bavarica Gr.	1	0.31%
Thienemannimyia Gr.	1	0.31%
Baetis Rhodani Gr	1	0.31%

#### **Functional Composition**

Category	R	Α	PRA
Predator	3	4	1.25%
Parasite			
Collector Gatherer	8	35	10 94%
Collector Filterer	4	135	42.19%
Macrophyte Herbivore			
Piercer Herbivore			
Xylophage			
Scraper	4	118	36 88%
Shredder	1	28	8.75%
Omnivore			
Unknown			



## Metric Composition Taxa Richness E Richness P Richness T Richness EPT Richness EPT Percent All Non-Insect Abundance All Non-Insect Richness All Non-Insect Percent Oligochaeta+Hirudinea Percent Baetidae/Ephemeroptera

Metric Values and Scores

Value

20

1

1

5

7

50 31%

38

5

11 88%

5.31%

Baetidae/Ephemeroptera	1.000
Hydropsychidae/Trichoptera	0.063
Dominance	
Dominant Taxon Percent	30 31%
Dominant Taxa (2) Percent	59 06%
Dominant Taxa (3) Percent	67 81%
Dominant Taxa (10) Percent	96 25%
Diversity	
Shannon H (loqe)	1.931
Shannon H (loq2)	2.786
Margalef D	3.323
Simpson D	0.212
Evenness	0.094
Function	
Predator Richness	3
Predator Percent	1.25%
Filterer Richness	4
Filterer Percent	42.19%
Collector Percent	53.13%
Scraper/Shredder Percent	45 63%
Scraper/Filterer	0.874
Scraper/Filterer	0.466
Habit	
Burrower Richness	0
Burrower Percent	0.00%
Swimmer Richness	1
Swimmer Percent	0.31%
Clinger Richness	8
Clinger Percent	77.19%
Characteristics	
Cold Stenotherm Richness	0
Cold Stenotherm Percent	0.00%
Hemoglobin Bearer Richness	2
Hemoglobin Bearer Percent	30 63%
Air Breather Richness	0
Air Breather Percent	0.00%
Voltinism	
Univoltine Richness	10
Semivoltine Richness	2
Multivoltine Percent	32.19%
lolerance	
Sediment Tolerant Richness	2
Sediment Tolerant Percent	2.81%
Sediment Sensitive Richness	0
Sediment Sensitive Percent	0.00%
Metals Tolerance Index	3.430
Pollution Sensitive Richness	0
Pollution Tolerant Percent	37.19%
Hilsenhoff Biotic Index	4.388
Intolerant Percent	17 50%
Supertolerant Percent	10 00%
CTQa	82 250



## **Bioassessment Indices**

Diousse	Soment marces			
BioIndex	Description	Score	Pct	Rating
BIBI	B-IBI (Karr et al.)	18	36 00%	
MTP	Montana DEQ Plains (Bukantis 1998)	24	80 00%	Slight
MTV	Montana Revised Valleys/Foothills (Bollman 1998)	4	22 22%	Moderate
MTM	Montana DEQ Mountains (Bukantis 1998)	10	47 62%	Moderate

Friday, October 14, 2016

**APPENDIX J** 

FISH SAMPLING METHODS

Stream	Section Name	Section Length	Estimate Type	Downstream Lat	Downstream Long
Baggs Creek	RM 0.4	120 m	Single Pass	46.39659	-112.63052
	RM 2.4	113 m	Depletion	46.39407	-112.59422
Barker	Lower RM 0.5	100 m	Depletion	46.15737	-113.12189
Creek	RM 1.5	140 m	Depletion	46.14403	-113.12628
	USGS Gauge RM 0.4	100 m	Depletion	46.47399	-113.23616
Boulder	RM 2.0	100 m	Depletion	46.44669	-113.22075
Creek	RM 6.5 Princeton Bridge	120 m	Depletion	46.41325	-113.1609
	Copper Lakes Trailhead	100 m	Depletion	46.39672	-113.14002
	School RM 0.8	113 m	Depletion	46.40001	-112.72959
Cottonwood	Middle RM 3.0	200 m	Single Pass	46.39602	-112.68595
Oleek	Upper RM 6.9	100 m	Depletion	46.3831	-112.63288
Middle Fork Cottonwood Creek	RM 0.7	100 m	Depletion	46.35883	-112.57642
	Hall	1.54 Km	Mark/Recapture	46.58556	-113.18108
Flint Crook	Johnson Tuning Fork	1.32 Km	Mark/Recapture	46.40133	-113.304
Fint Creek	Chor	1.42 Km	Mark/Recapture	46.28823	-113.33698
	Dam (Campground)	100 m	Depletion	46.23226	-113.29792
	Lower RM 1.0	100 m	Depletion	46.17497	-113.13055
Foster Creek	Middle RM 2.3	100 m	Depletion	46.18919	-113.14171
	Upper RM 3.8	130 m	Depletion	46.20537	-113.12403
	RM 0.6	100 m	Depletion	46.69828	-113.37712
	RM 1.2	120 m	Depletion	46.69159	-113.38245
Harvey	RM 1.6	100 m	Depletion	46.6822	-113.39116
Creek	RM 2.3	100 m	Depletion	46.6768	-113.39555
	Below 8 Mile	137 m	Depletion	46.61099	-113.43065
	Above FS Road	100 m	Depletion	46.60113	-113.44439
	FAS	1200 m	Mark/Recapture	46.56424	-112.67784
	N. Trout Creek	1000 m	Mark/Recapture	46.57673	-112.50767
Little Blackfoot	Elliston RM 26.7	300 m	Depletion	46.5535	-112.40379
River	Above Sunshine Camp	200 m	Depletion	46.50319	-112.40455
	Ontario Creek RM 34.9	120 m	Depletion	46.46229	-112.42051
	Kading Cmpgrnd RM 40.1	200 m	Depletion	46.42166	-112.48753
Spotted Dog	RM 1.1	150 m	Depletion	46.58143	-112.60246
Creek	RM 4.6	170 m	Depletion	46.53831	-112.58932
Storm Lake Creek	Lower RM 0.6	100 m	Depletion	46.15704	-113.21209
	Above first road crossing RM 1.4	100 m	Depletion	46.14611	-113.21759
	Lower end of meadow RM 4.2	100 m	Depletion	46.11486	-113.24855
	Below upper road crossing RM 6.3	100 m	Depletion	46.08979	-113.26583

Table J1. Fish sampling methods in the Clark Fork River Operable Unit, 2016.

Stream	Section Name	Section Length	Estimate Type	Downstream Lat	Downstream Long
	Above upper road crossing RM 6.3	100 m	Depletion	46.08854	-113.26732
	Lower RM 1.3	96 m	Depletion	46.15655	-113.1727
Twin Lakes Creek	Meadow RM 2.8	100 m	Depletion	46.14503	-113.19615
	Upstream of old bridge RM 4.6	100 m	Depletion	46.12344	-113.20932
	Downstream of lower lake RM 7.2	100 m	Depletion	46.09039	-113.21017
	Upstream of upper lake RM 8.5	100 m	Depletion	46.07794	-113.21556
	PH Shack	2.57 Km	Mark/Recapture	46.19658	-112.76772
	Bottom of PH Shack to Perkins Lane	2.41 Km	Mark/Recapture	46.20856	-112.76762
Upper Clark	Below Sager Lane				
Fork River	Williams Tavenner	4.02 Km	Mark/Recapture	46.48631	-112.72647
	Phosphate	3.38 Km	Mark/Recapture	46.57443	-112.89466
	Morse Ranch	12.3 Km	Mark/Recapture	46.65427	-113.1462
	Bearmouth	10.6 Km	Mark/Recapture	46.69818	-113.41624
Warm Springs Creek	WMA RM 3.3	900 m	Mark/Recapture	46.17756	-112.78963
	Airport Road RM 3.3	609 m	Mark/Recapture	46.14632	-112.86194
	Below Myers Dam	1000 m	Mark/Recapture	46.15136	-113.0276
	Garrity WMA	970 m	Mark/Recapture	46.1627	-113.06291
	Veronica Trail RM 26.0	100 m	Depletion	46.17413	-113.15636
	Upper Bridge RM 27.4	100 m	Depletion	46.22478	-113.18143
	Upper Forks Confluence	100 m	Depletion	46.24232	-113.16467
West Fork Warm Springs Creek	RM 1.0	100 m	Depletion	46.26241	-113.15594