Groundwater flows in this area are substantially controlled by fracture flow, flows along vein structures, and historic mine workings. As a result, no substantial change in groundwater hydrology is expected with mining at elevations higher than the elevation of the Pandora Mill flow-control bulkhead near Telluride and the Camp Bird Mine in the Revenue group of the Sneffels District.

Mine working flows are seasonally driven by snow melt. Work conducted by Idarado to install a bulkhead at the Pandora Mill Tunnel level is estimated to cause a range of water elevations (Newmont 2018), none of which exceed 600 feet above the bulkhead, therefore not reaching the Revenue Tunnel elevation.

The deposit host rock through which the Revenue Tunnel is driven is the propyliticly-altered San Juan Tuff. Chemical alteration of the San Juan Tuff has resulted in a neutralizing host rock, as demonstrated by the approximately 100-year history of Revenue Tunnel drainage with measured pH values ranging from 7.0 to 8.5. In addition to the neutralizing host rock, the primary target vein (the Virginius) is neutralizing as well and because no new veins would be intercepted, no substantial changes to groundwater quality are expected.

8.3 Site Geology

The Revenue Mine's local geology is predominantly controlled by fractures and vein structures that cross the various volcanic formations in the area. The Regional Geology of the area along with main fracture/vein systems is shown on the Map C-5 located in Exhibit C. The veins of the Ouray-Telluride mining district seem to occupy structures that are related to the San Juan and Silverton Calderas as radial and concentric structures extending for several miles northwest of the actual caldera margin. These structures were apparently influenced by the contemporaneous emplacement of the Stony Mountain Stock as evidenced by their propensity to merge with the radial pattern of faulting surrounding the Stony Mountain Stock. The dominant rock formation in the Project area is the 35 to 30 Ma andesitic San Juan Formation. This is a thick package of mostly water-lain volcaniclastic rocks with minor lava flows.

As noted above, water storage and transmission is not driven by lithology but rather fracture flow. There is no primary water bearing zone, formation, or even intrusion. Historically, when new tunnels and drifts were driven at lower elevations in the area and dewatered, the upper areas dried out. Additionally, mine water flows fluctuate seasonally due to infiltration from snowmelt.

The quartz veins that penetrated the San Juan Formation are primarily 1’ to 5’ wide and are comprised of up to 20% sulfide minerals with rare free gold and silver. The Virginius vein is a quartz carbonate structure with acid neutralizing potential. Most of the rock surrounding the veins is andesite but is lamprophyritic by composition – meaning it contains carbonates in its

matrix. These lamprophyre volcanic deposits are similar in age and composition to deposits in the Silverton area that are being used to neutralize acid mine drainage.

The quartz veins have four principal metallic minerals:

- galena (PbS)
- sphalerite (ZnS)
- chalcopyrite ($CuFeS_2$)
- Tetrahedrite ($Cu_{12}Sb_4S_{13}$) with a variant freibergite which has some silver (Ag) replacing some of the copper.

8.4 Groundwater/Mine Water

Groundwater in the Revenue Mine area is almost completely supplied by infiltration of high-elevation surface water seeping through fracture systems. No sedimentary aquifers are found in the area. Additionally, the groundwater regime is strongly influenced by historical mining activity. As such, it is not possible to identify all groundwater sources and flows. From historical documentation of the Revenue/Virginius mining activity in the area, it is known that only the original Virginius mining area is located above and connected to the Revenue tunnel. Other mines are located above the Revenue tunnel, such as the Atlas Mine and historic mines in Governor Basin, but at this time do not connect to the revenue tunnel.

The primary drivers of the groundwater at the Revenue Mine consist of:

- the old Virginius vein development above the Revenue Tunnel in the Monongahela workings;
- groundwater intercepts in the historic workings; and
- groundwater produced by new mine development intercepting fracture zones and vein structures above the new workings.

See Section 7.3 and Maps G-2, G-2a, C-4 and C-5 for more detail about the geology of the site and its influence on groundwater flow in the area.

8.5 Hydrology of the Area Impacted by DMO Activities

Maps U-1 and U-2 show the locations of the EPFs on the main Revenue Mine site. Maps G-2, G-2a and C-4 show the groundwater regime and the areas of influence both on site and within 2 miles of the permit areas.

The Reagent Room and Mill are enclosed structures and the designated chemicals stored and used in these areas are protected from the elements and contained within buildings or underground facilities. The Atlas and Revenue TSFs are designed to allow water to percolate

through to groundwater but only after it is demonstrated that the leachate from the tailings placed on the TSFs achieves applicable groundwater standards after being subject to various leaching procedures (i.e., SPLP and TCLP). Given the proximity of the main Revenue Mine site to Sneffels Creek, it is expected that groundwater eventually connects with surface water. Groundwater wells to monitor water quality down gradient of the TSFs are checked on a quarterly basis to assess the potential impacts from these facilities.

The five-stage passive mine water treatment system is constructed of lined ponds designed to prevent untreated mine water from discharging to groundwater. This water flows through the treatment system and is discharged directly to Sneffels Creek following treatment via a permitted outfall.

A well to be installed down gradient of the site in the summer of 2022 will be used to monitor groundwater quality from the entire site including the mill / process area. Surface water samples also are collected downstream of the permit area to monitor potential surface water quality impacts from operations.

There are no EPFs on the Hubb Reed / Monongahela Raise area or the 960 and Yellow Rose raises. However, surface water sampling downstream of the Hubb Reed / Monongahela Raise is performed to evaluate water quality in Governor Basin.

9 Groundwater Quality Data

9.1 Groundwater Uses (Current and Future)

In general, the local groundwater and surface water regime that impacts the mine site is limited to the area that lies to the northeast of the San Miguel / Ouray County Line (county line) and to the south of Sneffels Creek. This area is shown in the hatched area on Map G-2. Groundwater and surface water to the southwest of the county line flows towards Telluride. Groundwater and surface water that flow off the drainages to the north of Sneffels Creek are captured by Sneffels Creek and are not expected to come in contact with the mine site. Likewise, water that flows off the Revenue Mine eventually makes its way into Sneffels Creek and does not impact the drainages located to the north of Sneffels.

Groundwater that originates in the Revenue Mine is used for a variety of activities on site.

- Groundwater intercepted at the Anglo/Saxon Tunnel is captured and used for make-up water in the mill;
- Groundwater generated at the Terrible Vein is used for mining operations, including drilling and dust control; and
- Groundwater intercepted at a vault approximately 0.5 miles back in the Revenue Tunnel is used for the mine's drinking water supply. This water is treated prior to use.

There are no drinking water or process water wells located on the site or within 2 miles of the site. The only wells that are present are the on-site groundwater monitoring wells used to monitor groundwater quality.

OSMI is unaware of any plans to install drinking water wells or other process-related wells within 2 miles of the permit boundary. This is supported by the fact that, in October 2016, the Ouray County Board of County Commissioners adopted Section 24 to the County Land Use Code, which prohibits non-mining development on patented mining claims and mill sites at or higher than 9,480 feet elevation.

9.2 Groundwater Data

Groundwater is high quality and generally meets the Permitted numeric protection limits for groundwater quality. Groundwater standards are based on a hybrid of agricultural groundwater standards from Table 3 of Regulation 41, surface water standards from Regulation 35 and established background concentrations from historic data. These standards were developed under the original permit application in 2012 and revised as part of Amendment 01 in 2015. The groundwater standards currently in use were approved by DRMS in a letter dated April 15, 2015.

Groundwater quality within the permit boundary at the Revenue Mine area is measured at six groundwater monitoring wells (GW-1A, GW-1B, GW-2A, GW-2B, GW-3R, and GW-3B). See Table U-5. Wells GW-1A (shallow) and GW-1B (deep) are located at the western edge of the permit boundary to monitor the Atlas TSF. Wells GW-2A and GW-2B, which are adjacent to the Mine Water Pond, and GW-3R, and GW-3B, which are adjacent to the bioreactor (Pond #2), monitor the groundwater potentially impacted by the Revenue TSF.

A seventh well is being proposed to monitor groundwater downgradient of the entire site including the mill/process area. This proposed well will be located to the east of the main mine area and to the south of Sneffels Creek. An approximate location of this new well is shown on Map U-1. The actual location of the proposed downgradient well will be identified once the snow melts. Once drilled, a revised Map U-1 and updated Exhibit U will be developed.

A more detailed discussion of well locations, construction, analytical suites, and practical quantification limits can be found in under the Water Quality Monitoring Section (Section 11 of this EPP).

In addition to the monitoring wells on the surface, mine water quality is monitored via five underground (UG) water sample points. Groundwater and underground sampling points and their descriptions are listed in Table U-5 and shown on Maps U-1 and U-2. Underground locations are sampled to characterize source water locations to better understand water quality as it enters the passive mine water treatment system.

Table U-5 Groundwater and Underground Water Quality Sampling Locations

Station ID	Location	Sampling Status
Groundwater Monitoring Wells		
GW-1A	Downgradient of the Atlas TSF	Active
GW-1B	Downgradient of the Atlas TSF	Active
GW-2A	Downgradient of Mine Water Pond #1	Active
GW-2B	Downgradient of Mine Water Pond #1	Active
GW-3B	Downgradient of the Revenue TSF and Mine Water Pond #2	Active
GW-3R	Downgradient of Mine Water Pond #2	Active

Station ID	Location	Sampling Status
Groundwater Monitoring Wells		
GW-4R	Downgradient of the main portal area	Proposed – to be installed summer 2022
Underground Sampling Locations		
UG-1	Yellow Rose	Inactive
UG-2	Main line above Yellow Rose	Sampled Quarterly
UG-3	Atlas/Cumberland	Inactive
UG-4	Main line above Atlas/Cumberland	Sampled annually
UG-5	Main line - Portal	Sampled Quarterly
UG-7	Main line below Yellow Rose	Optional
UG-8	Main line below Atlas/Cumberland	Sampled Quarterly
UG-9	Main line below Terrible	Optional
UG-10	Main line above Terrible	Sampled Annually

A summary of groundwater quality collected from monitoring wells for the past 5 calendar quarters (Q1-2021 through Q1-2022) is presented in the attached Table U-6. Note GW-3R exceeded the approved groundwater standards for lead, copper and silver in June 2021. The well was resampled in July 2021 and all parameters were below approved groundwater standards. The bioreactor (Mine Water Pond #2) of the passive mine water treatment system was being commissioned at this time, and it is believed that some untreated water may have reached the monitoring wells. Water quality at GW-3R has met approved standards since July 2021. This

issue was reported to DRMS in a letter dated July 21, 2021, with a follow-up letter dated August 13, 2021.

A five-stage passive mine water treatment system became operational in May 2021 to treat groundwater (i.e., mine water) exiting the Portal at UG-5. The treatment system, described in detail in Section 9 of this Exhibit U, was designed and tested to meet both DRMS and CDPHE requirements for water quality and function into closure with minimal maintenance, low waste production, limited power requirements, and positive aesthetic value. Analysis of the passive mine water treatment system is performed voluntarily to inform systems operations and best management practices. Compliance of mine discharge is evaluated under CDPS Industrial Wastewater permit CO-0000003.

Table U-7 Mine Discharge Water Quality Data from Mine Water Treatment System (Outfall 002A)

Analyte	Units	Permit Limits 30 day avg / daily max (ug/l)	Minimum	Maximum	Average	Non-detect Count	Sample Count
Arsenic, total recoverable	mg/L	Report	0.0016	0.0101	0.0040	4	4
Bicarbonate as CaCO3	mg/L	NA	51.3	51.3	51.3	1	1
Cadmium, potentially dissolved	mg/L	0.74/2.2	0.00015	0.00227	0.00077	17	17
Cadmium, total	mg/L	50/100	0.000651	0.008	0.003	4	4
Carbonate as CaCO3	mg/L	NA	2	2	2	1	1
Chromium, total recoverable	mg/L	NA	0.0005	0.0027	0.0011	4	4
Chromium, Trivalent Total Recoverable	mg/L	Report	0.005	0.005	0.005	4	4
Copper, potentially dissolved	mg/L	12.5/ Report	0.0008	0.0102	0.0022	17	17
Copper, total	mg/L	150/300	0.00114	0.0144	0.0073	4	4
Cyanide, WAD	mg/L	NA/5.6	0.003	0.003	0.003	17	17
Dissolved Chromium, Hexavalent	mg/L	NA	0.005	0.005	0.005	5	5
Hydroxide as CaCO3	mg/L	NA	2	2	2	1	1
Iron, total recoverable	mg/L	1276/NA	0.06	5.59	0.81	17	17

Analyte	Units	Permit Limits 30 day avg / daily max (ug/l)	Minimum	Maximum	Average	Non-detect Count	Sample Count
Lead, potentially dissolved	mg/L	2.6/100	0.0003	0.179	0.018	17	17
Lead, total	mg/L	300/600	0.03	0.235	0.046	17	17
Manganese, potentially dissolved	mg/L	2076/ 4127	0.356	1.53	0.762	17	17
Mercury, total	mg/L	1/2	0.0002	0.0002	0.0002	16	16
Mercury, total (low level)	ng/L	0.011/NA	0.3	4.2	2.0	4	4
Oil and Grease	mg/L	Visual/NA	1.9	1.9	1.9	2	2
pH (lab)	s.u.	6.5-9	7.8	8.5	8.12	17	17
Total Dissolved Solids	mg/L	Report	200	264	230	5	5
Total Suspended Solids	mg/L	20/30	5	126	17	17	17
Silver, potentially dissolved	mg/L	0.08/ Report	0.0001	0.00017	0.0001	17	17
Total Alkalinity	mg/L	NA	51.3	51.3	51.3	1	1
Zinc, potentially dissolved	mg/L	126/166	0.0278	0.646	0.233	17	17
Zinc, total	mg/L	750/1500	0.173	0.63	0.35	4	4
pH (field)	s.u.	6.5-9	7.63	9	8.3	0	25
Water Temperature (field)	deg. C	Report	0.1	15.2	7.42	0	25
Flow (field) [1]	CFS	1.75 MGD	0.0305	1.84	0.881	0	25

Notes: All non-detect values included at the method detection limit

1 - Flow measurements based on staff gauge readings flow is also monitored and reported by continuous monitor and reported on discharge monitoring reports.

10 Surface Water Control & Containment Facilities

Surface water flows shown on Maps G-1, G-2 and C-1a at the Revenue Mine are dominated by Sneffels Creek and the associated drainage basin (i.e., Yankee Boy Basin and Governor Basin). Yankee Boy Basin is approximately 2,000 acres with a high point of 14,150 feet (peak of Mt. Sneffels) and comprises the upper reaches of Sneffels Creek. Governor Creek drains the 870-acre Governor Basin with a high point of 13,581 feet at Mount Emma, joining Sneffels Creek in the valley floor above the Revenue Portal area. The proposed change in this amendment expands the footprint of the hoist and refuge chamber in Governor Basin from 100 square feet (0.23 acres) to approximately 1.39 acres to allow for safer winter operations, secondary escapeway, and stormwater management. There is no established stream in the vicinity of the proposed Governor Basin permit boundary.

Sneffels Creek just upstream of the Revenue Mine ranges in flow from a peak recorded flow of 19,000 gallons per minute (GPM) in summer months to less than 400 GPM in the winter season. These flows are supplied by surface runoff, fracture flow, and historic open mine workings such as the Atlas Mine, Ruby Trust and Lower Mountain Top. Water quality in Sneffels Creek upstream of the Revenue Mine does not meet use classifications or water quality standards for cadmium, lead and zinc.

The surface water flows at the Revenue Mine report to Sneffels Creek, which is Stream Segment 9 of the Uncompahgre River basin (COGUUN09) as designated by Regulation 35 of the Colorado Water Quality Control Commission (5 CCR-1002-35). Sneffels Creek near the mine alternates between shallow wide sections and very narrow, steep, high-energy, canyons. The stream drops from 10,670 feet elevation at the upper edge of the permit to 10,580 feet at the bottom of the permit area, over a distance of 2,400 feet with a grade of approximately 3.75%. The grade steepens just northeast of the permit area as the creek flows towards Canyon Creek and the Camp Bird Mine. From there, the combined flow meets the Uncompahgre River at Ouray, approximately 5 miles downstream from the mine.

10.1 Design Specifications

Each of the environmental control features at the Revenue Mine are designed to contain designated chemicals at the mill and to divert and convey surface runoff away from features that could cause acid mine drainage.

10.1.1 Mill and Associated Features

The mill was constructed in accordance with the designs submitted as part of TR-15. Detailed design drawings certified by a Professional Engineer were provided as part of TR-15. The mill is underground and has more secondary containment than required to contain 100% of the reagents

used in the process. The pipes that transport reagents from the Reagent Room to the mill are either over secondary containment or double walled to prevent loss of containment in case of a leak. The tailings thickener tank is located within secondary containment with a capacity to contain 123% of the tank should it overtop or rupture. A building will be constructed over the top of the Tailings Thickener Tank to prevent snow and rain from entering secondary containment.

Stormwater at this part of the site is diverted around the mill area by stormwater Diversion Ditch #1, which is designed to collect stormwater and divert it around the site to the wetlands on the western side of the permit area. See Map U-1 for details. Stormwater that falls on the disturbed areas including the Reagent Room, Tailings Thickener area and Mill Building is directed to a low point near the security building where it infiltrates into the ground. A proposed new sediment pond will capture stormwater to infiltrate into groundwater.

10.1.2 Reagent Room

The New Reagent Room is a fully contained building and was designed to contain 220% of the reagents stored in the building. Piping from the Reagent Room to the mill is fully contained or double walled. A concrete apron outside the building will be constructed in 2022 to contain spills should they occur during offloading of reagents. The Reagent Room was designed by a professional engineer. Designs were submitted to DRMS as part of TR-14.Stormwater at this part of the site is diverted around the mill area by stormwater Diversion Ditch #1, which is designed to collected stormwater and divert it around the site to the wetlands located on the western portion of the site. See Map U-1 for details. Stormwater that falls on the disturbed areas including the Reagent Room is collected in Mine Water Pond #2 and treated in the passive mine water treatment system.

10.1.3 Revenue TSF

The Revenue TSF was designed by Greg Lewicki, P.E. of Lewicki & Associates. The designs are provided as Attachment D to the 2015 Tailings and Waste Rock Management Plan, which is included in Appendix 6 of Amendment 02. The TSFs are dry stack facilities and are constructed to allow meteoric water to percolate through to groundwater. This is possible because the tailings generated by the milling operation have been sampled and are non acid generating.

Stormwater is controlled by diverting water around the TSF via Stormwater Collection Ditch #2.

10.1.4 Atlas TSF

The Atlas TSF also was designed by Greg Lewicki, P.E., of Lewicki & Associates. Similar to the Revenue TSF, the Atlas TSF is a dry stack tailings facility, which allows meteoric water to percolate to groundwater. The Atlas TSF is graded to direct stormwater runoff that comes in contact with the tailings towards the southeast to a sediment pond where it is allowed to either infiltrate or evaporate. Stormwater run-on that is coming off the native hillside to the south of the Atlas TSF is

diverted around the facility and directed towards the wetlands located between the Atlas and Revenue TSF on the western side of the permit boundary.

10.1.5 Passive Mine Water Treatment System

The following discussion of mine water discharge management is broken into three segments, describing the treatment process and changes in configuration for each of the three ponds. Each of the ponds was expanded to accommodate the passive treatment system, to accommodate additional flows should such capacity be required in the future, and to contain flows from a 10-year 24 hour storm event.

The ponds and water conveyances associated with the passive treatment system were designed by a Professional Engineer from Merdiam Partners. All three ponds are lined (a combination of membrane and clay liners) or contained in pipe.

- Chemical Flocculant – the first stage of the treatment system is the option to use a chemical flocculant to encourage settlement of total suspended solids in the mine water as it exits the portal. A drum of ferric chloride outfitted with a small pump can be used to enhance settling in the mine water as it enters the first pond. Chemical flocculant is used on an as needed basis.

- Mine Water Pond # 1 is the first pond encountered by mine water after it leaves the portal. The pond size was increased, and Collection Ditch 2 was routed into Pond #1 to allow for the pond's expansion. Outfall 001A remains in place under Modification 5 of CDPS permit CO-0000003 although this outfall is not currently used as a discharge point. This pond contains settling capacity, a silt curtain removes additional sediment, and a sand filter to further filter the water and to remove sediment before it enters the anaerobic bioreactor cell (Mine Water Pond #2). Two feet of free board will be maintained in Mine Water Pond #1, as demonstrated by area capacity curves. Pond # 1 is lined with a combination of an HDPE liner (reused from the original mine water pond) and clay liners to create a pond that contributes to the natural environment with perimeter vegetation growth, as requested by the Army Corps of Engineers during a 2017 inspection.

- Mine Water Pond# 2 (formally Pond #2) has been expanded and reconfigured to serve as a sulfate reducing bioreactor. Organic material (e.g., manure, straw, and wood chips) along with limestone are used to support bacterial growth. The pond is lined and maintained in a saturated state. Water from Mine Water Pond #1 is piped under the substrate and allowed to flow up through the bioreactor where sulfates in the water are reduced to sulfides and metals precipitate out as metal sulfides. Water reports from the surface of Mine Water Pond #2 to an open channel and then a pipeline before cascading down a waterfall to Mine Water Pond #3.

- Mine Water Pond #3 (formally Pond #3) is a polishing pond transitioning the water back to aerobic conditions and encouraging settling using passive wetlands. Water from Mine Water Pond #3 discharges through Outfall 002A, which is the point of compliance pursuant to CDPS Permit No. CO-0000003. Details of the mine water treatment system can be found in TR-10.

10.2 Stormwater Management Plan

Stormwater at the Revenue Portal area and the three ventilation shafts is managed under a Stormwater Permit Certification COR-040289 and the Stormwater Management Plan (SWMP), which details the mining activities, effluent limitation guidelines, stormwater management controls, identification of potential pollutant sources, best management practices, schedules and procedures, training, comprehensive inspections requirements, and maintenance. Stormwater management features are inspected on a quarterly basis and following significant precipitation events.

Meteoric water that falls on the permit boundary is controlled through diversion ditches, conveyances and sediment control ponds or is allowed to collect near the main entrance where it either infiltrates or evaporates prior to leaving the property boundary. The SWMP is updated on a regular basis as control features on the mine site change. A copy of the current SWMP is provided in Appendix 2 of Amendment 02.

11 Surface Water Quality Data

The following section describes the standards for the receiving streams including current and potential future uses. Surface water quality and flow data collected during quarters when it is safe to do so, also are discussed.

11.1 Stream Standards

Water quality standards have been developed for the entire Upper Gunnison River Basin, Colorado Code of Regulations, Regulation No. 35 – Classifications and Numeric Standards for Gunnison and Dolores River Basins (5 CCR 1002-35, Regulation 35). The main portal area along with the Yellow Rose and 960 Raise discharge into Segment 9 (COGUUN09) and Governor Basin into Segment 5 (COGUUN05). Water quality in Sneffels Creek is monitored approximately 1 mile downstream just above the Camp Bird Mine, which is also part of Segment 9. The water quality standards for the Revenue Mine extend all the way to where Canyon Creek confluences with the Uncompahgre River, which is approximately 5.2 miles downstream of the main portal.

11.1.1 COGUUN09 - Main Portal, Yellow Rose and 960 Raise

Water from the main portal area, the Yellow Rose and the 960 Raise drains to the portion of Sneffels Creek, which is considered Segment 9 of the Upper Gunnison River Basin. Segment 9 is classified as agriculture, aquatic life cold water 2, and recreation P. It is not classified as a drinking water source.

Table U-8 Regulation 35 Water Quality Standards for Segment 9

9. Mainstem of Imogene Creek from its source to its confluence with Sneffels Creek. Mainstem and all tributaries of Sneffels Creek from a point 1.5 miles above its confluence with Imogene Creek at 37.974979, -107.753960 (WGS84) to its confluence with Imogene Creek. Mainstem of Canyon Creek from its inception at the confluence of Imogene Creek and Sneffels Creek to the confluence with the Uncompahgre River.

COGUUN09	Classifications
Designation	Agriculture Aq Life Cold 2 Recreation P
Reviewable	
Qualifiers: Fish Ingestion	
Other: *Uranium(acute) = See 35.5(3) for details. *Uranium(chronic) = See 35.5(3) for details.	

Physical and Biological	DM	MWAT
Temperature °C	CS-I	CS-I
	acute	**chronic**
D.O. (mg/L)	---	6.0
D.O. (spawning)	---	7.0
pH	6.5 - 9.0	---
chlorophyll a (mg/m^2)	---	150
E. coli (per 100 mL)	---	205
Inorganic (mg/L)		
	acute	**chronic**
Ammonia	TVS	TVS
Boron	--	0.75
Chloride	--	---
Chlorine	0.019	0.011
Cyanide	0.005	---

Metals (ug/L)	acute	chronic
Arsenic	340	---
Arsenic(T)	---	7.6
Cadmium	TVS	TVS
Chromium III	TVS	TVS
Chromium III(T)	---	100
Chromium VI	TVS	TVS
Copper	TVS	TVS
Iron(T)	---	1000
Lead	TVS	TVS
Manganese	TVS	TVS
Mercury(T)	---	0.01
Molybdenum(T)	---	150
Nickel	TVS	TVS
Selenium	TVS	TVS
Silver	TVS	TVS(tr)

9. Mainstem of Imogene Creek from its source to its confluence with Sneffels Creek. Mainstem and all tributaries of Sneffels Creek from a point 1.5 miles above its confluence with Imogene Creek at 37.974979, -107.753960 (WGS84) to its confluence with Imogene Creek. Mainstem of Canyon Creek from its inception at the confluence of Imogene Creek and Sneffels Creek to the confluence with the Uncompahgre River.							
COGUUN09	**Classifications**	**Physical and Biological**			**Metals (ug/L)**		
		Nitrate	100	---	Uranium	varies*	varies*
		Nitrite	--	0.05	Zinc	TVS	TVS
		Phosphorus	--	0.11			
		Sulfate	--	---			
		Sulfide	--	0.002			

All metals are dissolved unless otherwise noted
T = total recoverable, tr = trout, sc = sculpin
D.O = dissolved oxygen
DM = daily maximum'
MWAT = maximum weekly average temperature
See 35.6 for details in applied standards

Segment 9 is listed on the State of Colorado 303(d) list for impaired waters. Specifically, the portion of Segment 9 upstream and at the main portal area is impaired for dissolved lead and zinc and for aquatic life use (Regulation 93).

11.1.2 COGUUN05 - Governor Basin

Water that falls on the 1.39 acre permit area located in Governor Basin is diverted around the site and historic mine waste and eventually flows into Governor Creek, which confluences with Sneffels Creek just below the Ruby Trust Mine. Water from Governor Basin is part of the Upper Gunnison River Basin, Segment 5 (COGUUN05) under Regulation 35 and is classified as agriculture, aquatic life cold 2, recreation E, and water supply. There are no water supply uses in Governor Basin.

Table U-9 Regulation 35 Water Quality Standards for Segment 5

5. All tributaries to the Uncompahgre River, including all wetlands, from the source to a point immediately below the confluence with Dexter Creek, except for specific listings in Segments 1, 6a, 6b, and 7 through 9.							
COGUUN05	**Classifications**	**Physical and Biological**			**Metals (ug/L)**		
Designation	Agriculture Aq Life Cold 2 Recreation E Water Supply		**DM**	**MWAT**		**acute**	**chronic**
Reviewable		Temperature °C	CS-I	CS-I	Arsenic	340	---
			acute	**chronic**	Arsenic(T)	--- [A]	0.02-10
		D.O. (mg/L)	---	6.0	Cadmium	TVS	TVS
Qualifiers:		D.O. (spawning)	---	7.0	Cadmium(T)	5.0	---
Other: *Uranium(acute) = See 35.5(3) for details. *Uranium(chronic) = See 35.5(3) for details.		pH	6.5 - 9.0	---	Chromium III	---	TVS
		chlorophyll a (mg/m^2)	---	150	Chromium III(T)	50	---
		E. coli (per 100 mL)	---	126	Chromium VI	TVS	TVS
					Copper	TVS	TVS
		Inorganic (mg/L)			Iron	---	WS
			acute	**chronic**	Iron(T)	---	1000
		Ammonia	TVS	TVS	Lead	TVS	TVS
		Boron	---	0.75	Lead(T)	50	---
		Chloride	---	250	Manganese	TVS	TVS/WS
		Chlorine	0.019	0.011	Mercury(T)	---	0.01

5. All tributaries to the Uncompahgre River, including all wetlands, from the source to a point immediately below the confluence with Dexter Creek, except for specific listings in Segments 1, 6a, 6b, and 7 through 9.							
COGUUN05	**Classifications**	**Physical and Biological**			**Metals (ug/L)**		
		Cyanide	0.005	---	Molybdenum(T)	---	150
		Nitrate	10	---	Nickel	TVS	TVS
		Nitrite	---	0.05	Nickel(T)	---	100
		Phosphorus	---	0.11	Selenium	TVS	TVS
		Sulfate	---	WS	Silver	TVS	TVS(tr)
		Sulfide	---	0.002	Uranium	varies*	varies*
					Zinc	TVS	TVS

All metals are dissolved unless otherwise noted
T = total recoverable, tr = trout, sc = sculpin
D.O = dissolved oxygen
DM = daily maximum'
MWAT = maximum weekly average temperature
See 35.6 for details in applied standards

Segment 5 is listed on the State of Colorado 303(d) list for impaired waters. Specifically, the portion of Segment 5-C, Governor Basin is on the State of Colorado 303(d) list for impaired waters for dissolved lead, cadmium, copper, zinc, manganese, and total lead. The impairment to water quality in Governor Basin is a function of both natural mineralization in the basin as well as impacts to water quality from historic mining activities. Farther downstream, Segment 5-E, which is described as Sneffels Creek below Governor Basin and above Segment 9, is impaired for dissolved cadmium, zinc, manganese, and lead as well as macroinvertebrates (Regulation 93)

11.2 Surface Water Quality

Surface water quality is sampled on a routine basis at various locations in the drainage and along Sneffels Creek at the mine site and upstream and downstream of the site. A table summarizing the surface water sampling locations is provided in Table U-10. Surface water quality data is discussed in Exhibit G. In addition, a summary of surface water quality is provided in attached Table U-11, which includes available surface water quality data for the past 5 quarters sampled.

Table U-10 Surface Water Quality Sampling Locations

Sample Description	Map Location
Atlas Mine Drainage	SW-1
Sneffels Below Governor Basin Confluence, above Atlas Mill	SW-2
Revenue Seep	SW-3
Sneffels Downstream of Outfall	SW-4
Sneffels above Permit Boundary & Below Atlas Tails	SW-15
Sneffels Below Atlas Mine Drainage	SW-16
Sneffels Above Governor Basin and Below Ruby Trust	SW-17

Sample Description	Map Location
Sneffels Just Above Camp Bird	SW-21

Sampling occurs approximately three times per year during the rising limb of the hydrograph (April/May), high flow (June/July) and low flow conditions (September/October) but does not occur on a quarterly basis due to limited winter access to the drainage and the safety concerns with avalanche danger in the vicinity of the sample locations.

The surface water sample locations were chosen to bracket water quality at various features upstream and downstream of the mine site as described in the sample location descriptions in Table U-10 These locations were chosen to assess ambient water quality in Sneffels Creek both upstream and downstream of the permit boundary.

The analytical detection limits for surface water quality are established as practical quantification limits (PQLs). The laboratory often can achieve detection limits that are lower than the PQLs. These lower limits are reported as Method Detection Limits (MDLs). Both the laboratory PQL and MDL are provided on Table U-11.

12 Water Quality Monitoring Plan

Groundwater and surface water quality is monitored on a regular basis to assess the protectiveness of the EPFs and to demonstrate that the conditions of the EPP are being met. The following section provides an overview of the water quality monitoring program for surface water, mine water, stormwater, groundwater and industrial wastewater., Sample locations are shown on Map G-1 and listed in Tables U-5 (Groundwater and Underground Water Quality Sampling Location), U-7 (Water Quality Data from Treatment System (Outfall 002A)), and U-10 (Surface Water Quality Sampling Locations)

12.1 Water Quality Parameters

In general, the main parameters of concern for the site are cadmium, total iron, lead, and zinc. The following sections describe the parameters that are monitored for industrial discharge water quality, stormwater quality, surface water, groundwater, underground samples, and tailings leaching.

Table U-12 summarizes the different parameters that are monitored for each type of water quality monitoring performed.

Table U-12: List of Parameters Monitored for Water Quality Programs

Parameter	Industrial Discharge	Stormwater Discharge	Surface Water	Groundwater	UG Water Mine water
Flow	X	NA	X	NA	X
Field Temp	NA	NA	NA	X	X
Conductivity (Field)	NA	NA	NA	X	X
ORP (Field)	NA	NA	NA	X	X
DO (Field)	NA	NA	NA	X	X
Temp (daily Max)	X	NA	X	NA	NA
Temp MWAT	X	NA	X	NA	NA
pH	X	X	X	X	X
TSS	X	X	NA	X	X
Oil & Grease	X	NA	NA	NA	NA
TDS	X	NA	NA	X	X
Turbidity	NA	X	NA	NA	NA
Aluminum	NA	NA	NA	X	X
Antimony, Total	NA	X	NA	X	X
As, Dissolved	NA	NA	X	X	X
As, Total	NA	NA	X	NA	NA
As, TR	X	NA	X	NA	NA

Parameter	Industrial Discharge	Stormwater Discharge	Surface Water	Groundwater	UG Water Mine water
Barium, Dissolved	NA	NA	NA	X	X
Be, Dissolved	NA	NA	NA	X	X
Be, Total	NA	X	NA	NA	NA
Boron, Dissolved	NA	NA	X	X	X
Bicarbonate as CaC03	NA	NA	NA	X	X
Chloride	NA	NA	NA	X	X
Chlorine	NA	NA	X	NA	NA
Cd, Total	X	X	NA	NA	NA
Cd, PD	X	X	NA	NA	NA
Cd, Dissolved	NA	NA	X	X	X
Cr+3, Dissolved	NA	NA	X	X	X
Cr+3, Total	NA	NA	X	NA	NA
Cr+3, TR	X	NA	NA	NA	NA
Cu, Dissolved	NA	NA	X	X	X
Cu, Total	X	X	NA	NA	NA
Cu, PD	X	NA	NA	NA	NA
CN, WAD	X	NA	X	NA	NA
CN	NA	NA	X	X	X
Fluoride	NA	NA	NA	X	X
Fe, TR	X	NA	NA	NA	NA
Fe, Total	NA	X	X	NA	NA
Fe, Dissolved	NA	X	NA	X	X
Pb, Dissolved	NA	NA	X	X	X
Pb, Total	X	X	NA	NA	NA
Pb, PD	X	NA	NA	NA	NA
Phosphorous	NA	NA	X	X	X
Potassium, Dissolved	NA	NA	NA	X	X
Mg, Dissolved	NA	NA	NA	X	X
Mn, Dissolved	NA	NA	X	X	X
Mn, PD	X	NA	NA	NA	NA
Mo, Total	NA	NA	X	NA	NA
Mo, Dissolved	NA	NA	NA	X	X
Ni, Dissolved	NA	NA	X	X	X
Ni, Total	NA	X	NA	NA	NA
Nitrate	NA	NA	X	X	X
Nitrite	NA	NA	X	X	X

Parameter	Industrial Discharge	Stormwater Discharge	Surface Water	Groundwater	UG Water Mine water
Nitrate/Nitrite as N	NA	NA	NA	X	X
Hg, dissolved	NA	NA	NA	X	X
Hg, total (LL)	X	NA	NA	NA	NA
Hg, total	X	X	X	NA	NA
Ag, PD	X	NA	NA	NA	NA
Ag, Dissolved	NA	NA	X	X	X
Ag, Total	NA	X	NA	NA	NA
Se, Dissolved	NA	NA	NA	X	X
Se, Total	NA	X	X	NA	NA
Silica, Dissolved	NA	NA	NA	X	X
Sodium, Dissolved	NA	NA	NA	X	X
Sulfate	NA	NA	NA	X	X
Sulfide	NA	NA	X	NA	NA
Thallium, Dissolved	NA	NA	NA	X	X
Total Alkalinity	NA	NA	NA	X	X
Uranium, Dissolved	NA	NA	NA	X	X
Vanadium, Dissolved	NA	NA	NA	X	X
Zn, Dissolved	NA	NA	X	X	X
Zn, Total	X	X	NA	NA	NA
Zn, PD	X	X	NA	NA	NA
Whole Effluent Toxicity (Chronic)	X	NA	NA	NA	NA

NA – not applicable for that monitoring requirement

12.2 Sampling Locations and Frequency

Samples are collected on an appropriate frequency to monitor the effectiveness of the EPFs or as required to meet discharge permit requirements.

The following table U-13 lists the various water monitoring programs and the frequency of each. Locations are shown on Map U-1 and in the tables U-5 and U-8.

Table U-13 – Monitoring Frequency

Monitoring Program	Quarterly	Bi-Monthly	Annual	Other*
Groundwater	X			
Underground	X		X	
Surface Water				X
Industrial Wastewater	X	X		
Stormwater (if there is a discharge)	X			
Tailings SPLP/TCLP/ ABA	X			

* Note – sampling for surface water occurs approximately 3 times per year based on flow conditions and depending on whether it is safe to access the sampling locations in Sneffels Creek.

13 Climate Data

The following section provides available climate data for the site, which is used to perform a water balance for all liquid containment systems open to the environment that are used to contain designated chemicals or acid generating materials.

I The entire permitted area including the Revenue Mine, the Yellow Rose and 960 Raises, and the Monongahela/Hubb Reed Raise is above 6,500 feet of elevation. As such, mean annual precipitation for the past five years, the average direction and velocity of prevailing winds, the mean monthly temperature ranges for the past five years, and evaporation rates are provided in Tables U-14, U-15 and U-16.

The climate data is limited to data that is collected in the City of Ouray, which is at an elevation of 7,900 compared with the mine site, which is at 10,600 feet and a weather station located on Mount Abrams at 11,841 feet elevation. A weather station was added to Governor Basin in 2021 so more representative climate data will be collected year-round on a going forward basis.

Wind data was gathered from the National Oceanic and Atmospheric Administration for weather station #CAABR, which is located at 11,841 feet elevation on Mount Abrams in Ouray County. Prevailing winds appear to dominate from the southwest, south and northwest/north northwest.

Table U-14: Average, Min and Max Wind Speeds in mph for 2021 and Q1 2022

Year	2021												2022		
Month	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**
Average (mph)	8.4	12.7	11.4	10.9	11.2	9.1	7	8.1	7.8	9.5	8	14.5	8	9.1	9.2
Min (mph)	0.1	0	0.3	0	0	0.1	0.1	0.1	0.6	0	0.7	0.7	0.4	0.7	0.9
Max (mph)	29.4	49.9	36.2	32.7	34.3	29.5	23.5	23.4	23.4	28.4	37.2	42.7	46.1	31.9	29

Wind data from Mt. Abrams Weather Station at 11,841' elevation courtesy of NOAA.

Table U-15 Monthly Total Precipitation in Inches for OURAY NO. 2, CO

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2000	M	M	M	M	M	1.21	M	M	M	M	M	M	M
2001	M	M	M	M	M	M	M	M	M	M	M	1.25	M
2002	M	M	M	1.32	M	M	M	M	4.33	2.42	M	M	M
2003	0.68	M	M	M	M	M	M	M	M	M	M	M	M

Table U-15 Monthly Total Precipitation in Inches for OURAY NO. 2, CO

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2004	M	M	0.82	M	M	M	2.75	M	M	1.95	3.24	1.11	M
2005	2.44	M	2.11	2.63	1.22	M	M	M	2.44	3.43	0.90	M	M
2006	1.74	0.59	M	M	0.99	0.47	4.94	3.62	2.22	3.79	1.19	1.38	M
2007	1.11	1.98	1.91	3.18	2.88	0.79	1.81	3.27	2.64	1.78	0.70	5.06	27.11
2008	2.94	2.20	2.05	2.41	2.18	0.29	2.88	2.08	2.06	1.49	1.51	3.62	25.71
2009	1.38	1.35	2.00	2.85	1.57	2.17	2.50	0.91	1.70	2.80	1.04	1.66	21.93
2010	0.69	2.32	4.47	2.49	1.15	1.15	3.98	2.96	0.62	2.58	0.97	1.86	25.24
2011	1.52	1.97	1.59	4.42	3.57	0.37	2.23	1.76	1.99	2.56	1.44	1.14	24.56
2012	1.40	1.75	0.96	1.24	0.09	0.36	5.34	2.03	1.65	0.43	0.45	3.21	18.91
2013	2.34	2.19	0.82	2.00	0.79	0.10	3.28	3.58	4.90	3.13	1.87	0.93	25.93
2014	1.27	2.36	1.58	2.47	2.26	0.12	1.54	2.39	3.77	0.97	2.39	1.61	22.73
2015	0.35	1.54	1.41	1.32	5.07	1.74	2.03	1.58	1.63	2.25	2.85	2.11	23.88
2016	1.86	1.31	1.01	2.57	2.22	0.69	1.84	4.16	1.59	0.76	1.67	2.21	21.89
2017	2.91	1.30	3.49	1.89	2.14	0.17	3.09	1.67	2.23	0.75	0.99	0.36	20.99
2018	1.93	2.26	0.86	2.64	0.50	0.33	3.54	1.99	0.68	3.06	0.55	1.72	20.06
2019	1.92	2.13	4.62	1.50	3.67	1.24	2.31	1.61	0.40	1.03	2.15	1.84	24.42
2020	1.76	0.75	1.48	1.29	0.57	1.28	2.54	0.87	1.29	0.80	2.52	1.85	17.00
2021	0.72	1.99	2.76	1.43	2.70	1.17	2.67	1.78	1.62	2.21	0.24	1.88	21.17
2022	0.90	2.14	M	M	M	M	M	M	M	M	M	M	M
Mean	1.57	1.77	2.00	2.21	1.97	0.80	2.90	2.27	2.10	2.01	1.48	1.93	22.77
Max	2.94	2.36	4.62	4.42	5.07	2.17	5.34	4.16	4.90	3.79	3.24	5.06	27.11
	2008	2014	2019	2011	2015	2009	2012	2016	2013	2006	2004	2007	2007
Min	0.35	0.59	0.82	1.24	0.09	0.10	1.54	0.87	0.40	0.43	0.24	0.36	17.00
	2015	2006	2004	2012	2012	2013	2014	2020	2019	2012	2021	2017	2020

Data from NOAA, National Weather Service
M = Missing Data

Table U-16: Monthly Mean Avg Temperature Degrees F for OURAY NO. 2, CO 2000-2021

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2000	26.7	M	M	45.2	55.2	63.6	M	66.3	M	M	M	M	51.4
2001	M	M	33.8	43.3	53.3	63.9	67.5	63.1	58.2	M	M	22.6	50.7
2002	22.8	22.0	M	47.1	M	68.9	70.3	65.0	55.7	42.6	30.5	M	47.2
2003	29.8	M	M	M	52.4	61.2	72.6	66.2	53.7	50.0	M	M	55.1
2004	23.2	22.6	37.4	43.8	54.4	61.8	64.7	M	M	44.0	31.1	M	42.6
2005	30.2	M	32.2	39.7	53.0	58.9	M	M	57.4	46.4	M	M	45.4
2006	24.6	26.4	M	M	54.3	64.3	67.0	62.4	52.6	44.0	37.5	26.6	46.0
2007	23.1	29.5	37.8	42.9	51.3	61.8	68.2	65.6	58.7	45.5	39.1	23.4	45.6
2008	19.4	26.6	32.1	38.3	48.4	60.2	65.9	64.6	57.4	47.0	37.9	25.8	43.6
2009	27.9	31.7	36.8	38.8	55.3	57.6	66.1	63.6	57.0	41.5	37.9	20.9	44.6
2010	25.7	23.7	31.0	41.2	48.0	62.2	65.7	63.0	59.6	47.8	31.7	33.6	44.4
2011	21.9	22.9	36.3	40.2	46.3	61.3	65.7	66.0	56.8	45.2	35.2	25.1	43.6
2012	28.3	26.6	37.8	46.5	54.6	65.7	66.1	64.8	57.6	47.6	39.7	27.3	46.9
2013	21.0	22.5	34.9	39.5	51.7	64.3	67.5	62.6	57.2	42.5	35.0	22.9	43.5
2014	28.4	30.3	35.4	40.8	49.7	60.9	66.7	62.3	59.5	48.0	34.2	28.6	45.4

Table U-16: Monthly Mean Avg Temperature Degrees F for OURAY NO. 2, CO 2000-2021													
Year	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual**
2015	29.1	33.7	39.3	43.4	47.9	63.0	63.4	64.0	60.4	50.7	32.7	25.4	46.1
2016	25.0	31.3	37.0	41.4	49.2	64.5	65.3	60.5	56.8	51.5	39.4	26.9	45.7
2017	25.6	35.0	40.5	43.1	49.2	64.5	66.3	63.4	58.2	47.0	42.5	31.6	47.2
2018	30.3	30.4	36.8	44.3	55.6	64.9	68.6	65.9	61.1	45.3	32.4	25.7	46.8
2019	24.2	25.5	34.3	44.4	45.0	58.9	66.9	66.0	61.6	42.1	36.8	26.4	44.3
2020	25.6	27.4	38.0	43.4	55.4	62.4	66.5	69.7	58.0	49.1	37.4	24.5	46.5
2021	25.2	27.1	33.8	43.3	51.4	64.1	67.7	64.9	60.6	44.9	41.0	31.7	46.3
2022	27.0	25.0	M	M	M	M	M	M	M	M	M	M	26.0
Mean	25.7	27.4	35.8	42.4	51.3	62.6	66.9	64.4	57.9	46.1	36.2	26.4	46.1
Max	30.3	35.0	40.5	47.1	55.6	68.9	72.6	69.7	61.6	51.5	42.5	33.6	55.1
	2018	2017	2017	2002	2018	2002	2003	2020	2019	2016	2017	2010	
Min	19.4	22.0	31.0	38.3	45.0	57.6	63.4	60.5	52.6	41.5	30.5	20.9	26.0
	2008	2002	2010	2008	2019	2009	2015	2016	2006	2009	2002	2009	

Data from NOAA, National Weather Services
M = Missing Data

The published evaporation rate for Ouray County and the Revenue Mine Area according to the NOAA Annual Evaporation Chart presented in Exhibit K is 35 inches per year. Subtracting the average evaporation from average precipitation suggests the Revenue Mine is in an area of net evaporation of approximately 12 inches per year. Applying this information to a water balance to assess containment systems open to the environmental and intended to contain designated chemicals or acid-generating materials suggests there is sufficient reserve capacity to contain designated chemicals. Furthermore, most of the secondary containment for designated chemicals is located inside buildings or other structures that protect the containment from the elements. Ponds used for treatment or stormwater controls have been constructed to contain the 10-year 24 hour storm event at a minimum.

A more specific water balance for the mine and mill operations is presented in Exhibit G.

14 Geochemical Data and Analysis

Mill tailings generated at the mill will be placed on-site in either the Revenue or Atlas TSF. Waste rock is used to backfill mined out stopes underground, hauled to surface and crushed for use as road base, or blended with tailings and placed in the TSFs. A geochemical evaluation of tailings and waste rock was completed as required by TR-09 and TR-15. Summaries of the results received thus far are provided in Tables U-17 through U-19 and discussed below.

14.1 Tailings

Tailings generated by the mill have undergone initial testing for Acid Based Accounting (ABA, Synthetic Precipitation Leaching Procedure (SPLP), and Toxic Characteristic Leachate Procedure (TCLP). The results of these tests are summarized below.

14.1.1 Acid Based Accounting

ABA is the balance between the acid-producing and acid-consuming properties of a mine-waste material. The aim of ABA analysis is to produce an Acid Production Potential (AP) value and a Neutralization Potential (NP) value. With these values a Net Neutralization Potential (NNP) can be calculated: NNP=NP-AP. If the NNP is greater than 20 t CaCO3/Kt, it is generally accepted that the material is non-acid producing. The calculated NNP for the tailings made in the Revenue Mill is 70.6 t CaCO3/Kt, which is well above 20 and therefore, the tailings generated at the mill are considered acid neutralizing.

14.1.2 Synthetic Precipitation Leaching Procedure

SPLP is a leachate procedure that passes pH 5.00 water through the sample material and the resulting leachate is analyzed. Generally, SPLP is specific to soil or other surface materials and is performed to evaluate the potential of contaminants present in such materials to leach into groundwater. The results of the SPLP performed on the tailings generated in the Revenue Mill are summarized in Table U-17 below.

TTable U-17 SPLP Results

ANALYTE	GW Standard (mg/L)	Revenue Tailings (mg/L)
Aluminum	5	0.232
Antimony	Report	0.00778
Arsenic	0.1	0.00840
Barium	Report	0.0809
Beryllium	0.1	<0.00008
Boron	0.75	<0.03
Cadmium	0.001	<0.00005

ANALYTE	GW Standard (mg/L)	Revenue Tailings (mg/L)
Calcium	Report	12.2
Chromium	0.1	<0.0005
Copper	0.009	<0.0008
Iron	1	<0.06
Lead	0.044	0.00397
Magnesium	Report	0.86
Manganese	1.672	0.0870
Mercury	0.01	<0.0002
Molybdenum	Report	0.0123
Nickel	0.05	<0.0004
Potassium	Report	6.51
Selenium	0.005	<0.0001
Silica	Report	3.4
Silver	0.0001	<0.0001
Sodium	Report	1.23
Thallium	Report	0.00013
Uranium	Report	<0.0001
Vanadium	0.1	<0.0005
Zinc	5	<0.006

14.1.3 Toxic Characteristic Leachate Procedure

TCLP is a chemical analysis used to determine whether there are hazardous elements present in a waste material. TCLP is typically used for waste characterization for disposal at a landfill and is not applicable to mine-related wastes. The procedure uses extraction fluid with a pH of 2.88 to simulate leaching through a landfill and is not representative of meteoric water that would come in contact with the mill tailings at the Revenue Mine. This procedure was done at the request of DRMS. TCLP results are summarized below in Table U-18 and show that mill tailings are well below the levels considered hazardous to the environment.

TTable U-18 TCLP Results

ANALYTE	TCLP Limit (mg/L)	Revenue Tailings (mg/L)
Arsenic (TCLP)	5	0.07

ANALYTE	TCLP Limit (mg/L)	Revenue Tailings (mg/L)
Barium (TCLP)	100	0.898
Cadmium (TCLP)	1	<0.008
Chromium (TCLP)	5	<0.02
Lead (TCLP)	5	0.979
Mercury (TCLP)	0.2	<0.0002
Selenium (TCLP)	1	<0.05
Silver (TCLP)	5	<0.01

14.2 Waste Rock

Waste rock is generally comprised of the San Juan Tuff, which is a calcium rich host rock. Most waste rock generated on site will be used to backfill mined out stopes, but some waste rock is hauled to the surface and stockpiled for use as road base or blended with tailings and placed in the TSFs. The waste rock has been approved for use as a road base providing it passes leachability tests (See TR-09).

Waste rock is tested on a routine basis per TR-09 for leachability using the SPLP test to confirm it is suitable for use as road base in offsite locations.

A summary of the SPLP results for waste rock tested since 2016 is provided in Table U-19, which show the waste rock meets all applicable groundwater standards.

Table U-19 – Waste Rock SPLP Analyses since 2016

Analyte	Units	GW Standards	7/19/2016	7/26/2017	8/5/2019	10/2/2019	7/20/2020	6/29/2021	8/23/2021
Aluminum (1312)	mg/L	5	0.73	0.31	0.33	0.1	0.59	0.307	0.349
Antimony (1312)	mg/L	Report	0.0009	0.02	0.0039	0.0144	0.003	0.00303	0.00415
Arsenic (1312)	mg/L	0.1	0.003	0.01	0.0091	0.0045	0.0035	0.0125	0.00993
Barium (1312)	mg/L	Report	0.01	0.15	0.0534	0.122	0.191	0.108	0.118
Beryllium (1312)	mg/L	0.1	ND	ND	ND	ND	ND	ND	ND
Bicarbonate as CaCO3	mg/L	Report	13.80	17.00	28.1	27.6	13.5	15.5	16.9

Analyte	Units	GW Standards	7/19/2016	7/26/2017	8/5/2019	10/2/2019	7/20/2020	6/29/2021	8/23/2021
Boron (1312)	mg/L	0.75	0.01	0.03	ND	ND	ND	ND	ND
Bromide (1312-DI)	mg/L	NA	ND	ND	1.14	0.101	0.553	ND	0.37
Cadmium (1312)	mg/L	0.001	ND	ND	ND	ND	ND	ND	ND
Calcium (1312)	mg/L	Report	9.60	9.30	9.9	14.2	7.5	11.7	12.2
Carbon, total organic (TOC) (1312-DI)	mg/L	NA	ND	ND	ND	ND	ND	ND	ND
Carbonate as CaCO3	mg/L	Report	27.50	4.20	ND	ND	3.7	ND	ND
Chloride (1312-DI)	mg/L	250	ND	ND	ND	ND	ND	ND	ND
Chromium (1312)	mg/L	0.1	ND	ND	ND	ND	ND	0.00072	ND
Cobalt (1312)	mg/L	NA	0.00	0.00	ND	0.00005	ND	0.000099	ND
Conductivity @25C (1312-DI)	umhos/cm	Report	91.5	70.3	78.5	112	54.1	91.0	87.0
Copper (1312)	mg/L	0.009	ND	ND	0.0013	ND	ND	ND	0.0015
Fluoride (1312 DI)	mg/L	2	0.11	0.14	ND	ND	0.1	ND	ND
Hardness as CaCO3 (1312)	mg/L	Report	25	24	27	37	20	32	33
Hydroxide as CaCO3	mg/L	Report	ND	ND	ND	ND	ND	ND	ND
Iron (1312)	mg/L	1	0.09	0.03	ND	ND	ND	ND	ND
Lead (1312)	mg/L	0.044	0.0011	0.021	0.0001	0.0375	0.0003	0.00058	0.00223
Lithium (1312)	mg/L	NA	ND	ND	0.014	ND	ND	ND	ND
Magnesium (1312)	mg/L	Report	0.30	0.20	0.5	0.3	0.2	0.61	0.49
Manganese (1312)	mg/L	1.672	0.0038	0.0046	0.0112	0.0177	0.0035	0.00686	0.00916
Mercury (1312)	mg/L	0.01	ND	ND	ND	ND	ND	ND	ND
Molybdenum (1312)	mg/L	Report	0.001	0.04	0.0025	0.0454	0.0027	0.0088	0.0111
Nickel (1312)	mg/L	0.05	ND	ND	ND	ND	ND	0.0016	ND
Nitrate (1312 DI)	mg/L	NA	0.06	0.16	ND	1.75	0.07	4.5	3.33
Nitrate/Nitrite as N (1312-DI)	mg/L	100	0.06	0.21	ND	1.75	0.07	4.46	3.33
Nitrite as N (1312-DI)	mg/L	NA	ND	0.05	ND	ND	ND	ND	ND
Nitrogen, ammonia (1312-DI)	mg/L	NA	0.64	0.15	ND	ND	ND	ND	0.06
pH	s.u.	6-9	9.50	9.50	9.2	8.9	9.3	9	9.1
pH measured at	C	NA	23.30	21.60	23.50	19.50	20.80	20.9	20.6
Phosphorus, ortho dissolved (1312-DI)	mg/L	NA	ND	ND	ND	ND	ND	ND	0.014
Phosphorus, Total (1312-DI)	mg/L	NA	ND	ND	0.01	ND	3.1	1.6	ND
Potassium (1312)	mg/L	Report	1.50	3.10	2.9	3.50	42	70	1.39
Residue, Filterable (TDS) @180C (1312)	mg/L	400	58.00	46.00	48	74.00	ND	ND	58
Residue, Non-Filter (TSS) @180C (1312)	mg/L	Report	ND	ND	ND	ND	ND	ND	ND
Selenium (1312)	mg/L	0.005	ND	0.0003	0.0008	0.0004	ND	ND	ND
Silica (1312)	mg/L	Report	7.70	5.60	5.4	3.70	5	5.5	5.70
Silver (1312)	mg/L	0.0001	ND	ND	ND	0.0001	ND	ND	ND
Sodium (1312)	mg/L	Report	1.80	1.40	2.1	1.7	1.5	4.44	3.53
Strontium (1312)	mg/L	NA	0.20	0.25	0.188	0.205	0.217	0.358	0.468
Sulfate (1312-DI)	mg/L	250	1.54	6.32	7.26	17	3.28	4.4	4.48
Thallium (1312)	mg/L	Report	ND	ND	ND	ND	ND	ND	ND
Tin (1312)	mg/L	NA	ND	ND	ND	ND	ND	ND	ND

Analyte	Units	GW Standards	7/19/2016	7/26/2017	8/5/2019	10/2/2019	7/20/2020	6/29/2021	8/23/2021
Total Alkalinity	mg/L	Report	41.30	21.10	28.1	27.6	17.2	16.9	16.9
Uranium (1312)	mg/L	Report	ND	ND	ND	ND	ND	ND	ND
Vanadium (1312)	mg/L	0.1	0.00	0.00	0.001	ND	0.0019	0.00136	0.00067
Zinc (1312)	mg/L	5	ND	0.01	0.006	ND	0.007	ND	ND

NA = not applicable

ND = below laboratory detection limit

15 Construction Schedule Information

Several EPFs are still under construction and will be completed during the summer of 2022 as summarized in the following section.

15.1 Reagent Room

Construction of the Reagent Room EPF is being performed in accordance with TR-15 and is being performed in phases as required by Rule 7.3.1 with inspections by DRMS to assess each phase of construction. Construction QA/QC for the Reagent Room is provided to DRMS during inspections (see Section 15 of this EPF).

Remaining work to be performed on the Reagent Room includes the following:

- Seal the concrete floor with approved chemical resistant sealant
- Pour concrete apron outside the Reagent Room to provide containment during off-loading of designated chemicals
- Complete piping and equipment installation
- Schedule QA/QC DRMS inspections before final sign off.

This remaining work is expected to be completed during the 2022 construction season.

15.2 Mill and Related Structures

Construction of the mill was completed in 2015 with updates to certain equipment in 2020 and 2021. Remaining work to be performed on the mill include the following:

- Construct building over the tailings thickener tank;
- Install a roof over the area between the Reagent Room and the tailings thickener building

This work is expected to be completed during the summer / fall of 2022.

15.3 TSFs

Construction of the TSF pads was completed in October 2021 to prepare the TSFs for tailings placement. Construction of the Revenue TSF was completed in 2014. Construction of the Atlas TSF was completed in 2021.

A preliminary as-built drawing of the Atlas TSF was provided to DRMS in a letter dated March 30, 2022. A final as-built drawing for the Atlas TSF will be provided once the snow melts. Ongoing construction and management of the TSFs as tailings are being placed, graded and compacted is

being performed in accordance with the 2015 Tailings and Waste Rock Management Plan (Appendix 7) and in accordance with Section 15 of this EPP.

15.4 Passive Mine Water Treatment System

Construction of the five-stage passive mine water treatment system was completed in 2021 and the system was commissioned and brought online in May 2021.

16 Quality Assurance and Quality Control Program and Measures

Quality Assurance and Quality Control (QA/QC) is performed during construction of EPFs and as part of ongoing use of the EPFs. QA/QC documentation is provided to DRMS during phased inspections as construction of these facilities progresses as required by Rule 6.4.21(16).

A brief description of the QA/QC Programs for each of the EPFs is provided below.

16.1 Reagent Room

Each phase of the construction of the reagent room was inspected by DRMS prior to initiation of the next phase up through construction of the steel structure. Construction on the reagent room was curtailed for the winter and will resume during the 3rd quarter of 2022. QA/QC documentation for what has been completed to date and the remaining Reagent Room construction activities will be provided to DRMS per TR-14 requirements and include:

- Existing Construction / Disturbance: DRMS inspected the construction and disturbance of the reagent room on July 6, 2021.
- Remaining Excavation / Concrete Prep Work: DRSM inspection the concrete rep work on July 12, 2021.
- Building Erection (concrete work): DRMS inspection the concrete work on September 27, 2021.
- Building Erection (Structural Steel): DRMS inspection the structural steel on October 19, 2021.
- Secondary Containment / Floor Sealant: This work is ongoing. Completion of secondary containment and applying a floor sealant were put on hold due to difficulty in procuring the appropriate floor sealant. A DRMS QA/QC inspection will be scheduled following installation of this task.
- Equipment Installation: OSMI received approval from DRMS to begin installing equipment in advance of applying floor sealant due to the inability to procure epoxy. Equipment installation began during the 4th quarter of 2021 but was curtailed due to winter conditions. Equipment installed prior to applying the floor sealant will be sealed with caulk to prevent process water from seeping underneath equipment. Once equipment installation is complete, an QA/QC task inspection will be scheduled.
- Final: Once Reagent Room construction is complete, DRMS will perform a final inspection to sign off on all of the QA/QC tasks listed above and as stated in the TR-14 approval letter.

16.2 Mill

The following QA/QC commitments were made as part of Technical Revision 15.

- Process Water: Sample the mill circuit as a baseline twice during mill commissioning once during the early commissioning and once late in the commission to assess mill water quality. The mill water is analyzed for the groundwater parameters as well as total organics. One sample of mill water was collected during the early stages of mill startup. However, the mill has been placed on standby until mining resumes. Once the mill starts up again, a second sample will be collected and analyzed.
- Tailings: During commissioning of the mill, a baseline characterization of the mill tailings was performed using SPLP, TCLP and ABA. Results of this characterization are provided in Section 13 of this EPP. Tailings and waste rock will be managed in accordance with the 2015 Tailings and Waste Rock Management Plan until such time that plan is updated.
- Concentrate: A Safety Data Sheet (SDS) for lead concentrate was developed following completion of the first batch of concentrate. An SDS for the zinc concentrate will be developed once a batch of zinc concentrate has been made.
- As Built Drawings: As built drawings of the final mill configuration will be submitted once the mill construction is complete.

16.3 Atlas and Revenue TSF

The construction of the TSFs has been completed however, as tailings are placed for permanent disposal, there are certain QA/QC measures that must be completed during buildout of the TSFs. These are:

- Compaction testing during placement of lifts using a nuclear density gauge to confirm the tailings meet the required compaction.
- Moisture content testing.
- SPLP testing at a minimum every 6 months or if the milling process is changed.
- Routine surveys to confirm construction is being performed according to designs.

16.4 Passive Mine Water Treatment System

Construction on the passive mine water treatment system was completed in the spring of 2021. Ongoing QA/QC of the treatment system includes:

- Bi-monthly and quarterly sampling of the outfall to assess compliance with CDPS Permit No. CO-0000003.
- Monthly inspections of the toe of Pond #3 to assess whether the pond is leaking.
- Routine pond inspections to assess the conditions of the ponds and channel between pond #2 and #3.

16.5 Stormwater BMPs

Stormwater BMPs are inspected on a quarterly basis or after a significant storm event as described in the site stormwater management plan and in accordance with CDPS Permit No. COR-040289.

17 Plant Growth Medium (Soils)

The soil types and boundaries for the area are shown on Map I-1 and are described in Exhibit I. Most of the permit area has been previously disturbed due to historical mining activities at a time when topsoil was not salvaged. Therefore, there is little topsoil available to salvage for reclamation purposes. A summary of the soil types found in the permit areas is provided in Table U-20.

Table U-20 Soil Types

Map Unit Symbol	Map Unit Name / Soil Type
104	Borolls - Rock outcrop complex, 40 to 90 percent slopes
112	Cryorthents - Rock outcrop complex, 50 to 120 percent slopes, extremely stony
114	Dumps, mine
129	Moran very gravelly load, 30 to 65 percent slopes, extremely stony
130	Moran, extremely stony - Telluride, extremely stony - Rock outcrop complex, 5 to 40 percent slopes
145	Rock outcrop
150	Rubble land
171	Whitecross - Rock outcrop complex, 45 to 75 percent slopes, extremely stony

Some topsoil does exist in 3 areas of the permit area and these soils support vegetation. These three areas are the wetlands located between the Revenue and the Atlas TSFs, the wetlands between mine water pond #2 and #3 and the wooded area that comprises the southern boundary of the permit area. These areas will not be disturbed during mining activities.

Topsoil, from newly disturbed areas, if any will be salvaged and used for reclamation. Addition topsoil will be imported for final reclamation.

The estimated soil salvage volumes are given in Exhibit E. The plans for stockpiling topsoil also are explained in Exhibit D. All stockpiles will be seeded with the mix described in the Reclamation Plan (Exhibit E) once the piles are established.

18 Wildlife Protection

Information about expected wildlife in the permit area is provided in Exhibit H. Disturbed areas will be reclaimed to wildlife habitat, thus increasing the wildlife value post-reclamation. As described in the Reclamation Plan (Exhibit E) and shown on Reclamation maps (Exhibit F) the site will be fully reclaimed to wildlife habitat once the mine is closed, except for a small portion of the area where the main buildings are located for commercial use after the mine is closed (see Exhibit F maps for details).

The main Revenue Tunnel will be fitted with a bat gate for bat habitat. The Colorado Division of Parks and Wildlife commented in its evaluation letter to the DRMS as part of the initial permit application that this was acceptable.

19 Disposal of Tailings and Sludges in Mine Workings

At this time, no tailings or sludges will be disposed in underground mine workings. However, development rock generated during underground mining activities is used to backfill stopes and other workings as underground mining progresses. In addition, the feasibility of backfilling crushed waste rock and tailings into the mine as a sand backfill is currently under evaluation. Should mining techniques change such that sand backfill is deemed feasible, OSMI will seek approval via a new technical revision prior to initiating such activity.

Previous approvals from DRMS allow development rock to be used for site road maintenance, backfill or placement in TSFs or to be sold to the County for use off site.

20 Emergency Response Plan

OSMI has several plans used to address emergencies on site. These Plans include:

- The Emergency Response Plan (ERP) developed for use by employees as a guide to respond to emergencies encountered at the mine;
- The SPCC Plan to address spills of petroleum products; and
- Materials Containment Plan to address spills of designated chemicals and other non-petroleum related chemicals

Copies of the ERP, SPCC and MCP are provided in Appendix 1.

Table U-21: Events Requiring Reporting (Rule 8.2.1 and 8.2.2)

Emergency Scenario	Permit Criteria	Reporting Timeframe
Release of process solutions containing designated chemicals outside of an EPF	Telephone notice during regular business hours Outside of business hours call Emergency and Incident reporting line through CDPHE	Verbal reporting to DRMS within 24 hours Followed up by written report within 5 days
Failure or imminent failure of impoundment, embankment, stockpile, or slope that poses potential danger to human health, property or environment	Telephone notice during regular business hours Outside of business hours call Emergency and Incident reporting line through CDPHE	Verbal reporting to DRMS within 24 hours Followed up by written report within 5 days

In the event of a failure or imminent failure of a designated EPF, notification will be provided to DRMS within 24 hours. The notification will include the following information:

1) Identify that this is a notification of an emergency condition
2) The nature of the condition including chemicals and toxic or acid producing materials involved
3) An estimate of the quantity of chemical, toxic or acid-forming material that has been or could be released

4) The time and duration of the occurrence and if it is on-going, or urgency of the pending situation
5) Any known or anticipated impacts to human health, property, or the environment
6) Precautions and corrective actions taken by OSMI
7) OSMI's contact information

For spills that require reporting to an agency other than DRMS, as identified in Rule 3.1.13 of the Hard Rock, Metal and DMOs, OSMI commits to notifying DRMS and providing the following information.

1) Operation name, DRMS permit number and name of person reporting the spill,
2) Telephone number of a responsible company official for the Office staff to use as a contact,
3) Date and time of spill,
4) Type of material spilled (CAS number if applicable, from the SDS),
5) Estimate of the amount spilled, whether any material has left the permit area, and where the spilled material went, and
6) Initial measures taken to contain and clean up spill.

21 References

1. Chemical Safety Data Sheets for Designated Chemicals (see Appendix 8).
2. Colorado Discharge Permit System, Permit No. CO-0000003, Modification 5, August 31, 2018.
3. Colorado Discharge Permit System, Stormwater Certification No. CO-040289, August 1, 2016, and administratively continued under General Permit COR-040000.
4. Colorado Drinking Water Program, Non-Transient, Non-Community Groundwater Public Water System ID No. CO-0246283, 2014.
5. Colorado Water Quality Control Commission, Regulation 35. 5 CCR-1002-35, Effective June 30, 2021.
6. Division of Reclamation, Mining and Safety Permit No. M-2012-032, Amendment 2, Exhibit D, December 2021.
7. Division of Reclamation, Mining and Safety Permit No. M-2012-032, Amendment 2, Exhibit E, December 2021.
8. Division of Reclamation, Mining and Safety Permit No. M-2012-032, Amendment 2, Exhibit F, December 2021.
9. Division of Reclamation, Mining and Safety Permit No. M-2012-032, Amendment 2, Exhibit G, December 2021.
10. Division of Reclamation, Mining and Safety Permit No. M-2012-032, Technical Revision 09, Approved March 16, 2017.
11. Division of Reclamation, Mining and Safety Permit No. M-2012-032, Technical Revision 10, Approved September 27, 2018.
12. Division of Reclamation, Mining and Safety Permit No. M-2012-032, Technical Revision 14, Submitted April 16, 2021.
13. Division of Reclamation, Mining and Safety Permit No. M-2012-032, Technical Revision 15, Conditionally Approved July 21, 2021.
14. Emergency Response Plan for the Revenue Mine, Updated XX, 2021
15. Environmental Assessment for BLM and USFS Fringe Lease, May 2021
16. Final Design Documents, New Reagent Room, Barr Engineering. DRMS Permit No. M-2012-032, TR-14, April 16, 2021.
17. Hard Rock, Metal, and Designated Mining Operations. Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board. July 15, 2019.
18. Materials Containment Plan for the Revenue Mine, February 1, 2017.
19. Spill Prevention, Control and Countermeasures Plan for the Revenue Mine, Updated May 12, 2021.
20. Stormwater Management Plan for the Revenue Mine, Updated November 2021.
21. Tailings and Waste Rock Management Plan – Revenue Mine, Greg Lewicki and Associates, PLLC, July 2015.

22. Ouray County Board of County Commissioners, Land Use Code, Section 24, November 02, 2016.

Tables

Table U-1: List of Designated Chemicals

Designated Chemical	Purpose of use	Location for Use and Dosing Rate	Location for Storage	Typical Quantities Used and/or Stored on Site	Secondary Containment Provided (gal)	Fate of Chemical	Manufacturer	Alt Names	Human Health §2: SDS HCS 2012 (29CFR 1910.1200)		Environmental Impacts §12: SDS	
AeroFloat 242 Promoter	This is the ammonium salt of AEROFLOAT 31 promoter. Widely used for flotation of Pb from Pb/Zn ores and Cu/Pb from Cu/Pb/Zn ores. Improves Ag recovery from these ores.	Mill Reagent Room Mill Dosing Rate approximately 0.01 lbs/short ton	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	300 gallons stored in mixing /storage tanks 70 gallons stored in day tanks	6072	To be consumed by mill circuit	Solvay (distributor for Cytec Industries Inc.)	NA	Acute toxicity, Category 4→ Acute toxicity, Category 3→ Skin Corrosion, Category 1B→ Serious eye damage, Category 1→ Skin Sensitization, Category 1→ Reproductive toxicity, Category 2→ Specific target organ toxicity - repeated exposure, Category 2→	H302: Harmful if swallowed H311: Toxic in contact with skin H314: Causes severe skin burns and eye damage H318: Causes serious eye damage H317: May cause an allergic skin reaction H361: Suspected of damaging fertility or the unborn child H373: May cause damage to organs through prolonged or repeated exposure.	Acute toxicity to fish Acute toxicity to daphnia and other aquatic invertebrates Toxicity to aquatic plants Toxicity to microorganisms M-Factor Ammonium hydroxide Biodegradability Toxicity to benthic organisms Toxicity to soil dwelling organisms Toxicity to terrestrial plants Toxicity to above ground organisms	LC50 - 96 h: ca.66mg/L Rainbow trout Not tested Not tested Not tested Acute aquatic toxicity = 1 < 70% - 28 Days Not tested Not tested Not tested Not tested
Danafloat 067 (alternative to AeroFloat 242)	Flotation Agent	Mill Reagent Room Mill Dosing Rate approximately 0.01 lbs/short ton	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	300 gallons stored in mixing /storage tanks 70 gallons stored in day tanks.	6072	To be consumed by mill circuit	Quadra Chemicals Inc.	NA	Acute toxicity, Category 4→ Acute toxicity, Category 3→ Skin Corrosion, Category 1→ Serious eye damage, Category 1→	H302: Harmful if swallowed H311: Toxic in contact with skin H314: Causes severe skin burns and eye damage H318: Causes serious eye damage	Acute EC50 5 to 10ppm Marine Water - Species: Algae - macrocystic pyrifera - young Acute EC50 7000 µg/l fresh water - Crustaceans - Grammarus fasciatus Acute LC50 10000 µg/l fresh water Fish - lepomis macrochirus	Exposure 4 days 48 Hours 96 Hours
Aerophine 3418 Promoter	AEROPHINE 3418A has application in flotation of copper- and lead-sulfide minerals, particularly where these are found in complex sulfide ores containing sphalerite zinc mineralization, and ores with high levels of pyrite and/or pyrrhotite.	Mill Reagent Room Mill Dosing Rate approximately 0.01 lbs/short ton	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	300 gallons stored in mixing /storage tanks 70 gallons stored in day tanks.		To be consumed by mill circuit	Solvay (distributor for Cytec Industries Inc.)	NA	Serious eye damage, Category 1→ Skin sensitization, Sub - Category 1B→ Health hazards not otherwise classified, Category 1→	H318: Causes serious eye damage H317: May cause an allergic skin reaction Contact with acids liberates toxic gases	Acute toxicity to fish Acute toxicity to daphnia and other aquatic invertebrates Toxicity to aquatic plants Toxicity to microorganisms Chronic toxicity to fish Chronic to daphnia and other aquatic invertebrates Toxicity to benthic organisms Toxicity to soil dwelling organisms Toxicity to terrestrial plants Toxicity to above ground organisms	Not harmful (LC LL50>100mg/L) Not harmful (EC/EL50>100mg/L) Not harmful (EC/EL50>100mg/L) Not tested Not tested Not tested Not tested Not tested Not tested Not tested
Copper Sulfate Pentahydrate	Used in Zinc flotation as an activator of sphalerite	Mill Reagent Room Mill Dosing Rate approximately 0.22 lbs/short ton	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	240 gallons in storage and 70 gallons in day tank	6072	To be consumed by mill circuit	Quadra Chemicals LTD,	cupric sulfate, blue vitriol, bluestone	Acute Toxicity - Oral Category 4→ Skin Corrosion/Irritation Category 2→ Eye damage/Irritation Category 2→	Harmful if swallowed Harmful in contact with skin Eye damage/Irritation	Ecotoxicity Persistence and degradability Bioaccumulation Mobility Other Adverse Effects	Very toxic to aquatic life with long lasting effects Not determined Not determined May be mobile due to water solubility Not Determined

Table U-1: List of Designated Chemicals

Designated Chemical	Purpose of use	Location for Use and Dosing Rate	Location for Storage	PPE §8: SDS	NFPA - Classification §16 SDS	EPA List of Lists §12 SDS	Corrosivity	Incompatible Materials
AeroFloat 242 Promoter	This is the ammonium salt of AEROFLOAT 31 promoter. Widely used for flotation of Pb from Pb/Zn ores and Cu/Pb from Cu/Pb/Zn ores. Improves Ag recovery from these ores.	Mill Reagent Room Mill Dosing Rate approximately 0.01 lbs/short ton	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	Chemical resistant, tightly fitting goggles Impervious clothing Change working clothes after each shift Handle in accordance with good industrial hygiene and safety practice Wash hands before breaks/at the end of workday When using do not eat, drink or smoke Eye wash bottles/stations in compliance with applicable standards Ensure that eyewash stations and showers are close to the workstation location	Health - 3 Serious Flammability - 1 Slight Instability or Reactivity - 0 Minimal	Ammonium Hydroxide CAS - No. 1336-21-6 1000lb	Not classified re: corrosion of metals	Oxidizing agents, strong acids or bases, and amines
Danafloat 067 (alternative to AeroFloat 242)	Flotation Agent	Mill Reagent Room Mill Dosing Rate approximately 0.01 lbs/short ton	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	Chemical resistant, tightly fitting goggles Impervious clothing Change working clothes after each shift Handle in accordance with good industrial hygiene and safety practice Wash hands before breaks/at the end of workday When using do not eat, drink or smoke Eye wash bottles/stations in compliance with applicable standards Ensure that eyewash stations and showers are close to the workstation location	Health - 3 Flammability - 0 Physical Hazards - 0	Ammonium O, O-bis(methylphenyl) dithiophosphate 49-51 % CAS -No. 587373-83-4 mix-cresol 0-7% CAS No. 1319-77-3 ammonia 0-7% CAS No. 1336-21-6	Corrosive to the respiratory system and digestive tract	Acids
Aerophine 3418 Promoter	AEROPHINE 3418A has application in flotation of copper- and lead-sulfide minerals, particularly where these are found in complex sulfide ores containing sphalerite zinc mineralization, and ores with high levels of pyrite and/or pyrrhotite.	Mill Reagent Room Mill Dosing Rate approximately 0.01 lbs/short ton	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	Impervious gloves - Nitrile or fluorinated rubber gloves Chemical resistant goggles, tightly fitting Impervious clothing Full protective suit Change working clothes after each shift contaminated work clothing should not be allowed out of the workplace Handle in accordance with good industrial hygiene and safety practice Wash hands before breaks and at the end of workday When using do not eat, drink, smoke Eye wash bottles/stations in compliance with applicable standards Ensure that eyewash stations and safety showers are close to the work station location.	Health - 3 Serious Flammability - 1 Slight Instability or Reactivity - 0 Minimal	N/A	Not corrosive to metals	Mineral acids, strong oxidizing agents, strong acids or bases
Copper Sulfate Pentahydrate	Used in Zinc flotation as an activator of sphalerite	Mill Reagent Room Mill Dosing Rate approximately 0.22 lbs/short ton	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	Safety glasses with side shields/goggles Long sleeved shirt, long pants, and shoes plus socks Water proof gloves Discard clothing and other absorbent materials that have been drenched or heavily contaminated with products concentrate Wash PPE Separately from other laundry. Wear an approved respirator for dusts or mists Handle in accordance with good industrial hygiene and safety practices.	Health - 3 Serious Flammability - 0 Instability or Reactivity - 0 Minimal	CAS/313 Category Codes N100 & (CERCLA) 313	Mildly corrosive to steel	Aluminum powder, acetylene gas, hydroxylamine, magnesium and moisture

Table U-1: List of Designated Chemicals

Designated Chemical	Purpose of use	Location for Use and Dosing Rate	Location for Storage	Typical Quantities Used and/or Stored on Site	Secondary Containment Provided (gal)	Fate of Chemical	Manufacturer	Alt Names	Human Health §2: SDS HCS 2012 (29CFR 1910.1200)		Environmental Impacts §12: SDS	
Floquat FL 2949	Used as a settling agent, A flocculant causes the suspended mineral to form into small masses. This will make the thickener load settle.	Mill Reagent Room Mill Dosing Rate: approximately 0.2% concentration	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	310 gallons stored 70 gallon mixing tank feeding 240 gallon solution tank.	6758	To be consumed by mill circuit	SNF, Inc.		No known hazards to humans Aqueous solutions or powders that become wet render surfaces extremely slippery		Acute toxicity to fish Acute toxicity to invertebrates Acute toxicity to algae Chronic toxicity to fish Chronic toxicity to invertebrates Toxicity to microorganisms Effects on terrestrial organisms Sediment toxicity	LC50/Danio rerio/96 hours > 10-100mg/L (OECD 203) LC50/Fathead minnow/96 hours > 10-100mg/L (OECD 203) Algal inhibition tests are not appropriate. No Data No Data No Data No known effects No Data
Hyperfloc AF 309 (alternative to Floquat)	Used as a settling agent, A flocculant causes the suspended mineral to form into small masses. This will make the thickener load settle.	Mill Reagent Room Mill Dosing Rate: approximately 0.2% concentration	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	310 gallons stored 70 gallon mixing tank feeding 240 gallon solution tank.	6758	To be consumed by mill circuit	SNF, Inc.	NA	No known hazards to humans Aqueous solutions or powders that become wet render surfaces extremely slippery		Acute toxicity to fish Acute toxicity to invertebrates Acute toxicity to algae Chronic toxicity to fish Chronic toxicity to invertebrates Toxicity to microorganisms Effects on terrestrial organisms Sediment toxicity	LC50/Danio rerio/96 hours > 100mg/L (OECD 203) LC50/Fathead minnow/96 hours > 100mg/L (OECD 203) LC50/Scenedesmus subspicatus/72 hours > 100mg/L (OECD 201) No Data No Data No Data No known effects No Data
Hydrated Lime	Lime is used to adjust the pH to aid in the collector adsorption by controlling the pulp chemistry. It also aids in the depression of certain minerals	Mill Reagent Room Mill Lime is added at a concentration necessary to achieve pH > 11 s.u.	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	Stored in 1800 lb. supersacks until used 9200 gallons used/stored in mixing day tank 1320 gallons stored in reagent room	12281		Lhoist North America	NA	Eye damage Category 1→ Carcinogen Category 1→ Skin Irritation Category 2→ Specific Target Organ Toxicity Single Exposure Category 3→ Specific Target Organ Toxicity Repeat Exposure Category 1→	Serious eye damage Skin irritation Respiratory irritation Damage to lungs through prolonged or repeated exposure when inhaled Cancer potential through inhalation Hydrated lime is not listed as a carcinogen, however this product contains crystalline silica, which is classified as carcinogenic to humans when inhaled.	Reacts with atmospheric CO2 overtime to form calcium carbonate No bioaccumulation effect or food chain concentration toxicity Minimal mobility in soil. Reacts with clay portion of soil to form calcium silicates and calcium aluminates This material is alkaline and if released into water or moist soil will cause an increase in pH.	Calcium Hydroxide 13mg/m305-62-0 OSHA PEL: 15 mg/m3 (total) 5 mg/m3 (respirable) ACGIH TLV: 5 mg/m3 Magnesium Oxide 1309-48-4 OSHA PEL: 15 mg/m3 ACGIH TLV: 10 mg/m3 Crystalline Silica 14808-60-7 OSHA PEL: 0.050mg/m3 as an 8 hr. TWA (respirable) ACGIH TLV: 0.025 mg/m3 (respirable)

Table U-1: List of Designated Chemicals

Designated Chemical	Purpose of use	Location for Use and Dosing Rate	Location for Storage	PPE §8: SDS	NFPA - Classification §16 SDS	EPA List of Lists §12 SDS	Corrosivity	Incompatible Materials
Floquat FL 2949	Used as a settling agent, A flocculant causes the suspended mineral to form into small masses. This will make the thickener load settle.	Mill Reagent Room Mill Dosing Rate: approximately 0.2% concentration	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	Safety glasses with side shields PVC or other plastic material gloves Coverall and/or chemical apron and rubber footwear where physical contact can occur. No personal respiratory protective equipment normally required Wash hands before breaks and immediately after handling the product.	Health - 0 Flammability - 0 Instability - 0	N/A	Not classified re: corrosion of metals	None known
Hyperfloc AF 309 (alternative to Floquat)	Used as a settling agent, A flocculant causes the suspended mineral to form into small masses. This will make the thickener load settle.	Mill Reagent Room Mill Dosing Rate: approximately 0.2% concentration	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	Safety glasses with side shields Plastic material gloves Work clothes protecting arms, legs and body Dust safety masks recommended where working powder concentration is more than 10 mg/m3. Wash hands before breaks and immediately after handling the product.	Health - 0 Flammability - 0 Instability - 0	CERCLA - Hazardous substances list (40 CFR 302.4) - RQ - Not concerned	Not classified re: corrosion of metals	Strong bases, oxidizing agents
Hydrated Lime	Lime is used to adjust the pH to aid in the collector adsorption by controlling the pulp chemistry. It also aids in the depression of certain minerals	Mill Reagent Room Mill Lime is added at a concentration necessary to achieve pH > 11 s.u.	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	NIOSH Approved respirators if airborne concentration exceeds PEL Safety Glasses with side shields or safety goggles. Contact lenses should not be work when working with the lime products. Wear appropriate clothing and gloves to prevent contact Eye wash fountain and emergency showers close to work station location	N/A	N/A	Not classified re: corrosion of metals	Acids, reactive fluoridated or brominated compounds, reactive powdered metals, organic acid anhydrides, nitro-organic compounds, reactive phosphorous compounds, interhalogenated compounds

Table U-1: List of Designated Chemicals

Designated Chemical	Purpose of use	Location for Use and Dosing Rate	Location for Storage	Typical Quantities Used and/or Stored on Site	Secondary Containment Provided (gal)	Fate of Chemical	Manufacturer	Alt Names	Human Health §2: SDS HCS 2012 (29CFR 1910.1200)		Environmental Impacts §12: SDS	
Oreprep F-549 Frother	A frothing agent used to create a stable surface for sulfide mineral to adhere.	Mill Reagent Room Mill Add as needed - no dosing rate specified.	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	300 gallons stored in storge tank in reagent room	793	To be consumed by mill circuit	Solvay (distributor for Cytec Canada Inc.)	NA	Skin irritation Category 2→ Eye irritation Category 2A→	H315: Causes skin irritation H319: Causes serious eye irritation	Acute toxicity to fish Acute toxicity to daphnia and other aquatic invertebrates Toxicity to aquatic plants Toxicity to microorganisms Chronic toxicity to fish Chronic toxicity to daphnia and other aquatic invertebrates Abiotic degradation physical and photo-chemical elimination Biodegradation Adsorption potential Known distribution to environmental compartments Results of PBT and vPvB assessment Other adverse effects	No Data No Data No Data No Data No Data No Data No Data No Data No Data No Data No Data No Data No Data
Polyfroth W20 (Alternative to Oreprep)	A frothing agent used to create a stable surface for sulfide mineral to adhere.	Mill Reagent Room Mill Add as needed - no dosing rate specified.	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	300 gallons stored in storge tank in reagent room	793	To be consumed by mill circuit	Quadra Chemicals Inc.	NA	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper us o the product. This SDS should be retained and available for employee's and other users of this product. No known significant effects or critical hazards.		No known significant effects or critical hazards. Ecotoxicity - Not available Persistence and degradability - Not available.	
	Xanthate is commonly used in the flotation process of sulfide minerals. Xanthate is a combination of alcohol, sodium hydroxide and carbon dioxide, which is an anionic collector.	Mill Reagent Room Mill Dosing Rate approximately 0.03 lbs/short ton	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	240 gallons in storage and 70 gallons in day tank	1031	To be consumed by mill circuit	Charles Tennant & Company	NA	Sodium Isopropylxanthate→ Self heating substances and mixtures Category 1→ Acute toxicity (oral) Category 4→ Acute toxicity (dermal) Category 4→ Skin irritation Category 2→ Eye irritation Category 2A→ Catches Fire spontaneously if exposed to air→ Harmful if swallowed or in contact with skin→ Causes skin irritation→	Proxan Sodium (Synonym) H251: Self Heating; may catch fire H302: Harmful if swallowed H315: Causes skin Irritation	Acute Aquatic Toxicity Category 2→ Chronic Aquatic Toxicity Category 2→ Do not allow to enter soil, water ways or waste water. This product may be harmful to aquatic life Biodegradability All waste from this product including all empty containers must be disposed of in accordance with municipal, provincial and federal regulations.	H411: Toxic to aquatic life long lasting effects
NAX 31 (Sodium Isopropyl Xanthate alternative)	Xanthate is commonly used in the flotation process of sulfide minerals. Xanthate is a combination of alcohol, sodium hydroxide and carbon dioxide, which is an anionic collector.	Mill Reagent Room Mill Dosing Rate approximately 0.03 lbs/short ton	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	Stored in 50 lb. bags until used. 240 gallons in storage and 70 gallons in day tank	NA (stored dry)	To be consumed by mill circuit	Prospec Chemicals (Charles Tennant & CO 3rd party supplier of Xanthate. Cascade Columbia is a Distributor for Charles Tennant).	NA	Acute Toxicity Oral Category 1→ Acute Toxicity Dermal Category 4→ Acute Toxicity Skin Irritation→ Eye irritation Category 2→ Danger Category 2→	Harmful if swallowed Harmful in contact with skin Wash with plenty of soap and water Eye damage/Irritation NA	NA	NA

Table U-1: List of Designated Chemicals

Designated Chemical	Purpose of use	Location for Use and Dosing Rate	Location for Storage	PPE §8: SDS	NFPA - Classification §16 SDS	EPA List of Lists §12 SDS	Corrosivity	Incompatible Materials
Oreprep F-549 Frother	A frothing agent used to create a stable surface for sulfide mineral to adhere.	Mill Reagent Room Mill Add as needed - no dosing rate specified.	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	Store in a well ventilated area Chemical resistant goggles tightly fitting Impervious clothing Change work clothes after each work shift Contaminated work clothing should not be allowed out of the workplace Handle in accordance with good industrial hygiene and safety practice Wash hands before breaks and at end of workday Do not eat, drink or smoke while using this product.	Health - 2 Moderate Flammability - 1 Instability or reactivity - 0 or Minimal.	N/A	Not corrosive to metals	Strong oxidizing agents
Polyfroth W20 (Alternative to Oreprep)	A frothing agent used to create a stable surface for sulfide mineral to adhere.	Mill Reagent Room Mill Add as needed - no dosing rate specified.	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	Chemical resistant, impervious gloves, complying with an approved standard should be worn at tall times when handling chemical products if a risk assessment indicates this is necessary	Health - 0 Flammability - 0 Instability - 0	NA	NA	No specific test data related to reactivity available for this product or it's ingredients. The product is stable Under normal conditions of storage and use, hazardous
	Xanthate is commonly used in the flotation process of sulfide minerals. Xanthate is a combination of alcohol, sodium hydroxide and carbon dioxide, which is an anionic collector.	Mill Reagent Room Mill Dosing Rate approximately 0.03 lbs/short ton	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	Wear impervious gloves when there is greater exposure risk If respiratory protection is required institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection. NIOSH or MSHA approved respirator for acidic vapors Face shield, safety glasses with side shields. Safety Boots Adequate protective clothing An eye wash station/safety shower should be near the work station Explosion proof mechanical ventilation to limit vapor concentration below T.L.V.	Health - 2 Flammability - 0 Instability - 2	CAS/313 Category Codes 7440-23-5 CERCLA RQ 10	Not classified re: corrosion of metals	Strong oxidizing agents, strong acids, strong bases, flammable liquids, heat, moisture
NAX 31 (Sodium Isopropyl Xanthate alternative)	Xanthate is commonly used in the flotation process of sulfide minerals. Xanthate is a combination of alcohol, sodium hydroxide and carbon dioxide, which is an anionic collector.	Mill Reagent Room Mill Dosing Rate approximately 0.03 lbs/short ton	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	Wear impervious gloves. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection. Refer tot eh CAS standard Z94.4-m1982 Selection, care and use of respirators. If vapors are present, use a NIOSH or MSHA approved respirator for acidic vapors or a self contained breathing apparatus. Face shield, safety goggles. Rubber safety boots, adequate protective clothing. Eye wash station and safety shower should be near the work area.	NA	NA	Not classified re: corrosion of metals	Strong oxidizing agents, strong acids, strong bases, flammable liquids, heat, moisture

Table U-1: List of Designated Chemicals

Designated Chemical	Purpose of use	Location for Use and Dosing Rate	Location for Storage	Typical Quantities Used and/or Stored on Site	Secondary Containment Provided (gal)	Fate of Chemical	Manufacturer	Alt Names	Human Health §2: SDS HCS 2012 (29CFR 1910.1200)		Environmental Impacts §12: SDS	
Sodium Metabisulfite	Sodium Metabisulfite aka MBS is used for pH control in froth flotation to control Pyrite depression. ... It is also used to prevent flotation of sphalerite by copper activation in the presence of Tennantite/Covellite in the ore.	Mill Reagent Room Mill Dosing Rate approximately 0.5 lbs/short ton	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	Stored in 50 lb. bags until used. 140 gallon mixing tank feeds 140 gallon solution tank. 70 gallons stored in day tank	NA (stored dry)	To be consumed by mill circuit	Quadra Chemicals LTD. (Prospect Chemicals 2nd/3rd party distributor/supplier)	Sodium Pyrosulfite, Disodium Pyrosulfite, Pyrosulfurous Acid, Disodium Salt, Sodium Disulphite.	Acute Toxicity Oral Category 4→ Acute Toxicity Dermal Category 5→ Serious Eye Irritant Category 1→	Harmful if swallowed Harmful in contact with skin Eye damage/Irritation	Ecotoxicity: Sodium Metabisulfite is a non hazardous solid commonly used as a waste water dechlorination agent. High concentrations will contribute to elevated chemical oxygen demand in aquatic environments.	
Zinc Sulphate Monohydrate	The established lead-zinc ore flotation processing scheme is to add zinc sulphate (ZnSO4) to the grind to control metal ion activation (sphalerite depression). ... Sphalerite that is rejected into the lead flotation tails is then floated in a second flotation step after activation with copper sulphate.	Mill Reagent Room Mill Dosing Rate approximately 0.5 lbs/short ton	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	Stored in 50 lb. bags until used. 240 gallon mixing tank in reagent room	NA (stored dry)	To be consumed by mill circuit	Zinc Nacional	White vitriol, Goslarite	Acute aquatic toxicity Category 1→ Skin corrosion/irritation Category 2→ Serious eye damage Category 1→ Specific target organ toxicity, single exposure, Respiratory tract irritation Category 3→ Hazardous to the aquatic environment, long-term hazard Category 1→	H302: Harmful if swallowed H315: Causes skin irritation H318: Causes serious eye damage H335: May cause respiratory irritation H410: Very toxic to aquatic life with long lasting effects	LC50 24 Hours fish (rainbow trout) 1.24 mg/L LC50 48 Hours fish (rainbow trout) 2.4 - 5mg/L LC50 96 Hours fish (rainbow trout) .24 - .83 mg/L LC50 96 Hours Daphnia 7.4 mg/L	Zinc Sulphate has a high water solubility and its zinc and manganese contents are directly bio available. The zinc may be toxic to aquatic organism, especially fish, with water hardness\, pH and dissolved organic carbon levels being regulating factors.

Table U-1: List of Designated Chemicals

Designated Chemical	Purpose of use	Location for Use and Dosing Rate	Location for Storage	PPE §8: SDS	NFPA - Classification §16 SDS	EPA List of Lists §12 SDS	Corrosivity	Incompatible Materials
Sodium Metabisulfite	Sodium Metabisulfite aka MBS is used for pH control in froth flotation to control Pyrite depression. ... It is also used to prevent flotation of sphalerite by copper activation in the presence of Tennantite/Covellite in the ore.	Mill Reagent Room Mill Dosing Rate approximately 0.5 lbs/short ton	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	General and local exhaust ventilation systems to maintain airborne concentrations If necessary, wear and MSHA/NIOSH approved respirator. Protective boots, gloves, and clothing to prevent excessive skin contact. Protective eye glasses, safety glasses with side shields, or goggles. emergency eye wash stations, showers, and washing facilities available in the work area. Remove this material from PPE as needed. Do not eat, drink or smoke in work areas.	Health - 2 Serious Flammability - 0 Instability or Reactivity - 0 Minimal	Hazardous Substance (40 CFR 302.4) RQ N/A	Not classified re: corrosion of metals	Acid and water produce sulfur oxides. Powdered potassium, sodium metal, alkali agents, oxidizing agents, and chlorates.
Zinc Sulphate Monohydrate	The established lead-zinc ore flotation processing scheme is to add zinc sulphate (ZnSO4) to the grind to control metal ion activation (sphalerite depression). ... Sphalerite that is rejected into the lead flotation tails is then floated in a second flotation step after activation with copper sulphate.	Mill Reagent Room Mill Dosing Rate approximately 0.5 lbs/short ton	Staged at the Warehouse in Ouray, CO and transported to the site via truck. Only stored in the reagent room or temporarily stored in the mill tunnel.	Gloves and long-sleeved work clothes or disposable coveralls may be necessary. Eye protection should be worn where dust is generated and there is a potential that eye contact may occur. Use adequate local or general ventilation where necessary to maintain the concentrations of dust well below the recommended occupation exposure limits for general Particulates, not otherwise specified. Where dud fumes are generated and cannot be controlled to within acceptable levels by engineering means, use appropriate NIOSH approved respiratory protection equipment.	Does not burn or support combustion § 5 Fire Fighting Measures SDS	CERCLA RQ 1000 Section 313c	Not classified re: corrosion of metals	Strong oxidizers, acids, strong bases

Attachment B Summary of Groundwater Data for Past 5 Quarters GW-1A

Analyte	Units	GW Std	2020 Q4 (11/12/2020)	2021 Q1 (3/25/2021)	2021 Q2 (6/17/2021)	2021 Q3 (9/24/2021)	2021 Q4 (10/28/2021)
Aluminum, dissolved	mg/L	5			0.05		
Antimony, dissolved	mg/L	Report			0.00095		
Arsenic, dissolved	mg/L	0.1			0.00079		
Barium, dissolved	mg/L	Report			0.0314		
Beryllium, dissolved	mg/L	0.1			0.00008		
Bicarbonate as CaCO3	mg/L	Report			33		
Boron, dissolved	mg/L	0.75			0.03		
Cadmium, dissolved	mg/L	0.001			0.00014		
Calcium, dissolved	mg/L	Report			19.7		
Carbonate as CaCO3	mg/L	Report			2		
Chloride	mg/L	250			0.58		
Chromium, dissolved	mg/L	0.1			0.0005		
Conductivity @25C	µS/cm	Report			129		
Copper, dissolved	mg/L	0.009			0.00102		
Cyanide, total	mg/L	0.005			0.003		
Fluoride	mg/L	2			0.23		
Hardness as CaCO3 (dissolved)	mg/L	Report			56		
Hydroxide as CaCO3	mg/L	Report			2		
Iron, dissolved	mg/L	1			0.06		
Lead, dissolved	mg/L	0.044			0.00224		
Magnesium, dissolved	mg/L	Report			1.61		
Manganese, dissolved	mg/L	1.672			0.01		
Mercury, dissolved	mg/L	0.01			0.0002		
Molybdenum, dissolved	mg/L	Report			0.00088		
Nickel, dissolved	mg/L	0.05			0.008		
Nitrate/Nitrite as N	mg/L	100			0.259		
pH (lab)	s.u.	6-9			7.7		
Phosphorus, total	mg/L	NA			0.01		
Potassium, dissolved	mg/L	Report			0.64		
Total Dissolved Solids	mg/L	400			72		
Total Suspended Solids	mg/L	Report			5		
Selenium, dissolved	mg/L	0.005			0.00016		
Silica, dissolved	mg/L	Report			4.6		
Silver, dissolved	mg/L	0.0001			0.0001		
Sodium, dissolved	mg/L	Report			1.98		
Sulfate	mg/L	250			25.1		
Thallium, dissolved	mg/L	Report			0.0001		
Total Alkalinity	mg/L	Report			33		
Uranium, dissolved	mg/L	Report			0.0001		
Vanadium, dissolved	mg/L	0.1			0.01		
Zinc, dissolved	mg/L	5			0.054		
pH (field)	s.u.	0.713			8.34		
Water Temperature (field)	deg. C				7.6		
ORP (field)	mV				281		
Conductivity (field)	µS/cm				309		
Disolved Oxygen (field)	%				51.9		

*Well dry Q4 2020, Q1 2021, Q3 2021 & Q4 2021

Attachment B Summary of Groundwater Data for Past 5 Quarters GW-1B

Analyte	Units	GW Std	2020 Q4 (11/12/2020)	2021 Q1 (3/25/2021)	2021 Q2 (6/17/2021)	2021 Q3 (9/24/2021)	2021 Q4 (10/28/2021)
Aluminum, dissolved	mg/L	5	0.05	0.05	0.05	0.05	0.05
Antimony, dissolved	mg/L	Report	0.00101	0.00072	0.0004	0.00094	0.00079
Arsenic, dissolved	mg/L	0.1	0.00062	0.00044	0.00054	0.00056	0.00053
Barium, dissolved	mg/L	Report	0.05722	0.0545	0.0309	0.0523	0.0466
Beryllium, dissolved	mg/L	0.1	0.00008	0.00008	0.00008	0.00008	0.00008
Bicarbonate as CaCO3	mg/L	Report	34.5	46.3	32.6	35.6	35.1
Boron, dissolved	mg/L	0.75	0.02	0.02	0.03	0.03	0.03
Cadmium, dissolved	mg/L	0.001	0.000125	0.000133	0.000127	0.000135	0.000135
Calcium, dissolved	mg/L	Report	34.9	36.3	19.9	30.6	28.6
Carbonate as CaCO3	mg/L	Report	2	2	2	2	2
Chloride	mg/L	250	0.6	0.98	0.5	0.99	0.75
Chromium, dissolved	mg/L	0.1	0.0005	0.0005	0.0005	0.0005	0.0005
Conductivity @25C	µS/cm	Report	210	227	128	205	185
Copper, dissolved	mg/L	0.009	0.0001	0.0008	0.0008	0.0008	0.0008
Cyanide, total	mg/L	0.005	0.003	0.003	0.003	0.003	0.003
Fluoride	mg/L	2	0.17	0.15	0.02	0.21	0.15
Hardness as CaCO3 (dissolved)	mg/L	Report	100	103	56	87	81
Hydroxide as CaCO3	mg/L	Report	2	2	2	2	2
Iron, dissolved	mg/L	1	0.06	0.06	0.06	0.06	0.06
Lead, dissolved	mg/L	0.044	0.00012	0.0002	0.00019	0.00015	0.00014
Magnesium, dissolved	mg/L	Report	3.07	2.98	1.64	2.6	2.43
Manganese, dissolved	mg/L	1.672	0.01	0.01	0.01	0.01	0.01
Mercury, dissolved	mg/L	0.01	0.0002	0.0002	0.0002	0.0002	0.0002
Molybdenum, dissolved	mg/L	Report	0.00138	0.00102	0.00091	0.00117	0.00081
Nickel, dissolved	mg/L	0.05	0.008	0.008	0.008	0.008	0.008
Nitrate/Nitrite as N	mg/L	100	0.098	0.337	0.26	0.071	0.073
pH (lab)	s.u.	6-9	7.8	8	7.7	8	7.8
Phosphorus, total	mg/L	NA	0.01	0.01	0.01	0.01	0.01
Potassium, dissolved	mg/L	Report	0.46	0.39	0.6	0.62	0.4
Total Dissolved Solids	mg/L	400	148	154	72	120	122
Total Suspended Solids	mg/L	Report	10	10	5	5	5
Selenium, dissolved	mg/L	0.005	0.00041	0.00036	0.00019	0.00023	0.00025
Silica, dissolved	mg/L	Report	4.3	4.9	4.7	5	4.6
Silver, dissolved	mg/L	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Sodium, dissolved	mg/L	Report	2.74	2.28	1.74	1.9	1.78
Sulfate	mg/L	250	69.2	59.1	34.3	51.1	45.1
Thallium, dissolved	mg/L	Report	0.0001	0.0001	0.0001	0.0001	0.0001
Total Alkalinity	mg/L	Report	34.5	46.3	32.6	35.6	35.1
Uranium, dissolved	mg/L	Report	0.0001	0.00012	0.0001	0.0001	0.0001
Vanadium, dissolved	mg/L	0.1	0.01	0.01	0.01	0.01	0.01
Zinc, dissolved	mg/L	5	0.052	0.068	0.05	0.059	0.066
pH (field)	s.u.		7.48	7.75	8.29	6.68	7.34
Water Temperature (field)	deg. C		1.2	1.4	7.6	8.4	3.5
ORP (field)	mV		241	290	211	479	135.3
Conductivity (field)	µS/cm		6			204.1	198.9
Disolved Oxygen (field)	%				57.2	69.2	66.2

Attachment B Summary of Groundwater Data for Past 5 Quarters GW-2A

Analyte	Units	GW Std	2020 Q4 (11/12/2020)	2021 Q1 (3/29/2021)	2021 Q2 (6/17/2021)	2021 Q3 (9/15/2021)	2021 Q4 (10/28/2021)
Aluminum, dissolved	mg/L	5	0.05	0.05	0.05	0.05	0.05
Antimony, dissolved	mg/L	Report	0.00102	0.00102	0.0004	0.00094	0.00093
Arsenic, dissolved	mg/L	0.1	0.00042	0.00042	0.00025	0.00025	0.00033
Barium, dissolved	mg/L	Report	0.0548	0.0626	0.0374	0.0479	0.0511
Beryllium, dissolved	mg/L	0.1	0.00008	0.00008	0.00008	0.00008	0.00008
Bicarbonate as CaCO3	mg/L	Report	25.2	27.6	26	26	28.3
Boron, dissolved	mg/L	0.75	0.02	0.03	0.03	0.03	0.03
Cadmium, dissolved	mg/L	0.001	0.000631	0.000699	0.000479	0.000527	0.000637
Calcium, dissolved	mg/L	Report	28.5	37.7	24.1	26.9	29.8
Carbonate as CaCO3	mg/L	Report	2	2	2	2	2
Chloride	mg/L	250	0.5	1.18	0.5	0.73	0.73
Chromium, dissolved	mg/L	0.1	0.0005	0.00252	0.0005	0.0005	0.0005
Conductivity @25C	µS/cm	Report	193	268	161	184	199
Copper, dissolved	mg/L	0.009	0.0008	0.0008	0.0008	0.0008	0.00083
Cyanide, total	mg/L	0.005	0.003	0.003	0.003	0.003	0.003
Fluoride	mg/L	2	0.23	0.27	0.25	0.24	0.28
Hardness as CaCO3 (dissolved)	mg/L	Report	80	106	68	76	84
Hydroxide as CaCO3	mg/L	Report	2	2	2	2	2
Iron, dissolved	mg/L	1	0.06	0.06	0.06	0.06	0.06
Lead, dissolved	mg/L	0.044	0.00014	0.00018	0.00042	0.00013	0.00013
Magnesium, dissolved	mg/L	Report	2.19	2.92	1.9	2.1	2.28
Manganese, dissolved	mg/L	1.672	0.01	0.01	0.01	0.01	0.01
Mercury, dissolved	mg/L	0.01	0.0002	0.0002	0.0002	0.0002	0.0002
Molybdenum, dissolved	mg/L	Report	0.0009	0.00109	0.00094	0.00096	0.00092
Nickel, dissolved	mg/L	0.05	0.008	0.008	0.008	0.008	0.008
Nitrate/Nitrite as N	mg/L	100	0.127	0.588	0.588	0.272	1.03
pH (lab)	s.u.	6-9	7.4	4	7.5	7.7	7.4
Phosphorus, total	mg/L	NA	0.01	0.024	0.01	0.01	0.01
Potassium, dissolved	mg/L	Report	0.52	0.44	0.71	0.46	0.5
Total Dissolved Solids	mg/L	400	118	164	100	112	126
Total Suspended Solids	mg/L	Report	5	7	32	5	5
Selenium, dissolved	mg/L	0.005	0.00039	0.00039	0.00011	0.00022	0.0003
Silica, dissolved	mg/L	Report	5.4	5.6	4.9	5.5	0.5
Silver, dissolved	mg/L	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Sodium, dissolved	mg/L	Report	2.03	2.31	1.66	2.07	2.15
Sulfate	mg/L	250	57.7	83.1	42.8	52.4	54
Thallium, dissolved	mg/L	Report	0.0001	0.0001	0.0001	0.0001	0.0001
Total Alkalinity	mg/L	Report	25.2	2	26	26	28.3
Uranium, dissolved	mg/L	Report	0.0001	0.0001	0.0001	0.0001	0.0001
Vanadium, dissolved	mg/L	0.1	0.01	0.01	0.01	0.01	0.01
Zinc, dissolved	mg/L	5	0.512	0.552	0.379	0.451	0.486
pH (field)	s.u.	0.713	6.95	6.83	8.39	6.33	6.71
Water Temperature (field)	deg. C		5.2	1.6	14.4	6.7	4.7
ORP (field)	mV		258	251	229	367.6	200.1
Conductivity (field)	µS/cm				216	177.5	211.4
Disolved Oxygen (field)	%				45.3	64.4	52

Attachment B Summary of Groundwater Data for Past 5 Quarters GW-2B

Analyte	Units	GW Std	2020 Q4 (11/12/2020)	2021 Q1 (3/25/2021)	2021 Q2 (6/17/2021)	2021 Q3 (9/15/2021)	2021 Q4 (10/28/2021)
Aluminum, dissolved	mg/L	5	0.05	0.05	0.05	0.05	0.05
Antimony, dissolved	mg/L	Report	0.0011	0.00065	0.00069	0.00076	0.00077
Arsenic, dissolved	mg/L	0.1	0.00032	0.0002	0.00025	0.00022	0.0003
Barium, dissolved	mg/L	Report	0.0589	0.0676	0.064	0.0534	0.055
Beryllium, dissolved	mg/L	0.1	0.00008	0.00008	0.00008	0.00008	0.00008
Bicarbonate as CaCO3	mg/L	Report	26.4	29.2	29.3	28	29.1
Boron, dissolved	mg/L	0.75	0.02	0.02	0.03	0.03	0.03
Cadmium, dissolved	mg/L	0.001	0.00024	0.000262	0.000244	0.000187	0.000217
Calcium, dissolved	mg/L	Report	27.1	37.3	34.5	26.6	27.9
Carbonate as CaCO3	mg/L	Report	2	2	2	2	2
Chloride	mg/L	250	0.5	0.93	0.65	0.61	0.59
Chromium, dissolved	mg/L	0.1	0.0005	0.0005	0.0005	0.0005	0.0005
Conductivity @25C	µS/cm	Report	179	235	222	180	184
Copper, dissolved	mg/L	0.009	0.0008	0.0008	0.0008	0.0008	0.0008
Cyanide, total	mg/L	0.005	0.003	0.003	0.003	0.003	0.003
Fluoride	mg/L	2	0.22	0.15	0.26	0.22	0.23
Hardness as CaCO3 (dissolved)	mg/L	Report	77	105	98	75	79
Hydroxide as CaCO3	mg/L	Report	2	2	2	2	2
Iron, dissolved	mg/L	1	0.06	0.06	0.06	0.06	0.06
Lead, dissolved	mg/L	0.044	0.0001	0.0001	0.0001	0.0001	0.0001
Magnesium, dissolved	mg/L	Report	2.22	2.99	2.79	2.17	2.26
Manganese, dissolved	mg/L	1.672	0.01	0.01	0.01	0.01	0.01
Mercury, dissolved	mg/L	0.01	0.0002	0.0002	0.0002	0.0002	0.0002
Molybdenum, dissolved	mg/L	Report	0.00088	0.00082	0.00074	0.00078	0.00079
Nickel, dissolved	mg/L	0.05	0.008	0.008	0.008	0.008	0.008
Nitrate/Nitrite as N	mg/L	100	0.113	0.094	0.321	0.173	0.388
pH (lab)	s.u.	6-9	7.5	7.6	7.5	7.8	7.5
Phosphorus, total	mg/L	NA	0.01	0.01	0.01	0.01	0.01
Potassium, dissolved	mg/L	Report	0.52	0.52	0.77	0.5	0.55
Total Dissolved Solids	mg/L	400	110	160	154	112	112
Total Suspended Solids	mg/L	Report	5	5	5	5	5
Selenium, dissolved	mg/L	0.005	0.00038	0.00035	0.00023	0.00021	0.0003
Silica, dissolved	mg/L	Report	5.6	5	5.5	5.9	5.8
Silver, dissolved	mg/L	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Sodium, dissolved	mg/L	Report	1.92	2.25	2.08	1.99	1.99
Sulfate	mg/L	250	52.1	80.3	70.3	49	46.4
Thallium, dissolved	mg/L	Report	0.0001	0.0001	0.0001	0.0001	0.0001
Total Alkalinity	mg/L	Report	26.4	29.2	29.3	28	29.1
Uranium, dissolved	mg/L	Report	0.0001	0.0001	0.0001	0.0001	0.0001
Vanadium, dissolved	mg/L	0.1	0.01	0.01	0.01	0.01	0.01
Zinc, dissolved	mg/L	5	0.276	0.356	0.324	0.259	0.275
pH (field)	s.u.		7.17	7.87	8.46	6.34	6.81
Water Temperature (field)	deg. C		3.7	1.3	5.5	5.9	4.7
ORP (field)	mV		250	228	246	365.6	188.4
Conductivity (field)	µS/cm		1	14	319	174.1	198.4
Disolved Oxygen (field)	%				50.4	60.2	47.6

Attachment B Summary of Groundwater Data for Past 5 Quarters GW-3B

Analyte	Units	GW Std	2020 Q4 (11/12/2020)	2021 Q1 (3/25/2021)	2021 Q2 (6/17/2021)	2021 Q3 (9/15/2021)	2021 Q4 (10/28/2021)
Aluminum, dissolved	mg/L	5	0.05		0.05	0.05	0.05
Antimony, dissolved	mg/L	Report	0.00079		0.0007	0.0004	0.0004
Arsenic, dissolved	mg/L	0.1	0.00038		0.00031	0.0002	0.0002
Barium, dissolved	mg/L	Report	0.051		0.047	0.0469	0.05
Beryllium, dissolved	mg/L	0.1	0.00008		0.00008	0.00008	0.00008
Bicarbonate as CaCO3	mg/L	Report	25.9		30.1	30.3	31.5
Boron, dissolved	mg/L	0.75	0.02		0.03	0.03	0.03
Cadmium, dissolved	mg/L	0.001	0.000082		0.000082	0.00005	0.00005
Calcium, dissolved	mg/L	Report	27		31.5	32.6	35.2
Carbonate as CaCO3	mg/L	Report	2		2	2	2
Chloride	mg/L	250	0.5		0.5	0.73	0.74
Chromium, dissolved	mg/L	0.1	0.0005		0.0005	0.0005	0.0005
Conductivity @25C	µS/cm	Report	194		198	216	210
Copper, dissolved	mg/L	0.009	0.0008		0.0008	0.0008	0.0008
Cyanide, total	mg/L	0.005	0.003		0.003	0.003	0.003
Fluoride	mg/L	2	0.19		0.2	0.16	0.16
Hardness as CaCO3 (dissolved)	mg/L	Report	84		87	92	99
Hydroxide as CaCO3	mg/L	Report	2		2	2	2
Iron, dissolved	mg/L	1	0.06		0.06	0.06	0.06
Lead, dissolved	mg/L	0.044	0.00021		0.00348	0.0001	0.0001
Magnesium, dissolved	mg/L	Report	2.06		2.12	2.5	2.65
Manganese, dissolved	mg/L	1.672	0.01		0.013	0.01	0.01
Mercury, dissolved	mg/L	0.01	0.0002		0.0002	0.0002	0.0002
Molybdenum, dissolved	mg/L	Report	0.00072		0.00062	0.00033	0.00032
Nickel, dissolved	mg/L	0.05	0.008		0.008	0.008	0.008
Nitrate/Nitrite as N	mg/L	100	0.192		0.404	0.199	0.141
pH (lab)	s.u.	6-9	7.5		7.5	7.9	7.6
Phosphorus, total	mg/L	NA	0.01		0.01	0.01	0.01
Potassium, dissolved	mg/L	Report	0.51		0.75	0.48	0.59
Total Dissolved Solids	mg/L	400	126		128	136	142
Total Suspended Solids	mg/L	Report	5		5	5	5
Selenium, dissolved	mg/L	0.005	0.00042		0.00027	0.00022	0.00022
Silica, dissolved	mg/L	Report	5.5		5.3	6.3	7
Silver, dissolved	mg/L	0.0001	0.0001		0.0001	0.0001	0.0001
Sodium, dissolved	mg/L	Report	2.38		2.21	2.13	2.24
Sulfate	mg/L	250	61		60.7	66	58.4
Thallium, dissolved	mg/L	Report	0.0001		0.0001	0.0001	0.0001
Total Alkalinity	mg/L	Report	25.9		30.1	30.3	31.5
Uranium, dissolved	mg/L	Report	0.0001		0.0001	0.0001	0.0001
Vanadium, dissolved	mg/L	0.1	0.01		0.01	0.01	0.01
Zinc, dissolved	mg/L	5	0.098		0.125	0.02	0.02
pH (field)	s.u.	0.713	7.01		8.49	6.63	6.82
Water Temperature (field)	deg. C		6.91		8.9	5.6	4.8
ORP (field)	mV		240		249	442.8	130.4
Conductivity (field)	µS/cm		101		211	208.3	212.4
Disolved Oxygen (field)	%				53.1	44.3	31.9

*GW-3B not sampled Q1 of 2021 due to unsafe conditions - avalanche danger

Attachment B Summary of Groundwater Data for Past 5 Quarters GW-3R

Analyte	Units	GW Std	2020 Q4 (11/12/2020)	2021 Q1 (3/25/2021)	2021 Q2 (6/17/2021)	2021 Q2 Resample (7/20/2021)	2021 Q3 (9/15/2021)	2021 Q4 (10/28/2021)
Aluminum, dissolved	mg/L	5	0.05	0.05	0.05	0.05	0.05	0.05
Antimony, dissolved	mg/L	Report	0.00101	0.0008	0.00291	0.00103	0.00108	0.00103
Arsenic, dissolved	mg/L	0.1	0.00064	0.0005	0.00478	0.00043	0.00052	0.00051
Barium, dissolved	mg/L	Report	0.0392	0.0419	0.0446	0.0309	0.0357	0.0368
Beryllium, dissolved	mg/L	0.1	0.00008	0.00008	0.00008	0.00008	0.00008	0.00008
Bicarbonate as CaCO3	mg/L	Report	41	23.7	34.2	30.5	33.8	27
Boron, dissolved	mg/L	0.75	0.02	0.03	0.03	0.03	0.03	0.03
Cadmium, dissolved	mg/L	0.001	0.00026	0.000402	0.000481	0.000226	0.000268	0.000309
Calcium, dissolved	mg/L	Report	33	38.9	28.1	28.1	33.8	35.1
Carbonate as CaCO3	mg/L	Report	2	2	2	2	2	2
Chloride	mg/L	250	0.5	0.9	0.92	0.5	0.61	0.67
Chromium, dissolved	mg/L	0.1	0.0005	0.0005	0.00843	0.0005	0.0005	0.0005
Conductivity @25C	µS/cm	Report	205	251	184	181	219	225
Copper, dissolved	mg/L	0.009	0.0009	0.0008	0.0139	0.0008	0.0008	0.0008
Cyanide, total	mg/L	0.005	0.003	0.003	0.003	0.003	0.003	0.003
Fluoride	mg/L	2	0.14	0.15	0.16	0.21	0.15	0.15
Hardness as CaCO3 (dissolved)	mg/L	Report	90	106	77	77	28	96
Hydroxide as CaCO3	mg/L	Report	2	2	2	2	2	2
Iron, dissolved	mg/L	1	0.06	0.06	0.535	0.06	0.06	0.06
Lead, dissolved	mg/L	0.044	0.00013	0.146	0.146	0.0001	0.0001	0.0001
Magnesium, dissolved	mg/L	Report	1.89	2.14	1.54	1.61	1.92	2
Manganese, dissolved	mg/L	1.672	0.01	0.01	0.247	0.01	0.01	0.01
Mercury, dissolved	mg/L	0.01	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Molybdenum, dissolved	mg/L	Report	0.00071	0.00057	0.0016	0.00074	0.00079	0.00071
Nickel, dissolved	mg/L	0.05	0.008	0.008	0.008	0.008	0.008	0.008
Nitrate/Nitrite as N	mg/L	100	0.242	0.165	0.417	0.266	0.289	0.339
pH (lab)	s.u.	6-9	7.5	7.3	7.5	7.8	7.8	7.5
Phosphorus, total	mg/L	NA	0.01	0.01	0.207	0.01	0.01	0.01
Potassium, dissolved	mg/L	Report	0.46	0.33	1.75	0.52	0.42	0.45
Total Dissolved Solids	mg/L	400	134	162	116	108	138	132
Total Suspended Solids	mg/L	Report	5	5	21	5	5	5
Selenium, dissolved	mg/L	0.005	0.00026	0.00035	0.00015	0.00016	0.00014	0.00019
Silica, dissolved	mg/L	Report	4.7	5.5	7.5	4.8	5.1	5
Silver, dissolved	mg/L	0.0001	0.0001	0.0001	0.00019	0.0001	0.0001	0.0001
Sodium, dissolved	mg/L	Report	2.63	2.41	3.42	2.92	2.81	2.68
Sulfate	mg/L	250	68.7	81.7	46.4	46.8	66.6	68.2
Thallium, dissolved	mg/L	Report	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Total Alkalinity	mg/L	Report	41	23.7	34.2	30.5	28	27
Uranium, dissolved	mg/L	Report	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Vanadium, dissolved	mg/L	0.1	0.01	0.01	0.01	0.01	0.01	0.01
Zinc, dissolved	mg/L	5	0.161	0.225	0.195	0.138	0.156	0.168
pH (field)	s.u.	0.713	7.48	7.55	8.75	7.7	6.56	6.81
Water Temperature (field)	deg. C		3.9	0.2	6.9	9.3	6	4.6
ORP (field)	mV		233	216	344	255	374.9	184.8
Conductivity (field)	µS/cm		30	1	351	179.2	212.8	239.5
Disolved Oxygen (field)	%		6.7		63.1	78.2	59.5	48.8

Table U-11 Q3 2020 Surface Water Sampling Results

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-0	12/9/2020	Sum of Cations	0.401	B	meq/L		
SW-0	12/9/2020	Lead, dissolved	0.00011	B	mg/L	0.0001	0.0005
SW-0	12/9/2020	Magnesium, dissolved	0.49	B	mg/L	0.2	1
SW-0	12/9/2020	Sodium, dissolved	0.67	B	mg/L	0.2	1
SW-0	12/9/2020	Calcium, dissolved	6.61		mg/L	0.1	0.5
SW-0	12/9/2020	TDS (ratio - measured/calculated)					
SW-0	12/9/2020	Zinc, dissolved	0.022	B	mg/L	0.02	0.05
SW-0	12/9/2020	Aluminum, total recoverable	0.0588		mg/L	0.005	0.015
SW-0	12/9/2020	Sulfate	1.3	B	mg/L	1	5
SW-0	12/9/2020	Iron, total recoverable	0.0676		mg/L	0.007	0.02
SW-0	12/9/2020	Cation-Anion Balance			%		
SW-0	12/9/2020	Hardness as CaCO3 (dissolved)	19		mg/L	0.2	5
SW-0	12/9/2020	TDS (calculated)	9.09		mg/L		
SW-0	12/9/2020	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-0	12/9/2020	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-0	12/9/2020	Arsenic, dissolved		U	mg/L	0.0002	0.001
SW-0	12/9/2020	Arsenic, total recoverable		U	mg/L	0.0002	0.001
SW-0	12/9/2020	Cadmium, dissolved		U	mg/L	0.00005	0.0003
SW-0	12/9/2020	Copper, dissolved		U	mg/L	0.0008	0.002
SW-0	12/9/2020	Iron, dissolved		U	mg/L	0.007	0.02
SW-0	12/9/2020	Manganese, dissolved		U	mg/L	0.01	0.05
SW-0	12/9/2020	Mercury, total (low level)		U	ng/L	0.3	1
SW-0	12/9/2020	Potassium, dissolved		U	mg/L	0.2	1
SW-0	12/9/2020	Bicarbonate as CaCO3		U	mg/L	2	20
SW-0	12/9/2020	Carbonate as CaCO3		U	mg/L	2	20
SW-0	12/9/2020	Chloride		U	mg/L	0.5	2
SW-0	12/9/2020	Fluoride		U	mg/L	0.11	0.35
SW-0	12/9/2020	Hydroxide as CaCO3		U	mg/L	2	20
SW-0	12/9/2020	Nitrate/Nitrite as N		U	mg/L	0.02	0.1
SW-0	12/9/2020	Residue, Filterable (TDS) @180C		U	mg/L	20	40
SW-0	12/9/2020	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-0	12/9/2020	Sum of Anions		U	meq/L		
SW-0	12/9/2020	Total Alkalinity		U	mg/L	2	20
SW-0	12/9/2020	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-15	12/2/2020	Nitrate/Nitrite as N	0.067	B	mg/L	0.02	0.1
SW-15	12/2/2020	Aluminum, total recoverable	0.0073	B	mg/L	0.005	0.015
SW-15	12/2/2020	Arsenic, dissolved	0.00075	B	mg/L	0.0002	0.001
SW-15	12/2/2020	Arsenic, total recoverable	0.00087	B	mg/L	0.0002	0.001
SW-15	12/2/2020	Cadmium, dissolved	0.000069	B	mg/L	0.00005	0.0003
SW-15	12/2/2020	Mercury, total (low level)	0.3	B	ng/L	0.3	1
SW-15	12/2/2020	Potassium, dissolved	0.35	B	mg/L	0.2	1

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-15	12/2/2020	Zinc, dissolved	0.033	B	mg/L	0.02	0.05
SW-15	12/2/2020	Fluoride	0.22	B	mg/L	0.11	0.35
SW-15	12/2/2020	Hardness as CaCO3 (dissolved)	99		mg/L	0.2	5
SW-15	12/2/2020	Cation-Anion Balance	-2.3		%		
SW-15	12/2/2020	Bicarbonate as CaCO3	37.4		mg/L	2	20
SW-15	12/2/2020	Sodium, dissolved	2.8		mg/L	0.2	1
SW-15	12/2/2020	Magnesium, dissolved	2.68		mg/L	0.2	1
SW-15	12/2/2020	Calcium, dissolved	35.1		mg/L	0.1	0.5
SW-15	12/2/2020	Sum of Anions	2.2		meq/L		
SW-15	12/2/2020	Residue, Filterable (TDS) @180C	154		mg/L	20	40
SW-15	12/2/2020	Sulfate	67.6		mg/L	5	25
SW-15	12/2/2020	Total Alkalinity	37.4		mg/L	2	20
SW-15	12/2/2020	TDS (ratio - measured/calculated)	1.17				
SW-15	12/2/2020	TDS (calculated)	132		mg/L		
SW-15	12/2/2020	Sum of Cations	2.1		meq/L		
SW-15	12/2/2020	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-15	12/2/2020	Hydroxide as CaCO3		U	mg/L	2	20
SW-15	12/2/2020	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-15	12/2/2020	Copper, dissolved		U	mg/L	0.0008	0.002
SW-15	12/2/2020	Iron, dissolved		U	mg/L	0.007	0.02
SW-15	12/2/2020	Iron, total recoverable		U	mg/L	0.007	0.02
SW-15	12/2/2020	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-15	12/2/2020	Manganese, dissolved		U	mg/L	0.01	0.05
SW-15	12/2/2020	Carbonate as CaCO3		U	mg/L	2	20
SW-15	12/2/2020	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-15	12/2/2020	Chloride		U	mg/L	0.5	2
SW-15	12/2/2020	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-15	12/2/2020	Water Temperature (field)	-0.5		C		
SW-15	12/2/2020	Specific Conductance (field)	-17		uS/cm		
SW-15	12/2/2020	pH (field)	8.01		units	0.1	0.1
SW-15	12/2/2020	ORP (field) (field)	343		mV		
SW-15	12/2/2020	Flow	0.276		CFS		
SW-15	12/2/2020	Dissolved Oxygen (field)		N	%		
SW-16	12/2/2020	Arsenic, dissolved	0.00094	B	mg/L	0.0002	0.001
SW-16	12/2/2020	Cadmium, dissolved	0.000079	B	mg/L	0.00005	0.0003
SW-16	12/2/2020	Copper, dissolved	0.00108	B	mg/L	0.0008	0.002
SW-16	12/2/2020	Lead, dissolved	0.00014	B	mg/L	0.0001	0.0005
SW-16	12/2/2020	Mercury, total (low level)	0.84	B	ng/L	0.3	1
SW-16	12/2/2020	Zinc, dissolved	0.042	B	mg/L	0.04	0.1
SW-16	12/2/2020	Carbon, dissolved organic (DOC)	2.2	B	mg/L	1	5
SW-16	12/2/2020	Residue, Non-Filterable (TSS) @105C	9	B	mg/L	5	20

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-16	12/2/2020	Fluoride	0.22	B	mg/L	0.11	0.35
SW-16	12/2/2020	Sodium, dissolved	2.89		mg/L	0.4	2
SW-16	12/2/2020	Sum of Anions	2.2		meq/L		
SW-16	12/2/2020	Sum of Cations	2.1		meq/L		
SW-16	12/2/2020	TDS (calculated)	132		mg/L		
SW-16	12/2/2020	Residue, Filterable (TDS) @180C	156		mg/L	20	40
SW-16	12/2/2020	Total Alkalinity	37.8		mg/L	2	20
SW-16	12/2/2020	Hardness as CaCO3 (dissolved)	96		mg/L	0.5	10
SW-16	12/2/2020	Bicarbonate as CaCO3	37.8		mg/L	2	20
SW-16	12/2/2020	Magnesium, dissolved	2.55		mg/L	0.4	2
SW-16	12/2/2020	Iron, total recoverable	0.0765		mg/L	0.007	0.02
SW-16	12/2/2020	Calcium, dissolved	34.4		mg/L	0.2	1
SW-16	12/2/2020	Arsenic, total recoverable	0.00149		mg/L	0.0002	0.001
SW-16	12/2/2020	Aluminum, total recoverable	0.0641		mg/L	0.005	0.015
SW-16	12/2/2020	Cation-Anion Balance	-2.3		%		
SW-16	12/2/2020	Sulfate	68.7		mg/L	5	25
SW-16	12/2/2020	TDS (ratio - measured/calculated)	1.18				
SW-16	12/2/2020	Specific Conductance (field)	22		uS/cm		
SW-16	12/2/2020	Water Temperature (field)	-1		C		
SW-16	12/2/2020	pH (field)	8.25		units	0.1	0.1
SW-16	12/2/2020	ORP (field) (field)	173		mV		
SW-16	12/2/2020	Flow	0.84		CFS		
SW-16	12/2/2020	Dissolved Oxygen (field)	54		%		
SW-16	12/2/2020	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-16	12/2/2020	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-16	12/2/2020	Iron, dissolved		U	mg/L	0.007	0.02
SW-16	12/2/2020	Potassium, dissolved		U	mg/L	0.4	2
SW-16	12/2/2020	Carbonate as CaCO3		U	mg/L	2	20
SW-16	12/2/2020	Chloride		U	mg/L	0.5	2
SW-16	12/2/2020	Hydroxide as CaCO3		U	mg/L	2	20
SW-16	12/2/2020	Nitrate/Nitrite as N		U	mg/L	0.02	0.1
SW-17	12/2/2020	Sodium, dissolved	5.95		mg/L	0.2	1
SW-17	12/2/2020	Sulfate	89.5		mg/L	5	25
SW-17	12/2/2020	Residue, Filterable (TDS) @180C	204		mg/L	20	40
SW-17	12/2/2020	Hardness as CaCO3 (dissolved)	125		mg/L	0.2	5
SW-17	12/2/2020	Fluoride	0.68		mg/L	0.11	0.35
SW-17	12/2/2020	Chloride	6.72		mg/L	0.5	2
SW-17	12/2/2020	Sum of Cations	2.8		meq/L		
SW-17	12/2/2020	Bicarbonate as CaCO3	50		mg/L	2	20
SW-17	12/2/2020	TDS (calculated)	182		mg/L		
SW-17	12/2/2020	Silver, dissolved	0.00122		mg/L	0.0001	0.0005
SW-17	12/2/2020	Magnesium, dissolved	1.98		mg/L	0.2	1
SW-17	12/2/2020	Iron, total recoverable	0.0486		mg/L	0.007	0.02

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-17	12/2/2020	Calcium, dissolved	46.9		mg/L	0.1	0.5
SW-17	12/2/2020	Arsenic, total recoverable	0.0029		mg/L	0.0002	0.001
SW-17	12/2/2020	Arsenic, dissolved	0.00258		mg/L	0.0002	0.001
SW-17	12/2/2020	Aluminum, total recoverable	0.052		mg/L	0.005	0.015
SW-17	12/2/2020	Cation-Anion Balance	-5.1		%		
SW-17	12/2/2020	Sum of Anions	3.1		meq/L		
SW-17	12/2/2020	Mercury, total (low level)	0.56	B	ng/L	0.3	1
SW-17	12/2/2020	Total Alkalinity	50		mg/L	2	20
SW-17	12/2/2020	TDS (ratio - measured/calculated)	1.12				
SW-17	12/2/2020	Nitrate/Nitrite as N	0.042	B	mg/L	0.02	0.1
SW-17	12/2/2020	Copper, dissolved	0.001	B	mg/L	0.0008	0.002
SW-17	12/2/2020	Carbon, dissolved organic (DOC)	2.1	B	mg/L	1	5
SW-17	12/2/2020	Hydroxide as CaCO3		U	mg/L	2	20
SW-17	12/2/2020	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-17	12/2/2020	Cadmium, dissolved		U	mg/L	0.00005	0.0003
SW-17	12/2/2020	Iron, dissolved		U	mg/L	0.007	0.02
SW-17	12/2/2020	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-17	12/2/2020	Manganese, dissolved		U	mg/L	0.01	0.05
SW-17	12/2/2020	Potassium, dissolved		U	mg/L	0.2	1
SW-17	12/2/2020	Carbonate as CaCO3		U	mg/L	2	20
SW-17	12/2/2020	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-17	12/2/2020	Zinc, dissolved		U	mg/L	0.02	0.05
SW-17	12/2/2020	Specific Conductance (field)	5		uS/cm		
SW-17	12/2/2020	pH (field)	7.88		units	0.1	0.1
SW-17	12/2/2020	pH (field)	7.88		units	0.1	0.1
SW-17	12/2/2020	ORP (field) (field)	174		mV		
SW-17	12/2/2020	ORP (field) (field)	174		mV		
SW-17	12/2/2020	Flow		N	CFS		
SW-17	12/2/2020	Flow	8.59		CFS		
SW-17	12/2/2020	Dissolved Oxygen (field)	99		%		
SW-17	12/2/2020	Water Temperature (field)	3.8		C		
SW-17	12/2/2020	Water Temperature (field)	3.8		C		
SW-17	12/2/2020	Dissolved Oxygen (field)		N	%		
SW-17	12/2/2020	Specific Conductance (field)	5		uS/cm		
SW-2	12/2/2020	Arsenic, dissolved	0.00032	B	mg/L	0.0002	0.001
SW-2	12/2/2020	Arsenic, total recoverable	0.0004	B	mg/L	0.0002	0.001
SW-2	12/2/2020	Cadmium, dissolved	0.000206	B	mg/L	0.00005	0.0003
SW-2	12/2/2020	Lead, dissolved	0.00013	B	mg/L	0.0001	0.0005
SW-2	12/2/2020	Potassium, dissolved	0.33	B	mg/L	0.2	1
SW-2	12/2/2020	Carbon, dissolved organic (DOC)	4.3	B	mg/L	1	5
SW-2	12/2/2020	Nitrate/Nitrite as N	0.083	B	mg/L	0.02	0.1
SW-2	12/2/2020	Fluoride	0.25	B	mg/L	0.11	0.35

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-2	12/2/2020	Cation-Anion Balance	0		%		
SW-2	12/2/2020	Bicarbonate as CaCO3	33.8		mg/L	2	20
SW-2	12/2/2020	Zinc, dissolved	0.146		mg/L	0.02	0.05
SW-2	12/2/2020	Sodium, dissolved	2.15		mg/L	0.2	1
SW-2	12/2/2020	Magnesium, dissolved	2.37		mg/L	0.2	1
SW-2	12/2/2020	Calcium, dissolved	31.3		mg/L	0.1	0.5
SW-2	12/2/2020	TDS (calculated)	117		mg/L		
SW-2	12/2/2020	TDS (ratio - measured/calculated)	1.15				
SW-2	12/2/2020	Sum of Cations	1.9		meq/L		
SW-2	12/2/2020	Sum of Anions	1.9		meq/L		
SW-2	12/2/2020	Sulfate	59.6		mg/L	5	25
SW-2	12/2/2020	Residue, Filterable (TDS) @180C	134		mg/L	20	40
SW-2	12/2/2020	Hardness as CaCO3 (dissolved)	88		mg/L	0.2	5
SW-2	12/2/2020	Total Alkalinity	33.8		mg/L	2	20
SW-2	12/2/2020	Hydroxide as CaCO3		U	mg/L	2	20
SW-2	12/2/2020	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-2	12/2/2020	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-2	12/2/2020	Chloride		U	mg/L	0.5	2
SW-2	12/2/2020	Carbonate as CaCO3		U	mg/L	2	20
SW-2	12/2/2020	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-2	12/2/2020	Aluminum, total recoverable		U	mg/L	0.005	0.015
SW-2	12/2/2020	Copper, dissolved		U	mg/L	0.0008	0.002
SW-2	12/2/2020	Iron, dissolved		U	mg/L	0.007	0.02
SW-2	12/2/2020	Iron, total recoverable		U	mg/L	0.007	0.02
SW-2	12/2/2020	Manganese, dissolved		U	mg/L	0.01	0.05
SW-2	12/2/2020	Mercury, total (low level)		U	ng/L	0.3	1
SW-2	12/2/2020	Water Temperature (field)	1.1		C		
SW-2	12/2/2020	Specific Conductance (field)	7		uS/cm		
SW-2	12/2/2020	pH (field)	8.04		units	0.1	0.1
SW-2	12/2/2020	ORP (field) (field)	213		mV		
SW-2	12/2/2020	Flow	1.14		CFS		
SW-2	12/2/2020	Dissolved Oxygen (field)	100		%		
SW-21	12/9/2020	Hardness as CaCO3 (dissolved)	103		mg/L	0.2	5
SW-21	12/9/2020	Cation-Anion Balance	0		%		
SW-21	12/9/2020	Bicarbonate as CaCO3	37.3		mg/L	2	20
SW-21	12/9/2020	Zinc, dissolved	0.11		mg/L	0.02	0.05
SW-21	12/9/2020	Sodium, dissolved	3.54		mg/L	0.2	1
SW-21	12/9/2020	Magnesium, dissolved	2.53		mg/L	0.2	1
SW-21	12/9/2020	Iron, total recoverable	0.0219		mg/L	0.007	0.02
SW-21	12/9/2020	Aluminum, total recoverable	0.0185		mg/L	0.005	0.015
SW-21	12/9/2020	TDS (calculated)	136		mg/L		
SW-21	12/9/2020	Nitrate/Nitrite as N	0.235		mg/L	0.02	0.1

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-21	12/9/2020	Arsenic, total recoverable	0.00096	B	mg/L	0.0002	0.001
SW-21	12/9/2020	Cadmium, dissolved	0.000236	B	mg/L	0.00005	0.0003
SW-21	12/9/2020	Lead, dissolved	0.0002	B	mg/L	0.0001	0.0005
SW-21	12/9/2020	Mercury, total (low level)	0.73	B	ng/L	0.3	1
SW-21	12/9/2020	Potassium, dissolved	0.49	B	mg/L	0.2	1
SW-21	12/9/2020	Fluoride	0.24	B	mg/L	0.11	0.35
SW-21	12/9/2020	Sum of Anions	2.2		meq/L		
SW-21	12/9/2020	Sulfate	69.6		mg/L	5	25
SW-21	12/9/2020	Sum of Cations	2.2		meq/L		
SW-21	12/9/2020	Arsenic, dissolved	0.00076	B	mg/L	0.0002	0.001
SW-21	12/9/2020	TDS (ratio - measured/calculated)	1.16				
SW-21	12/9/2020	Residue, Filterable (TDS) @180C	158		mg/L	20	40
SW-21	12/9/2020	Total Alkalinity	37.3		mg/L	2	20
SW-21	12/9/2020	Calcium, dissolved	37.2		mg/L	0.1	0.5
SW-21	12/9/2020	Iron, dissolved		U	mg/L	0.007	0.02
SW-21	12/9/2020	Chloride		U	mg/L	0.5	2
SW-21	12/9/2020	Specific Conductance (field)	-1		uS/cm		
SW-21	12/9/2020	pH (field)	8.1		units	0.1	0.1
SW-21	12/9/2020	ORP (field) (field)	230		mV		
SW-21	12/9/2020	Flow		N	CFS		
SW-21	12/9/2020	Dissolved Oxygen (field)		N	%		
SW-21	12/9/2020	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-21	12/9/2020	Hydroxide as CaCO3		U	mg/L	2	20
SW-21	12/9/2020	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-21	12/9/2020	Copper, dissolved		U	mg/L	0.0008	0.002
SW-21	12/9/2020	Manganese, dissolved		U	mg/L	0.01	0.05
SW-21	12/9/2020	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-21	12/9/2020	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-21	12/9/2020	Carbonate as CaCO3		U	mg/L	2	20
SW-21	12/9/2020	Water Temperature (field)	0.6		C		
SW-3	12/2/2020	Potassium, dissolved	0.4	B	mg/L	0.2	1
SW-3	12/2/2020	Carbon, dissolved organic (DOC)	2.1	B	mg/L	1	5
SW-3	12/2/2020	Chloride	0.53	B	mg/L	0.5	2
SW-3	12/2/2020	Fluoride	0.23	B	mg/L	0.11	0.35
SW-3	12/2/2020	Residue, Non-Filterable (TSS) @105C	9	B	mg/L	5	20
SW-3	12/2/2020	Arsenic, dissolved	0.00059	B	mg/L	0.0002	0.001
SW-3	12/2/2020	Manganese, dissolved	0.018	B	mg/L	0.01	0.05
SW-3	12/2/2020	Total Alkalinity	37.9		mg/L	2	20
SW-3	12/2/2020	TDS (ratio - measured/calculated)	1.21				
SW-3	12/2/2020	TDS (calculated)	152		mg/L		
SW-3	12/2/2020	Sum of Cations	2.4		meq/L		

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-3	12/2/2020	Sum of Anions	2.5		meq/L		
SW-3	12/2/2020	Sulfate	81.1		mg/L	5	25
SW-3	12/2/2020	Residue, Filterable (TDS) @180C	184		mg/L	20	40
SW-3	12/2/2020	Cation-Anion Balance	-2		%		
SW-3	12/2/2020	Nitrate/Nitrite as N	0.423		mg/L	0.02	0.1
SW-3	12/2/2020	Cadmium, dissolved	0.000296		mg/L	0.00005	0.0003
SW-3	12/2/2020	Bicarbonate as CaCO3	37.9		mg/L	2	20
SW-3	12/2/2020	Zinc, dissolved	0.198		mg/L	0.02	0.05
SW-3	12/2/2020	Sodium, dissolved	3.47		mg/L	0.2	1
SW-3	12/2/2020	Mercury, total (low level)	40.6		ng/L	1.5	5
SW-3	12/2/2020	Magnesium, dissolved	2.04		mg/L	0.2	1
SW-3	12/2/2020	Lead, dissolved	0.00201		mg/L	0.0001	0.0005
SW-3	12/2/2020	Calcium, dissolved	40.9		mg/L	0.1	0.5
SW-3	12/2/2020	Arsenic, total recoverable	0.00393		mg/L	0.0002	0.001
SW-3	12/2/2020	Aluminum, total recoverable	0.726		mg/L	0.005	0.015
SW-3	12/2/2020	Hardness as CaCO3 (dissolved)	111		mg/L	0.2	5
SW-3	12/2/2020	Iron, total recoverable	0.584		mg/L	0.007	0.02
SW-3	12/2/2020	Flow	0.72		CFS		
SW-3	12/2/2020	Dissolved Oxygen (field)		N	%		
SW-3	12/2/2020	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-3	12/2/2020	Copper, dissolved		U	mg/L	0.0008	0.002
SW-3	12/2/2020	Iron, dissolved		U	mg/L	0.007	0.02
SW-3	12/2/2020	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-3	12/2/2020	Carbonate as CaCO3		U	mg/L	2	20
SW-3	12/2/2020	Hydroxide as CaCO3		U	mg/L	2	20
SW-3	12/2/2020	Water Temperature (field)	-1.1		C		
SW-3	12/2/2020	Specific Conductance (field)	-84		uS/cm		
SW-3	12/2/2020	pH (field)	7.76		units	0.1	0.1
SW-3	12/2/2020	ORP (field) (field)	207		mV		
SW-4	12/9/2020	Lead, dissolved	0.00154		mg/L	0.0001	0.0005
SW-4	12/9/2020	Cadmium, dissolved	0.000528		mg/L	0.00005	0.0003
SW-4	12/9/2020	Aluminum, total recoverable	0.0223		mg/L	0.005	0.015
SW-4	12/9/2020	TDS (ratio - measured/calculated)	1.16				
SW-4	12/9/2020	TDS (calculated)	140		mg/L		
SW-4	12/9/2020	Calcium, dissolved	38.2		mg/L	0.1	0.5
SW-4	12/9/2020	Sum of Anions	2.2		meq/L		
SW-4	12/9/2020	Bicarbonate as CaCO3	30.3		mg/L	2	20
SW-4	12/9/2020	Cation-Anion Balance	2.2		%		
SW-4	12/9/2020	Fluoride	0.36		mg/L	0.11	0.35
SW-4	12/9/2020	Hardness as CaCO3 (dissolved)	106		mg/L	0.2	5
SW-4	12/9/2020	Nitrate/Nitrite as N	0.249		mg/L	0.02	0.1
SW-4	12/9/2020	Iron, total recoverable	0.0246		mg/L	0.007	0.02
SW-4	12/9/2020	Sulfate	76.4		mg/L	5	25

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-4	12/9/2020	Sum of Cations	2.3		meq/L		
SW-4	12/9/2020	Sodium, dissolved	3.5		mg/L	0.2	1
SW-4	12/9/2020	Mercury, total (low level)	14.4		ng/L	0.3	1
SW-4	12/9/2020	Magnesium, dissolved	2.61		mg/L	0.2	1
SW-4	12/9/2020	Zinc, dissolved	0.233		mg/L	0.02	0.05
SW-4	12/9/2020	Residue, Filterable (TDS) @180C	162		mg/L	20	40
SW-4	12/9/2020	Potassium, dissolved	0.53	B	mg/L	0.2	1
SW-4	12/9/2020	Manganese, dissolved	0.046	B	mg/L	0.01	0.05
SW-4	12/9/2020	Arsenic, total recoverable	0.0007	B	mg/L	0.0002	0.001
SW-4	12/9/2020	Arsenic, dissolved	0.00067	B	mg/L	0.0002	0.001
SW-4	12/9/2020	Total Alkalinity	30.3		mg/L	2	20
SW-4	12/9/2020	Dissolved Oxygen (field)		N	%		
SW-4	12/9/2020	Flow	2.44		CFS		
SW-4	12/9/2020	ORP (field) (field)	232		mV		
SW-4	12/9/2020	Water Temperature (field)	1.2		C		
SW-4	12/9/2020	pH (field)	7.28		units	0.1	0.1
SW-4	12/9/2020	Specific Conductance (field)	-40		uS/cm		
SW-4	12/9/2020	Chloride		U	mg/L	0.5	2
SW-4	12/9/2020	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-4	12/9/2020	Copper, dissolved		U	mg/L	0.0008	0.002
SW-4	12/9/2020	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-4	12/9/2020	Carbonate as CaCO3		U	mg/L	2	20
SW-4	12/9/2020	Hydroxide as CaCO3		U	mg/L	2	20
SW-4	12/9/2020	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-4	12/9/2020	Iron, dissolved		U	mg/L	0.007	0.02
SW-4	12/9/2020	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-99	12/2/2020	Arsenic, total recoverable	0.00087	B	mg/L	0.0002	0.001
SW-99	12/2/2020	Nitrate/Nitrite as N	0.066	B	mg/L	0.02	0.1
SW-99	12/2/2020	Arsenic, dissolved	0.00075	B	mg/L	0.0002	0.001
SW-99	12/2/2020	Cadmium, dissolved	0.000071	B	mg/L	0.00005	0.0003
SW-99	12/2/2020	Copper, dissolved	0.001	B	mg/L	0.0008	0.002
SW-99	12/2/2020	Iron, total recoverable	0.0073	B	mg/L	0.007	0.02
SW-99	12/2/2020	Potassium, dissolved	0.34	B	mg/L	0.2	1
SW-99	12/2/2020	Zinc, dissolved	0.034	B	mg/L	0.02	0.05
SW-99	12/2/2020	Carbon, dissolved organic (DOC)	2.9	B	mg/L	1	5
SW-99	12/2/2020	Aluminum, total recoverable	0.0076	B	mg/L	0.005	0.015
SW-99	12/2/2020	Fluoride	0.21	B	mg/L	0.11	0.35
SW-99	12/2/2020	Calcium, dissolved	34.5		mg/L	0.1	0.5
SW-99	12/2/2020	Sulfate	67.8		mg/L	5	25
SW-99	12/2/2020	Residue, Filterable (TDS) @180C	152		mg/L	20	40
SW-99	12/2/2020	Hardness as CaCO3 (dissolved)	97		mg/L	0.2	5
SW-99	12/2/2020	Cation-Anion Balance	-2.3		%		

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-99	12/2/2020	Bicarbonate as CaCO3	36		mg/L	2	20
SW-99	12/2/2020	Sum of Cations	2.1		meq/L		
SW-99	12/2/2020	Magnesium, dissolved	2.67		mg/L	0.2	1
SW-99	12/2/2020	TDS (calculated)	130		mg/L		
SW-99	12/2/2020	Sodium, dissolved	2.77		mg/L	0.2	1
SW-99	12/2/2020	Sum of Anions	2.2		meq/L		
SW-99	12/2/2020	Total Alkalinity	36		mg/L	2	20
SW-99	12/2/2020	TDS (ratio - measured/calculated)	1.17				
SW-99	12/2/2020	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-99	12/2/2020	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-99	12/2/2020	Iron, dissolved		U	mg/L	0.007	0.02
SW-99	12/2/2020	Manganese, dissolved		U	mg/L	0.01	0.05
SW-99	12/2/2020	Mercury, total (low level)		U	ng/L	0.3	1
SW-99	12/2/2020	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-99	12/2/2020	Carbonate as CaCO3		U	mg/L	2	20
SW-99	12/2/2020	Chloride		U	mg/L	0.5	2
SW-99	12/2/2020	Hydroxide as CaCO3		U	mg/L	2	20
SW-99	12/2/2020	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20

Lab qualifiers:

U - material was analyzed for but was not detected above the sample detection limit

B - Analyte concentrations detected at a value between the MDL and PQL. The associated value is estimated

L - Target analyte response was below the laboratory defined negative threhold

H - Analysis exceeded method hold time. pH is a field test with an immediate hold time

Table U-11 Q1 2021 Surface Water Quality Sampling

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-22	2/22/2021	Oil and Grease		U	mg/L	2.1	10.4
SW-22	2/22/2021	Flow		N	CFS		
SW-22	2/22/2021	ORP (field) (field)	243		mV		
SW-22	2/22/2021	Dissolved Oxygen (field)		N	%		
SW-22	2/22/2021	Water Temperature (field)	1.3		C		
SW-22	2/22/2021	Specific Conductance (field)		N	uS/cm		
SW-22	2/22/2021	pH (field)	7.61		units	0.1	0.1
SW-22	2/15/2021	Bromofluorobenzene	113.1		%	70	130
SW-22	2/15/2021	Benzene		U	ug/L	1	1
SW-22	2/15/2021	Bromofluorobenzene (TVH)	112.7		%	70	130
SW-22	2/15/2021	Ethylbenzene		U	ug/L	1	1
SW-22	2/15/2021	TVH C6 to C10		U	mg/L	0.05	0.05
SW-22	2/15/2021	Bromofluorobenzene	99.9		%	70	130
SW-22	2/15/2021	Methyl Tert Butyl Ether		U	ug/L	4	4
SW-22	2/15/2021	m p Xylene		U	ug/L	2	2
SW-22	2/15/2021	o Xylene		U	ug/L	1	1
SW-22	2/15/2021	Dibromofluoromethane	99.3		%	70	130
SW-22	2/15/2021	OTP	80.51		%	70	130
SW-22	2/15/2021	Toluene		U	ug/L	1	1
SW-22	2/15/2021	Toluene-d8	98.2		%	70	130
SW-22	2/15/2021	TPH C10 to C28	0.3	J	mg/L	0.24	0.48
SW-22	2/15/2021	Water Temperature (field)	0.9		C		
SW-22	2/15/2021	Specific Conductance (field)		N	uS/cm		
SW-22	2/15/2021	pH (field)		N	units	0.1	0.1
SW-22	2/15/2021	ORP (field) (field)	232		mV		
SW-22	2/15/2021	Dissolved Oxygen (field)		N	%		
SW-22	2/15/2021	Flow		N	CFS		

Lab qualifiers:

U - material was analyzed for but was not detected above the sample detection limit

B - Analyte concentrations detected at a value between the MDL and PQL. The associated value is estimated

L - Target analyte response was below the laboratory defined negative threhold

H - Analysis exceeded method hold time. pH is a field test with an immediate hold time

Q12021 sampling was performed to check for organics in the stream, which is why only downstream sampling was performed

Table U-11 Q2a 2021 Surface Water Sampling Results - Event #1

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-0	5/26/2021	Cation-Anion Balance			%		
SW-0	5/26/2021	TDS (calculated)			mg/L		
SW-0	5/26/2021	TDS (ratio - measured/calculated)					
SW-0	5/26/2021	Mercury, total (low level)	0.36	B	ng/L	0.3	1
SW-0	5/26/2021	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-0	5/26/2021	Aluminum, total recoverable		U	mg/L	0.005	0.015
SW-0	5/26/2021	Arsenic, dissolved		U	mg/L	0.0002	0.001
SW-0	5/26/2021	Arsenic, total recoverable		U	mg/L	0.0002	0.001
SW-0	5/26/2021	Cadmium, dissolved		U	mg/L	0.00005	0.00025
SW-0	5/26/2021	Calcium, dissolved		U	mg/L	0.1	0.5
SW-0	5/26/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-0	5/26/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-0	5/26/2021	Iron, total recoverable		U	mg/L	0.007	0.02
SW-0	5/26/2021	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-0	5/26/2021	Magnesium, dissolved		U	mg/L	0.2	1
SW-0	5/26/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-0	5/26/2021	Potassium, dissolved		U	mg/L	0.2	1
SW-0	5/26/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-0	5/26/2021	Sodium, dissolved		U	mg/L	0.2	1
SW-0	5/26/2021	Zinc, dissolved		U	mg/L	0.02	0.05
SW-0	5/26/2021	Bicarbonate as CaCO3		U	mg/L	2	20
SW-0	5/26/2021	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-0	5/26/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-0	5/26/2021	Chloride		U	mg/L	0.5	2
SW-0	5/26/2021	Fluoride		U	mg/L	0.15	0.35
SW-0	5/26/2021	Hardness as CaCO3 (dissolved)		U	mg/L	0.2	5
SW-0	5/26/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-0	5/26/2021	Nitrate/Nitrite as N		U	mg/L	0.02	0.1
SW-0	5/26/2021	Residue, Filterable (TDS) @180C		U	mg/L	20	40
SW-0	5/26/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-0	5/26/2021	Sulfate		U	mg/L	1	5
SW-0	5/26/2021	Sum of Anions		U	meq/L		
SW-0	5/26/2021	Sum of Cations		U	meq/L		
SW-0	5/26/2021	Total Alkalinity		U	mg/L	2	20
SW-0	5/25/2021	Dissolved Oxygen (field)		N	%		
SW-0	5/25/2021	Flow		N	CFS		
SW-0	5/25/2021	ORP (field) (field)		N	mV		
SW-0	5/25/2021	pH (field)	5.7		units	0.1	0.1
SW-0	5/25/2021	Specific Conductance (field)		N	uS/cm		
SW-0	5/25/2021	Water Temperature (field)		N	C		
SW-1	5/26/2021	Aluminum, dissolved	0.0308		mg/L	0.005	0.015

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-1	5/26/2021	Aluminum, total recoverable	0.183		mg/L	0.005	0.015
SW-1	5/26/2021	Arsenic, total recoverable	0.0018		mg/L	0.0002	0.001
SW-1	5/26/2021	Cadmium, dissolved	0.0022		mg/L	0.00005	0.00025
SW-1	5/26/2021	Calcium, dissolved	19.5		mg/L	0.1	0.5
SW-1	5/26/2021	Iron, total recoverable	0.143		mg/L	0.007	0.02
SW-1	5/26/2021	Lead, dissolved	0.00214		mg/L	0.0001	0.0005
SW-1	5/26/2021	Magnesium, dissolved	1.15		mg/L	0.2	1
SW-1	5/26/2021	Manganese, dissolved	0.189		mg/L	0.01	0.05
SW-1	5/26/2021	Sodium, dissolved	1.04		mg/L	0.2	1
SW-1	5/26/2021	Zinc, dissolved	0.693		mg/L	0.02	0.05
SW-1	5/26/2021	Bicarbonate as CaCO3	21.4		mg/L	2	20
SW-1	5/26/2021	Cation-Anion Balance	-4		%		
SW-1	5/26/2021	Hardness as CaCO3 (dissolved)	53		mg/L	0.2	5
SW-1	5/26/2021	Nitrate/Nitrite as N	0.324		mg/L	0.02	0.1
SW-1	5/26/2021	Sulfate	37.7		mg/L	1	5
SW-1	5/26/2021	Sum of Anions	1.3		meq/L		
SW-1	5/26/2021	Sum of Cations	1.2		meq/L		
SW-1	5/26/2021	TDS (calculated)	74.3		mg/L		
SW-1	5/26/2021	TDS (ratio - measured/calculated)	1.05				
SW-1	5/26/2021	Total Alkalinity	21.4		mg/L	2	20
SW-1	5/26/2021	Mercury, total (low level)	1.69		ng/L	0.3	1
SW-1	5/26/2021	Arsenic, dissolved	0.00088	B	mg/L	0.0002	0.001
SW-1	5/26/2021	Copper, dissolved	0.00134	B	mg/L	0.0008	0.002
SW-1	5/26/2021	Iron, dissolved	0.0103	B	mg/L	0.007	0.02
SW-1	5/26/2021	Carbon, dissolved organic (DOC)	1.1	B	mg/L	1	5
SW-1	5/26/2021	Chloride	0.74	B	mg/L	0.5	2
SW-1	5/26/2021	Fluoride	0.18	B	mg/L	0.15	0.35
SW-1	5/26/2021	Residue, Filterable (TDS) @180C	78	H	mg/L	20	40
SW-1	5/26/2021	Potassium, dissolved		U	mg/L	0.2	1
SW-1	5/26/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-1	5/26/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-1	5/26/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-1	5/26/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-1	5/26/2021	Dissolved Oxygen (field)	10.47		%		
SW-1	5/26/2021	Flow	5.73		CFS		
SW-1	5/26/2021	ORP (field) (field)	185		mV		
SW-1	5/26/2021	pH (field)	8.28		units	0.1	0.1
SW-1	5/26/2021	Specific Conductance (field)	286		uS/cm		
SW-1	5/26/2021	Water Temperature (field)	6.9		C		
SW-15	5/27/2021	Aluminum, total recoverable	0.13		mg/L	0.005	0.015
SW-15	5/27/2021	Arsenic, total recoverable	0.00177		mg/L	0.0002	0.001
SW-15	5/27/2021	Calcium, dissolved	15.7		mg/L	0.1	0.5

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-15	5/27/2021	Iron, total recoverable	0.136		mg/L	0.007	0.02
SW-15	5/27/2021	Magnesium, dissolved	1.41		mg/L	0.2	1
SW-15	5/27/2021	Mercury, total (low level)	1.59		ng/L	0.3	1
SW-15	5/27/2021	Sodium, dissolved	1.31		mg/L	0.2	1
SW-15	5/27/2021	Bicarbonate as CaCO3	23.9		mg/L	2	20
SW-15	5/27/2021	Cation-Anion Balance	-0.2		%		
SW-15	5/27/2021	Hardness as CaCO3 (dissolved)	45		mg/L	0.2	5
SW-15	5/27/2021	Nitrate/Nitrite as N	0.166		mg/L	0.02	0.1
SW-15	5/27/2021	Residue, Filterable (TDS) @180C	72		mg/L	20	40
SW-15	5/27/2021	Sulfate	22.8		mg/L	1	5
SW-15	5/27/2021	Sum of Anions	0.975		meq/L		
SW-15	5/27/2021	Sum of Cations	0.972		meq/L		
SW-15	5/27/2021	TDS (calculated)	56.9		mg/L		
SW-15	5/27/2021	TDS (ratio - measured/calculated)	1.27				
SW-15	5/27/2021	Total Alkalinity	23.9		mg/L	2	20
SW-15	5/27/2021	Aluminum, dissolved	0.0139	B	mg/L	0.005	0.015
SW-15	5/27/2021	Arsenic, dissolved	0.00089	B	mg/L	0.0002	0.001
SW-15	5/27/2021	Cadmium, dissolved	0.000106	B	mg/L	0.00005	0.00025
SW-15	5/27/2021	Iron, dissolved	0.0088	B	mg/L	0.007	0.02
SW-15	5/27/2021	Lead, dissolved	0.00021	B	mg/L	0.0001	0.0005
SW-15	5/27/2021	Manganese, dissolved	0.011	B	mg/L	0.01	0.05
SW-15	5/27/2021	Potassium, dissolved	0.38	B	mg/L	0.2	1
SW-15	5/27/2021	Zinc, dissolved	0.042	B	mg/L	0.02	0.05
SW-15	5/27/2021	Chloride	0.65	B	mg/L	0.5	2
SW-15	5/27/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-15	5/27/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-15	5/27/2021	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-15	5/27/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-15	5/27/2021	Fluoride		U	mg/L	0.15	0.35
SW-15	5/27/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-15	5/27/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-15	5/27/2021	Dissolved Oxygen (field)		N	%		
SW-15	5/27/2021	Flow	22.91		CFS		
SW-15	5/27/2021	ORP (field) (field)	157		mV		
SW-15	5/27/2021	pH (field)	8.25		units	0.1	0.1
SW-15	5/27/2021	Specific Conductance (field)	-777		uS/cm		
SW-15	5/27/2021	Water Temperature (field)	9.7		C		
SW-16	5/26/2021	Aluminum, dissolved	0.141		mg/L	0.005	0.015
SW-16	5/26/2021	Aluminum, total recoverable	0.24		mg/L	0.005	0.015
SW-16	5/26/2021	Arsenic, dissolved	0.00163		mg/L	0.0002	0.001
SW-16	5/26/2021	Arsenic, total recoverable	0.00182		mg/L	0.0002	0.001
SW-16	5/26/2021	Calcium, dissolved	15.6		mg/L	0.1	0.5

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-16	5/26/2021	Copper, dissolved	0.00485		mg/L	0.0008	0.002
SW-16	5/26/2021	Iron, dissolved	0.126		mg/L	0.007	0.02
SW-16	5/26/2021	Iron, total recoverable	0.204		mg/L	0.007	0.02
SW-16	5/26/2021	Lead, dissolved	0.00587		mg/L	0.0001	0.0005
SW-16	5/26/2021	Magnesium, dissolved	1.43		mg/L	0.2	1
SW-16	5/26/2021	Sodium, dissolved	1		mg/L	0.2	1
SW-16	5/26/2021	Zinc, dissolved	0.296		mg/L	0.02	0.05
SW-16	5/26/2021	Bicarbonate as CaCO3	22.1		mg/L	2	20
SW-16	5/26/2021	Cation-Anion Balance	-0.8		%		
SW-16	5/26/2021	Hardness as CaCO3 (dissolved)	45		mg/L	0.2	5
SW-16	5/26/2021	Nitrate/Nitrite as N	0.204		mg/L	0.02	0.1
SW-16	5/26/2021	Sulfate	23.9		mg/L	1	5
SW-16	5/26/2021	Sum of Anions	1		meq/L		
SW-16	5/26/2021	Sum of Cations	0.984		meq/L		
SW-16	5/26/2021	TDS (calculated)	56.9		mg/L		
SW-16	5/26/2021	TDS (ratio - measured/calculated)	0.98				
SW-16	5/26/2021	Total Alkalinity	22.1		mg/L	2	20
SW-16	5/26/2021	Mercury, total (low level)	2.19		ng/L	0.3	1
SW-16	5/26/2021	Cadmium, dissolved	0.000139	B	mg/L	0.00005	0.00025
SW-16	5/26/2021	Manganese, dissolved	0.038	B	mg/L	0.01	0.05
SW-16	5/26/2021	Potassium, dissolved	0.31	B	mg/L	0.2	1
SW-16	5/26/2021	Carbon, dissolved organic (DOC)	1.3	B	mg/L	1	5
SW-16	5/26/2021	Chloride	0.57	B	mg/L	0.5	2
SW-16	5/26/2021	Residue, Non-Filterable (TSS) @105C	6	B	mg/L	5	20
SW-16	5/26/2021	Residue, Filterable (TDS) @180C	56	H	mg/L	20	40
SW-16	5/26/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-16	5/26/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-16	5/26/2021	Fluoride		U	mg/L	0.15	0.35
SW-16	5/26/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-16	5/26/2021	Dissolved Oxygen (field)		N	%		
SW-16	5/26/2021	Flow	24.4		CFS		
SW-16	5/26/2021	ORP (field) (field)	168		mV		
SW-16	5/26/2021	pH (field)	8.16		units	0.1	0.1
SW-16	5/26/2021	Specific Conductance (field)	-279		uS/cm		
SW-16	5/26/2021	Water Temperature (field)	7.5		C		
SW-17	5/26/2021	Aluminum, dissolved	0.0174		mg/L	0.005	0.015
SW-17	5/26/2021	Calcium, dissolved	12.4		mg/L	0.1	0.5
SW-17	5/26/2021	Magnesium, dissolved	1.02		mg/L	0.2	1
SW-17	5/26/2021	Bicarbonate as CaCO3	20.7		mg/L	2	20
SW-17	5/26/2021	Cation-Anion Balance	-6.3		%		
SW-17	5/26/2021	Hardness as CaCO3 (dissolved)	35		mg/L	0.2	5
SW-17	5/26/2021	Nitrate/Nitrite as N	0.223		mg/L	0.02	0.1

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-17	5/26/2021	Sulfate	18.7		mg/L	1	5
SW-17	5/26/2021	Sum of Anions	0.822		meq/L		
SW-17	5/26/2021	Sum of Cations	0.725		meq/L		
SW-17	5/26/2021	TDS (calculated)	45.8		mg/L		
SW-17	5/26/2021	TDS (ratio - measured/calculated)	1				
SW-17	5/26/2021	Total Alkalinity	20.7		mg/L	2	20
SW-17	5/26/2021	Aluminum, total recoverable	0.155		mg/L	0.005	0.015
SW-17	5/26/2021	Iron, total recoverable	0.129		mg/L	0.007	0.02
SW-17	5/26/2021	Mercury, total (low level)	1.29		ng/L	0.3	1
SW-17	5/26/2021	Arsenic, dissolved	0.00037	B	mg/L	0.0002	0.001
SW-17	5/26/2021	Arsenic, total recoverable	0.00075	B	mg/L	0.0002	0.001
SW-17	5/26/2021	Iron, dissolved	0.0121	B	mg/L	0.007	0.02
SW-17	5/26/2021	Sodium, dissolved	0.43	B	mg/L	0.2	1
SW-17	5/26/2021	Carbon, dissolved organic (DOC)	1.3	B	mg/L	1	5
SW-17	5/26/2021	Chloride	0.56	B	mg/L	0.5	2
SW-17	5/26/2021	Residue, Non-Filterable (TSS) @105C	6	B	mg/L	5	20
SW-17	5/26/2021	Residue, Filterable (TDS) @180C	46	H	mg/L	20	40
SW-17	5/26/2021	Cadmium, dissolved		U	mg/L	0.00005	0.00025
SW-17	5/26/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-17	5/26/2021	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-17	5/26/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-17	5/26/2021	Potassium, dissolved		U	mg/L	0.2	1
SW-17	5/26/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-17	5/26/2021	Zinc, dissolved		U	mg/L	0.02	0.05
SW-17	5/26/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-17	5/26/2021	Fluoride		U	mg/L	0.15	0.35
SW-17	5/26/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-17	5/26/2021	Dissolved Oxygen (field)	76.7		%		
SW-17	5/26/2021	Flow	23		CFS		
SW-17	5/26/2021	ORP (field) (field)	172		mV		
SW-17	5/26/2021	pH (field)	8.15		units	0.1	0.1
SW-17	5/26/2021	Specific Conductance (field)	-19		uS/cm		
SW-17	5/26/2021	Water Temperature (field)	4.21		C		
SW-2	5/27/2021	Aluminum, total recoverable	0.105		mg/L	0.005	0.015
SW-2	5/27/2021	Arsenic, total recoverable	0.00151		mg/L	0.0002	0.001
SW-2	5/27/2021	Calcium, dissolved	17.1		mg/L	0.1	0.5
SW-2	5/27/2021	Iron, total recoverable	0.0938		mg/L	0.007	0.02
SW-2	5/27/2021	Magnesium, dissolved	1.56		mg/L	0.2	1
SW-2	5/27/2021	Mercury, total (low level)	1.52		ng/L	0.3	1
SW-2	5/27/2021	Sodium, dissolved	1.3		mg/L	0.2	1
SW-2	5/27/2021	Zinc, dissolved	0.051		mg/L	0.02	0.05
SW-2	5/27/2021	Bicarbonate as CaCO3	24.8		mg/L	2	20

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-2	5/27/2021	Cation-Anion Balance	0		%		
SW-2	5/27/2021	Hardness as CaCO3 (dissolved)	49		mg/L	0.2	5
SW-2	5/27/2021	Nitrate/Nitrite as N	0.194		mg/L	0.02	0.1
SW-2	5/27/2021	Residue, Filterable (TDS) @180C	80		mg/L	20	40
SW-2	5/27/2021	Sulfate	29.1		mg/L	1	5
SW-2	5/27/2021	Sum of Anions	1.1		meq/L		
SW-2	5/27/2021	Sum of Cations	1.1		meq/L		
SW-2	5/27/2021	TDS (calculated)	65.5		mg/L		
SW-2	5/27/2021	TDS (ratio - measured/calculated)	1.22				
SW-2	5/27/2021	Total Alkalinity	24.8		mg/L	2	20
SW-2	5/27/2021	Aluminum, dissolved	0.0139	B	mg/L	0.005	0.015
SW-2	5/27/2021	Arsenic, dissolved	0.00096	B	mg/L	0.0002	0.001
SW-2	5/27/2021	Cadmium, dissolved	0.000137	B	mg/L	0.00005	0.00025
SW-2	5/27/2021	Iron, dissolved	0.0079	B	mg/L	0.007	0.02
SW-2	5/27/2021	Lead, dissolved	0.00036	B	mg/L	0.0001	0.0005
SW-2	5/27/2021	Potassium, dissolved	0.34	B	mg/L	0.2	1
SW-2	5/27/2021	Carbon, dissolved organic (DOC)	1.1	B	mg/L	1	5
SW-2	5/27/2021	Chloride	0.7	B	mg/L	0.5	2
SW-2	5/27/2021	Fluoride	0.22	B	mg/L	0.15	0.35
SW-2	5/27/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-2	5/27/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-2	5/27/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-2	5/27/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-2	5/27/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-2	5/27/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-2	5/27/2021	Dissolved Oxygen (field)	88.1		%		
SW-2	5/27/2021	Flow	24.78		CFS		
SW-2	5/27/2021	ORP (field) (field)	146		mV		
SW-2	5/27/2021	pH (field)	8.18		units	0.1	0.1
SW-2	5/27/2021	Specific Conductance (field)	390		uS/cm		
SW-2	5/27/2021	Water Temperature (field)	11.1		C		
SW-21	5/26/2021	Aluminum, dissolved	0.0214		mg/L	0.005	0.015
SW-21	5/26/2021	Aluminum, total recoverable	0.298		mg/L	0.005	0.015
SW-21	5/26/2021	Arsenic, total recoverable	0.0022		mg/L	0.0002	0.001
SW-21	5/26/2021	Calcium, dissolved	19.4		mg/L	0.1	0.5
SW-21	5/26/2021	Iron, total recoverable	0.259		mg/L	0.007	0.02
SW-21	5/26/2021	Lead, dissolved	0.00066		mg/L	0.0001	0.0005
SW-21	5/26/2021	Magnesium, dissolved	1.51		mg/L	0.2	1
SW-21	5/26/2021	Sodium, dissolved	1.26		mg/L	0.2	1
SW-21	5/26/2021	Zinc, dissolved	0.094		mg/L	0.02	0.05
SW-21	5/26/2021	Bicarbonate as CaCO3	26.4		mg/L	2	20
SW-21	5/26/2021	Cation-Anion Balance	-4		%		

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-21	5/26/2021	Hardness as CaCO3 (dissolved)	55		mg/L	0.2	5
SW-21	5/26/2021	Nitrate/Nitrite as N	0.324		mg/L	0.02	0.1
SW-21	5/26/2021	Sulfate	33		mg/L	1	5
SW-21	5/26/2021	Sum of Anions	1.3		meq/L		
SW-21	5/26/2021	Sum of Cations	1.2		meq/L		
SW-21	5/26/2021	TDS (calculated)	72.8		mg/L		
SW-21	5/26/2021	TDS (ratio - measured/calculated)	1.1				
SW-21	5/26/2021	Total Alkalinity	26.4		mg/L	2	20
SW-21	5/26/2021	Mercury, total (low level)	2.99		ng/L	0.3	1
SW-21	5/26/2021	Arsenic, dissolved	0.00088	B	mg/L	0.0002	0.001
SW-21	5/26/2021	Cadmium, dissolved	0.000238	B	mg/L	0.00005	0.00025
SW-21	5/26/2021	Copper, dissolved	0.00101	B	mg/L	0.0008	0.002
SW-21	5/26/2021	Iron, dissolved	0.0121	B	mg/L	0.007	0.02
SW-21	5/26/2021	Manganese, dissolved	0.016	B	mg/L	0.01	0.05
SW-21	5/26/2021	Potassium, dissolved	0.31	B	mg/L	0.2	1
SW-21	5/26/2021	Carbon, dissolved organic (DOC)	1.2	B	mg/L	1	5
SW-21	5/26/2021	Chloride	1.07	B	mg/L	0.5	2
SW-21	5/26/2021	Residue, Non-Filterable (TSS) @105C	8	B	mg/L	5	20
SW-21	5/26/2021	Residue, Filterable (TDS) @180C	80	H	mg/L	20	40
SW-21	5/26/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-21	5/26/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-21	5/26/2021	Fluoride		U	mg/L	0.15	0.35
SW-21	5/26/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-21	5/26/2021	Dissolved Oxygen (field)	96.9		%		
SW-21	5/26/2021	Flow	44.01		CFS		
SW-21	5/26/2021	ORP (field) (field)	168		mV		
SW-21	5/26/2021	pH (field)	7.93		units	0.1	0.1
SW-21	5/26/2021	Specific Conductance (field)	-301		uS/cm		
SW-21	5/26/2021	Water Temperature (field)	8		C		
SW-3	5/26/2021	Aluminum, total recoverable	0.0285		mg/L	0.005	0.015
SW-3	5/26/2021	Arsenic, total recoverable	0.00104		mg/L	0.0002	0.001
SW-3	5/26/2021	Cadmium, dissolved	0.000282		mg/L	0.00005	0.00025
SW-3	5/26/2021	Calcium, dissolved	57.1		mg/L	0.1	0.5
SW-3	5/26/2021	Iron, total recoverable	0.0374		mg/L	0.007	0.02
SW-3	5/26/2021	Magnesium, dissolved	3.74		mg/L	0.2	1
SW-3	5/26/2021	Sodium, dissolved	5.47		mg/L	0.2	1
SW-3	5/26/2021	Zinc, dissolved	0.199		mg/L	0.02	0.05
SW-3	5/26/2021	Bicarbonate as CaCO3	35.3		mg/L	2	20
SW-3	5/26/2021	Cation-Anion Balance	-2.9		%		
SW-3	5/26/2021	Chloride	9.26		mg/L	0.5	2
SW-3	5/26/2021	Hardness as CaCO3 (dissolved)	158		mg/L	0.2	5
SW-3	5/26/2021	Nitrate/Nitrite as N	2.1		mg/L	0.02	0.1

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-3	5/26/2021	Sulfate	124		mg/L	5	25
SW-3	5/26/2021	Sum of Anions	3.6		meq/L		
SW-3	5/26/2021	Sum of Cations	3.4		meq/L		
SW-3	5/26/2021	TDS (calculated)	222		mg/L		
SW-3	5/26/2021	TDS (ratio - measured/calculated)	1.09				
SW-3	5/26/2021	Total Alkalinity	35.3		mg/L	2	20
SW-3	5/26/2021	Mercury, total (low level)	2.85		ng/L	0.3	1
SW-3	5/26/2021	Arsenic, dissolved	0.00066	B	mg/L	0.0002	0.001
SW-3	5/26/2021	Lead, dissolved	0.0002	B	mg/L	0.0001	0.0005
SW-3	5/26/2021	Potassium, dissolved	0.7	B	mg/L	0.2	1
SW-3	5/26/2021	Fluoride	0.19	B	mg/L	0.15	0.35
SW-3	5/26/2021	Residue, Filterable (TDS) @180C	242	H	mg/L	20	40
SW-3	5/26/2021	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-3	5/26/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-3	5/26/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-3	5/26/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-3	5/26/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-3	5/26/2021	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-3	5/26/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-3	5/26/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-3	5/26/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-3	5/26/2021	Dissolved Oxygen (field)		N	%		
SW-3	5/26/2021	Flow	3.11		CFS		
SW-3	5/26/2021	ORP (field) (field)	182		mV		
SW-3	5/26/2021	pH (field)	8.21		units	0.1	0.1
SW-3	5/26/2021	Specific Conductance (field)	13		uS/cm		
SW-3	5/26/2021	Water Temperature (field)	6.5		C		
SW-4	5/26/2021	Aluminum, dissolved	0.0182		mg/L	0.005	0.015
SW-4	5/26/2021	Aluminum, total recoverable	0.235		mg/L	0.005	0.015
SW-4	5/26/2021	Arsenic, total recoverable	0.0024		mg/L	0.0002	0.001
SW-4	5/26/2021	Cadmium, dissolved	0.00032		mg/L	0.00005	0.00025
SW-4	5/26/2021	Calcium, dissolved	19.9		mg/L	0.1	0.5
SW-4	5/26/2021	Iron, total recoverable	0.235		mg/L	0.007	0.02
SW-4	5/26/2021	Lead, dissolved	0.0005		mg/L	0.0001	0.0005
SW-4	5/26/2021	Magnesium, dissolved	1.61		mg/L	0.2	1
SW-4	5/26/2021	Sodium, dissolved	1.37		mg/L	0.2	1
SW-4	5/26/2021	Zinc, dissolved	0.124		mg/L	0.02	0.05
SW-4	5/26/2021	Bicarbonate as CaCO3	25		mg/L	2	20
SW-4	5/26/2021	Cation-Anion Balance	-4		%		
SW-4	5/26/2021	Hardness as CaCO3 (dissolved)	56		mg/L	0.2	5
SW-4	5/26/2021	Nitrate/Nitrite as N	0.338		mg/L	0.02	0.1
SW-4	5/26/2021	Sulfate	34.9		mg/L	5	25

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-4	5/26/2021	Sum of Anions	1.3		meq/L		
SW-4	5/26/2021	Sum of Cations	1.2		meq/L		
SW-4	5/26/2021	TDS (calculated)	74.7		mg/L		
SW-4	5/26/2021	TDS (ratio - measured/calculated)	1.07				
SW-4	5/26/2021	Total Alkalinity	25		mg/L	2	20
SW-4	5/26/2021	Mercury, total (low level)	2.95		ng/L	0.3	1
SW-4	5/26/2021	Arsenic, dissolved	0.00072	B	mg/L	0.0002	0.001
SW-4	5/26/2021	Copper, dissolved	0.0009	B	mg/L	0.0008	0.002
SW-4	5/26/2021	Iron, dissolved	0.0089	B	mg/L	0.007	0.02
SW-4	5/26/2021	Manganese, dissolved	0.022	B	mg/L	0.01	0.05
SW-4	5/26/2021	Potassium, dissolved	0.33	B	mg/L	0.2	1
SW-4	5/26/2021	Carbon, dissolved organic (DOC)	1.1	B	mg/L	1	5
SW-4	5/26/2021	Chloride	1.13	B	mg/L	0.5	2
SW-4	5/26/2021	Residue, Non-Filterable (TSS) @105C	5	B	mg/L	5	20
SW-4	5/26/2021	Residue, Filterable (TDS) @180C	80	H	mg/L	20	40
SW-4	5/26/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-4	5/26/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-4	5/26/2021	Fluoride		U	mg/L	0.15	0.35
SW-4	5/26/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-4	5/26/2021	Dissolved Oxygen (field)	87.9		%		
SW-4	5/26/2021	Flow	19.83		CFS		
SW-4	5/26/2021	ORP (field) (field)	130		mV		
SW-4	5/26/2021	pH (field)	8.18		units	0.1	0.1
SW-4	5/26/2021	Specific Conductance (field)	264		uS/cm		
SW-4	5/26/2021	Water Temperature (field)	5.3		C		
SW-99	5/26/2021	Aluminum, dissolved	0.019		mg/L	0.005	0.015
SW-99	5/26/2021	Aluminum, total recoverable	0.322		mg/L	0.005	0.015
SW-99	5/26/2021	Calcium, dissolved	12.4		mg/L	0.1	0.5
SW-99	5/26/2021	Iron, total recoverable	0.253		mg/L	0.007	0.02
SW-99	5/26/2021	Magnesium, dissolved	1.03		mg/L	0.2	1
SW-99	5/26/2021	Mercury, total (low level)	1.68		ng/L	0.3	1
SW-99	5/26/2021	Bicarbonate as CaCO3	20.3		mg/L	2	20
SW-99	5/26/2021	Cation-Anion Balance	-4.3		%		
SW-99	5/26/2021	Hardness as CaCO3 (dissolved)	35		mg/L	0.2	5
SW-99	5/26/2021	Nitrate/Nitrite as N	0.225		mg/L	0.02	0.1
SW-99	5/26/2021	Sulfate	18.4		mg/L	1	5
SW-99	5/26/2021	Sum of Anions	0.792		meq/L		
SW-99	5/26/2021	Sum of Cations	0.726		meq/L		
SW-99	5/26/2021	TDS (calculated)	44.7		mg/L		
SW-99	5/26/2021	TDS (ratio - measured/calculated)	1.16				
SW-99	5/26/2021	Total Alkalinity	20.3		mg/L	2	20
SW-99	5/26/2021	Arsenic, dissolved	0.0004	B	mg/L	0.0002	0.001

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-99	5/26/2021	Arsenic, total recoverable	0.00099	B	mg/L	0.0002	0.001
SW-99	5/26/2021	Iron, dissolved	0.0112	B	mg/L	0.007	0.02
SW-99	5/26/2021	Lead, dissolved	0.00011	B	mg/L	0.0001	0.0005
SW-99	5/26/2021	Sodium, dissolved	0.42	B	mg/L	0.2	1
SW-99	5/26/2021	Carbon, dissolved organic (DOC)	1.2	B	mg/L	1	5
SW-99	5/26/2021	Residue, Non-Filterable (TSS) @105C	9	B	mg/L	5	20
SW-99	5/26/2021	Residue, Filterable (TDS) @180C	52	H	mg/L	20	40
SW-99	5/26/2021	Cadmium, dissolved		U	mg/L	0.00005	0.00025
SW-99	5/26/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-99	5/26/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-99	5/26/2021	Potassium, dissolved		U	mg/L	0.2	1
SW-99	5/26/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-99	5/26/2021	Zinc, dissolved		U	mg/L	0.02	0.05
SW-99	5/26/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-99	5/26/2021	Chloride		U	mg/L	0.5	2
SW-99	5/26/2021	Fluoride		U	mg/L	0.15	0.35
SW-99	5/26/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-99	5/26/2021	Dissolved Oxygen (field)	76.7		%		
SW-99	5/26/2021	Flow	23		CFS		
SW-99	5/26/2021	ORP (field) (field)	172		mV		
SW-99	5/26/2021	pH (field)	8.15		units	0.1	0.1
SW-99	5/26/2021	Specific Conductance (field)		N	uS/cm		
SW-99	5/26/2021	Water Temperature (field)	4.21		C		

Lab qualifiers:

U - material was analyzed for but was not detected above the sample detection limit

B - Analyte concentrations detected at a value between the MDL and PQL. The associated value is estimated

L - Target analyte response was below the laboratory defined negative threhold

H - Analysis exceeded method hold time. pH is a field test with an immediate hold time

Table U-11 Q2 2021 Surface Water Sampling Results - Event #2

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-0	6/28/2021	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-0	6/28/2021	Aluminum, total recoverable		U	mg/L	0.005	0.015
SW-0	6/28/2021	Arsenic, dissolved		U	mg/L	0.0002	0.001
SW-0	6/28/2021	Arsenic, total recoverable		U	mg/L	0.0002	0.001
SW-0	6/28/2021	Cadmium, dissolved		U	mg/L	5E-05	0.00025
SW-0	6/28/2021	Calcium, dissolved	0.13	B	mg/L	0.1	0.5
SW-0	6/28/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-0	6/28/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-0	6/28/2021	Iron, total recoverable		U	mg/L	0.007	0.02
SW-0	6/28/2021	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-0	6/28/2021	Magnesium, dissolved		U	mg/L	0.2	1
SW-0	6/28/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-0	6/28/2021	Mercury, total		U	ng/L	0.3	1
SW-0	6/28/2021	Potassium, dissolved		U	mg/L	0.2	1
SW-0	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-0	6/28/2021	Sodium, dissolved		U	mg/L	0.2	1
SW-0	6/28/2021	Zinc, dissolved		U	mg/L	0.02	0.05
SW-0	6/28/2021	Bicarbonate as CaCO3		U	mg/L	2	20
SW-0	6/28/2021	Carbon, dissolved organic (DOC)	1.1	B	mg/L	1	5
SW-0	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-0	6/28/2021	Cation-Anion Balance			%		
SW-0	6/28/2021	Chloride		U	mg/L	0.5	2
SW-0	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-0	6/28/2021	Hardness as CaCO3 (dissolved)	0.325	B	mg/L	0.2	5
SW-0	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-0	6/28/2021	Nitrate/Nitrite as N		U	mg/L	0.02	0.1
SW-0	6/28/2021	Residue, Filterable (TDS) @180C		U	mg/L	20	40
SW-0	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-0	6/28/2021	Sulfate		U	mg/L	1	5
SW-0	6/28/2021	Sum of Anions		U	meq/L		
SW-0	6/28/2021	Sum of Cations		U	meq/L		
SW-0	6/28/2021	TDS (calculated)	0.13		mg/L		
SW-0	6/28/2021	TDS (ratio - measured/calculated)					
SW-0	6/28/2021	Total Alkalinity		U	mg/L	2	20
SW-0	6/28/2021	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-0	6/28/2021	Aluminum, total recoverable		U	mg/L	0.005	0.015
SW-0	6/28/2021	Arsenic, dissolved		U	mg/L	0.0002	0.001
SW-0	6/28/2021	Arsenic, total recoverable		U	mg/L	0.0002	0.001
SW-0	6/28/2021	Cadmium, dissolved		U	mg/L	5E-05	0.00025
SW-0	6/28/2021	Calcium, dissolved	0.13	B	mg/L	0.1	0.5
SW-0	6/28/2021	Copper, dissolved		U	mg/L	0.0008	0.002

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-0	6/28/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-0	6/28/2021	Iron, total recoverable		U	mg/L	0.007	0.02
SW-0	6/28/2021	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-0	6/28/2021	Magnesium, dissolved		U	mg/L	0.2	1
SW-0	6/28/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-0	6/28/2021	Mercury, total		U	ng/L	0.3	1
SW-0	6/28/2021	Potassium, dissolved		U	mg/L	0.2	1
SW-0	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-0	6/28/2021	Sodium, dissolved		U	mg/L	0.2	1
SW-0	6/28/2021	Zinc, dissolved		U	mg/L	0.02	0.05
SW-0	6/28/2021	Bicarbonate as CaCO3		U	mg/L	2	20
SW-0	6/28/2021	Carbon, dissolved organic (DOC)	1.1	B	mg/L	1	5
SW-0	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-0	6/28/2021	Cation-Anion Balance			%		
SW-0	6/28/2021	Chloride		U	mg/L	0.5	2
SW-0	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-0	6/28/2021	Hardness as CaCO3 (dissolved)	0.325	B	mg/L	0.2	5
SW-0	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-0	6/28/2021	Nitrate/Nitrite as N		U	mg/L	0.02	0.1
SW-0	6/28/2021	Residue, Filterable (TDS) @180C		U	mg/L	20	40
SW-0	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-0	6/28/2021	Sulfate		U	mg/L	1	5
SW-0	6/28/2021	Sum of Anions		U	meq/L		
SW-0	6/28/2021	Sum of Cations		U	meq/L		
SW-0	6/28/2021	TDS (calculated)	0.13		mg/L		
SW-0	6/28/2021	TDS (ratio - measured/calculated)					
SW-0	6/28/2021	Total Alkalinity		U	mg/L	2	20
SW-0	6/28/2021	Dissolved Oxygen (field)	9		%		
SW-0	6/28/2021	Flow		N	CFS		
SW-0	6/28/2021	ORP (field) (field)	227		mV		
SW-0	6/28/2021	pH (field)		N	units	0.1	0.1
SW-0	6/28/2021	Specific Conductance (field)	3		uS/cm		
SW-0	6/28/2021	Water Temperature (field)	16.3		C		
SW-1	6/28/2021	Aluminum, dissolved	0.009	B	mg/L	0.005	0.015
SW-1	6/28/2021	Aluminum, total recoverable	0.0358		mg/L	0.005	0.015
SW-1	6/28/2021	Arsenic, dissolved	0.00089	B	mg/L	0.0002	0.001
SW-1	6/28/2021	Arsenic, total recoverable	0.00176		mg/L	0.0002	0.001
SW-1	6/28/2021	Cadmium, dissolved	0.00051		mg/L	5E-05	0.00025
SW-1	6/28/2021	Calcium, dissolved	18.7		mg/L	0.1	0.5
SW-1	6/28/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-1	6/28/2021	Iron, dissolved	0.0124	B	mg/L	0.007	0.02
SW-1	6/28/2021	Iron, total recoverable	0.109		mg/L	0.007	0.02

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-1	6/28/2021	Lead, dissolved	0.00012	B	mg/L	0.0001	0.0005
SW-1	6/28/2021	Magnesium, dissolved	0.89	B	mg/L	0.2	1
SW-1	6/28/2021	Manganese, dissolved	0.225		mg/L	0.01	0.05
SW-1	6/28/2021	Mercury, total	0.69	B	ng/L	0.3	1
SW-1	6/28/2021	Potassium, dissolved	0.24	B	mg/L	0.2	1
SW-1	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-1	6/28/2021	Sodium, dissolved	1.55		mg/L	0.2	1
SW-1	6/28/2021	Zinc, dissolved	0.175		mg/L	0.02	0.05
SW-1	6/28/2021	Bicarbonate as CaCO3	26.2		mg/L	2	20
SW-1	6/28/2021	Carbon, dissolved organic (DOC)	1.2	B	mg/L	1	5
SW-1	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-1	6/28/2021	Cation-Anion Balance	-4.3		%		
SW-1	6/28/2021	Chloride		U	mg/L	0.5	2
SW-1	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-1	6/28/2021	Hardness as CaCO3 (dissolved)	50		mg/L	0.2	5
SW-1	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-1	6/28/2021	Nitrate/Nitrite as N	0.189		mg/L	0.02	0.1
SW-1	6/28/2021	Residue, Filterable (TDS) @180C	84		mg/L	20	40
SW-1	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-1	6/28/2021	Sulfate	32.2		mg/L	1	5
SW-1	6/28/2021	Sum of Anions	1.2		meq/L		
SW-1	6/28/2021	Sum of Cations	1.1		meq/L		
SW-1	6/28/2021	TDS (calculated)	70		mg/L		
SW-1	6/28/2021	TDS (ratio - measured/calculated)	1.2				
SW-1	6/28/2021	Total Alkalinity	26.2		mg/L	2	20
SW-1	6/28/2021	Aluminum, dissolved	0.009	B	mg/L	0.005	0.015
SW-1	6/28/2021	Aluminum, total recoverable	0.0358		mg/L	0.005	0.015
SW-1	6/28/2021	Arsenic, dissolved	0.00089	B	mg/L	0.0002	0.001
SW-1	6/28/2021	Arsenic, total recoverable	0.00176		mg/L	0.0002	0.001
SW-1	6/28/2021	Cadmium, dissolved	0.00051		mg/L	5E-05	0.00025
SW-1	6/28/2021	Calcium, dissolved	18.7		mg/L	0.1	0.5
SW-1	6/28/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-1	6/28/2021	Iron, dissolved	0.0124	B	mg/L	0.007	0.02
SW-1	6/28/2021	Iron, total recoverable	0.109		mg/L	0.007	0.02
SW-1	6/28/2021	Lead, dissolved	0.00012	B	mg/L	0.0001	0.0005
SW-1	6/28/2021	Magnesium, dissolved	0.89	B	mg/L	0.2	1
SW-1	6/28/2021	Manganese, dissolved	0.225		mg/L	0.01	0.05
SW-1	6/28/2021	Mercury, total	0.69	B	ng/L	0.3	1
SW-1	6/28/2021	Potassium, dissolved	0.24	B	mg/L	0.2	1
SW-1	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-1	6/28/2021	Sodium, dissolved	1.55		mg/L	0.2	1

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-1	6/28/2021	Zinc, dissolved	0.175		mg/L	0.02	0.05
SW-1	6/28/2021	Bicarbonate as CaCO3	26.2		mg/L	2	20
SW-1	6/28/2021	Carbon, dissolved organic (DOC)	1.2	B	mg/L	1	5
SW-1	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-1	6/28/2021	Cation-Anion Balance	-4.3		%		
SW-1	6/28/2021	Chloride		U	mg/L	0.5	2
SW-1	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-1	6/28/2021	Hardness as CaCO3 (dissolved)	50		mg/L	0.2	5
SW-1	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-1	6/28/2021	Nitrate/Nitrite as N	0.189		mg/L	0.02	0.1
SW-1	6/28/2021	Residue, Filterable (TDS) @180C	84		mg/L	20	40
SW-1	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-1	6/28/2021	Sulfate	32.2		mg/L	1	5
SW-1	6/28/2021	Sum of Anions	1.2		meq/L		
SW-1	6/28/2021	Sum of Cations	1.1		meq/L		
SW-1	6/28/2021	TDS (calculated)	70		mg/L		
SW-1	6/28/2021	TDS (ratio - measured/calculated)	1.2				
SW-1	6/28/2021	Total Alkalinity	26.2		mg/L	2	20
SW-1	6/28/2021	Dissolved Oxygen (field)	59.6		%		
SW-1	6/28/2021	Flow	2.03		CFS		
SW-1	6/28/2021	ORP (field) (field)	230		mV		
SW-1	6/28/2021	pH (field)	8.69		units	0.1	0.1
SW-1	6/28/2021	Specific Conductance (field)		N	uS/cm		
SW-1	6/28/2021	Water Temperature (field)	7.8		C		
SW-15	6/28/2021	Aluminum, dissolved	0.0147	B	mg/L	0.005	0.015
SW-15	6/28/2021	Aluminum, total recoverable	0.125		mg/L	0.005	0.015
SW-15	6/28/2021	Arsenic, dissolved	0.00042	B	mg/L	0.0002	0.001
SW-15	6/28/2021	Arsenic, total recoverable	0.00386		mg/L	0.0002	0.001
SW-15	6/28/2021	Cadmium, dissolved	0.00074		mg/L	5E-05	0.00025
SW-15	6/28/2021	Calcium, dissolved	16.1		mg/L	0.1	0.5
SW-15	6/28/2021	Copper, dissolved	0.0017	B	mg/L	0.0008	0.002
SW-15	6/28/2021	Iron, dissolved	0.0096	B	mg/L	0.007	0.02
SW-15	6/28/2021	Iron, total recoverable	0.231		mg/L	0.007	0.02
SW-15	6/28/2021	Lead, dissolved	0.00032	B	mg/L	0.0001	0.0005
SW-15	6/28/2021	Magnesium, dissolved	1.5		mg/L	0.2	1
SW-15	6/28/2021	Manganese, dissolved	0.405		mg/L	0.01	0.05
SW-15	6/28/2021	Mercury, total	1.56		ng/L	0.3	1
SW-15	6/28/2021	Potassium, dissolved	0.36	B	mg/L	0.2	1
SW-15	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-15	6/28/2021	Sodium, dissolved	1.09		mg/L	0.2	1
SW-15	6/28/2021	Zinc, dissolved	0.157		mg/L	0.02	0.05

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-15	6/28/2021	Bicarbonate as CaCO3	21.5		mg/L	2	20
SW-15	6/28/2021	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-15	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-15	6/28/2021	Cation-Anion Balance	-4.8		%		
SW-15	6/28/2021	Chloride		U	mg/L	0.5	2
SW-15	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-15	6/28/2021	Hardness as CaCO3 (dissolved)	46		mg/L	0.2	5
SW-15	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-15	6/28/2021	Nitrate/Nitrite as N	0.128		mg/L	0.02	0.1
SW-15	6/28/2021	Residue, Filterable (TDS) @180C	70		mg/L	20	40
SW-15	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-15	6/28/2021	Sulfate	32.6		mg/L	1	5
SW-15	6/28/2021	Sum of Anions	1.1		meq/L		
SW-15	6/28/2021	Sum of Cations	1		meq/L		
SW-15	6/28/2021	TDS (calculated)	65.4		mg/L		
SW-15	6/28/2021	TDS (ratio - measured/calculated)	1.07				
SW-15	6/28/2021	Total Alkalinity	21.5		mg/L	2	20
SW-15	6/28/2021	Aluminum, dissolved	0.0147	B	mg/L	0.005	0.015
SW-15	6/28/2021	Aluminum, total recoverable	0.125		mg/L	0.005	0.015
SW-15	6/28/2021	Arsenic, dissolved	0.00042	B	mg/L	0.0002	0.001
SW-15	6/28/2021	Arsenic, total recoverable	0.00386		mg/L	0.0002	0.001
SW-15	6/28/2021	Cadmium, dissolved	0.00074		mg/L	5E-05	0.00025
SW-15	6/28/2021	Calcium, dissolved	16.1		mg/L	0.1	0.5
SW-15	6/28/2021	Copper, dissolved	0.0017	B	mg/L	0.0008	0.002
SW-15	6/28/2021	Iron, dissolved	0.0096	B	mg/L	0.007	0.02
SW-15	6/28/2021	Iron, total recoverable	0.231		mg/L	0.007	0.02
SW-15	6/28/2021	Lead, dissolved	0.00032	B	mg/L	0.0001	0.0005
SW-15	6/28/2021	Magnesium, dissolved	1.5		mg/L	0.2	1
SW-15	6/28/2021	Manganese, dissolved	0.405		mg/L	0.01	0.05
SW-15	6/28/2021	Mercury, total	1.56		ng/L	0.3	1
SW-15	6/28/2021	Potassium, dissolved	0.36	B	mg/L	0.2	1
SW-15	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-15	6/28/2021	Sodium, dissolved	1.09		mg/L	0.2	1
SW-15	6/28/2021	Zinc, dissolved	0.157		mg/L	0.02	0.05
SW-15	6/28/2021	Bicarbonate as CaCO3	21.5		mg/L	2	20
SW-15	6/28/2021	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-15	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-15	6/28/2021	Cation-Anion Balance	-4.8		%		
SW-15	6/28/2021	Chloride		U	mg/L	0.5	2
SW-15	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-15	6/28/2021	Hardness as CaCO3 (dissolved)	46		mg/L	0.2	5

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-15	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-15	6/28/2021	Nitrate/Nitrite as N	0.128		mg/L	0.02	0.1
SW-15	6/28/2021	Residue, Filterable (TDS) @180C	70		mg/L	20	40
SW-15	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-15	6/28/2021	Sulfate	32.6		mg/L	1	5
SW-15	6/28/2021	Sum of Anions	1.1		meq/L		
SW-15	6/28/2021	Sum of Cations	1		meq/L		
SW-15	6/28/2021	TDS (calculated)	65.4		mg/L		
SW-15	6/28/2021	TDS (ratio - measured/calculated)	1.07				
SW-15	6/28/2021	Total Alkalinity	21.5		mg/L	2	20
SW-15	6/28/2021	Dissolved Oxygen (field)	64.4		%		
SW-15	6/28/2021	Flow	0		CFS		
SW-15	6/28/2021	ORP (field) (field)	257		mV		
SW-15	6/28/2021	pH (field)	8.56		units	0.1	0.1
SW-15	6/28/2021	Specific Conductance (field)		N	uS/cm		
SW-15	6/28/2021	Water Temperature (field)	6.2		C		
SW-16	6/28/2021	Aluminum, dissolved	0.0083	B	mg/L	0.005	0.015
SW-16	6/28/2021	Aluminum, total recoverable	0.0747		mg/L	0.005	0.015
SW-16	6/28/2021	Arsenic, dissolved	0.00039	B	mg/L	0.0002	0.001
SW-16	6/28/2021	Arsenic, total recoverable	0.00283		mg/L	0.0002	0.001
SW-16	6/28/2021	Cadmium, dissolved	0.0005		mg/L	5E-05	0.00025
SW-16	6/28/2021	Calcium, dissolved	15.8		mg/L	0.1	0.5
SW-16	6/28/2021	Copper, dissolved	0.0009	B	mg/L	0.0008	0.002
SW-16	6/28/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-16	6/28/2021	Iron, total recoverable	0.152		mg/L	0.007	0.02
SW-16	6/28/2021	Lead, dissolved	0.0002	B	mg/L	0.0001	0.0005
SW-16	6/28/2021	Magnesium, dissolved	1.52		mg/L	0.2	1
SW-16	6/28/2021	Manganese, dissolved	0.265		mg/L	0.01	0.05
SW-16	6/28/2021	Mercury, total	0.65	B	ng/L	0.3	1
SW-16	6/28/2021	Potassium, dissolved	0.24	B	mg/L	0.2	1
SW-16	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-16	6/28/2021	Sodium, dissolved	1.03		mg/L	0.2	1
SW-16	6/28/2021	Zinc, dissolved	0.105		mg/L	0.02	0.05
SW-16	6/28/2021	Bicarbonate as CaCO3	21.3		mg/L	2	20
SW-16	6/28/2021	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-16	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-16	6/28/2021	Cation-Anion Balance	-4.8		%		
SW-16	6/28/2021	Chloride		U	mg/L	0.5	2
SW-16	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-16	6/28/2021	Hardness as CaCO3 (dissolved)	46		mg/L	0.2	5
SW-16	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-16	6/28/2021	Nitrate/Nitrite as N	0.141		mg/L	0.02	0.1
SW-16	6/28/2021	Residue, Filterable (TDS) @180C	72		mg/L	20	40
SW-16	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-16	6/28/2021	Sulfate	31.5		mg/L	1	5
SW-16	6/28/2021	Sum of Anions	1.1		meq/L		
SW-16	6/28/2021	Sum of Cations	1		meq/L		
SW-16	6/28/2021	TDS (calculated)	63.5		mg/L		
SW-16	6/28/2021	TDS (ratio - measured/calculated)	1.13				
SW-16	6/28/2021	Total Alkalinity	21.3		mg/L	2	20
SW-16	6/28/2021	Aluminum, dissolved	0.0083	B	mg/L	0.005	0.015
SW-16	6/28/2021	Aluminum, total recoverable	0.0747		mg/L	0.005	0.015
SW-16	6/28/2021	Arsenic, dissolved	0.00039	B	mg/L	0.0002	0.001
SW-16	6/28/2021	Arsenic, total recoverable	0.00283		mg/L	0.0002	0.001
SW-16	6/28/2021	Cadmium, dissolved	0.0005		mg/L	5E-05	0.00025
SW-16	6/28/2021	Calcium, dissolved	15.8		mg/L	0.1	0.5
SW-16	6/28/2021	Copper, dissolved	0.0009	B	mg/L	0.0008	0.002
SW-16	6/28/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-16	6/28/2021	Iron, total recoverable	0.152		mg/L	0.007	0.02
SW-16	6/28/2021	Lead, dissolved	0.0002	B	mg/L	0.0001	0.0005
SW-16	6/28/2021	Magnesium, dissolved	1.52		mg/L	0.2	1
SW-16	6/28/2021	Manganese, dissolved	0.265		mg/L	0.01	0.05
SW-16	6/28/2021	Mercury, total	0.65	B	ng/L	0.3	1
SW-16	6/28/2021	Potassium, dissolved	0.24	B	mg/L	0.2	1
SW-16	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-16	6/28/2021	Sodium, dissolved	1.03		mg/L	0.2	1
SW-16	6/28/2021	Zinc, dissolved	0.105		mg/L	0.02	0.05
SW-16	6/28/2021	Bicarbonate as CaCO3	21.3		mg/L	2	20
SW-16	6/28/2021	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-16	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-16	6/28/2021	Cation-Anion Balance	-4.8		%		
SW-16	6/28/2021	Chloride		U	mg/L	0.5	2
SW-16	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-16	6/28/2021	Hardness as CaCO3 (dissolved)	46		mg/L	0.2	5
SW-16	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-16	6/28/2021	Nitrate/Nitrite as N	0.141		mg/L	0.02	0.1
SW-16	6/28/2021	Residue, Filterable (TDS) @180C	72		mg/L	20	40
SW-16	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-16	6/28/2021	Sulfate	31.5		mg/L	1	5
SW-16	6/28/2021	Sum of Anions	1.1		meq/L		
SW-16	6/28/2021	Sum of Cations	1		meq/L		

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-16	6/28/2021	TDS (calculated)	63.5		mg/L		
SW-16	6/28/2021	TDS (ratio - measured/calculated)	1.13				
SW-16	6/28/2021	Total Alkalinity	21.3		mg/L	2	20
SW-16	6/28/2021	Dissolved Oxygen (field)	67.8		%		
SW-16	6/28/2021	Flow	22.068		CFS		
SW-16	6/28/2021	ORP (field) (field)	259		mV		
SW-16	6/28/2021	pH (field)	8.48		units	0.1	0.1
SW-16	6/28/2021	Specific Conductance (field)	42		uS/cm		
SW-16	6/28/2021	Water Temperature (field)	4.8		C		
SW-17	6/28/2021	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-17	6/28/2021	Aluminum, total recoverable	0.0291		mg/L	0.005	0.015
SW-17	6/28/2021	Arsenic, dissolved	0.00035	B	mg/L	0.0002	0.001
SW-17	6/28/2021	Arsenic, total recoverable	0.00046	B	mg/L	0.0002	0.001
SW-17	6/28/2021	Cadmium, dissolved		U	mg/L	5E-05	0.00025
SW-17	6/28/2021	Calcium, dissolved	15.1		mg/L	0.1	0.5
SW-17	6/28/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-17	6/28/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-17	6/28/2021	Iron, total recoverable	0.0273	B	mg/L	0.014	0.04
SW-17	6/28/2021	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-17	6/28/2021	Magnesium, dissolved	1.5		mg/L	0.2	1
SW-17	6/28/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-17	6/28/2021	Mercury, total	4.52		ng/L	0.3	1
SW-17	6/28/2021	Potassium, dissolved		U	mg/L	0.2	1
SW-17	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-17	6/28/2021	Sodium, dissolved	0.74	B	mg/L	0.2	1
SW-17	6/28/2021	Zinc, dissolved		U	mg/L	0.02	0.05
SW-17	6/28/2021	Bicarbonate as CaCO3	20.3		mg/L	2	20
SW-17	6/28/2021	Carbon, dissolved organic (DOC)	1.2	B	mg/L	1	5
SW-17	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-17	6/28/2021	Cation-Anion Balance	-4.7		%		
SW-17	6/28/2021	Chloride		U	mg/L	0.5	2
SW-17	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-17	6/28/2021	Hardness as CaCO3 (dissolved)	44		mg/L	0.2	5
SW-17	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-17	6/28/2021	Nitrate/Nitrite as N	0.157		mg/L	0.02	0.1
SW-17	6/28/2021	Residue, Filterable (TDS) @180C	64		mg/L	20	40
SW-17	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-17	6/28/2021	Sulfate	28.3		mg/L	1	5
SW-17	6/28/2021	Sum of Anions	1		meq/L		
SW-17	6/28/2021	Sum of Cations	0.911		meq/L		
SW-17	6/28/2021	TDS (calculated)	58		mg/L		

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-17	6/28/2021	TDS (ratio - measured/calculated)	1.1				
SW-17	6/28/2021	Total Alkalinity	20.3		mg/L	2	20
SW-17	6/28/2021	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-17	6/28/2021	Aluminum, total recoverable	0.0291		mg/L	0.005	0.015
SW-17	6/28/2021	Arsenic, dissolved	0.00035	B	mg/L	0.0002	0.001
SW-17	6/28/2021	Arsenic, total recoverable	0.00046	B	mg/L	0.0002	0.001
SW-17	6/28/2021	Cadmium, dissolved		U	mg/L	5E-05	0.00025
SW-17	6/28/2021	Calcium, dissolved	15.1		mg/L	0.1	0.5
SW-17	6/28/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-17	6/28/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-17	6/28/2021	Iron, total recoverable	0.0273	B	mg/L	0.014	0.04
SW-17	6/28/2021	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-17	6/28/2021	Magnesium, dissolved	1.5		mg/L	0.2	1
SW-17	6/28/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-17	6/28/2021	Mercury, total	4.52		ng/L	0.3	1
SW-17	6/28/2021	Potassium, dissolved		U	mg/L	0.2	1
SW-17	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-17	6/28/2021	Sodium, dissolved	0.74	B	mg/L	0.2	1
SW-17	6/28/2021	Zinc, dissolved		U	mg/L	0.02	0.05
SW-17	6/28/2021	Bicarbonate as CaCO3	20.3		mg/L	2	20
SW-17	6/28/2021	Carbon, dissolved organic (DOC)	1.2	B	mg/L	1	5
SW-17	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-17	6/28/2021	Cation-Anion Balance	-4.7		%		
SW-17	6/28/2021	Chloride		U	mg/L	0.5	2
SW-17	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-17	6/28/2021	Hardness as CaCO3 (dissolved)	44		mg/L	0.2	5
SW-17	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-17	6/28/2021	Nitrate/Nitrite as N	0.157		mg/L	0.02	0.1
SW-17	6/28/2021	Residue, Filterable (TDS) @180C	64		mg/L	20	40
SW-17	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-17	6/28/2021	Sulfate	28.3		mg/L	1	5
SW-17	6/28/2021	Sum of Anions	1		meq/L		
SW-17	6/28/2021	Sum of Cations	0.911		meq/L		
SW-17	6/28/2021	TDS (calculated)	58		mg/L		
SW-17	6/28/2021	TDS (ratio - measured/calculated)	1.1				
SW-17	6/28/2021	Total Alkalinity	20.3		mg/L	2	20
SW-17	6/28/2021	Dissolved Oxygen (field)	97.4		%		
SW-17	6/28/2021	Flow	11.28		CFS		
SW-17	6/28/2021	ORP (field) (field)	221		mV		
SW-17	6/28/2021	pH (field)	8.47		units	0.1	0.1

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-17	6/28/2021	Specific Conductance (field)		N	uS/cm		
SW-17	6/28/2021	Water Temperature (field)	4.7		C		
SW-2	6/28/2021	Aluminum, dissolved	0.013	B	mg/L	0.005	0.015
SW-2	6/28/2021	Aluminum, total recoverable	0.12		mg/L	0.005	0.015
SW-2	6/28/2021	Arsenic, dissolved	0.00046	B	mg/L	0.0002	0.001
SW-2	6/28/2021	Arsenic, total recoverable	0.0034		mg/L	0.0002	0.001
SW-2	6/28/2021	Cadmium, dissolved	0.00073		mg/L	5E-05	0.00025
SW-2	6/28/2021	Calcium, dissolved	17.1		mg/L	0.1	0.5
SW-2	6/28/2021	Copper, dissolved	0.00185	B	mg/L	0.0008	0.002
SW-2	6/28/2021	Iron, dissolved	0.0094	B	mg/L	0.007	0.02
SW-2	6/28/2021	Iron, total recoverable	0.216		mg/L	0.007	0.02
SW-2	6/28/2021	Lead, dissolved	0.0003	B	mg/L	0.0001	0.0005
SW-2	6/28/2021	Magnesium, dissolved	1.52		mg/L	0.2	1
SW-2	6/28/2021	Manganese, dissolved	0.356		mg/L	0.01	0.05
SW-2	6/28/2021	Mercury, total	0.86	B	ng/L	0.3	1
SW-2	6/28/2021	Potassium, dissolved	0.27	B	mg/L	0.2	1
SW-2	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-2	6/28/2021	Sodium, dissolved	1.2		mg/L	0.2	1
SW-2	6/28/2021	Zinc, dissolved	0.166		mg/L	0.02	0.05
SW-2	6/28/2021	Bicarbonate as CaCO3	22		mg/L	2	20
SW-2	6/28/2021	Carbon, dissolved organic (DOC)	1.1	B	mg/L	1	5
SW-2	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-2	6/28/2021	Cation-Anion Balance	-4.3		%		
SW-2	6/28/2021	Chloride		U	mg/L	0.5	2
SW-2	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-2	6/28/2021	Hardness as CaCO3 (dissolved)	49		mg/L	0.2	5
SW-2	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-2	6/28/2021	Nitrate/Nitrite as N	0.137		mg/L	0.02	0.1
SW-2	6/28/2021	Residue, Filterable (TDS) @180C	76		mg/L	20	40
SW-2	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-2	6/28/2021	Sulfate	33.6		mg/L	1	5
SW-2	6/28/2021	Sum of Anions	1.2		meq/L		
SW-2	6/28/2021	Sum of Cations	1.1		meq/L		
SW-2	6/28/2021	TDS (calculated)	67.7		mg/L		
SW-2	6/28/2021	TDS (ratio - measured/calculated)	1.12				
SW-2	6/28/2021	Total Alkalinity	22		mg/L	2	20
SW-2	6/28/2021	Aluminum, dissolved	0.013	B	mg/L	0.005	0.015
SW-2	6/28/2021	Aluminum, total recoverable	0.12		mg/L	0.005	0.015
SW-2	6/28/2021	Arsenic, dissolved	0.00046	B	mg/L	0.0002	0.001
SW-2	6/28/2021	Arsenic, total recoverable	0.0034		mg/L	0.0002	0.001

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-2	6/28/2021	Cadmium, dissolved	0.00073		mg/L	5E-05	0.00025
SW-2	6/28/2021	Calcium, dissolved	17.1		mg/L	0.1	0.5
SW-2	6/28/2021	Copper, dissolved	0.00185	B	mg/L	0.0008	0.002
SW-2	6/28/2021	Iron, dissolved	0.0094	B	mg/L	0.007	0.02
SW-2	6/28/2021	Iron, total recoverable	0.216		mg/L	0.007	0.02
SW-2	6/28/2021	Lead, dissolved	0.0003	B	mg/L	0.0001	0.0005
SW-2	6/28/2021	Magnesium, dissolved	1.52		mg/L	0.2	1
SW-2	6/28/2021	Manganese, dissolved	0.356		mg/L	0.01	0.05
SW-2	6/28/2021	Mercury, total	0.86	B	ng/L	0.3	1
SW-2	6/28/2021	Potassium, dissolved	0.27	B	mg/L	0.2	1
SW-2	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-2	6/28/2021	Sodium, dissolved	1.2		mg/L	0.2	1
SW-2	6/28/2021	Zinc, dissolved	0.166		mg/L	0.02	0.05
SW-2	6/28/2021	Bicarbonate as CaCO3	22		mg/L	2	20
SW-2	6/28/2021	Carbon, dissolved organic (DOC)	1.1	B	mg/L	1	5
SW-2	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-2	6/28/2021	Cation-Anion Balance	-4.3		%		
SW-2	6/28/2021	Chloride		U	mg/L	0.5	2
SW-2	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-2	6/28/2021	Hardness as CaCO3 (dissolved)	49		mg/L	0.2	5
SW-2	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-2	6/28/2021	Nitrate/Nitrite as N	0.137		mg/L	0.02	0.1
SW-2	6/28/2021	Residue, Filterable (TDS) @180C	76		mg/L	20	40
SW-2	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-2	6/28/2021	Sulfate	33.6		mg/L	1	5
SW-2	6/28/2021	Sum of Anions	1.2		meq/L		
SW-2	6/28/2021	Sum of Cations	1.1		meq/L		
SW-2	6/28/2021	TDS (calculated)	67.7		mg/L		
SW-2	6/28/2021	TDS (ratio - measured/calculated)	1.12				
SW-2	6/28/2021	Total Alkalinity	22		mg/L	2	20
SW-2	6/28/2021	Dissolved Oxygen (field)	55.1		%		
SW-2	6/28/2021	Flow	4.871		CFS		
SW-2	6/28/2021	ORP (field) (field)	251		mV		
SW-2	6/28/2021	pH (field)	8.63		units	0.1	0.1
SW-2	6/28/2021	Specific Conductance (field)		N	uS/cm		
SW-2	6/28/2021	Water Temperature (field)	8.2		C		
SW-21	6/28/2021	Aluminum, dissolved	0.016		mg/L	0.005	0.015
SW-21	6/28/2021	Aluminum, total recoverable	0.103		mg/L	0.005	0.015
SW-21	6/28/2021	Arsenic, dissolved	0.00069	B	mg/L	0.0002	0.001
SW-21	6/28/2021	Arsenic, total recoverable	0.00252		mg/L	0.0002	0.001
SW-21	6/28/2021	Cadmium, dissolved	0.00051		mg/L	5E-05	0.00025

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-21	6/28/2021	Calcium, dissolved	18.7		mg/L	0.1	0.5
SW-21	6/28/2021	Copper, dissolved	0.00139	B	mg/L	0.0008	0.002
SW-21	6/28/2021	Iron, dissolved	0.0089	B	mg/L	0.007	0.02
SW-21	6/28/2021	Iron, total recoverable	0.136		mg/L	0.007	0.02
SW-21	6/28/2021	Lead, dissolved	0.00036	B	mg/L	0.0001	0.0005
SW-21	6/28/2021	Magnesium, dissolved	1.43		mg/L	0.2	1
SW-21	6/28/2021	Manganese, dissolved	0.209		mg/L	0.01	0.05
SW-21	6/28/2021	Mercury, total	1.13		ng/L	0.3	1
SW-21	6/28/2021	Potassium, dissolved	0.33	B	mg/L	0.2	1
SW-21	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-21	6/28/2021	Sodium, dissolved	1.42		mg/L	0.2	1
SW-21	6/28/2021	Zinc, dissolved	0.11		mg/L	0.02	0.05
SW-21	6/28/2021	Bicarbonate as CaCO3	25.9		mg/L	2	20
SW-21	6/28/2021	Carbon, dissolved organic (DOC)	1.4	B	mg/L	1	5
SW-21	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-21	6/28/2021	Cation-Anion Balance	-4.3		%		
SW-21	6/28/2021	Chloride	0.53	B	mg/L	0.5	2
SW-21	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-21	6/28/2021	Hardness as CaCO3 (dissolved)	53		mg/L	0.2	5
SW-21	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-21	6/28/2021	Nitrate/Nitrite as N	0.161		mg/L	0.02	0.1
SW-21	6/28/2021	Residue, Filterable (TDS) @180C	82		mg/L	20	40
SW-21	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-21	6/28/2021	Sulfate	33.3		mg/L	1	5
SW-21	6/28/2021	Sum of Anions	1.2		meq/L		
SW-21	6/28/2021	Sum of Cations	1.1		meq/L		
SW-21	6/28/2021	TDS (calculated)	71.9		mg/L		
SW-21	6/28/2021	TDS (ratio - measured/calculated)	1.14				
SW-21	6/28/2021	Total Alkalinity	25.9		mg/L	2	20
SW-21	6/28/2021	Aluminum, dissolved	0.016		mg/L	0.005	0.015
SW-21	6/28/2021	Aluminum, total recoverable	0.103		mg/L	0.005	0.015
SW-21	6/28/2021	Arsenic, dissolved	0.00069	B	mg/L	0.0002	0.001
SW-21	6/28/2021	Arsenic, total recoverable	0.00252		mg/L	0.0002	0.001
SW-21	6/28/2021	Cadmium, dissolved	0.00051		mg/L	5E-05	0.00025
SW-21	6/28/2021	Calcium, dissolved	18.7		mg/L	0.1	0.5
SW-21	6/28/2021	Copper, dissolved	0.00139	B	mg/L	0.0008	0.002
SW-21	6/28/2021	Iron, dissolved	0.0089	B	mg/L	0.007	0.02
SW-21	6/28/2021	Iron, total recoverable	0.136		mg/L	0.007	0.02
SW-21	6/28/2021	Lead, dissolved	0.00036	B	mg/L	0.0001	0.0005
SW-21	6/28/2021	Magnesium, dissolved	1.43		mg/L	0.2	1
SW-21	6/28/2021	Manganese, dissolved	0.209		mg/L	0.01	0.05

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-21	6/28/2021	Mercury, total	1.13		ng/L	0.3	1
SW-21	6/28/2021	Potassium, dissolved	0.33	B	mg/L	0.2	1
SW-21	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-21	6/28/2021	Sodium, dissolved	1.42		mg/L	0.2	1
SW-21	6/28/2021	Zinc, dissolved	0.11		mg/L	0.02	0.05
SW-21	6/28/2021	Bicarbonate as CaCO3	25.9		mg/L	2	20
SW-21	6/28/2021	Carbon, dissolved organic (DOC)	1.4	B	mg/L	1	5
SW-21	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-21	6/28/2021	Cation-Anion Balance	-4.3		%		
SW-21	6/28/2021	Chloride	0.53	B	mg/L	0.5	2
SW-21	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-21	6/28/2021	Hardness as CaCO3 (dissolved)	53		mg/L	0.2	5
SW-21	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-21	6/28/2021	Nitrate/Nitrite as N	0.161		mg/L	0.02	0.1
SW-21	6/28/2021	Residue, Filterable (TDS) @180C	82		mg/L	20	40
SW-21	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-21	6/28/2021	Sulfate	33.3		mg/L	1	5
SW-21	6/28/2021	Sum of Anions	1.2		meq/L		
SW-21	6/28/2021	Sum of Cations	1.1		meq/L		
SW-21	6/28/2021	TDS (calculated)	71.9		mg/L		
SW-21	6/28/2021	TDS (ratio - measured/calculated)	1.14				
SW-21	6/28/2021	Total Alkalinity	25.9		mg/L	2	20
SW-21	6/28/2021	Dissolved Oxygen (field)	73		%		
SW-21	6/28/2021	Flow	5.462		CFS		
SW-21	6/28/2021	ORP (field) (field)	240		mV		
SW-21	6/28/2021	pH (field)	8.72		units	0.1	0.1
SW-21	6/28/2021	Specific Conductance (field)		N	uS/cm		
SW-21	6/28/2021	Water Temperature (field)	8.9		C		
SW-3	6/28/2021	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-3	6/28/2021	Aluminum, total recoverable	0.0374		mg/L	0.005	0.015
SW-3	6/28/2021	Arsenic, dissolved	0.00074	B	mg/L	0.0002	0.001
SW-3	6/28/2021	Arsenic, total recoverable	0.00079	B	mg/L	0.0002	0.001
SW-3	6/28/2021	Cadmium, dissolved	0.00023	B	mg/L	5E-05	0.00025
SW-3	6/28/2021	Calcium, dissolved	34		mg/L	0.1	0.5
SW-3	6/28/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-3	6/28/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-3	6/28/2021	Iron, total recoverable	0.0267		mg/L	0.007	0.02
SW-3	6/28/2021	Lead, dissolved	0.00021	B	mg/L	0.0001	0.0005
SW-3	6/28/2021	Magnesium, dissolved	1.95		mg/L	0.2	1
SW-3	6/28/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-3	6/28/2021	Mercury, total	1.12		ng/L	0.3	1

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-3	6/28/2021	Potassium, dissolved	0.58	B	mg/L	0.2	1
SW-3	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-3	6/28/2021	Sodium, dissolved	3.42		mg/L	0.2	1
SW-3	6/28/2021	Zinc, dissolved	0.149		mg/L	0.02	0.05
SW-3	6/28/2021	Bicarbonate as CaCO3	35.9		mg/L	2	20
SW-3	6/28/2021	Carbon, dissolved organic (DOC)	1.1	B	mg/L	1	5
SW-3	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-3	6/28/2021	Cation-Anion Balance	0		%		
SW-3	6/28/2021	Chloride	2.1		mg/L	0.5	2
SW-3	6/28/2021	Fluoride	0.18	B	mg/L	0.15	0.35
SW-3	6/28/2021	Hardness as CaCO3 (dissolved)	93		mg/L	0.2	5
SW-3	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-3	6/28/2021	Nitrate/Nitrite as N		U	mg/L	0.02	0.1
SW-3	6/28/2021	Residue, Filterable (TDS) @180C	148		mg/L	20	40
SW-3	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-3	6/28/2021	Sulfate	56.9		mg/L	5	25
SW-3	6/28/2021	Sum of Anions	2		meq/L		
SW-3	6/28/2021	Sum of Cations	2		meq/L		
SW-3	6/28/2021	TDS (calculated)	121		mg/L		
SW-3	6/28/2021	TDS (ratio - measured/calculated)	1.22				
SW-3	6/28/2021	Total Alkalinity	35.9		mg/L	2	20
SW-3	6/28/2021	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-3	6/28/2021	Aluminum, total recoverable	0.0374		mg/L	0.005	0.015
SW-3	6/28/2021	Arsenic, dissolved	0.00074	B	mg/L	0.0002	0.001
SW-3	6/28/2021	Arsenic, total recoverable	0.00079	B	mg/L	0.0002	0.001
SW-3	6/28/2021	Cadmium, dissolved	0.00023	B	mg/L	5E-05	0.00025
SW-3	6/28/2021	Calcium, dissolved	34		mg/L	0.1	0.5
SW-3	6/28/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-3	6/28/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-3	6/28/2021	Iron, total recoverable	0.0267		mg/L	0.007	0.02
SW-3	6/28/2021	Lead, dissolved	0.00021	B	mg/L	0.0001	0.0005
SW-3	6/28/2021	Magnesium, dissolved	1.95		mg/L	0.2	1
SW-3	6/28/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-3	6/28/2021	Mercury, total	1.12		ng/L	0.3	1
SW-3	6/28/2021	Potassium, dissolved	0.58	B	mg/L	0.2	1
SW-3	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-3	6/28/2021	Sodium, dissolved	3.42		mg/L	0.2	1
SW-3	6/28/2021	Zinc, dissolved	0.149		mg/L	0.02	0.05
SW-3	6/28/2021	Bicarbonate as CaCO3	35.9		mg/L	2	20
SW-3	6/28/2021	Carbon, dissolved organic (DOC)	1.1	B	mg/L	1	5
SW-3	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-3	6/28/2021	Cation-Anion Balance	0		%		
SW-3	6/28/2021	Chloride	2.1		mg/L	0.5	2
SW-3	6/28/2021	Fluoride	0.18	B	mg/L	0.15	0.35
SW-3	6/28/2021	Hardness as CaCO3 (dissolved)	93		mg/L	0.2	5
SW-3	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-3	6/28/2021	Nitrate/Nitrite as N		U	mg/L	0.02	0.1
SW-3	6/28/2021	Residue, Filterable (TDS) @180C	148		mg/L	20	40
SW-3	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-3	6/28/2021	Sulfate	56.9		mg/L	5	25
SW-3	6/28/2021	Sum of Anions	2		meq/L		
SW-3	6/28/2021	Sum of Cations	2		meq/L		
SW-3	6/28/2021	TDS (calculated)	121		mg/L		
SW-3	6/28/2021	TDS (ratio - measured/calculated)	1.22				
SW-3	6/28/2021	Total Alkalinity	35.9		mg/L	2	20
SW-3	6/28/2021	Dissolved Oxygen (field)	87.7		%		
SW-3	6/28/2021	Flow	0.2		CFS		
SW-3	6/28/2021	ORP (field) (field)	237		mV		
SW-3	6/28/2021	pH (field)	8.86		units	0.1	0.1
SW-3	6/28/2021	Specific Conductance (field)		N	uS/cm		
SW-3	6/28/2021	Water Temperature (field)	11.1		C		
SW-4	6/28/2021	Aluminum, dissolved	0.0129	B	mg/L	0.005	0.015
SW-4	6/28/2021	Aluminum, total recoverable	0.119		mg/L	0.005	0.015
SW-4	6/28/2021	Arsenic, dissolved	0.00053	B	mg/L	0.0002	0.001
SW-4	6/28/2021	Arsenic, total recoverable	0.00323		mg/L	0.0002	0.001
SW-4	6/28/2021	Cadmium, dissolved	0.00071		mg/L	5E-05	0.00025
SW-4	6/28/2021	Calcium, dissolved	19.5		mg/L	0.1	0.5
SW-4	6/28/2021	Copper, dissolved	0.00165	B	mg/L	0.0008	0.002
SW-4	6/28/2021	Iron, dissolved	0.0079	B	mg/L	0.007	0.02
SW-4	6/28/2021	Iron, total recoverable	0.188		mg/L	0.007	0.02
SW-4	6/28/2021	Lead, dissolved	0.00032	B	mg/L	0.0001	0.0005
SW-4	6/28/2021	Magnesium, dissolved	1.57		mg/L	0.2	1
SW-4	6/28/2021	Manganese, dissolved	0.331		mg/L	0.01	0.05
SW-4	6/28/2021	Mercury, total	1.15		ng/L	0.3	1
SW-4	6/28/2021	Potassium, dissolved	0.34	B	mg/L	0.2	1
SW-4	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-4	6/28/2021	Sodium, dissolved	1.53		mg/L	0.2	1
SW-4	6/28/2021	Zinc, dissolved	0.162		mg/L	0.02	0.05
SW-4	6/28/2021	Bicarbonate as CaCO3	25.5		mg/L	2	20
SW-4	6/28/2021	Carbon, dissolved organic (DOC)	1.2	B	mg/L	1	5
SW-4	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-4	6/28/2021	Cation-Anion Balance	-4		%		
SW-4	6/28/2021	Chloride		U	mg/L	0.5	2
SW-4	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-4	6/28/2021	Hardness as CaCO3 (dissolved)	55		mg/L	0.2	5
SW-4	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-4	6/28/2021	Nitrate/Nitrite as N	0.19		mg/L	0.02	0.1
SW-4	6/28/2021	Residue, Filterable (TDS) @180C	90		mg/L	20	40
SW-4	6/28/2021	Residue, Non-Filterable (TSS) @105C	6	B	mg/L	5	20
SW-4	6/28/2021	Sulfate	36.7		mg/L	1	5
SW-4	6/28/2021	Sum of Anions	1.3		meq/L		
SW-4	6/28/2021	Sum of Cations	1.2		meq/L		
SW-4	6/28/2021	TDS (calculated)	75.7		mg/L		
SW-4	6/28/2021	TDS (ratio - measured/calculated)	1.19				
SW-4	6/28/2021	Total Alkalinity	25.5		mg/L	2	20
SW-4	6/28/2021	Aluminum, dissolved	0.0129	B	mg/L	0.005	0.015
SW-4	6/28/2021	Aluminum, total recoverable	0.119		mg/L	0.005	0.015
SW-4	6/28/2021	Arsenic, dissolved	0.00053	B	mg/L	0.0002	0.001
SW-4	6/28/2021	Arsenic, total recoverable	0.00323		mg/L	0.0002	0.001
SW-4	6/28/2021	Cadmium, dissolved	0.00071		mg/L	5E-05	0.00025
SW-4	6/28/2021	Calcium, dissolved	19.5		mg/L	0.1	0.5
SW-4	6/28/2021	Copper, dissolved	0.00165	B	mg/L	0.0008	0.002
SW-4	6/28/2021	Iron, dissolved	0.0079	B	mg/L	0.007	0.02
SW-4	6/28/2021	Iron, total recoverable	0.188		mg/L	0.007	0.02
SW-4	6/28/2021	Lead, dissolved	0.00032	B	mg/L	0.0001	0.0005
SW-4	6/28/2021	Magnesium, dissolved	1.57		mg/L	0.2	1
SW-4	6/28/2021	Manganese, dissolved	0.331		mg/L	0.01	0.05
SW-4	6/28/2021	Mercury, total	1.15		ng/L	0.3	1
SW-4	6/28/2021	Potassium, dissolved	0.34	B	mg/L	0.2	1
SW-4	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-4	6/28/2021	Sodium, dissolved	1.53		mg/L	0.2	1
SW-4	6/28/2021	Zinc, dissolved	0.162		mg/L	0.02	0.05
SW-4	6/28/2021	Bicarbonate as CaCO3	25.5		mg/L	2	20
SW-4	6/28/2021	Carbon, dissolved organic (DOC)	1.2	B	mg/L	1	5
SW-4	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-4	6/28/2021	Cation-Anion Balance	-4		%		
SW-4	6/28/2021	Chloride		U	mg/L	0.5	2
SW-4	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-4	6/28/2021	Hardness as CaCO3 (dissolved)	55		mg/L	0.2	5
SW-4	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-4	6/28/2021	Nitrate/Nitrite as N	0.19		mg/L	0.02	0.1
SW-4	6/28/2021	Residue, Filterable (TDS) @180C	90		mg/L	20	40

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-4	6/28/2021	Residue, Non-Filterable (TSS) @105C	6	B	mg/L	5	20
SW-4	6/28/2021	Sulfate	36.7		mg/L	1	5
SW-4	6/28/2021	Sum of Anions	1.3		meq/L		
SW-4	6/28/2021	Sum of Cations	1.2		meq/L		
SW-4	6/28/2021	TDS (calculated)	75.7		mg/L		
SW-4	6/28/2021	TDS (ratio - measured/calculated)	1.19				
SW-4	6/28/2021	Total Alkalinity	25.5		mg/L	2	20
SW-4	6/28/2021	Dissolved Oxygen (field)	59.2		%		
SW-4	6/28/2021	Flow	3.135		CFS		
SW-4	6/28/2021	ORP (field) (field)	250		mV		
SW-4	6/28/2021	pH (field)	8.89		units	0.1	0.1
SW-4	6/28/2021	Specific Conductance (field)		N	uS/cm		
SW-4	6/28/2021	Water Temperature (field)	9		C		
SW-99	6/28/2021	Aluminum, dissolved	0.0131	B	mg/L	0.005	0.015
SW-99	6/28/2021	Aluminum, total recoverable	0.142		mg/L	0.005	0.015
SW-99	6/28/2021	Arsenic, dissolved	0.00041	B	mg/L	0.0002	0.001
SW-99	6/28/2021	Arsenic, total recoverable	0.0045		mg/L	0.0002	0.001
SW-99	6/28/2021	Cadmium, dissolved	0.00079		mg/L	5E-05	0.00025
SW-99	6/28/2021	Calcium, dissolved	16.1		mg/L	0.1	0.5
SW-99	6/28/2021	Copper, dissolved	0.00178	B	mg/L	0.0008	0.002
SW-99	6/28/2021	Iron, dissolved	0.0085	B	mg/L	0.007	0.02
SW-99	6/28/2021	Iron, total recoverable	0.263		mg/L	0.007	0.02
SW-99	6/28/2021	Lead, dissolved	0.00028	B	mg/L	0.0001	0.0005
SW-99	6/28/2021	Magnesium, dissolved	1.52		mg/L	0.2	1
SW-99	6/28/2021	Manganese, dissolved	0.472		mg/L	0.01	0.05
SW-99	6/28/2021	Mercury, total	0.93	B	ng/L	0.3	1
SW-99	6/28/2021	Potassium, dissolved	0.53	B	mg/L	0.2	1
SW-99	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-99	6/28/2021	Sodium, dissolved	1.09		mg/L	0.2	1
SW-99	6/28/2021	Zinc, dissolved	0.16		mg/L	0.02	0.05
SW-99	6/28/2021	Bicarbonate as CaCO3	20.7		mg/L	2	20
SW-99	6/28/2021	Carbon, dissolved organic (DOC)	1.1	B	mg/L	1	5
SW-99	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-99	6/28/2021	Cation-Anion Balance	-4.8		%		
SW-99	6/28/2021	Chloride		U	mg/L	0.5	2
SW-99	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-99	6/28/2021	Hardness as CaCO3 (dissolved)	47		mg/L	0.2	5
SW-99	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-99	6/28/2021	Nitrate/Nitrite as N	0.129		mg/L	0.02	0.1
SW-99	6/28/2021	Residue, Filterable (TDS) @180C	76		mg/L	20	40

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-99	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-99	6/28/2021	Sulfate	32.5		mg/L	1	5
SW-99	6/28/2021	Sum of Anions	1.1		meq/L		
SW-99	6/28/2021	Sum of Cations	1		meq/L		
SW-99	6/28/2021	TDS (calculated)	65		mg/L		
SW-99	6/28/2021	TDS (ratio - measured/calculated)	1.17				
SW-99	6/28/2021	Total Alkalinity	20.7		mg/L	2	20
SW-99	6/28/2021	Aluminum, dissolved	0.0131	B	mg/L	0.005	0.015
SW-99	6/28/2021	Aluminum, total recoverable	0.142		mg/L	0.005	0.015
SW-99	6/28/2021	Arsenic, dissolved	0.00041	B	mg/L	0.0002	0.001
SW-99	6/28/2021	Arsenic, total recoverable	0.0045		mg/L	0.0002	0.001
SW-99	6/28/2021	Cadmium, dissolved	0.00079		mg/L	5E-05	0.00025
SW-99	6/28/2021	Calcium, dissolved	16.1		mg/L	0.1	0.5
SW-99	6/28/2021	Copper, dissolved	0.00178	B	mg/L	0.0008	0.002
SW-99	6/28/2021	Iron, dissolved	0.0085	B	mg/L	0.007	0.02
SW-99	6/28/2021	Iron, total recoverable	0.263		mg/L	0.007	0.02
SW-99	6/28/2021	Lead, dissolved	0.00028	B	mg/L	0.0001	0.0005
SW-99	6/28/2021	Magnesium, dissolved	1.52		mg/L	0.2	1
SW-99	6/28/2021	Manganese, dissolved	0.472		mg/L	0.01	0.05
SW-99	6/28/2021	Mercury, total	0.93	B	ng/L	0.3	1
SW-99	6/28/2021	Potassium, dissolved	0.53	B	mg/L	0.2	1
SW-99	6/28/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-99	6/28/2021	Sodium, dissolved	1.09		mg/L	0.2	1
SW-99	6/28/2021	Zinc, dissolved	0.16		mg/L	0.02	0.05
SW-99	6/28/2021	Bicarbonate as CaCO3	20.7		mg/L	2	20
SW-99	6/28/2021	Carbon, dissolved organic (DOC)	1.1	B	mg/L	1	5
SW-99	6/28/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-99	6/28/2021	Cation-Anion Balance	-4.8		%		
SW-99	6/28/2021	Chloride		U	mg/L	0.5	2
SW-99	6/28/2021	Fluoride		U	mg/L	0.15	0.35
SW-99	6/28/2021	Hardness as CaCO3 (dissolved)	47		mg/L	0.2	5
SW-99	6/28/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-99	6/28/2021	Nitrate/Nitrite as N	0.129		mg/L	0.02	0.1
SW-99	6/28/2021	Residue, Filterable (TDS) @180C	76		mg/L	20	40
SW-99	6/28/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-99	6/28/2021	Sulfate	32.5		mg/L	1	5
SW-99	6/28/2021	Sum of Anions	1.1		meq/L		
SW-99	6/28/2021	Sum of Cations	1		meq/L		
SW-99	6/28/2021	TDS (calculated)	65		mg/L		

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-99	6/28/2021	TDS (ratio - measured/calculated)	1.17				
SW-99	6/28/2021	Total Alkalinity	20.7		mg/L	2	20
SW-99	6/28/2021	Dissolved Oxygen (field)	64.4		%		
SW-99	6/28/2021	Flow	0		CFS		
SW-99	6/28/2021	ORP (field) (field)	257		mV		
SW-99	6/28/2021	pH (field)	8.56		units	0.1	0.1
SW-99	6/28/2021	Specific Conductance (field)		N	uS/cm		
SW-99	6/28/2021	Water Temperature (field)	6.2		C		

Lab qualifiers:

U - material was analyzed for but was not detected above the sample detection limit

B - Analyte concentrations detected at a value between the MDL and PQL. The associated value is estimated

L - Target analyte response was below the laboratory defined negative threhold

H - Analysis exceeded method hold time. pH is a field test with an immediate hold time

Table U-11 Q3 2021 Surface Water Sampling Results

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-0	9/14/2021	Zinc, dissolved		U	mg/L	0.02	0.05
SW-0	9/14/2021	Total Alkalinity		U	mg/L	2	20
SW-0	9/14/2021	TDS (ratio - measured/calculated)					
SW-0	9/14/2021	TDS (calculated)			mg/L		
SW-0	9/14/2021	Sum of Cations		U	meq/L		
SW-0	9/14/2021	Sum of Anions		U	meq/L		
SW-0	9/14/2021	Sulfate		U	mg/L	1	5
SW-0	9/14/2021	Sodium, dissolved		U	mg/L	0.2	1
SW-0	9/14/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-0	9/14/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-0	9/14/2021	Residue, Filterable (TDS) @180C		U	mg/L	20	40
SW-0	9/14/2021	Potassium, dissolved		U	mg/L	0.2	1
SW-0	9/14/2021	Nitrate/Nitrite as N		U	mg/L	0.02	0.1
SW-0	9/14/2021	Mercury, total (low level)		U	ng/L	0.3	1
SW-0	9/14/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-0	9/14/2021	Magnesium, dissolved		U	mg/L	0.2	1
SW-0	9/14/2021	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-0	9/14/2021	Iron, total recoverable		U	mg/L	0.007	0.02
SW-0	9/14/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-0	9/14/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-0	9/14/2021	Hardness as CaCO3 (dissolved)		U	mg/L	0.2	5
SW-0	9/14/2021	Fluoride		U	mg/L	0.15	0.35
SW-0	9/14/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-0	9/14/2021	Chloride		U	mg/L	0.5	2
SW-0	9/14/2021	Cation-Anion Balance			%		
SW-0	9/14/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-0	9/14/2021	Carbon, dissolved organic (DOC)	1.1	B	mg/L	1	5
SW-0	9/14/2021	Calcium, dissolved		U	mg/L	0.1	0.5
SW-0	9/14/2021	Cadmium, dissolved		U	mg/L	0.00005	0.00025
SW-0	9/14/2021	Bicarbonate as CaCO3		U	mg/L	2	20
SW-0	9/14/2021	Arsenic, total recoverable		U	mg/L	0.0002	0.001
SW-0	9/14/2021	Arsenic, dissolved		U	mg/L	0.0002	0.001
SW-0	9/14/2021	Aluminum, total recoverable		U	mg/L	0.005	0.015
SW-0	9/14/2021	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-0	9/14/2021	Dissolved Oxygen (field)	67.9		%		
SW-0	9/14/2021	Flow		N	CFS		

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-0	9/14/2021	ORP (field) (field)	489.2		mV		
SW-0	9/14/2021	pH (field)	7.16		units	0.1	0.1
SW-0	9/14/2021	Specific Conductance (field)	1.4		uS/cm		
SW-0	9/14/2021	Water Temperature (field)	19.4		C		
SW-0	9/8/2021	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-0	9/8/2021	Aluminum, total recoverable		U	mg/L	0.005	0.015
SW-0	9/8/2021	Arsenic, dissolved		U	mg/L	0.0002	0.001
SW-0	9/8/2021	Arsenic, total recoverable		U	mg/L	0.0002	0.001
SW-0	9/8/2021	Bicarbonate as CaCO3		U	mg/L	2	20
SW-0	9/8/2021	Cadmium, dissolved		U	mg/L	0.00005	0.00025
SW-0	9/8/2021	Calcium, dissolved		U	mg/L	0.1	0.5
SW-0	9/8/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-0	9/8/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-0	9/8/2021	Fluoride		U	mg/L	0.15	0.35
SW-0	9/8/2021	Hardness as CaCO3 (dissolved)		U	mg/L	0.2	5
SW-0	9/8/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-0	9/8/2021	Iron, total recoverable		U	mg/L	0.007	0.02
SW-0	9/8/2021	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-0	9/8/2021	Magnesium, dissolved		U	mg/L	0.2	1
SW-0	9/8/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-0	9/8/2021	Mercury, total (low level)		U	ng/L	0.3	1
SW-0	9/8/2021	Nitrate/Nitrite as N		U	mg/L	0.02	0.1
SW-0	9/8/2021	Potassium, dissolved		U	mg/L	0.2	1
SW-0	9/8/2021	Residue, Filterable (TDS) @180C		U	mg/L	20	40
SW-0	9/8/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-0	9/8/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-0	9/8/2021	Sodium, dissolved		U	mg/L	0.2	1
SW-0	9/8/2021	Sulfate		U	mg/L	1	5
SW-0	9/8/2021	Sum of Anions		U	meq/L		
SW-0	9/8/2021	Sum of Cations		U	meq/L		
SW-0	9/8/2021	Total Alkalinity		U	mg/L	2	20
SW-0	9/8/2021	Zinc, dissolved		U	mg/L	0.02	0.05
SW-0	9/8/2021	Carbon, dissolved organic (DOC)	1.1	B	mg/L	1	5
SW-0	9/8/2021	Chloride	0.63	B	mg/L	0.5	2
SW-0	9/8/2021	Iron, dissolved	0.0071	B	mg/L	0.007	0.02
SW-0	9/8/2021	Cation-Anion Balance			%		
SW-0	9/8/2021	TDS (calculated)	0.637		mg/L		

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-0	9/8/2021	TDS (ratio - measured/calculated)					
SW-0	9/8/2021	Dissolved Oxygen (field)		N	%		
SW-0	9/8/2021	Flow		N	CFS		
SW-0	9/8/2021	ORP (field) (field)		N	mV		
SW-0	9/8/2021	pH (field)		N	units	0.1	0.1
SW-0	9/8/2021	Specific Conductance (field)		N	uS/cm		
SW-0	9/8/2021	Water Temperature (field)		N	C		
SW-1	9/8/2021	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-1	9/8/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-1	9/8/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-1	9/8/2021	Fluoride		U	mg/L	0.15	0.35
SW-1	9/8/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-1	9/8/2021	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-1	9/8/2021	Mercury, total (low level)		U	ng/L	0.3	1
SW-1	9/8/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-1	9/8/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-1	9/8/2021	Chloride	0.8	B	mg/L	0.5	2
SW-1	9/8/2021	Iron, dissolved	0.0083	B	mg/L	0.007	0.02
SW-1	9/8/2021	Arsenic, dissolved	0.00024	B	mg/L	0.0002	0.001
SW-1	9/8/2021	Arsenic, total recoverable	0.00093	B	mg/L	0.0002	0.001
SW-1	9/8/2021	Potassium, dissolved	0.54	B	mg/L	0.2	1
SW-1	9/8/2021	Aluminum, dissolved	0.0258		mg/L	0.005	0.015
SW-1	9/8/2021	Aluminum, total recoverable	0.0401		mg/L	0.005	0.015
SW-1	9/8/2021	Bicarbonate as CaCO3	27.4		mg/L	2	20
SW-1	9/8/2021	Cadmium, dissolved	0.00138		mg/L	0.00005	0.00025
SW-1	9/8/2021	Calcium, dissolved	34.2		mg/L	0.1	0.5
SW-1	9/8/2021	Cation-Anion Balance	0		%		
SW-1	9/8/2021	Hardness as CaCO3 (dissolved)	94		mg/L	0.2	5
SW-1	9/8/2021	Iron, total recoverable	0.168		mg/L	0.007	0.02
SW-1	9/8/2021	Magnesium, dissolved	2.01		mg/L	0.2	1
SW-1	9/8/2021	Manganese, dissolved	0.859		mg/L	0.01	0.05
SW-1	9/8/2021	Nitrate/Nitrite as N	0.255		mg/L	0.02	0.1
SW-1	9/8/2021	Residue, Filterable (TDS) @180C	136		mg/L	20	40
SW-1	9/8/2021	Sodium, dissolved	3.07		mg/L	0.2	1
SW-1	9/8/2021	Sulfate	73.9		mg/L	5	25
SW-1	9/8/2021	Sum of Anions	2.1		meq/L		
SW-1	9/8/2021	Sum of Cations	2.1		meq/L		

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-1	9/8/2021	TDS (calculated)	132		mg/L		
SW-1	9/8/2021	TDS (ratio - measured/calculated)	1.03				
SW-1	9/8/2021	Total Alkalinity	27.4		mg/L	2	20
SW-1	9/8/2021	Zinc, dissolved	0.352		mg/L	0.02	0.05
SW-1	9/8/2021	Dissolved Oxygen (field)	92		%		
SW-1	9/8/2021	Flow	0.176		CFS		
SW-1	9/8/2021	ORP (field) (field)	326.1		mV		
SW-1	9/8/2021	pH (field)	7.66		units	0.1	0.1
SW-1	9/8/2021	Specific Conductance (field)	222.5		uS/cm		
SW-1	9/8/2021	Water Temperature (field)	11.5		C		
SW-15	9/14/2021	Zinc, dissolved	0.025	B	mg/L	0.02	0.05
SW-15	9/14/2021	Total Alkalinity	36.2		mg/L	2	20
SW-15	9/14/2021	TDS (ratio - measured/calculated)	0.92				
SW-15	9/14/2021	TDS (calculated)	113		mg/L		
SW-15	9/14/2021	Sum of Cations	1.9		meq/L		
SW-15	9/14/2021	Sum of Anions	1.9		meq/L		
SW-15	9/14/2021	Sulfate	52.7		mg/L	5	25
SW-15	9/14/2021	Sodium, dissolved	2.46		mg/L	0.2	1
SW-15	9/14/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-15	9/14/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-15	9/14/2021	Residue, Filterable (TDS) @180C	104		mg/L	20	40
SW-15	9/14/2021	Potassium, dissolved	0.51	B	mg/L	0.2	1
SW-15	9/14/2021	Nitrate/Nitrite as N	0.052	B	mg/L	0.02	0.1
SW-15	9/14/2021	Mercury, total (low level)		U	ng/L	0.3	1
SW-15	9/14/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-15	9/14/2021	Magnesium, dissolved	2.79		mg/L	0.2	1
SW-15	9/14/2021	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-15	9/14/2021	Iron, total recoverable	0.0302		mg/L	0.007	0.02
SW-15	9/14/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-15	9/14/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-15	9/14/2021	Hardness as CaCO3 (dissolved)	91		mg/L	0.2	5
SW-15	9/14/2021	Fluoride	0.21	B	mg/L	0.15	0.35
SW-15	9/14/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-15	9/14/2021	Chloride	0.56	B	mg/L	0.5	2
SW-15	9/14/2021	Cation-Anion Balance	0		%		
SW-15	9/14/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-15	9/14/2021	Carbon, dissolved organic (DOC)		U	mg/L	1	5

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-15	9/14/2021	Calcium, dissolved	31.7		mg/L	0.1	0.5
SW-15	9/14/2021	Cadmium, dissolved	0.000063	B	mg/L	0.00005	0.00025
SW-15	9/14/2021	Bicarbonate as CaCO3	36.2		mg/L	2	20
SW-15	9/14/2021	Arsenic, total recoverable	0.001		mg/L	0.0002	0.001
SW-15	9/14/2021	Arsenic, dissolved	0.00087	B	mg/L	0.0002	0.001
SW-15	9/14/2021	Aluminum, total recoverable	0.0375		mg/L	0.005	0.015
SW-15	9/14/2021	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-15	9/14/2021	Dissolved Oxygen (field)	97.3		%		
SW-15	9/14/2021	Flow	2.35		CFS		
SW-15	9/14/2021	ORP (field) (field)	366.6		mV		
SW-15	9/14/2021	pH (field)	7.81		units	0.1	0.1
SW-15	9/14/2021	Specific Conductance (field)	202		uS/cm		
SW-15	9/14/2021	Water Temperature (field)	8		C		
SW-16	9/8/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-16	9/8/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-16	9/8/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-16	9/8/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-16	9/8/2021	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-16	9/8/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-16	9/8/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-16	9/8/2021	Carbon, dissolved organic (DOC)	1.1	B	mg/L	1	5
SW-16	9/8/2021	Chloride	0.78	B	mg/L	0.5	2
SW-16	9/8/2021	Aluminum, dissolved	0.0063	B	mg/L	0.005	0.015
SW-16	9/8/2021	Arsenic, dissolved	0.00098	B	mg/L	0.0002	0.001
SW-16	9/8/2021	Cadmium, dissolved	0.000121	B	mg/L	0.00005	0.00025
SW-16	9/8/2021	Fluoride	0.18	B	mg/L	0.15	0.35
SW-16	9/8/2021	Manganese, dissolved	0.016	B	mg/L	0.01	0.05
SW-16	9/8/2021	Nitrate/Nitrite as N	0.059	B	mg/L	0.02	0.1
SW-16	9/8/2021	Potassium, dissolved	0.55	B	mg/L	0.2	1
SW-16	9/8/2021	Zinc, dissolved	0.04	B	mg/L	0.02	0.05
SW-16	9/8/2021	Aluminum, total recoverable	0.0633		mg/L	0.005	0.015
SW-16	9/8/2021	Arsenic, total recoverable	0.00125		mg/L	0.0002	0.001
SW-16	9/8/2021	Bicarbonate as CaCO3	34.3		mg/L	2	20
SW-16	9/8/2021	Calcium, dissolved	28.1		mg/L	0.1	0.5
SW-16	9/8/2021	Cation-Anion Balance	-2.9		%		
SW-16	9/8/2021	Hardness as CaCO3 (dissolved)	80		mg/L	0.2	5
SW-16	9/8/2021	Iron, total recoverable	0.0683		mg/L	0.007	0.02

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-16	9/8/2021	Magnesium, dissolved	2.46		mg/L	0.2	1
SW-16	9/8/2021	Mercury, total (low level)	1.99		ng/L	0.3	1
SW-16	9/8/2021	Residue, Filterable (TDS) @180C	100		mg/L	20	40
SW-16	9/8/2021	Sodium, dissolved	2.15		mg/L	0.2	1
SW-16	9/8/2021	Sulfate	49.8		mg/L	5	25
SW-16	9/8/2021	Sum of Anions	1.8		meq/L		
SW-16	9/8/2021	Sum of Cations	1.7		meq/L		
SW-16	9/8/2021	TDS (calculated)	105		mg/L		
SW-16	9/8/2021	TDS (ratio - measured/calculated)	0.95				
SW-16	9/8/2021	Total Alkalinity	34.3		mg/L	2	20
SW-16	9/8/2021	Dissolved Oxygen (field)	86.6		%		
SW-16	9/8/2021	Flow	3.81		CFS		
SW-16	9/8/2021	ORP (field) (field)	307.6		mV		
SW-16	9/8/2021	pH (field)	7.63		units	0.1	0.1
SW-16	9/8/2021	Specific Conductance (field)	182.3		uS/cm		
SW-16	9/8/2021	Water Temperature (field)	13.4		C		
SW-17	9/14/2021	Zinc, dissolved		U	mg/L	0.02	0.05
SW-17	9/14/2021	Total Alkalinity	30.3		mg/L	2	20
SW-17	9/14/2021	TDS (ratio - measured/calculated)	0.84				
SW-17	9/14/2021	TDS (calculated)	97.9		mg/L		
SW-17	9/14/2021	Sum of Cations	1.7		meq/L		
SW-17	9/14/2021	Sum of Anions	1.6		meq/L		
SW-17	9/14/2021	Sulfate	47		mg/L	5	25
SW-17	9/14/2021	Sodium, dissolved	1.21		mg/L	0.2	1
SW-17	9/14/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-17	9/14/2021	Residue, Non-Filterable (TSS) @105C	6	B	mg/L	5	20
SW-17	9/14/2021	Residue, Filterable (TDS) @180C	82		mg/L	20	40
SW-17	9/14/2021	Potassium, dissolved	0.38	B	mg/L	0.2	1
SW-17	9/14/2021	Nitrate/Nitrite as N	0.059	B	mg/L	0.02	0.1
SW-17	9/14/2021	Mercury, total (low level)	0.77	B	ng/L	0.3	1
SW-17	9/14/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-17	9/14/2021	Magnesium, dissolved	2.42		mg/L	0.2	1
SW-17	9/14/2021	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-17	9/14/2021	Iron, total recoverable	0.205		mg/L	0.007	0.02
SW-17	9/14/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-17	9/14/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-17	9/14/2021	Hardness as CaCO3 (dissolved)	80		mg/L	0.2	5

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-17	9/14/2021	Fluoride		U	mg/L	0.15	0.35
SW-17	9/14/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-17	9/14/2021	Chloride	0.52	B	mg/L	0.5	2
SW-17	9/14/2021	Cation-Anion Balance	3		%		
SW-17	9/14/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-17	9/14/2021	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-17	9/14/2021	Calcium, dissolved	27.9		mg/L	0.1	0.5
SW-17	9/14/2021	Cadmium, dissolved		U	mg/L	0.00005	0.00025
SW-17	9/14/2021	Bicarbonate as CaCO3	30.3		mg/L	2	20
SW-17	9/14/2021	Arsenic, total recoverable	0.00075	B	mg/L	0.0002	0.001
SW-17	9/14/2021	Arsenic, dissolved	0.00037	B	mg/L	0.0002	0.001
SW-17	9/14/2021	Aluminum, total recoverable	0.311		mg/L	0.005	0.015
SW-17	9/14/2021	Aluminum, dissolved	0.0079	B	mg/L	0.005	0.015
SW-17	9/14/2021	Dissolved Oxygen (field)	92.6		%		
SW-17	9/14/2021	Flow	1.8		CFS		
SW-17	9/14/2021	ORP (field) (field)	367.4		mV		
SW-17	9/14/2021	pH (field)	7.77		units	0.1	0.1
SW-17	9/14/2021	Specific Conductance (field)	174		uS/cm		
SW-17	9/14/2021	Water Temperature (field)	9.8		C		
SW-2	9/14/2021	Zinc, dissolved		U	mg/L	0.02	0.05
SW-2	9/14/2021	Total Alkalinity	33.7		mg/L	2	20
SW-2	9/14/2021	TDS (ratio - measured/calculated)	0.93				
SW-2	9/14/2021	TDS (calculated)	110		mg/L		
SW-2	9/14/2021	Sum of Cations	1.9		meq/L		
SW-2	9/14/2021	Sum of Anions	1.8		meq/L		
SW-2	9/14/2021	Sulfate	52.1		mg/L	5	25
SW-2	9/14/2021	Sodium, dissolved	2.13		mg/L	0.2	1
SW-2	9/14/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-2	9/14/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-2	9/14/2021	Residue, Filterable (TDS) @180C	102		mg/L	20	40
SW-2	9/14/2021	Potassium, dissolved	0.38	B	mg/L	0.2	1
SW-2	9/14/2021	Nitrate/Nitrite as N	0.053	B	mg/L	0.02	0.1
SW-2	9/14/2021	Mercury, total (low level)	0.44	B	ng/L	0.3	1
SW-2	9/14/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-2	9/14/2021	Magnesium, dissolved	2.44		mg/L	0.2	1
SW-2	9/14/2021	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-2	9/14/2021	Iron, total recoverable	0.0625		mg/L	0.007	0.02

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-2	9/14/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-2	9/14/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-2	9/14/2021	Hardness as CaCO3 (dissolved)	88		mg/L	0.2	5
SW-2	9/14/2021	Fluoride	0.21	B	mg/L	0.15	0.35
SW-2	9/14/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-2	9/14/2021	Chloride	0.65	B	mg/L	0.5	2
SW-2	9/14/2021	Cation-Anion Balance	2.7		%		
SW-2	9/14/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-2	9/14/2021	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-2	9/14/2021	Calcium, dissolved	31.2		mg/L	0.1	0.5
SW-2	9/14/2021	Cadmium, dissolved		U	mg/L	0.00005	0.00025
SW-2	9/14/2021	Bicarbonate as CaCO3	33.7		mg/L	2	20
SW-2	9/14/2021	Arsenic, total recoverable	0.00105		mg/L	0.0002	0.001
SW-2	9/14/2021	Arsenic, dissolved	0.00076	B	mg/L	0.0002	0.001
SW-2	9/14/2021	Aluminum, total recoverable	0.0832		mg/L	0.005	0.015
SW-2	9/14/2021	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-2	9/14/2021	Dissolved Oxygen (field)	94.1		%		
SW-2	9/14/2021	Flow	3.21		CFS		
SW-2	9/14/2021	ORP (field) (field)	366.1		mV		
SW-2	9/14/2021	pH (field)	7.77		units	0.1	0.1
SW-2	9/14/2021	Specific Conductance (field)	200		uS/cm		
SW-2	9/14/2021	Water Temperature (field)	9.4		C		
SW-21	9/8/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-21	9/8/2021	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-21	9/8/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-21	9/8/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-21	9/8/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-21	9/8/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-21	9/8/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-21	9/8/2021	Chloride	1.28	B	mg/L	0.5	2
SW-21	9/8/2021	Carbon, dissolved organic (DOC)	1.1	B	mg/L	1	5
SW-21	9/8/2021	Arsenic, dissolved	0.00094	B	mg/L	0.0002	0.001
SW-21	9/8/2021	Cadmium, dissolved	0.000073	B	mg/L	0.00005	0.00025
SW-21	9/8/2021	Fluoride	0.19	B	mg/L	0.15	0.35
SW-21	9/8/2021	Lead, dissolved	0.00011	B	mg/L	0.0001	0.0005
SW-21	9/8/2021	Manganese, dissolved	0.023	B	mg/L	0.01	0.05
SW-21	9/8/2021	Mercury, total (low level)	0.4	B	ng/L	0.3	1

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-21	9/8/2021	Potassium, dissolved	0.62	B	mg/L	0.2	1
SW-21	9/8/2021	Aluminum, total recoverable	0.065		mg/L	0.005	0.015
SW-21	9/8/2021	Arsenic, total recoverable	0.00117		mg/L	0.0002	0.001
SW-21	9/8/2021	Bicarbonate as CaCO3	40.7		mg/L	2	20
SW-21	9/8/2021	Calcium, dissolved	33		mg/L	0.1	0.5
SW-21	9/8/2021	Cation-Anion Balance	0		%		
SW-21	9/8/2021	Hardness as CaCO3 (dissolved)	92		mg/L	0.2	5
SW-21	9/8/2021	Iron, total recoverable	0.105		mg/L	0.007	0.02
SW-21	9/8/2021	Magnesium, dissolved	2.39		mg/L	0.2	1
SW-21	9/8/2021	Nitrate/Nitrite as N	0.414		mg/L	0.02	0.1
SW-21	9/8/2021	Residue, Filterable (TDS) @180C	136		mg/L	20	40
SW-21	9/8/2021	Sodium, dissolved	3.12		mg/L	0.2	1
SW-21	9/8/2021	Sulfate	55.6		mg/L	5	25
SW-21	9/8/2021	Sum of Anions	2		meq/L		
SW-21	9/8/2021	Sum of Cations	2		meq/L		
SW-21	9/8/2021	TDS (calculated)	121		mg/L		
SW-21	9/8/2021	TDS (ratio - measured/calculated)	1.12				
SW-21	9/8/2021	Total Alkalinity	40.7		mg/L	2	20
SW-21	9/8/2021	Zinc, dissolved	0.063		mg/L	0.02	0.05
SW-21	9/8/2021	Dissolved Oxygen (field)	91.7		%		
SW-21	9/8/2021	Flow	5.48		CFS		
SW-21	9/8/2021	ORP (field) (field)	347.5		mV		
SW-21	9/8/2021	pH (field)	7.92		units	0.1	0.1
SW-21	9/8/2021	Specific Conductance (field)	212.6		uS/cm		
SW-21	9/8/2021	Water Temperature (field)	7.6		C		
SW-3	9/8/2021	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-3	9/8/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-3	9/8/2021	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-3	9/8/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-3	9/8/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-3	9/8/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-3	9/8/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-3	9/8/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-3	9/8/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-3	9/8/2021	Chloride	1.46	B	mg/L	0.5	2
SW-3	9/8/2021	Arsenic, dissolved	0.00081	B	mg/L	0.0002	0.001
SW-3	9/8/2021	Arsenic, total recoverable	0.00085	B	mg/L	0.0002	0.001

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-3	9/8/2021	Fluoride	0.22	B	mg/L	0.15	0.35
SW-3	9/8/2021	Iron, total recoverable	0.0174	B	mg/L	0.007	0.02
SW-3	9/8/2021	Lead, dissolved	0.00015	B	mg/L	0.0001	0.0005
SW-3	9/8/2021	Mercury, total (low level)	0.51	B	ng/L	0.3	1
SW-3	9/8/2021	Potassium, dissolved	0.82	B	mg/L	0.2	1
SW-3	9/8/2021	Aluminum, total recoverable	0.0195		mg/L	0.005	0.015
SW-3	9/8/2021	Bicarbonate as CaCO3	37.8		mg/L	2	20
SW-3	9/8/2021	Cadmium, dissolved	0.000317		mg/L	0.00005	0.00025
SW-3	9/8/2021	Calcium, dissolved	40		mg/L	0.1	0.5
SW-3	9/8/2021	Cation-Anion Balance	0		%		
SW-3	9/8/2021	Hardness as CaCO3 (dissolved)	110		mg/L	0.2	5
SW-3	9/8/2021	Magnesium, dissolved	2.52		mg/L	0.2	1
SW-3	9/8/2021	Nitrate/Nitrite as N	1.16		mg/L	0.02	0.1
SW-3	9/8/2021	Residue, Filterable (TDS) @180C	164		mg/L	20	40
SW-3	9/8/2021	Sodium, dissolved	3.97		mg/L	0.2	1
SW-3	9/8/2021	Sulfate	76.5		mg/L	5	25
SW-3	9/8/2021	Sum of Anions	2.4		meq/L		
SW-3	9/8/2021	Sum of Cations	2.4		meq/L		
SW-3	9/8/2021	TDS (calculated)	149		mg/L		
SW-3	9/8/2021	TDS (ratio - measured/calculated)	1.1				
SW-3	9/8/2021	Total Alkalinity	37.8		mg/L	2	20
SW-3	9/8/2021	Zinc, dissolved	0.226		mg/L	0.02	0.05
SW-3	9/8/2021	Dissolved Oxygen (field)	71.1		%		
SW-3	9/8/2021	Flow	0.51		CFS		
SW-3	9/8/2021	ORP (field) (field)	416.8		mV		
SW-3	9/8/2021	pH (field)	7.17		units	0.1	0.1
SW-3	9/8/2021	Specific Conductance (field)	261		uS/cm		
SW-3	9/8/2021	Water Temperature (field)	6.2		C		
SW-4	9/8/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-4	9/8/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-4	9/8/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-4	9/8/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-4	9/8/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-4	9/8/2021	Carbon, dissolved organic (DOC)	1.3	B	mg/L	1	5
SW-4	9/8/2021	Chloride	1.25	B	mg/L	0.5	2
SW-4	9/8/2021	Iron, dissolved	0.0132	B	mg/L	0.007	0.02
SW-4	9/8/2021	Aluminum, dissolved	0.0146	B	mg/L	0.005	0.015

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-4	9/8/2021	Arsenic, dissolved	0.00091	B	mg/L	0.0002	0.001
SW-4	9/8/2021	Cadmium, dissolved	0.000153	B	mg/L	0.00005	0.00025
SW-4	9/8/2021	Fluoride	0.2	B	mg/L	0.15	0.35
SW-4	9/8/2021	Mercury, total (low level)	0.74	B	ng/L	0.3	1
SW-4	9/8/2021	Potassium, dissolved	0.63	B	mg/L	0.2	1
SW-4	9/8/2021	Aluminum, total recoverable	0.0995		mg/L	0.005	0.015
SW-4	9/8/2021	Arsenic, total recoverable	0.00121		mg/L	0.0002	0.001
SW-4	9/8/2021	Bicarbonate as CaCO3	39.5		mg/L	2	20
SW-4	9/8/2021	Calcium, dissolved	33.9		mg/L	0.1	0.5
SW-4	9/8/2021	Cation-Anion Balance	0		%		
SW-4	9/8/2021	Hardness as CaCO3 (dissolved)	95		mg/L	0.2	5
SW-4	9/8/2021	Iron, total recoverable	0.117		mg/L	0.007	0.02
SW-4	9/8/2021	Lead, dissolved	0.00053		mg/L	0.0001	0.0005
SW-4	9/8/2021	Magnesium, dissolved	2.5		mg/L	0.2	1
SW-4	9/8/2021	Manganese, dissolved	0.076		mg/L	0.01	0.05
SW-4	9/8/2021	Nitrate/Nitrite as N	0.476		mg/L	0.02	0.1
SW-4	9/8/2021	Residue, Filterable (TDS) @180C	136		mg/L	20	40
SW-4	9/8/2021	Sodium, dissolved	3.31		mg/L	0.2	1
SW-4	9/8/2021	Sulfate	60.8		mg/L	5	25
SW-4	9/8/2021	Sum of Anions	2.1		meq/L		
SW-4	9/8/2021	Sum of Cations	2.1		meq/L		
SW-4	9/8/2021	TDS (calculated)	127		mg/L		
SW-4	9/8/2021	TDS (ratio - measured/calculated)	1.07				
SW-4	9/8/2021	Total Alkalinity	39.5		mg/L	2	20
SW-4	9/8/2021	Zinc, dissolved	0.093		mg/L	0.02	0.05
SW-4	9/8/2021	Dissolved Oxygen (field)	91.3		%		
SW-4	9/8/2021	Flow	4.74		CFS		
SW-4	9/8/2021	ORP (field) (field)	322.2		mV		
SW-4	9/8/2021	pH (field)	7.88		units	0.1	0.1
SW-4	9/8/2021	Specific Conductance (field)	220.1		uS/cm		
SW-4	9/8/2021	Water Temperature (field)	10		C		
SW-99	9/14/2021	Zinc, dissolved	0.022	B	mg/L	0.02	0.05
SW-99	9/14/2021	Total Alkalinity	35.6		mg/L	2	20
SW-99	9/14/2021	TDS (ratio - measured/calculated)	0.93				
SW-99	9/14/2021	TDS (calculated)	112		mg/L		
SW-99	9/14/2021	Sum of Cations	1.9		meq/L		
SW-99	9/14/2021	Sum of Anions	1.8		meq/L		

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-99	9/14/2021	Sulfate	53.2		mg/L	5	25
SW-99	9/14/2021	Sodium, dissolved	2.33		mg/L	0.2	1
SW-99	9/14/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-99	9/14/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-99	9/14/2021	Residue, Filterable (TDS) @180C	104		mg/L	20	40
SW-99	9/14/2021	Potassium, dissolved	0.41	B	mg/L	0.2	1
SW-99	9/14/2021	Nitrate/Nitrite as N	0.046	B	mg/L	0.02	0.1
SW-99	9/14/2021	Mercury, total (low level)		U	ng/L	0.3	1
SW-99	9/14/2021	Manganese, dissolved		U	mg/L	0.01	0.05
SW-99	9/14/2021	Magnesium, dissolved	2.57		mg/L	0.2	1
SW-99	9/14/2021	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-99	9/14/2021	Iron, total recoverable	0.0314		mg/L	0.007	0.02
SW-99	9/14/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-99	9/14/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-99	9/14/2021	Hardness as CaCO3 (dissolved)	88		mg/L	0.2	5
SW-99	9/14/2021	Fluoride	0.22	B	mg/L	0.15	0.35
SW-99	9/14/2021	Copper, dissolved		U	mg/L	0.0008	0.002
SW-99	9/14/2021	Chloride		U	mg/L	0.5	2
SW-99	9/14/2021	Cation-Anion Balance	2.7		%		
SW-99	9/14/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-99	9/14/2021	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-99	9/14/2021	Calcium, dissolved	31.1		mg/L	0.1	0.5
SW-99	9/14/2021	Cadmium, dissolved	0.000065	B	mg/L	0.00005	0.00025
SW-99	9/14/2021	Bicarbonate as CaCO3	35.6		mg/L	2	20
SW-99	9/14/2021	Arsenic, total recoverable	0.00109		mg/L	0.0002	0.001
SW-99	9/14/2021	Arsenic, dissolved	0.00084	B	mg/L	0.0002	0.001
SW-99	9/14/2021	Aluminum, total recoverable	0.0434		mg/L	0.005	0.015
SW-99	9/14/2021	Aluminum, dissolved		U	mg/L	0.005	0.015
SW-99	9/14/2021	Dissolved Oxygen (field)	94.4		%		
SW-99	9/14/2021	Flow	2.35		CFS		
SW-99	9/14/2021	ORP (field) (field)	365.1		mV		
SW-99	9/14/2021	pH (field)	7.85		units	0.1	0.1
SW-99	9/14/2021	Specific Conductance (field)	202		uS/cm		
SW-99	9/14/2021	Water Temperature (field)	8.2		C		
SW-99	9/8/2021	Carbon, dissolved organic (DOC)		U	mg/L	1	5
SW-99	9/8/2021	Iron, dissolved		U	mg/L	0.007	0.02
SW-99	9/8/2021	Carbonate as CaCO3		U	mg/L	2	20
SW-99	9/8/2021	Copper, dissolved		U	mg/L	0.0008	0.002

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL
SW-99	9/8/2021	Hydroxide as CaCO3		U	mg/L	2	20
SW-99	9/8/2021	Lead, dissolved		U	mg/L	0.0001	0.0005
SW-99	9/8/2021	Residue, Non-Filterable (TSS) @105C		U	mg/L	5	20
SW-99	9/8/2021	Silver, dissolved		U	mg/L	0.0001	0.0005
SW-99	9/8/2021	Chloride	0.71	B	mg/L	0.5	2
SW-99	9/8/2021	Aluminum, dissolved	0.0064	B	mg/L	0.005	0.015
SW-99	9/8/2021	Arsenic, dissolved	0.00094	B	mg/L	0.0002	0.001
SW-99	9/8/2021	Cadmium, dissolved	0.000123	B	mg/L	0.00005	0.00025
SW-99	9/8/2021	Fluoride	0.18	B	mg/L	0.15	0.35
SW-99	9/8/2021	Manganese, dissolved	0.014	B	mg/L	0.01	0.05
SW-99	9/8/2021	Mercury, total (low level)	0.48	B	ng/L	0.3	1
SW-99	9/8/2021	Nitrate/Nitrite as N	0.059	B	mg/L	0.02	0.1
SW-99	9/8/2021	Potassium, dissolved	0.55	B	mg/L	0.2	1
SW-99	9/8/2021	Zinc, dissolved	0.039	B	mg/L	0.02	0.05
SW-99	9/8/2021	Aluminum, total recoverable	0.0641		mg/L	0.005	0.015
SW-99	9/8/2021	Arsenic, total recoverable	0.00124		mg/L	0.0002	0.001
SW-99	9/8/2021	Bicarbonate as CaCO3	34.9		mg/L	2	20
SW-99	9/8/2021	Calcium, dissolved	27.8		mg/L	0.1	0.5
SW-99	9/8/2021	Cation-Anion Balance	-2.9		%		
SW-99	9/8/2021	Hardness as CaCO3 (dissolved)	80		mg/L	0.2	5
SW-99	9/8/2021	Iron, total recoverable	0.0629		mg/L	0.007	0.02
SW-99	9/8/2021	Magnesium, dissolved	2.5		mg/L	0.2	1
SW-99	9/8/2021	Residue, Filterable (TDS) @180C	116		mg/L	20	40
SW-99	9/8/2021	Sodium, dissolved	2.14		mg/L	0.2	1
SW-99	9/8/2021	Sulfate	49.7		mg/L	5	25
SW-99	9/8/2021	Sum of Anions	1.8		meq/L		
SW-99	9/8/2021	Sum of Cations	1.7		meq/L		
SW-99	9/8/2021	TDS (calculated)	105		mg/L		
SW-99	9/8/2021	TDS (ratio - measured/calculated)	1.1				
SW-99	9/8/2021	Total Alkalinity	34.9		mg/L	2	20
SW-99	9/8/2021	Dissolved Oxygen (field)	86.7		%		
SW-99	9/8/2021	Flow	3.62		CFS		
SW-99	9/8/2021	ORP (field) (field)	306.4		mV		
SW-99	9/8/2021	pH (field)	7.63		units	0.1	0.1
SW-99	9/8/2021	Specific Conductance (field)	182.6		uS/cm		
SW-99	9/8/2021	Water Temperature (field)	13.5		C		

Lab qualifiers:

U - material was analyzed for but was not detected above the sample detection limit

Sample Location	Collection Date	Analyte	Result	Lab Qualifier	Units	MDL	PQL

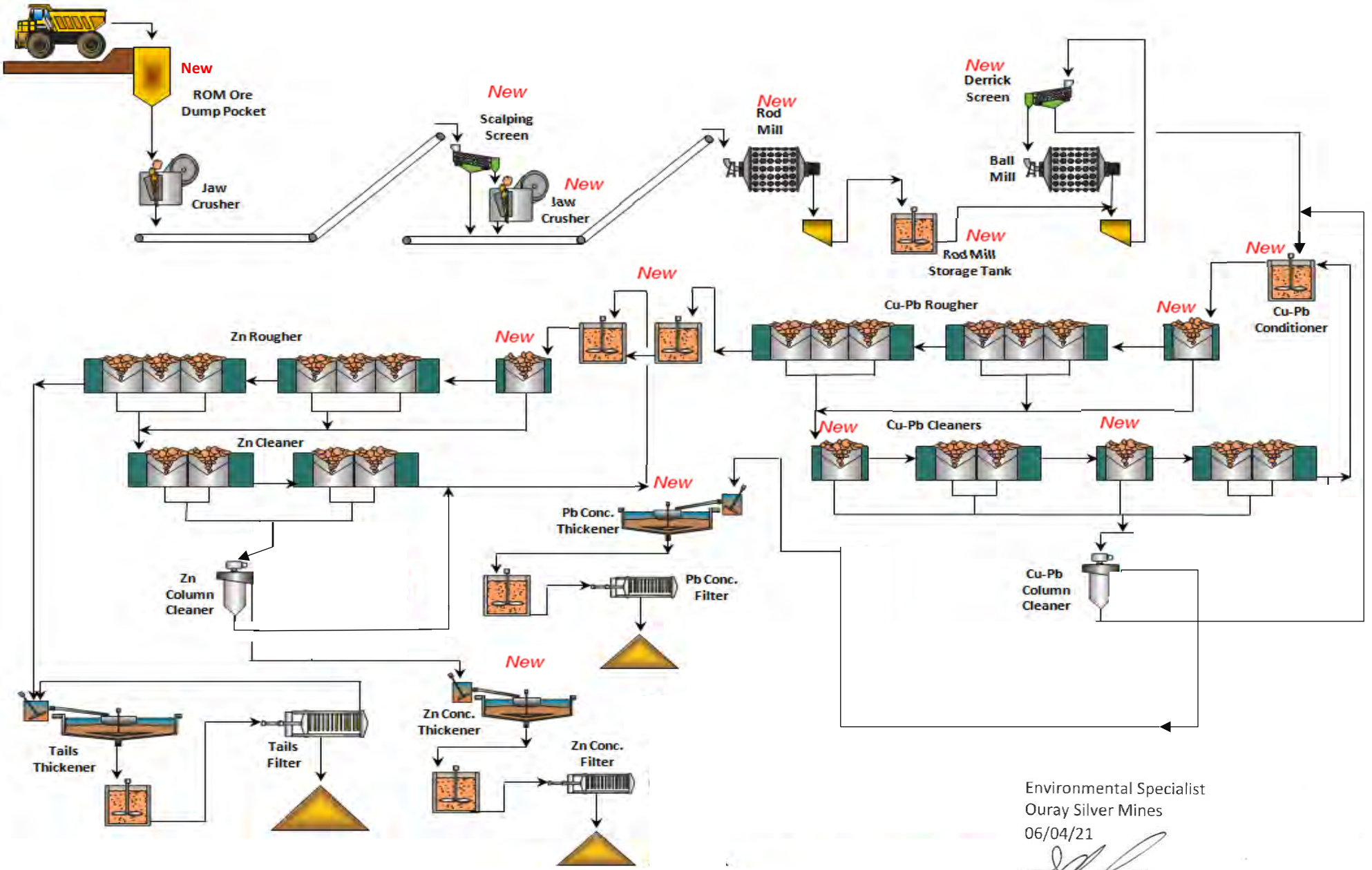
B - Analyte concentrations detected at a value between the MDL and PQL. The associated value is estimated

L - Target analyte response was below the laboratory defined negative threhold

H - Analysis exceeded method hold time. pH is a field test with an immediate hold time

Maps

Figure 1. – Simplified mill process flow diagram



Environmental Specialist
Ouray Silver Mines
06/04/21

LEGEND

- Direction of surface water flow
- Natural Waterways
- Mine discharge water
- Wetlands
- Permit Boundary
- Road
- Building
- UG Workings
- Building permitted and under construction
- Designated Chemical Locations
- Stormwater conveyance
- Stormwater barrier
- SPCC Inspection Site
- Sample Site

200 0 200 400 600

N

Tailing Storage Facility Access
Wattles
SW-15
GW-1A/B
Sneffels Creek
Berm
OF001A
Stormwater Outfall 001
GW-2A/B
SW-16
GW-3B
SW-3
Berm
Wattles
GW-4 (Inactive)
OF002A EPF
New Stormwater Pond (Proposed)
SW-22 (inactive)
Hay Bales
County Road 26
Mine Water Pond #3
Mine Water Pond #2
Mine Water Pond #1
SW-4
Atlas TSF EPF
Berm
Sediment Pond #1
SW-1
GW-3R
GW-4R (proposed)
Storm water diversion ditch #2
C-1 Fuel storage and filling
C-9 Fuel Storage
C-3 Materials storage warehouse
Revenue TSF EPF
Storm water collection ditch #2
C-8 Reagent Room EPF
C-4 Waste storage pad and hazardous waste SAA
C-11 Mill EPF
C-5 Backup generator
C-7 Underground shop
Floatation Gallery
Storm water diversion ditch #1
Atlas Creek
Avalanche Berm
Crusher Gallery
UG-5 Revenue Tunnel Portal (Access to C-6 Loci Barn Underground and C-10 1800 Level)
UG-2

1416 CR 26
Ouray, CO 81427

Date	Revision
4/26/22	A2 AR Comments

Map U-1
Environmental Protection Plan

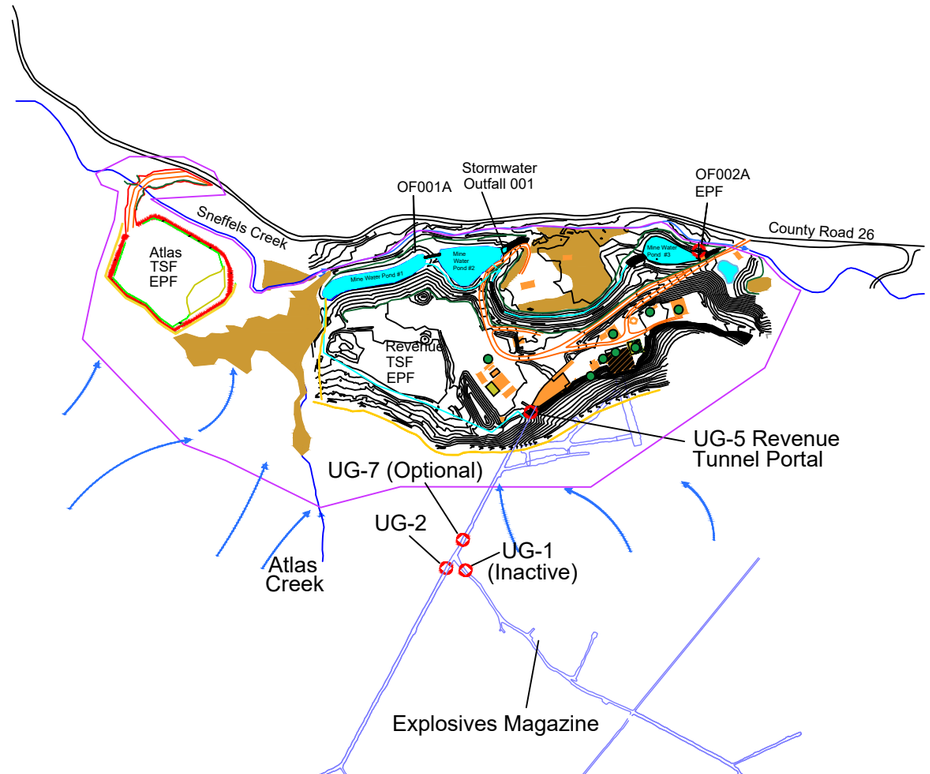
Date: April 26, 2020 | Drawn By: THJ
Approved By: Todd Jesse
File: 20220426_env_prot_map.dwg

N

200 0 200 400 600 800 1000 1200 1400

LEGEND

- Direction of surface water flow
- Natural Waterways
- Mine discharge water
- Wetlands
- Permit Boundary
- Road
- Building
- UG Workings
- Building permitted and under construction
- Designated Chemical Locations
- Stormwater conveyance
- Stormwater barrier
- SPCC Inspection Site
- Sample Site



Cumberland Workings

Yellow Rose Workings

Anglo-Saxon Workings

Explosives Magazine

Terrible Workings

Virginius Workings

UG-8

UG-4

UG-3 (Inactive)

Revenue Tunnel

Atlas Workings

UG-9 (Optional)

UG-10

C-10 1800 Level

C-6 Loci Barn Underground

1416 CR 26
Ouray, CO 81427

Date:	Revision:
4/26/22	A2 AR Comments

Map U-2
Environmental Protection Plan

Date: April 26, 2020 | Drawn By: THJ

Approved By: Todd Jessa

File: 20220426_env_prot_map.dwg

Attachment 3

Updated Appendices

Updated Appendix 2

SWMP

Ouray Silver Mines, Inc.
1900 Main St. Unit 1
PO Box 564
Ouray, CO 81427

REVENUE MINE

STORMWATER MANAGEMENT PLAN

Amended **May 2022**

In Conformance with the Guidelines set by:
Colorado Department of Public Health and Environment
Water Quality Control Division

CDPS General Permit COR-040000
Certificate COR-040289

STORMWATER MANAGEMENT PLAN (SWMP)

Facility Name:	Revenue Mine
Facility Type:	Underground mine and mill
Date Initial Operations Started:	Est. September 2021
Facility Mailing Address:	Ouray Silver Mines Inc. 1900 Main St. Unit 1 PO Box 564 Ouray, CO 81427
Facility Location Address:	Ouray Silver Mines Inc. - Revenue Mine 1416 County Rd. 26 Ouray, CO 81427 Monongahela / Hubb Reed Raise Governor Basin, Ouray County

Management Approval Statement:

This Stormwater Management Plan (SWMP) is fully supported by the management of Ouray Silver Mines Inc. (OSMI). OSMI will implement this plan and amend it as needed due to expansion, modifications and improvements at the facility. I certify under penalty of law that a completed SWMP, in compliance with Part I.B of the permit, has been prepared and implemented for my facility. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the SWMP is, to the best of my knowledge and belief, true, accurate, and complete, and implemented as written. I am aware that there are significant penalties for falsely certifying the completion of said SWMP, including the possibility of fine and imprisonment for knowing violations.

Name: Charles R. Andrews, CEO

Signature: _____

Date: 5-23-2022

SWMP ADMINISTRATOR

The SWMP Administrator is responsible for the daily Stormwater Management Plan administration at this site.

This designated person is: Todd Jesse Environmental Specialist

Telephone 970-325-9830.

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1 INTRODUCTION

This Stormwater Management Plan (SWMP) is used to mitigate potential impacts to Waters of the U.S. (i.e., Sneffels Creek) resulting from mining and milling operations at the Revenue Mine by Ouray Silver Mines Inc. in Ouray County, Colorado. The Revenue Mine includes surface activities at the main Revenue Portal and surface activities associated with the Monongahela / Hubb Reed Raise located in Governor Basin. Two other permitted areas, the Yellow Rose and the 960 Raise have not been constructed and are not discussed in this SWMP. The plan will be updated prior to these facilities being constructed.

Key elements of the SWMP are as follows:

- *Stormwater* from rainfall or snowmelt will pass through the site on its way to Sneffels Creek. All disturbed areas have collection systems in place that will direct runoff to the passive water treatment system where sediment settles, preventing sediment discharge. See the SWMP Map.

- *Sediment is classified by the State as a potential pollutant,* therefore all disturbed area runoff is diverted to either the passive water treatment system or sediment control ponds to prevent sediment being contributed to Sneffels Creek.

- The best method of managing site runoff water quality is to *remove and properly dispose of any site contaminants* that could be transported by stormwater runoff. Activities that have the potential to produce non-sediment pollutants will be restricted to in-door facilities with sufficient internal sump capacity to prevent discharge.

- *On-site Stormwater* (stormwater contacting the surface activity area of the mine) shall be contained within the mine and routed to a sediment pond before being discharged into Sneffels Creek.

- Any discharge of *On-Site Stormwater* to surface waters or to groundwater will be regulated through the Water Quality Control Division for discharges of stormwater or process water associated with hardrock mining and/or milling. Revenue Mine has a stormwater permit certification, COR-040289, which is part of the general permit COR-040000. OSMI also has a discharge permit (CO-0000003) to allow discharge of treated mine water and some stormwater to Sneffels Creek.

- OSMI manages the site in a manner that does not require stormwater discharge. However, should a discharge occur, such discharge will be sampled in accordance with the stormwater certification.

2 DESCRIPTION OF MINING ACTIVITIES

The Revenue Mine is located along Ouray County Road 26 (approximately five miles southwest of Ouray, CO) at latitude 37.97400° N and longitude 107.75076° W. The site is bordered by Sneffels Creek to the north and mountains of the San Juan range to the south. The total permitted area is approximately 50 acres, of which approximately 38 acres are considered disturbed. The mine area has been extensively disturbed from historic mining activities since the late 1880's.

Metal mining operations are performed pursuant to a Division of Reclamation Mining and Safety (DRMS) Section 112d Designated Mining Operation Permit known as the "Revenue Mine" Permit M-2012-032. Ouray Silver Mines Inc. is permitted for the following activities at the Revenue Mine site:

- Underground mining
- Underground processing of ore
- Surface facilities to support underground mining and ore processing activities Fuel and Chemical Storage

The mine is considered a designated mining operation (DMO), which means the mine must adhere to more stringent environmental controls associated with designated chemicals and acid forming materials (i.e., mill reagents and acid mine drainage).

The following activities are permitted at the Monongahela/Hubb Reed Area located in Governor Basin.

- Secondary escapeway
- Refuge chamber
- Exhaust fan

2.1 *UNDERGROUND MINING*

Mine development and production mining occurs underground approximately 1 mile from the main portal. Underground mining activities include developing drifts, stopes, and other excavations for the purpose of producing ore. Underground mining activities also include drilling, blasting, excavating, and hauling of materials. None of these activities will be exposed to stormwater runoff. Water used in the mining process reports to the main Revenue Ditch, which exits the mine via the Revenue Portal and is treated in a passive mine water treatment system prior to discharge pursuant to a Colorado Discharge Permit System (CDPS) industrial wastewater permit (CO-0000003).

2.2 *UNDERGROUND PROCESSING*

Mined ore is hauled to the ore processing area, also located underground, where it is dumped into the ore handling system, crushed and conveyed to the flotation circuit. The crushing and milling circuit is located entirely underground. Tailings from the milling process are transferred to a filter press in the Mill Building, which is attached to the underground milling operations.

Ore processing and related activities are conducted either underground or inside a building and therefore are not exposed to stormwater runoff.

Tailings that have gone through a filter press are hauled to one of two tailings storage facilities (TSFs) (i.e., the Revenue TSF or the Atlas TSF) for permanent placement. The TSFs are located on the surface and are equipped with stormwater controls (See Site Map for details).

2.3 *SURFACE FACILITIES*

The surface facilities used to support underground mining and processing are shown on the site map and consist of the following:

Main Revenue Portal Area:

- administration building / dry (change house)
- two material storage warehouses
- mill building (attached to underground mill)
- Reagent room building
- Waste storage pad/shed
- Propane sheds
- Temporary lineout building
- Railyard building
- Crusher and waste rock stockpile area
- Security building (temporary building)
- Lay down areas
- Passive mine water treatment system
- Access roads
- Tailings Storage Facilities (described in Section 2.2)

Monongahela/Hubb Reed Governor Basin Area:

- Hoist house
- Shaft
- Buried refuge chambers
- Access roads

The facilities at the Revenue Mine are constructed within permitted disturbance areas per the DRMS Permit No. M-2012-032 and have run on and runoff control systems.

3 AREA SUBJECT TO EFFLUENT LIMITATIONS GUIDLINES

The Revenue Mine is subject to Federal Effluent Limitation Guidelines (ELGs) as described in 40 CFR Part 440 Ore Mining and Dressing Point Source Category, Subpart J, Copper, Lead, Zinc, Gold, Silver, and Molybdenum Subpart. Only a portion of the entire DRMS permitted area is disturbed. This SWMP provides stormwater controls for the areas where stormwater may come into contact with industrial activities as defined by Regulation 61 and Rule 6.4.21 of the

Hardrock Rules. The general area subject to effluent limitations totals approximately 43 acres and is shown on the Site Map provided in Appendix B.

This SWMP addresses stormwater associated with an industrial activity as defined by 5 CCR 1002-61, Colorado Discharge Permit System Regulations (Regulation 61), which states, "Stormwater discharge associated with industrial activity means the discharge from any conveyance, which is used for collecting and conveying stormwater and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant.

Regulation 61 further defines Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations (metal mining is SIC Code 10) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge stormwater contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations."

Regulation 61 limits the area subjected to industrial activities for mining operations by the following section 61.3(2)(c), "The Division may not require a permit for discharges of stormwater runoff from mining operations or oil and gas exploration, production, processing or treatment operations or transmission facilities, composed entirely of flows which are from conveyances or systems of conveyances (including but not limited to pipes, conduits, ditches, and channels) used for collecting and conveying precipitation runoff and which are not contaminated by contact with or that have not come into contact with, any overburden, raw material, intermediate products, finished product, byproduct or waste products located on the site of such operations."

The Revenue Mine permit area has several run-on control features that convey stormwater from native hillsides around the disturbance areas and therefore, this runoff is not contaminated by contact with, nor has it come into contact with overburden, raw materials, etc.

Only the stormwater associated with an industrial activity is covered by this SWMP.

4 SITE MAP

There are two site maps in Appendix B of this SWMP. One map is for the main Revenue Mine Area and the other is for the Monongahela/Hubb Reed area in Governor Basin. Note the disturbance area at the Monongahela/Hubb Reed permit area is less than 0.5 acres and is therefore not included in OSMI's stormwater permit. However, OSMI's DRMS permit requires stormwater designs within the permit boundary. To simplify plans, OSMI has included the Monongahela / Hubb Reed area in this SWMP. The site maps depict the following features:

- Mine/mill site boundary, access and haul roads
- Equipment storage, fueling and maintenance areas
- Materials handling areas
- Areas used for storage of development rock, materials, soils or wastes

- Location of mine drainage and treatment system
- Tailings storage facilities
- Structural control measures used to reduce pollutants in stormwater runoff
- Springs, streams, wetlands and other surface waters
- Boundary of area that contributes runoff to outfalls that are subject to ELG; and
- All areas of soil disturbance.

The Site Map(s) also show the following information for those areas outside the area that contributes runoff to outfalls that are subject to ELGs

- An estimate of the direction of surface flow
- Stormwater outfalls and approximate area that drains to each outfall
- Location of impervious structures
- Locations of surface water bodies
- Location of potential pollutant sources.

5 STORMWATER MANAGEMENT CONTROLS

The following section describes the various controls used to manage stormwater at the Revenue Mine. Specifically,

- Identification of potential pollutant sources along with associated control measures and best management practices (BMPs).
- preventive maintenance used to maintain controls and BMPs,
- housekeeping measures
- spill prevention and response procedures
- employee education
- identification of discharges other than stormwater

5.1 Identification of Potential Pollutant Sources

The following potential pollutant sources have been identified at the site:

- Surface crushing facility
- equipment storage and laydown areas
- tailings storage facilities
- waste rock and topsoil storage areas
- access roads and haul roads
- reagent offloading areas
- fueling station(s), and
- other disturbed areas.

5.2 *Chemical and Fuel Storage Areas*

Various oil containing tanks and drums and several mill reagents are stored at the Revenue Mine. These tanks and containers have secondary containment either through structures directly surrounding the tanks or as a portable spill pallet.

The capacities of the oil containers present at the site are discussed in the mine's SPCC Plan. Locations of fueling area are shown on the Site Map. At various times, chemicals for the milling operation will be unloaded on the surface and transported into the mill building reagent room.

The Environmental Protection Plan discusses the management of mill chemicals and the controls in place to prevent a release. The regent room has an epoxy coated floor with vertical curbs to prevent release, as well as a concrete apron and sump pump. If for any reason, chemicals exit the filter building this system will capture the spill and pump it back to the reagent room.

5.3 Stormwater Management Best Management Practices (BMPs)

The following stormwater controls and BMPs are used to reduce the potential for the pollutant sources to contribute pollutants to stormwater discharges.

5.3.1 Run-on Controls / Stormwater Diversions

Stormwater not associated with an industrial activity (i.e., stormwater that has not come into contact with overburden, raw materials, etc.) is diverted around disturbed areas and directed to natural waterways. These stormwater diversions are shown as Stormwater Diversion Ditch #1 and Stormwater Diversion Ditch #2 on the Revenue Site Map and generally convey surface run-on from undistributed areas to the south of the main mine site around the process areas to natural wetlands located on the western portion of the site. This practice reduces the volume of stormwater that may come into contact with the pollutant sources identified in Section 5.1.

5.3.2 Passive Mine Water Treatment

Stormwater runoff associated with the Revenue TSF is directed towards the passive mine water treatment system where it is comingled with mine water and discharged pursuant to a CDPS individual permit (CO-0000003). The treatment system ponds have been over designed to accommodate the 10-year 24-hour storm event plus sediment storage.

The passive water treatment system and sediment pond are designed to contain the full stormwater runoff from a 10-year 24-hour event plus sediment storage volume. The drainage area to Mine Pond 1 is 3.319 acres, the drainage to Mine Pond 2 is 4.475 acres and the drainage area to the proposed Sediment Pond #2 is 6.955 acres. Mine Pond 2 is a sulfate reducing bioreactor that removes metals from the water. Mine Pond 2 discharges to Mine Pond 3, but also has an emergency spillway Stormwater Outfall 001. Mine Pond 3 discharges to Sneffels Creek via OF002A, as shown on the SWMP Map.

The Mine Water Ponds contain water that flows from historical tunnels from the Revenue Mine. Outfall 001A is no longer in use as mine water is directed through the passive water treatment system and discharges to Sneffels Creek at Outfall 002A.

Sneffels creek upstream of the mine is highly mountainous and drains an area of approximately 3,927 acres. No off-site areas drain to the sediment ponds since a diversion ditch is employed to ensure that runoff from the mountains to the south does not enter the site.

5.3.3 Sediment and Erosion Controls

Several sediment control ponds are used to managed runoff from the Atlas TSF and the general process area. Sediment Pond #1 was designed to control runoff from the Atlas TSF. Stormwater and snow melt that comes into contact with the tailings and waste rock placed in the Atlas TSF is directed towards Sediment Pond #1 where it is allowed to evaporate. At this point, this sediment pond is a non-discharging facility, however, when the Stormwater Certification is renewed, an emergency stormwater spillway will be added as a stormwater outfall subject to ELGs.

A second sediment capture area is located near the guard shack at the main entrance to the mine. Stormwater that comes into contact with the buildings and process area is conveyed via a ditch along the main access road to a small depression where it is allowed to infiltrate / evaporate. This area will be converted into a more defined sediment control pond in 2022.

Currently a coarse aggregate berm borders the mine site and Sneffels Creek. The berm is used to intercept and divert runoff from areas where the stormwater might cause erosion and/or interfere with the establishment of vegetation.

Sediment control measures located around the site will have a sediment barrier consisting of a row of entrenched and anchored erosion bales (or wattles). Erosion bales hold up to the extreme winter conditions at the mine site. Life of the bales is approximately one year by the industry standard. Bales may be replaced sooner if the control provides inefficient support or does not intercept, slow or detain the flow of stormwater to allow sediment to settle and be trapped.

Erosion bales will be either wire-bound or string-tied and will be installed so that bindings are oriented around the sides rather than along the tops and bottoms of the bales, to prevent deterioration of erosion bale bindings. To prevent water from escaping between the bales, the area will be filled with straw, therefore obtaining tight joints. Loose straw will be scattered over the area uphill from an erosion bale barrier to increase barrier efficiency.

Inspections of bales will be conducted during SWMP inspections. Repairs will be made promptly as needed. Erosion/Sediment accumulation against the erosion bale barrier will be removed when it reaches half the exposed bale height. Erosion bales as an industry standard have an expected life of one year therefore will be replaced at a minimum of once each year.

Controls are noted on the Site Map. Erosion logs, wattles and silt fencing will be installed to manufacturer's specifications and replaced as needed. Controls are inspected during routine SWMP inspections and deficiencies noted and corrected as soon as practically possible.

Sediment controls in place at the Monongahela/Hubb Reed area in Governor Basin include:

- Stormwater diversion ditches to convey stormwater around a portion of the permitted area.
- Stormwater channel to convey stormwater from the buildings (and area approximately ¼ of an acre) to a sediment control feature.

5.3.4 Materials Handling and Spill Prevention

Chemical reagents used in the milling process and petroleum products used for rolling stock are managed to reduce the risk to the environment from spills and other incidents. The company maintains a Spill Prevention Control and Countermeasure Plan (SPCC Plan) to manage petroleum products on site and an Environmental Protection Plan (EPP) and a Materials Containment Plan (MCP) to manage other chemicals and reagents. Spill kits are available at several locations including:

- A 35-gallon spill kit will be kept on site near the 10,000 gallon & 1,000 gallon fuel tanks (C1).
- A 55-gallon spill kit will be kept on site in the Materials Storage Warehouse (C-3)
- A 55-gallon spill kit will be kept on site in the Waste Storage Pad (C-4)
- A 35 gallons spill kit will be kept on site near the Underground Loci Barn (C-6)
- A 35-gallon spill kit will be kept on site in the Underground Shop (C-7)
- A 55-gallon spill kit will be kept on site in the Reagent Room (C-8)
- A 35-gallon spill kit will be kept on site near the 10,000 gallon fuel tank for generators (C-9)
- A 35-gallon spill kit will be kept on site near the rock drill oil on the 1800 level (C-10)
- A 55-gallon spill kit will be kept on site in the mill (C-11)

As shown on the Site Map, the mill is entirely underground. Several chemicals will be used in the milling process, primarily in flotation of the sulfide minerals. The two main mill tunnels will be graded to drain to a central sump, so that any chemical spill that could possibly occur would never enter the mine water discharge and consequently, the site discharge. This central sump will have a capacity of 3000 gallons, which is far more than any of the chemical tanks that will be stored in the mill area.

Mill Chemicals

Aero 242 Promoter- 0.01 lb/ton
Aerophine 3418- 0.02 lb/ton
Copper Sulfate ($CuSO_4$)-0.22 lb/ton
Hydrated Lime- 5.36 lb/ton
Sodium Metabisulfite [MBS]- 0.53 lb/ton
MIBC [Frother]- 0.23 lb/ton
SIPX- 0.04 lb./ton
Zinc Sulfate ($ZnSO_4$)- 0.53 lb./ton
Flocculant [all thickeners]- .1 lb./ton

The SDS sheets for these chemicals are available in a central location on site. These chemicals will be stored in factory containers of no greater than 1 ton each.

There are no materials or chemicals managed at the Monongahela / Hubb Reed area in Governor Basin.

5.4 Preventive Maintenance

Inspection and maintenance practices are:

- At a minimum, Spring and Fall comprehensive site inspections are performed at the Revenue Site to evaluate whether the sediment control structures are functioning correctly. This includes ditches, ponds and culverts.
- Inspections at the Monongahela / Hubb Reed area are limited to when access to the site is available.
- Access roads and haul roads are maintained to minimize erosion and sheet flow.
- A rock berm that surrounds the site is maintained to prevent stormwater from leaving the site in places other than permitted.
- Other SW controls such as straw bales, wattles, and silt fences are inspected during the regularly scheduled inspections as well as after each significant storm event.
- The emergency spillways at each pond will be checked for erosion or sediment buildup.

Additional routine inspections of work areas, waste storage areas, reagent unloading areas, the treatment ponds, etc. are performed on a more frequent basis. Issues noted during inspections are reported to the surface maintenance department for correction.

5.5 Good Housekeeping

The following good housekeeping practices will be employed at the site:

- Substances stored on-site are stored in a neat, orderly manner in their appropriate containers.
- Open containers of designated chemicals and other materials are stored under a roof or other enclosure to prevent mixing with stormwater.
- The General Manager is responsible for day-to-day site operations and directing spill prevention, cleanup, and reporting.
- Used oil is stored within 55-gallon drums on secondary containment and within an enclosed building to prevent mixing of stormwater and oil.
- If drip pans are used, they will be cleaned on a regular basis and not allowed to fill with stormwater.
- Equipment laydown areas are orderly and equipment that has the potential to impact stormwater runoff is stored inside or at the main warehouse in Ouray.
- Roads are maintained on a regular basis to prevent erosion.
- Dumpsters are hauled off site and trash is disposed of in a solid waste landfill.

5.6 Spill prevention and response procedures

Spills on the Revenue site are most likely to happen at the 10,000-gallon tank, during reagent unloading, or from a piece of equipment during maintenance. Containers greater than 55 gallons have secondary containment capable of containing at least 110% of the largest full tank capacity. Details on the spill prevention and spill cleanup procedures can be found in the SPCC plan. Spill kits are kept on site near each of the areas where hydrocarbons and reagents are stored to facilitate cleanup in case of a spill.

5.7 Employee education

Employees are provided training on stormwater matters during the new miner and annual refresher training required by MSHA. The training provides general awareness of on appropriate stormwater management, spill response, good housekeeping and materials storage practices Employees also are trained on what to do and who to contact in case of a spill, a failure of a BMP or identification of erosion features on site.

Records of new miner and annual refresher training are maintained on the MSHA 5000-23 form, which are maintained by safety department. The training materials used for this training are maintained by the environmental department.

5.8 Identification of discharges other than stormwater

There are two permitted mine water discharge points on site, Outfalls 001A and 002A, which are permitted as industrial discharges under CDPS Permit CO-0000003. Outfall 001A is located at the end of Mine Water Pond #1 and currently is not used for discharging but has been maintained as a permitted outfall in case there is a need to discharge at that location. Outfall 002A is located at the end of Mine Water Pond #3 and discharges directly to Sneffels Creek. This outfall is comingled mine water and some stormwater.

6 COMPREHENSIVE INSPECTION

The SWMP Administrator or his/her designee performs regular inspections of the site for stormwater management controls, spill control, maintenance, good housekeeping, and cleanup. Inspections during the Spring and Fall of each year are performed in accordance with the stormwater permit. Records of such inspections shall be maintained in files at the site together with the SWMP Plan. The inspections shall incorporate a complete review of Control Measures outlined in this plan and will report on any Control Measures that are not functioning and/or require maintenance. Any discharges that are out of compliance with the stormwater permit shall also be reported with corrective actions outlined.

7 CONSISTENCY WITH OTHER PLANS

OSMI maintains separate plans, including an SPCC Plan, an MCP, and an Environmental Protection Plan that cover spill prevention and controls for petroleum-based products and process-related chemicals, respectively. This SWMP is consistent with these other plans.

APPENDIX - A FLOW MEASUREMENTS AND CALCULATIONS

Stormwater associated with an industrial activity is routed to one of two sediment control ponds or to one of the Mine Water Ponds, which is part of the passive mine water treatment system. The following design calculations demonstrate that the capacity of the sediment control and treatment ponds are more than enough to contain the 10-year/24-hour storm event.

Ditches that collect runoff from the various portions of the disturbed area are designed to direct the stormwater into the sediment control ponds, which have trapezoidal emergency spillways built into the top of the embankment to allow the ponds to safely pass the 25-year peak

Discharge from these sediment control ponds is not expected during the life of the mine as they are overdesigned for the areas they are to control

The stormwater volume was determined using the calculations below as described in the "Procedures for Determining Peak Flows in Colorado", which includes and supplements Technical Release No. 55 "Urban Hydrology for Small Watersheds." If discharge or stormwater is required, sediment will be controlled by keeping the pump lower than the working area and by having gravel berms to prevent silty water from the bottom of the pond from entering the pump directly.

Hydrologic Soil Group

Group A Soils:	High infiltration (low runoff). Sand, loamy sand, or sandy loam. Infiltration rate > 0.3 inch/hr. when wet.
Group B Soils:	Moderate infiltration (moderate runoff). Silt loam or loam. Infiltration rate 0.15 to 0.3 inch/hr. when wet.
Group C Soils:	Low infiltration (moderate to high runoff). Sandy clay loam. Infiltration rate 0.05 to 0.15 inch/hr. when wet.
Group D Soils:	Very low infiltration (high runoff). Clay loam, silty clay loam, sandy clay, silty clay, or clay. Infiltration rate 0 to 0.05 inch/hr. when wet.

Runoff Curve Numbers (CN) for Watershed Area Draining to Mine Pond 1 (3.319 acres)

Description	Hydrologic Soil Group	Area (acres)	CN
Disturbed Land	**Group C Soils**	**3.319**	**87**

An area of 3.319 acres will drain to the discharge point of Pond 1 for the worst-case disturbance of this area.

The storage volume to prevent discharge is calculated as the volume between the Peak Stage of Pond #1 and the spillway. The calculations assume that the ponds are at Peak Stage:

The following areas were calculated using a scaled map from 2022 in AutoCAD which was used to create the SWMP Map.

By: T Jesse Date: 05/20/22
Location: Revenue Mine

1. Runoff Curve Number (CN)

Cover description	CN	Soil Group	Area (Acre)
Mined Land, Disturbed (Poor)	87	C	3.319

CN (weighted): 87.0
Total Area: 3.319 Acre

$S = (1000/CN) - 10$ $Q = [(P - 0.2\,S)2\,] / (P + 0.8\,S)$ (Bedient & Huber, 1989)

Where: S – potential abstraction (term is related to soil type and moisture condition)
CN – the curve number varies dependent on soil group and moisture condition.
Q – Direct runoff (excess rainfall) in inches
P – Rainfall depth, inches
After calculating Q, multiply by watershed area to get volume

2. Runoff
Return Period: 10-Year
Rainfall, P: 2.60 in
Runoff, Q: 1.2126 in
Runoff Volume: 0.335 Acre-Ft

The available storage volume of Pond 1 is 0.78 acre-feet therefore the pond is adequately sized.

Runoff Curve Numbers (CN) for Watershed Area Draining to Mine Pond 2 (4.475 acres)

Description	Hydrologic Soil Group	Area (acres)	CN
Disturbed Land	**Group C Soils**	**4.475**	**87**

An area of 4.475 acres will drain to the discharge point of Pond 2 for the worst-case disturbance of this area.

The storage volume to prevent discharge is calculated as the volume between the Peak Stage of Pond #2 and the spillway. The calculations assume that the ponds are at Peak Stage:

The following areas were calculated using a scaled map from 2022 in AutoCAD which was used to create the SWMP Map.

By: T Jesse Date: 05/20/22
Location: Revenue Mine

1. Runoff Curve Number (CN)

Cover description	CN	Soil Group	Area (Acre)
Mined Land, Disturbed (Poor)	87	C	4.475

CN (weighted): 87.0
Total Area: 4.475 Acre

$S = (1000/CN) - 10$ $Q = [(P - 0.2\,S)2] / (P + 0.8\,S)$ (Bedient & Huber, 1989)

Where: S – potential abstraction (term is related to soil type and moisture condition)
CN – the curve number varies dependent on soil group and moisture condition.
Q – Direct runoff (excess rainfall) in inches
P – Rainfall depth, inches
After calculating Q, multiply by watershed area to get volume

2. Runoff
Return Period: 10-Year
Rainfall, P: 2.60 in
Runoff, Q: 1.2126 in
Runoff Volume: 0.452 Acre-Ft

The available storage volume of Pond 2 is 1.054 acre-feet therefore the pond is adequately sized.

Runoff Curve Numbers (CN) for Watershed Area Draining to Proposed Sediment Pond #2 (6.995 acres)

Description	Hydrologic Soil Group	Area (acres)	CN
Disturbed Land	**Group C Soils**	**6.955**	**87**

An area of 6.955 acres will drain to the proposed Sediment Pond #2 for the worst-case disturbance of this site.

The storage volume to prevent discharge is calculated as the volume of the main pit above the water table. The water table lies greater than 5 feet below the surrounding surface. This scenario assumes that the pump is not working and the pond has filled to equilibrium level. The area of lower pond that will have the 5 feet of available height is calculated below:

The following areas were calculated using a scaled map image from 2011 in Survcad.

By: T Jesse Date: 05/20/2022
Location: Revenue Mine

1. Runoff Curve Number (CN)

Cover description	CN	Soil Type	Area
Mined Land, Disturbed (Poor)	87	C	6.955

CN (weighted): 87.0
Total Area: 6.955 Acre

2. Runoff
Return Period: 10-Year
Rainfall, P: 2.60 in
Runoff, Q: 1.2126 in
Runoff Volume: 0.703 Acre-Ft

The available storage volume of Proposed Sediment Pond #2 is a minimum of 0.88-acre feet therefore the pond is adequately sized.

Runoff Curve Numbers (CN) for Watershed Area Draining to Sediment Pond 1 (2.83 acres)

Description	Hydrologic Soil Group	Area (acres)	CN
Disturbed Land	**Group C Soils**	**2.83**	**87**

An area of 2.83acres will drain to the discharge point for Sediment Pond 1 for the worst-case disturbance of this site.

The storage volume to prevent discharge is calculated as the volume of the sediment pond above the water table. The water table lies greater than 5 feet below the surrounding surface.:

By: T Jesse Date: 05/20/22
Location: Revenue Mine – Atlas TSF

1. Runoff Curve Number (CN)

Cover description	CN	Soil Type	Area
Mined Land, Disturbed (Poor)	87	C	2.83

CN (weighted): 87.0
Total Area: 2.83 Acre

2. Runoff
Return Period: 10-Year
Rainfall, P: 2.60 in
Runoff, Q: 1.2126 in
Runoff Volume: 0.2859 Acre-Ft

The available storage volume of Sediment Pond 1 is a minimum of 1.51-acre feet therefore the pond is adequately sized.

Runoff Curve Numbers (CN) for Watershed Area Draining to Governor Basin Collection Ditch (0.15 acres)

Description	Hydrologic Soil Group	Area (acres)	CN
Disturbed Land	**Group C Soils**	**0.15**	**87**

An area of 0.15 acres will drain to the discharge point for Governor Basin Collection Ditch for the worst-case disturbance of this site.

The runoff rate for the half acre of land inside of the permit boundary in Governor Basin that does not have natural drainage is calculated below:

By: T Jesse Date: 03/27/12 16:16:30
Location: Governor Basin

1. Runoff Curve Number (CN)

Cover description	CN	Soil Type	Area
Mined Land, Disturbed (Poor)	87	C	0.15

CN (weighted): 87.0
Total Area: 0.15 Acre

2. Runoff
Return Period: 10-Year 24-hours
Rainfall, P: 2.60 in

Q = runoff rate (cubic feet per second) = CIA

C = Rational Method runoff coefficient = 0.18
I = rainfall intensity (inches per hour) = 0.108
A = drainage area (acres) = 0.15 acres
D = storm duration (hours) = 24 hours

Q = (0.18) (0.108)(0.15) = 0.002916 CFS = 1.31 GPM

The Governor Basin Collection Ditch will be constructed in the Spring of 2022 when weather conditions allow access to the area. A ditch will be created that will redirect stormwater from the raise bore area and divert it to a natural drainage to the side of the historic waste piles.

APPENDIX - B MAPS

LEGEND

- Direction of surface water flow
- Natural Waterways
- Mine discharge water
- Wetlands
- Permit Boundary
- Haul/Access Road
- Building permitted and under construction
- Building
- Stormwater conveyance
- Stormwater barrier
- Sediment pond
- Stormwater Boundary

200 0 200 400 600

N

Wattles

Tailing Storage Facility Access

Sneffels Creek

Berm

Atlas TSF EPF

Sediment Pond #1

Berm

Storm water diversion ditch #2

Berm

OF001A

Berm

Stormwater Outfall 001

Mine Water Pond #1

Mine Water Pond #2

Topsoil Pile

Waste Rock Stockpile Area

Revenue TSF EPF

Storm water collection ditch #2

Storm water diversion ditch #1

Fuel

Atlas Creek

Berm

Wattles

New Sediment Pond #2 (Proposed)

OF002A

Hay Bales

County Road 26

Mine Water Pond #3

Fuel

Underground Maintenance Shop

Revenue Tunnel Portal

1416 CR 26
Ouray, CO 81427

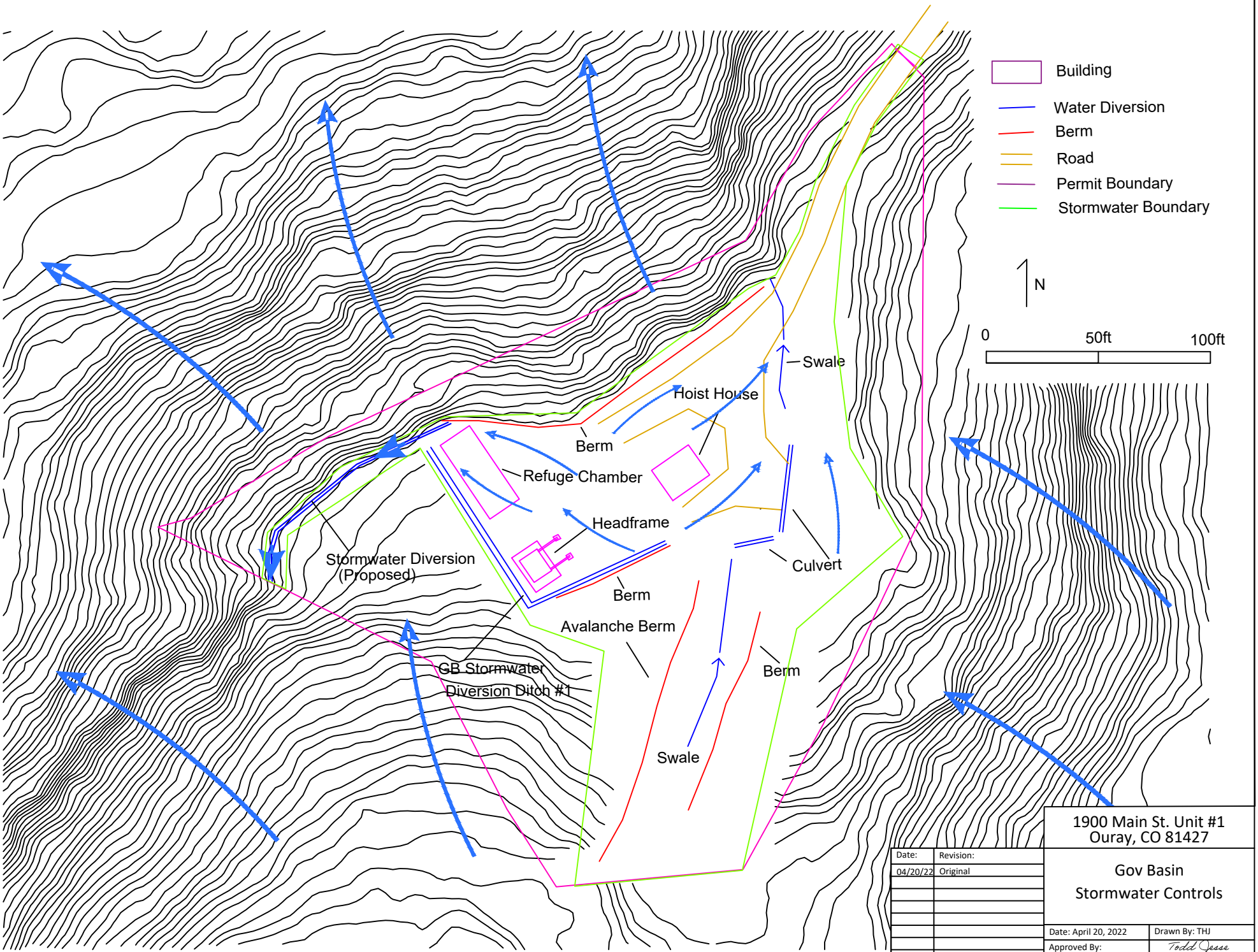
Stormwater Management Plan

Date:	Revision:
4/26/22	A2 AR Comments

Date: April 26, 2020 | Drawn By: THJ

Approved By: Todd Jesse

File: 20220426_swmp_map.dwg

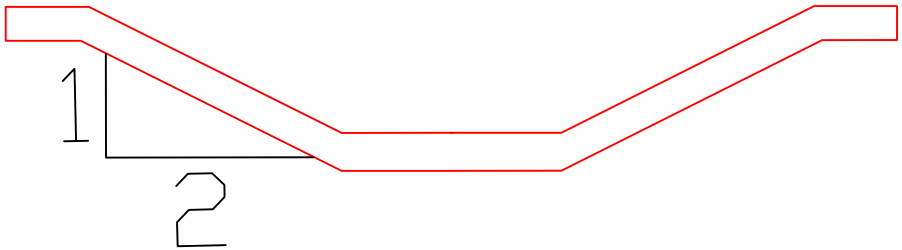


1900 Main St. Unit #1
Ouray, CO 81427

Gov Basin
Stormwater Controls

Date:	Revision:
04/20/22	Original

Date: April 20, 2022 | Drawn By: THJ
Approved By: Todd Jesse
File: gov_sw_map.dwg



Trapezoidal Channel
Equal Side Slopes
2 ft. channel depth
Channel Lining: riprap
(D_{50} = 0.5 ft) 12 inches thick

Note: Specific channel dimensions, such as embankment height and top of embankment width can vary.

1900 Main St. Unit #1
Ouray, CO 81427

Date:	Revision:
05/03/22	Original

Gov Basin
Stormwater Channel

Date: May 3, 2022	Drawn By: THJ
Approved By:	
File: sw_channel.dwg	

COLORADO
Department of Public Health & Environment

CERTIFICATION TO DISCHARGE UNDER CDPS GENERAL PERMIT COR040000
STORMWATER ASSOCIATED WITH METAL MINING OPERATIONS AND MINE-WASTE REMEDIATION

Certification Number: **COR040289 formerly COR040273**
This Certification to Discharge specifically authorizes:

Ouray Silver Mines Inc
to discharge stormwater from the facility identified as

Ouray Silver Mine
to: Sneffels Creek - Uncompaghre River

Facility Located at: 6208 CR 26 Ouray Ouray County, CO81427
Center Point Latitude 37.966667 Longitude -107.733333

OUTFALL 001 Latitude 37.966667 Longitude -107.733333

All discharges must comply with the lawful requirements of federal agencies municipalities, counties, drainage districts and other local agencies regarding any discharges to storm drain systems, conveyances, or other water courses under their jurisdiction.

Monitoring Requirements

1. Site-specific benchmark monitoring

Parameter	Units	Site-specific Benchmark Values		Rationale	Monitoring Frequency	Sample Type
		Acute	Chronic			
Cadmium, (potentially dissolved) 01313	ug/L	3.2	0.74	Regulations 35 and 93	Quarterly	Grab
Zinc, (potentially dissolved) 01303	ug/L	270	234	Regulations 35 and 93	Quarterly	Grab

2. Benchmark monitoring for Discharges from Waste Rock and Overburden Piles

Parameter	Units	Benchmark Values	Rationale	Monitoring Frequency	Sample Type
Total Suspended Solids (TSS) 00530	mg/L	100	EPA Benchmarks	Quarterly	Grab
Turbidity 00070	NTU	50	EPA Benchmarks	Quarterly	Grab
pH 00400	s.u.	6.0-9.0	EPA Benchmarks	Quarterly	Grab
Total Antimony 01097	mg/L	0.64	EPA Benchmarks	Quarterly	Grab
Total Arsenic 01002	mg/L	0.15	EPA Benchmarks	Quarterly	Grab
Total Beryllium 01012	mg/L	0.13	EPA Benchmarks	Quarterly	Grab
Total Cadmium 01027	mg/L	0.0045	EPA Benchmarks	Quarterly	Grab
Total Copper 01042	mg/L	0.0285	EPA Benchmarks	Quarterly	Grab
Total Iron 01045	mg/L	1.0	EPA Benchmarks	Quarterly	Grab
Dissolved Iron 01046	mg/L	Report	EPA Benchmarks	Quarterly	Grab

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Total Lead 01051	mg/L	0.213	EPA Benchmarks	Quarterly	Grab
Total Mercury 71900	mg/L	0.0014	EPA Benchmarks	Quarterly	Grab
Total Nickel 01067	mg/L	0.89	EPA Benchmarks	Quarterly	Grab
Total Selenium 01147	mg/L	0.005	EPA Benchmarks	Quarterly	Grab
Total Silver 01077	mg/L	0.0138	EPA Benchmarks	Quarterly	Grab
Total Zinc 01092	mg/L	0.23	EPA Benchmarks	Quarterly	Grab

Additional Monitoring Requirements

On the effective date of this certification, the Ouray Silver Mine facility is subject to the monitoring requirements discussed below at each discharge point of stormwater from the facility.

Monitoring frequency: The permittee must collect samples of stormwater discharge from the facility **once per quarter** unless otherwise directed by the Division.
Measurable Storm Event: For this certification, monitoring is only required once per quarter, regardless of the number of measureable storm events. However, if additional samples are collected during the quarter, these additional samples must also be included in the DMR summary as described below.

- Rain event. Permittees must conduct monitoring, as specified in the Monitoring Requirements table above, on a storm event that results in an actual discharge from the facility (measurable storm event), and that follows the preceding measurable storm event by at least 72 hours (3 days).

- Snowmelt event. The permittee must conduct snowmelt monitoring at a time when a measurable discharge occurs from the facility.

Storm Event Information
- Rain event. The permittee must document the information below for each monitored event.
  i. The date, time of the start of the discharge, time of sampling, duration (in hours) of the rainfall event, and magnitude (in inches) of the storm event sampled;
  ii. The duration between the storm event sampled and the end of the most recent storm event that produced a discharge.

- Snowmelt monitoring. The permittee must document the date of the sampling event for each monitored snowmelt event.

Sample Type and Requirements
- Grab samples shall be used for all monitoring and shall not be combined.
- Permittees must take a minimum of one grab sample from a discharge resulting from a measurable storm event. If the permittee, using an approved analytical method, monitors any parameter more frequently than specified in the Monitoring Requirements table above, then the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form (DMRs).
- Grab samples must be collected within the first 30 minutes of a measurable storm event. If it is not possible to collect the sample within the first 30 minutes of a measurable storm event, the sample must be collected as soon as practicable after the first 30 minutes, and documentation must be kept with the SWMP explaining why it was not possible to take samples within the first 30 minutes.
- In the case of snowmelt, samples must be taken during a period with a measurable discharge.
- All discharge samples at a facility must be taken during the same storm event, if feasible.

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Holding ponds:

- Sampling from facility holding ponds or other impoundments must be performed at the outlet from the pond. If the pond does not discharge, no sampling is necessary.
- If any process water mixes with stormwater, the resulting mixture is all considered process water, and must be covered under a CDPS industrial wastewater discharge permit.

Parameter Benchmark values: The permittee must analyze stormwater samples for the parameters identified in this certification. Benchmark values for these parameters are also provided in the certification, and are intended to be used to assess the effectiveness of control measures implemented at the facility. A benchmark exceedance is not a permit violation and, unless directed by the Division, the permittee is not required to take specific corrective action if a sample result exceeds its respective benchmark value.

Certification Issued 7/20/2016 Effective: 8/1/2016
Expiration date 9/30/2021 or upon renewal of the COR040000 General Permit whichever comes first
This cert is a division initiated modification of COR040273, to prepare for data entry into ICIS

This certification under the permit requires that specific actions be performed at designated times. The certification holder is legally obligated to comply with all terms and conditions of the permit.

Certification Approved By:
Kathleen M Rosow
Work Group Leader
Permits Section
Water Quality Control Division

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Updated Appendix 4

NRCS Soils Survey

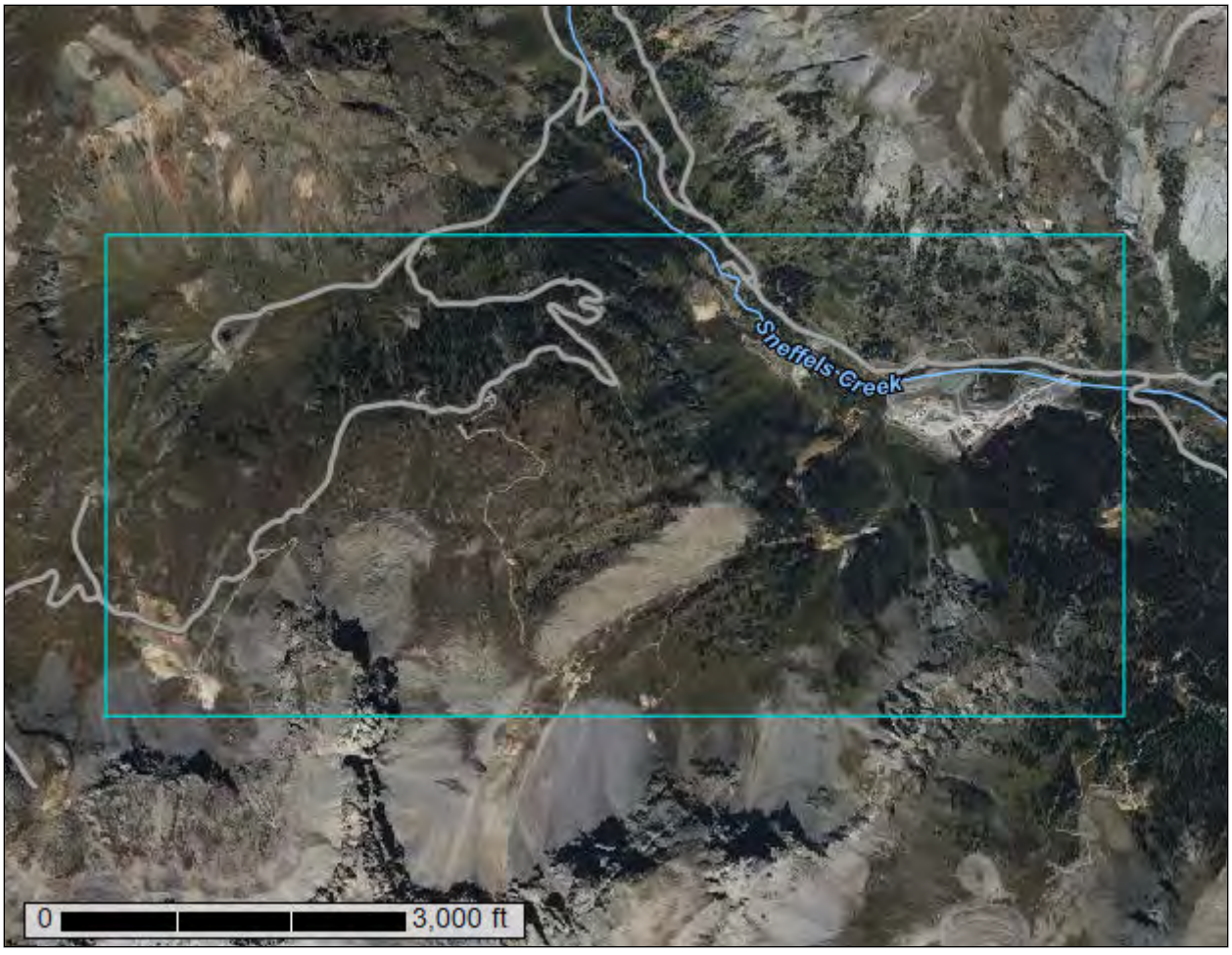
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Ouray Area, Colorado, Parts of Gunnison, Hinsdale, Ouray, San Juan, and San Miguel Counties



February 28, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

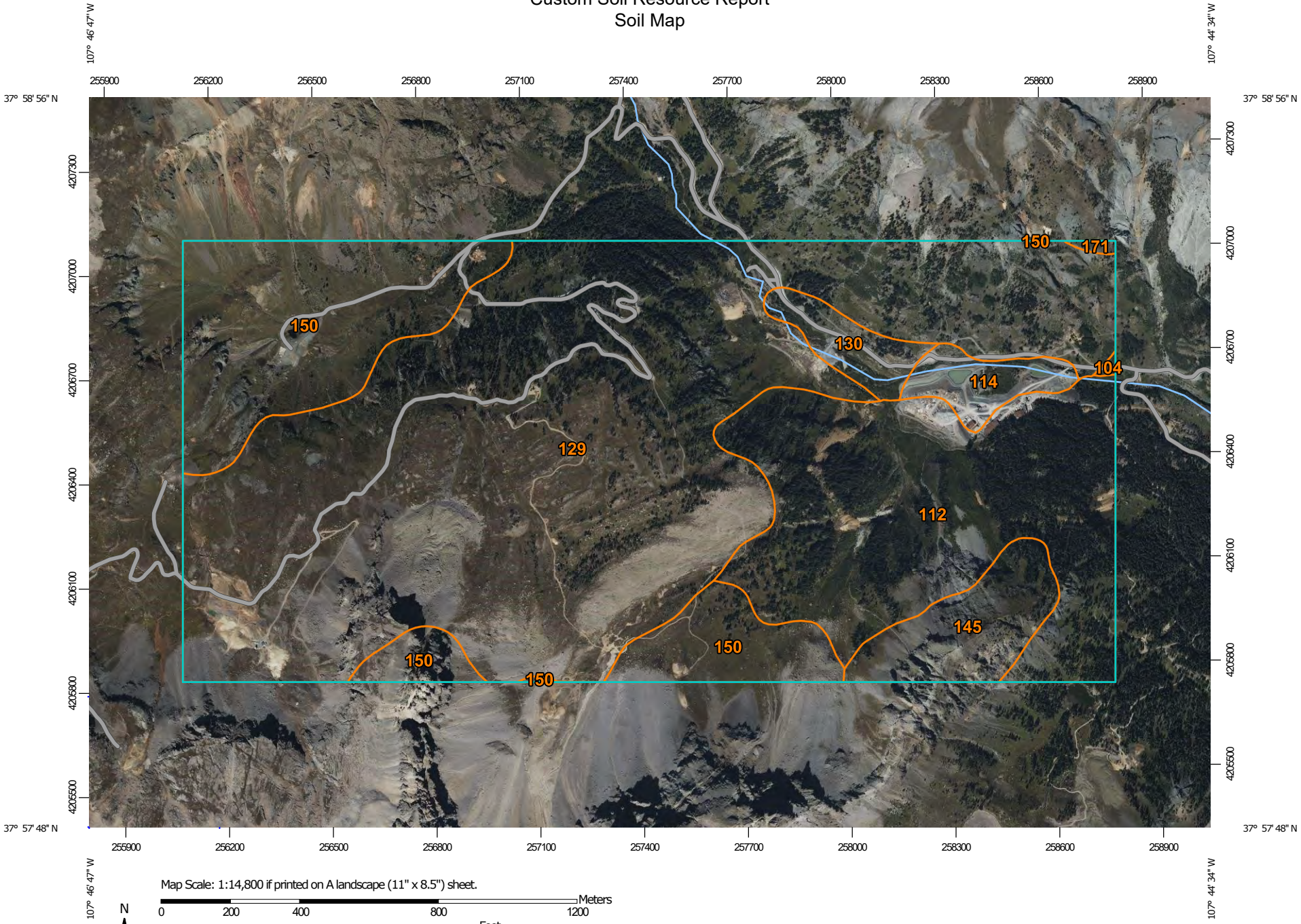
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ouray Area, Colorado, Parts of Gunnison, Hinsdale, Ouray, San Juan, and San Miguel Counties
Survey Area Data: Version 13, Sep 2, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 6, 2021—Sep 17, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
104	Borolls-Rock outcrop complex, 40 to 90 percent slopes	0.5	0.1%
112	Cryorthents-Rock outcrop complex, 50 to 120 percent slopes, extremely stony	172.4	20.3%
114	Dumps, mine	16.3	1.9%
129	Moran very gravelly loam, 30 to 65 percent slopes, extremely stony	473.3	55.7%
130	Moran, extremely stony-Telluride, extremely stony-Rock outcrop complex, 5 to 40 percent slopes	16.0	1.9%
145	Rock outcrop	34.2	4.0%
150	Rubble land	135.7	16.0%
171	Whitecross-Rock outcrop complex, 45 to 75 percent slopes, extremely stony	1.0	0.1%
Totals for Area of Interest		**849.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the

scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Ouray Area, Colorado, Parts of Gunnison, Hinsdale, Ouray, San Juan, and San Miguel Counties

104—Borolls-Rock outcrop complex, 40 to 90 percent slopes

Map Unit Setting

National map unit symbol: jyn7
Elevation: 8,800 to 11,200 feet
Mean annual precipitation: 25 to 34 inches
Mean annual air temperature: 32 to 41 degrees F
Frost-free period: 45 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition

Borolls and similar soils: 60 percent
Rock outcrop: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Borolls

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium derived from mixed and/or slope alluvium derived from mixed

Typical profile

A1 - 0 to 8 inches: very gravelly sandy loam
A2 - 8 to 19 inches: very gravelly loam
Cr - 19 to 23 inches: weathered bedrock

Properties and qualities

Slope: 40 to 90 percent
Depth to restrictive feature: 10 to 91 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Mountain slopes
Down-slope shape: Linear
Across-slope shape: Linear

Typical profile

R - 0 to 60 inches: unweathered bedrock

Properties and qualities

Slope: 40 to 90 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

Cryalfs

Percent of map unit: 10 percent
Hydric soil rating: No

Rubble land

Percent of map unit: 10 percent
Hydric soil rating: No

112—Cryorthents-Rock outcrop complex, 50 to 120 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: jynj
Elevation: 8,600 to 12,000 feet
Mean annual precipitation: 24 to 37 inches
Mean annual air temperature: 30 to 41 degrees F
Frost-free period: 40 to 70 days
Farmland classification: Not prime farmland

Map Unit Composition

Cryorthents and similar soils: 50 percent
Rock outcrop: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cryorthents

Setting

Landform: Ridges, mountain slopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop, interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from tuff and/or colluvium derived from tuff

Typical profile

A - 0 to 4 inches: extremely stony silt loam
C - 4 to 12 inches: extremely cobbly loam
R - 12 to 22 inches: unweathered bedrock

Properties and qualities

Slope: 50 to 120 percent
Depth to restrictive feature: 10 to 39 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8e
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Ridges, mountain slopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Free face, interfluve
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

R - 0 to 60 inches: unweathered bedrock

Properties and qualities

Slope: 50 to 120 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

Rubble land
Percent of map unit: 5 percent
Hydric soil rating: No

Scout
Percent of map unit: 5 percent
Hydric soil rating: No

114—Dumps, mine

Map Unit Composition
Dumps, mine: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dumps, Mine

Typical profile
- 0 to 60 inches: variable

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

129—Moran very gravelly loam, 30 to 65 percent slopes, extremely stony

Map Unit Setting
National map unit symbol: jyp5
Elevation: 10,400 to 12,900 feet
Mean annual precipitation: 31 to 42 inches
Mean annual air temperature: 28 to 35 degrees F
Frost-free period: 30 to 55 days
Farmland classification: Not prime farmland

Map Unit Composition
Moran and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Moran

Setting
Landform: Mountain slopes, mesas, basin floors
Landform position (two-dimensional): Backslope, summit, toeslope

Landform position (three-dimensional): Mountainflank, interfluve, base slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex, concave
Parent material: Slope alluvium derived from andesite and/or colluvium derived from andesite over till derived from mixed

Typical profile

A1 - 0 to 10 inches: very gravelly loam
A2 - 10 to 25 inches: very gravelly loam
Bw - 25 to 45 inches: very gravelly loam
C - 45 to 60 inches: extremely cobbly loam

Properties and qualities

Slope: 30 to 65 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R048AY304CO - Alpine Slopes
Other vegetative classification: ALPINE SLOPES (048AY304CO)
Hydric soil rating: No

Minor Components

Telluride

Percent of map unit: 5 percent
Hydric soil rating: No

Needleton

Percent of map unit: 5 percent
Hydric soil rating: No

Rubble land

Percent of map unit: 3 percent
Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent
Hydric soil rating: No

130—Moran, extremely stony-Telluride, extremely stony-Rock outcrop complex, 5 to 40 percent slopes

Map Unit Setting

National map unit symbol: 2w4zg
Elevation: 11,500 to 13,300 feet
Mean annual precipitation: 36 to 46 inches
Mean annual air temperature: 27 to 30 degrees F
Frost-free period: 25 to 40 days
Farmland classification: Not prime farmland

Map Unit Composition

Moran, extremely stony, and similar soils: 35 percent
Telluride, extremely stony, and similar soils: 25 percent
Rock outcrop: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Moran, Extremely Stony

Setting

Landform: Mountain slopes
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Slope alluvium and/or colluvium derived from volcanic rock

Typical profile

A - 0 to 10 inches: very stony loam
Bw1 - 10 to 25 inches: very stony loam
Bw2 - 25 to 45 inches: very stony loam
C - 45 to 60 inches: extremely cobbly loam

Properties and qualities

Slope: 5 to 40 percent
Surface area covered with cobbles, stones or boulders: 10.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.71 to 2.13 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Ecological site: R048AY304CO - Alpine Slopes

Other vegetative classification: ALPINE SLOPES (048AY304CO)
Hydric soil rating: No

Description of Telluride, Extremely Stony

Setting

Landform: Mountain slopes
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Slope alluvium and/or colluvium derived from volcanic rock over residuum weathered from andesite

Typical profile

A - 0 to 10 inches: very stony loam
Bw1 - 10 to 14 inches: very stony loam
Bw2 - 14 to 18 inches: extremely channery loam
R - 18 to 59 inches: bedrock

Properties and qualities

Slope: 5 to 40 percent
Surface area covered with cobbles, stones or boulders: 10.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R048AY308CO - Shallow Alpine
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: Unranked

Minor Components

Whitecross

Percent of map unit: 5 percent
Landform: Mountain slopes
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R048AY308CO - Shallow Alpine
Hydric soil rating: No

Rubble land

Percent of map unit: 5 percent
Hydric soil rating: Unranked

Sawpit

Percent of map unit: 5 percent
Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R048AY253CO - Wet Subalpine
Hydric soil rating: No

Henson

Percent of map unit: 5 percent
Landform: Mountain slopes
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R048AY304CO - Alpine Slopes
Hydric soil rating: No

145—Rock outcrop

Map Unit Setting

National map unit symbol: jyps
Elevation: 8,300 to 14,300 feet
Mean annual precipitation: 23 to 50 inches
Mean annual air temperature: 25 to 42 degrees F
Frost-free period: 15 to 75 days
Farmland classification: Not prime farmland

Map Unit Composition

Rock outcrop: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Outcrop

Setting

Landform: Ridges, mountain slopes, escarpments, cliffs
Landform position (three-dimensional): Free face, nose slope
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

R - 0 to 60 inches: unweathered bedrock

Properties and qualities

Slope: 0 to 120 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Cryorthents

Percent of map unit: 5 percent
Hydric soil rating: No

Rubble land

Percent of map unit: 5 percent
Hydric soil rating: No

150—Rubble land

Map Unit Setting

National map unit symbol: jypz
Elevation: 8,300 to 14,300 feet
Mean annual precipitation: 22 to 50 inches
Mean annual air temperature: 25 to 42 degrees F
Frost-free period: 15 to 75 days
Farmland classification: Not prime farmland

Map Unit Composition

Rubble land: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rubble Land

Setting

Landform: Mountain slopes, ridges
Landform position (three-dimensional): Free face, nose slope
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

H1 - 0 to 60 inches: fragmental material

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Rock outcrop
Percent of map unit: 5 percent
Hydric soil rating: No

Cryorthents
Percent of map unit: 5 percent
Hydric soil rating: No

171—Whitecross-Rock outcrop complex, 45 to 75 percent slopes, extremely stony

Map Unit Setting
National map unit symbol: jyqs
Elevation: 10,800 to 13,700 feet
Mean annual precipitation: 33 to 48 inches
Mean annual air temperature: 26 to 33 degrees F
Frost-free period: 10 to 50 days
Farmland classification: Not prime farmland

Map Unit Composition
Whitecross and similar soils: 50 percent
Rock outcrop: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Whitecross

Setting
Landform: Ridges, mountain slopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop, interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Slope alluvium derived from rhyolite and/or colluvium derived from rhyolite

Typical profile
A - 0 to 4 inches: very cobbly loam
Bw - 4 to 14 inches: very cobbly sandy loam
R - 14 to 18 inches: unweathered bedrock

Properties and qualities
Slope: 45 to 75 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R048AY308CO - Shallow Alpine
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Free face
Down-slope shape: Convex
Across-slope shape: Convex

Typical profile

R - 0 to 60 inches: unweathered bedrock

Properties and qualities

Depth to restrictive feature: 0 inches to lithic bedrock
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Minor Components

Rubble land

Percent of map unit: 10 percent
Hydric soil rating: No

Moran

Percent of map unit: 5 percent
Hydric soil rating: No

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Updated Appendix 5

2013 Wetlands Delineation

Wetland Delineation for the Revenue Mine
Ouray County, Colorado
Revised August 16, 2013

For: Silver Star Resources
By: WestWater Engineering

INTRODUCTION

WestWater Engineering (WestWater) was requested to conduct a wetland delineation at the Revenue Mine, located in Ouray County, CO. The survey area is approximately 43 acres of the 320 acre mining site and is made up of a conglomeration of mining claims. The patent dates on most of the claims are in the late 1800's. Most of the mines have gone through periods of activity for over one hundred years. The site has been thoroughly disturbed during this time period. The delineation was performed by WestWater in May and October, 2012 and May, 2013. On site with U.S. Army Corps of Engineers and preliminary jurisdictional revision was done on June 18, 2013.

WestWater identified 5.55 acres of Waters of U.S. (WoUS) including wetland, open water, and dry channels. A preliminary jurisdictional determination is being requested for SPK-2012-00953.

General project information is presented in Table 1.

Table 1. Project Information

Project Proponent:	Silver Star Resources Rory Williams Ph: 303-534-6500 1675 Larimer Street, Suite 820 Denver ,CO 80202
Land Owner:	Lands surrounding the project area are held in private and public (USFS) ownership. The project area is composed of a group of mining claims owned under the title of Revenue Virginius Claims, Appendix A.
Wetland Consultant:	WestWater Engineering Melani Jensen 2516 Foresight Circle #1 Ph: (970) 241-7076 Grand Junction, CO 81505 Fax: (970) 241-7079
Project Location:	The Revenue Mine is located approximately 7 miles southwest of Ouray, CO. on County Road 26 in Sec. 21, T43N, R8W (Figure 1 A and 1). County Road 26 is accessed off Hwy 550 just south of Ouray near the ice climbing center and Box Canyon Falls. The road is in good condition; however, four wheel drive is recommended in the case of inclement weather. Elevation of the Revenue Mine is approximately 10,600 ft.

Project Description:	Silver Star Resources is proposing to reopen the Revenue Mine in the near future. This will require a new State of Colorado Division of Reclamation, Mining and Safety (DRMS) permit and a permit from the U.S. Army Corps of Engineers (COE). The proposed activity includes opening the mine from the existing portal, where water has historically discharged into the Revenue Pond. As part of the new plan, rerouting the existing mine water discharge away from the Revenue Pond is needed since the placement of waste rock and tailings in the current location of the Revenue Pond is essential. There is no other practical place to store the waste rock and tailings in any large quantity. The mine water will be permanently routed into a built collection pond. DRMS regulations require that all flows from the disturbance area be channeled into sediment ponds which have very specific designs. Ore will be taken to a newly constructed underground mill where the concentrate will be produced. This concentrate will be taken offsite in trucks to an approved refining facility.

BACKGROUND INFORMATION

Table 2 depicts the Natural Resources Conservation Service (NRCS) soil map units within the survey area and their hydric rating (NRCS 2013) (Appendix F).

Table 2. NCRS soil map units and hydric rating for the Revenue Mine survey area.

Map Unit Symbol	Map Unit Name	Hydric Rating
112	Cryothents-Rock outcrop complex, 50 to 120 percent slopes, extremely stony	Not Hydric
114	Dumps, mine	Unknown Hydric
129	Moran very gravelly loam, 30 to 65 percent slopes, extremely stony	Not Hydric
130	Moran-Telluride-Rock outcrop complex, 5 to 40 percent slopes, extremely stony	Not Hydric

The survey area is mapped as Palustrine/Emergent Wetland/Saturated (PEMB) and Palustrine/Scrub-Shrub Wetland/Saturated (PSSB) by the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) (USFWS 2013) (Appendix G).

The survey area is located in the Uncompahgre sub-basin of the Gunnison basin in the Upper Colorado Region watershed, HUC 14020006, and within the Telluride, Colorado and Ironton, Colorado U.S. Geological Survey (USGS) 7.5 minute quadrangle.

A plant species list for the survey area was gathered and is provided in Table 3.

Table 3. Plant Species List for Revenue Mine

Species	Indicator Status	Species	Indicator Status
Achillea lanulosa (= A. millefoliia)	FACU	*Helenium autumnale*	FACW
Agrostis exarata	FACW	*Juncus arcticus ssp. Ater (= J. balticus)*	FACW
Bistorta bistortoides	FACW	*Lonicera involucrata*	FAC
Bromus ciliatus	FAC	*Phleum pratense*	FAC
Bromus inermis	FACU	*Picea engelmannii*	FAC
Calamagrostis canadensis	FACW	*Poa pratensis*	FAC
Caltha leptosepala	OBL	*Polemonium pulcherrimum*	NL
Cardamine cordifolia	FACW	*Potentilla pulcherrima*	NL
Carex aquatilis	OBL	*Ribes lucustre*	FAC
Carex lanuginosa	OBL	*Rumex densiflorus*	FACW
Carex microptera	FACU	*Salix geyeriana*	OBL
Carex utriculata	OBL	*Salix monticola*	OBL
Cirsium tracyi	FACU	*Salix planifolia*	OBL
Dactylis glomerata	FACU	*Salix brachycarpa*	FACW
Deschampsia cespitosa	FACW	*Senecio atratus*	NL
Elytrigia repens	NL	*Senecio ermophilus*	FACU
Epilobium ciliatum	FACW	*Senecio trangularis*	FACW
Erodium cicutarium	FACU	*Taraxacum officinale*	FACU
Fragaria virginiana	FACU	*Thalictrum fendleri*	FAC
Geranium richardsonii	FAC	*Urtica gracilis*	FAC
Geum macrophyllum	FAC		

WATERS OF THE U.S.

Observations - The valley's soils are composed primarily of mining waste rock and stockpiled tailings. Sneffels Creek runs from west to east through the project area. Ground water flow surfaces in various locations on the property and is the source of several wetland areas. Ground water discharging from the mine creates Revenue Pond near the mine portal. In May 2013 the ground water discharged from the mine had been rerouted and the Revenue Pond had been dramatically drained. An additional water source for the Revenue Pond was discovered as a ground water seep. A second visit in June 2013 was made and the Revenue Pond water level had again dropped even with some overflow input from the mine portal that could not be contained in the 8" pipe used to reroute the water flow. Photos of the Pond taken October 2012, May 2013, and June 2013 can be found in Appendix H. Mine management is photo documenting the level of Revenue Pond since the June 18, 2013 visit. Levels of flow from the Revenue Seep did not appear to have been altered by the change in water level at Revenue Pond. Historically, flow from the waste rock into the Revenue Seep corresponds with the flow input into the Revenue Pond (Lewicki 2012) (Appendix E).

Observations made during the site visit in May 2013 found three areas where waste rock disposal had encroached upon the fall 2012 delineated wetlands A, D, E and F10. Photo points 63, 64, 67, 68, and 90 in Appendix D document this observation. A conservative estimate of fill was calculated to cover approximately 830 ft^2 or 0.02 acres of wetland. Mine management was informed of the observation. Photo documentation can be found in Appendix I.

Delineation Methods

The delineation was performed by WestWater in accordance with COE standards included in the "Corps of Engineers Wetland Delineation Manual, January 1987" (COE 1987) and the Regional Supplement to the COE Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (Version 2.0, June 2010) (COE 2010). On site visits were made by WestWater in May and October 2012 and May 2013. Wetland boundaries were identified on the basis of the vegetation, soils, and hydrology present at the site. Soil was observed for the presence of redoximorphic characteristics. Soil was obtained from pits excavated in the very rocky substrate with a pick and shovel. Soil samples were not acquired from greater than 20 inches because of the difficult excavation. Observation of drainage patterns and other hydrologic indicators was completed and recorded on the attached data sheets. Only jurisdictional wetlands located adjacent to or above the ordinary high water mark (OHWM) were identified as part of this delineation. Wetland boundaries based on this evaluation were surveyed with an Ashtech Pro Mark 100 sub-meter hand-held global positioning system (GPS) unit (Figures 2 through 9). The survey area is an active mine site and heavily trafficked tourist area adjacent to National Forest and Wilderness area. Vertices locations are documented in Appendix B. GPS data were downloaded and mapped utilizing ARC GIS version 10.0. Shapefiles can be downloaded and are available upon request. Data point sets were documented on COE data sheets. Data point locations are recorded in Appendix B, depicted in Figure 2 – 9, and corresponding data sheets are attached to this report in Appendix C. Photo points and photos of the general area are attached in Appendix D.

Delineation Findings

Wetlands

WestWater identified two wetland types adjacent to jurisdictional non-wetland waters within the project area: fringe wetlands associated with Sneffels Creek and Atlas Creek and ground water wetlands created from water surfacing near the toe slope of the hillside and from water flowing through the waste rock (Figure 2 and 10). A total of 3.5 acres of wetland was delineated. Table 4 depicts a summary of all wetland acres.

Because this area has been very highly disturbed, *difficult wetland situations* criteria from the Western Mountains, Valleys, and Coast Region Supplement were used (Version 2.0, June 2010) (COE 2010).

Fringe wetlands were identified along Sneffels Creek and labeled as F10 (Figure 3 – 6 and Figure 10). Sneffels Creek is fairly incised and has predominantly steep banks along both sides. Along the south side of the creek, waste rock has been piled up to the creeks edge. As the creek has moved through its natural morphology, it has cut into the waste rock and left nearly vertical

banks above OHW of the creek. The north side of the creek is contained by bedrock. Narrow fringe wetlands in the waste rock are composed mostly of willows with little to no understory. Willow species include *Salix geyeriana, Salix monticola* and *Salix planifolia.* Delineated fringe wetlands for Sneffels Creek total 0.89 acres. Data Points on the attached corresponding COE data sheets are DP 1, 2, 14, 15, 31, and 32.

The unnamed tributary of Sneffels Creek, called "Atlas Creek" by mine management, was also carefully inspected for wetland characteristics. This tributary flows perennially off a steep hill side comprised mostly of boulders. A fringe wetland was flagged along the east bank of the tributary. Several test holes were dug to access soil characteristics around the creek. Hydric soil characteristics were only found in the test pits near the creek. A fringe wetland was flagged at the top of the bank slope extending above the creek.

Wetland L, located west of Atlas Creek was flagged in May, 2013 and the boundary was continuous with the fringe of Atlas Creek (Figure 7 and 10). Wetland L is supported by ground water and consists of several surfaced ponds and channels which flow into Atlas Creek and then into Sneffels Creek. Wetland L and the fringe of Atlas Creek total 1.29 acres. Corresponding COE data sheets are DP 10, 11, 33, and 34.

Wetlands A, B, D, and E have a sustaining source of hydrology from surfaced ground water flow. The Revenue Seep surfaces at the toe of a waste rock pile approximately 200 feet northeast of the Revenue Pond (Figure 8 and 10).

This area where Wetland A, B, D and E are located has been highly disturbed and is extremely rocky. The area appears to have been used to stock pile waste rock and tailings and then roughly graded flat, where some wetland characteristics have developed. Soil test pits were dug with a pick and soil observed in the pore spaces of the waste rock for the presence of redoximorphic characteristics. Indicators of hydrophytic vegetation were recorded, hydrology sources documented and the landscape setting observed.

Wetland A (Figure 8 and 10) is 0.02 acres with standing water a few inches deep and is separated from Sneffels Creek and wetland E by waste rock. The hydrology source for this wetland appears to be the surfaced ground water to the south from the Revenue Seep. Dominant vegetation consists of *Salix geyeriana, Salix planifolia, and Juncus arcticus.*

Wetland B (Figure 8 and 10) is 0.10 acres and found adjacent to a ponded area of the Revenue Seep. Several soil test pits were dug around the site. Some gleying and redox features were observed and the water table was also present within 5 inches of the surface in one test pit. Standing water was observed. Data Points on the attached corresponding COE data sheets are DP 26 and 27.

Wetland D (Figure 8 and 10) is 0.003 acres and is a wetland depression with an approximate 2 meter radius from flagged center point. Standing water was present at this location with dominant vegetation including *Viola adunca, Juncus arcticus, Carex utriculata, and Helenium autumnale*. This area contains debris from the mine.

Wetland E (Figure 8 and 10) is 1.14 acres and is the largest wetland in this area. Several ponded areas are located within this wetland from the Revenue Seep flow. Beaver activity in the

immediate area has created several areas of standing water. Several soil test pits were dug and vegetation indicators were established to determine the boundary. Vegetation found in this area included *Salix geyeriana, Salix monticola, Salix planifolia, Juncus arcticus, Carex aquatilis, Carex utriculata, Calamagrostis candadensis, Helenium autumnale.* Corresponding COE data sheets are DP 28 and 29.

Wetland J (Figure 6 and 10) is 0.07 acres and is located on the far east of the survey area. Wetland J is a small wetland. Its supporting hydrology is ground water that surfaces just west of the bridge across Sneffels Creek. The ground water source does not appear to be from the Revenue Pond because of the distance and location of these two areas relative to each other. It is more likely the hydrology source is from seepage from the adjacent hillside. Corresponding COE data sheets are DP 23.

Non-Wetland Waters

A total of 1.84 acres of non-wetland waters were determined to be jurisdictional. Table 4 summarizes individual aquatic resources.

Sneffels Creek flows through the survey area from west to east; it is a perennial stream averaging 12 feet wide and approximately 1.5 feet deep and is 1.11 acres. The creek is contained by steep banks of waste rock on the south and bedrock on the north. Atlas Creek flows into the survey area from the south (Figures 2 and Figure 7). This tributary averages 6 feet wide and 6 to 8 inches deep and is 0.10 acres. The main portion of the channel follows along the edge of the waste rock pile to Sneffels Creek.

The Revenue Seep appears to originate from the Revenue Pond and surfaced ground water, and flows from the toe of a waste rock pile approximately 200 feet northeast of the pond (Figure 2 and Figure 8). The water flows around a previously disturbed flat area that contains two historic buildings. Water from the Revenue Seep flows over the landscape and is collected in depression areas and a beaver pond structure and flows into Sneffels Creek. The Revenue Seep is a total of 0.31 acres and the beaver ponds are 0.05 acres.

Two ground water ponds, totaling 0.25 acres, are found within Wetland L. They are seasonally wet in the spring during high run off and are dry in the fall.

Other channels consist of a small channel that flows intermittently in the spring, approximately 1 foot wide by 1 inch deep, located on the western portion of the survey area, near DP 12 and 3, and drains into Sneffels Creek. A culvert feeds a channel from the Revenue Seep and is the additional waters in the "other channels" category. These two channels total 0.01 acres.

There are two areas of dry channels adjacent to Atlas Creek that have evidence of OHWM (Figure 7). These channels total 0.05 acres of WoUS.

REVENUE POND

The Revenue Pond, approximately 2.5 surface acres, was constructed in 1894 and supported mine operations. Waste rock from the mine was used to construct the Revenue Pond which has

steep banks. This waste rock is permeable and permits seepage of water into the Revenue Seep to the northeast. Discharge into the pond is from water collected from within the mine.

Observations made by mine management over time indicate that waters from the Atlas drainage does not enter into the Revenue Pond (Lewicki 2012). WestWater biologists present on site in both May and October, 2012 and May and June, 2013 did not observe any discharge into the Revenue Pond from Atlas Creek. The large dry channel adjacent to Atlas Creek, south of DP 17 (Figure 7), does not exhibit evidence of an OHWM and does not have flow during high flow periods. This channel is the result of extreme weather events. There are two smaller dry channels adjacent to Atlas Creek which do exhibit evidence of OHWM (Figure 7). Observations in May 2012, October 2012, May 2013, and June 2013 did not reveal any flow in these dry channels, or any flow into the pond from Atlas Creek of any kind. These two channels join approximately 50 feet upslope and continue for approximately 10 feet. The channel abruptly ends and there is no physical connection to Atlas Creek. There is an elevated area between the dry channels and Atlas Creek that separates the features. The elevated area is rocky and does not display evidence of an OHWM. The dry channels end at the southern end of the berm of Revenue Pond. There is no defined channel at this point. Photos taken in May 2012 and June 2013 of the berm and dry channels can be found in Appendix J.

The drainage feature observed on the aerial photos, located south of the central portion of the pond near DP 16 (Figure 7), was investigated in October, 2012 and May, 2013 for evidence of flow. No OHWM is present and no surface water flow was observed.

NWI mapping reports this pond as an impounded/diked feature, indicating this is a manmade structure (Appendix G). It was believed a reroute of the discharge into the pond from the mine would remove water input and the permeable waste rock would allow it to drain. In November, 2012, mine management piped the water collected from within the mine and rerouted the discharge to expel into Atlas Creek just above the confluence with Sneffels Creek. Most of the water drained from the pond within a few weeks, but did not completely dry before winter set in. Investigation of the pond in May, 2013 revealed the presence of a significant amount of water on the eastern end of the pond, believed to be 6 to 8 feet deep. Although most of the pond had drained this area was still ponded, and there was no evidence of the water level dropping during that visit. Further inspection located a ground water source to the west seeping into the bottom of the pond with definite flow into the ponded water to the east. The source of spring is surfacing ground water flow from the hillside to the south.

On June 18, 2013 an additional visit was made to the Revenue Mine. During this visit the water level was considerably lower than the May 22 and 23, 2013 site visit. The ground water source was still present and there was some overflow from the mine that could not be contained by the 8” pipe. The 8” pipe was not designed to handle peak water flows. The current 8” pipe (Figure 2) used for rerouting the water collected from within the mine was only designed to be temporary to demonstrate mine management’s ability to control the water source. Water will eventually be directed into new designed collection ponds to be located elsewhere on the property.

The edge of surface water of the pond and ground water source was mapped using the Ashtech Pro Mark 100 sub-meter hand-held global positioning system (GPS) unit in June 2013. The total surface area was 0.21 acres. The depth appeared to be 3 or 4 feet deep in the center, but was not measured. Mine management will be photo documenting the pond levels for the next few weeks.

As the high water flows reside the overflow from the mine will be contained fully to the 8" pipe and will not contribute the current pond levels.

Table 4. Delineated Waters of U.S. for Revenue Mine Ouray, CO.

Site Name	Class of Aquatic Resource	Delineated WoUS (acres)	Cowardin Class
Wetland A	Ground Water Wetlands	0.02	Palustrine/Emergent Wetland/Seasonally Flooded
Wetland B	Ground Water Wetlands	0.10	Palustrine/Emergent Wetland/Seasonally Flooded
Wetland D	Ground Water Wetlands	0.003	Palustrine/Emergent Wetland/Seasonally Flooded
Wetland E	Ground Water Wetlands	1.14	Palustrine/Emergent Wetland/Seasonally Flooded
Wetland J	Ground Water Wetlands	0.07	Palustrine/Emergent Wetland/Seasonally Flooded
Wetland L	Ground Water and Fringe Wetlands	1.29	Palustrine/Scrub-Shrub Wetland/Seasonally Flooded/Saturated
Wetland F10	Fringe Wetlands	0.89	Riverine/Scrub-Shrub Wetland/Seasonally Flooded
	Total Wetland	**3.513**	
Sneffels Creek	Relatively Permanent Water/Perennial Stream	1.11	N/A
Atlas Creek	Relatively Permanent Water/Perennial Stream	0.10	N/A
Revenue Pond	Relatively Permanent Water/Lake	0.21	N/A
Revenue Seep	Relatively Permanent Water/Perennial Spring	0.31	N/A
Other Channels	Relatively Permanent Water/Intermittent Stream	0.01	N/A
Ground Water Ponds	Relatively Permanent Water/Intermittent Spring	0.25	N/A
Dry Channels	Relatively Permanent Water/Ephemeral Stream Channel	0.05	N/A
	Total Non-Wetland Waters	**2.04**	
Total WoUS		**5.553**	

NON-WETLAND AREAS

During the site visit in October 2012 several areas were identified as having potentially hydrophytic vegetation and these sites were further investigated for indicators of soils and hydrology. These areas are discussed in detail below.

Wetland characteristics in the fringe of the Revenue Pond were thoroughly examined in October 2012. Vegetation was examined for hydrophytic characteristics. Hydrophytic vegetation present along the fringe included *Calamogrostis canadnsis, Rumex densiflorus, Polemonium pulcherimum, Feranium rishardsonii, Helenium autumnale, Salix geyeriana, Salix montiocla, Picea engelmanni*. Several test soil borings were taken within a meter of the OHWM of the pond. No hydric characteristics were found. There were no indications of hydrology. The area is comprised mainly of waste rock and water moves downward through the porous rock. Because no hydric soils or hydrology indicators were observed WestWater concluded that there was no fringe wetland around the settling pond. Corresponding COE data sheets are DP 21 and DP 22.

Non-wetland area F (Figure 9) is 0.01 acres and is a depression area with an approximate 4 meter radius from the center point. A test soil pit did not result in hydric soil indicators within the top 12 inches. There was very little herbaceous ground cover below the willows. Hydrology was not present at the time of the visit. The landscape setting is a depression area and was carefully examined but does not appear to have a hydrology source consistent with wetland criteria. Lack of hydrology was confirmed in May 2013.

Non-wetland areas G and H are located south of Sneffels Creek and east of wetland E (Figure 9). This area is in flat terrain elevated above Sneffels Creek and not susceptible to the ground water seepage from the Revenue Pond. Hydrology was not present at the time of the visit in October 2012 and landscape features did not suggest hydrology was present in the past or that pooling of water may occur. Lack of hydrology was confirmed in May 2013. Several marmot burrows were observed at this location. The area is very rocky and a soil sample was obtained to 12 inches deep. Hydric soil indicators were not found and no signs of hydrology were present. Vegetation in these two areas was comprised mostly of *Carex pellita* (an obligate species) and *Juncus arcticus (*a facultative wet species) with approximately 30% bare ground. WestWater did not determine these two areas to be wetlands. The corresponding COE data sheet is DP 30.

Non wetland K, located south of Revenue Pond and east of Atlas Creek, is a colluvium with very rocky soil characteristics (Figure 9). *Salix geyeriana* and *Salix brachycarpa* are the dominant vegetation species in this location. Test soil borings were taken in several locations upslope to observe potential hydric soil characteristics and determine hydrology presence is not present. Pocket gopher diggings were found throughout the area suggesting hydrology consistent with wetland features. No gleying or redox soil characteristics were present. Earthworms were found in many of the soil samples. WestWater determined the presence of obligate, facultative wet and facultative vegetation is mostly likely due to the spring snow melt. Data points found no hydric soils or indicators of hydrology. The waste rock deposits and colluvium feature is very rocky, porous and well drained and does not support hydrology. Corresponding COE data sheets are DP 16, 17, 18, 19, 20, 21, 22, 24, 25, 35, and 36.

RELOCATION OF THE HISTORIC BUILDINGS

A wetland evaluation was performed north of County Road 26 directly across from the current mining operation at the relocation site (Figure 9). Historic buildings to the south will be relocated to a relatively flat bench on this slope. The slope above the site location is steep approximately 40°. Vegetation found in this area included *Picea engelmannii, Achillea milleflium, Salix geyeriana, Fragaria virginiana, Phleum pretense, Festuca thurberi, Potentilla pulcherrimi* and *Taraxacum officinale.* A site inspection of this area found no wetland characteristics and determined any activity around the relocation site would not affect any potential wetland areas within 100 feet.

SUMMARY

A total of 5.55 acres of WoUS was delineated including 3.51 acres of wetland and 2.04 acres of non-wetland waters (Table 4). Several areas with hydrophytic vegetation were thoroughly investigated both in spring and fall and were determined to not meet the criteria of hydrology or soils and therefore were determined to be non-wetland areas.

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COE. 2010. U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Lewicki, Greg. 2012. A Brief History of the Mine and the Pond Construction.

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USFWS. 2013. National Wetlands Inventory. June 2013. Available online at: http://www.fws.gov/wetlands/Wetlands-Mapper.html. U.S. Fish and Wildlife Service.


Project Location
Legend
Survey Area May 2013
USGS 1:24K Quad Maps
Figure 1 A
Silver Star Resources
Revenue Mine
Wetland Delineation
Location Map
WestWater Engineering
Consulting Engineers & Scientists
0
1
2
Miles
1 in = 1 miles
Datum: NAD83, UTM 13N
Revised July 1, 2013
N
W
E
S
Ouray
Portland
Lake Lenore
Whitehouse Mountain
Mount Ridgway
Cirque Mtn
Twin Peaks
Potosi Peak
Bimetallist Mine
Sneffels
Camp Bird
Humbolt Mine
Mendota Peak
United States Mountain
Upper Camp Bird
Ophir Tunnel
Chicago Peak
Hayden Mountain
Richmond Pass
Imogene Pass
Governor Basin
Marshall Basin
Stony Mountain
Canyon Creek
Cascade Creek
Oak Creek
Coal Creek
Dexter Creek
Gaging Sta

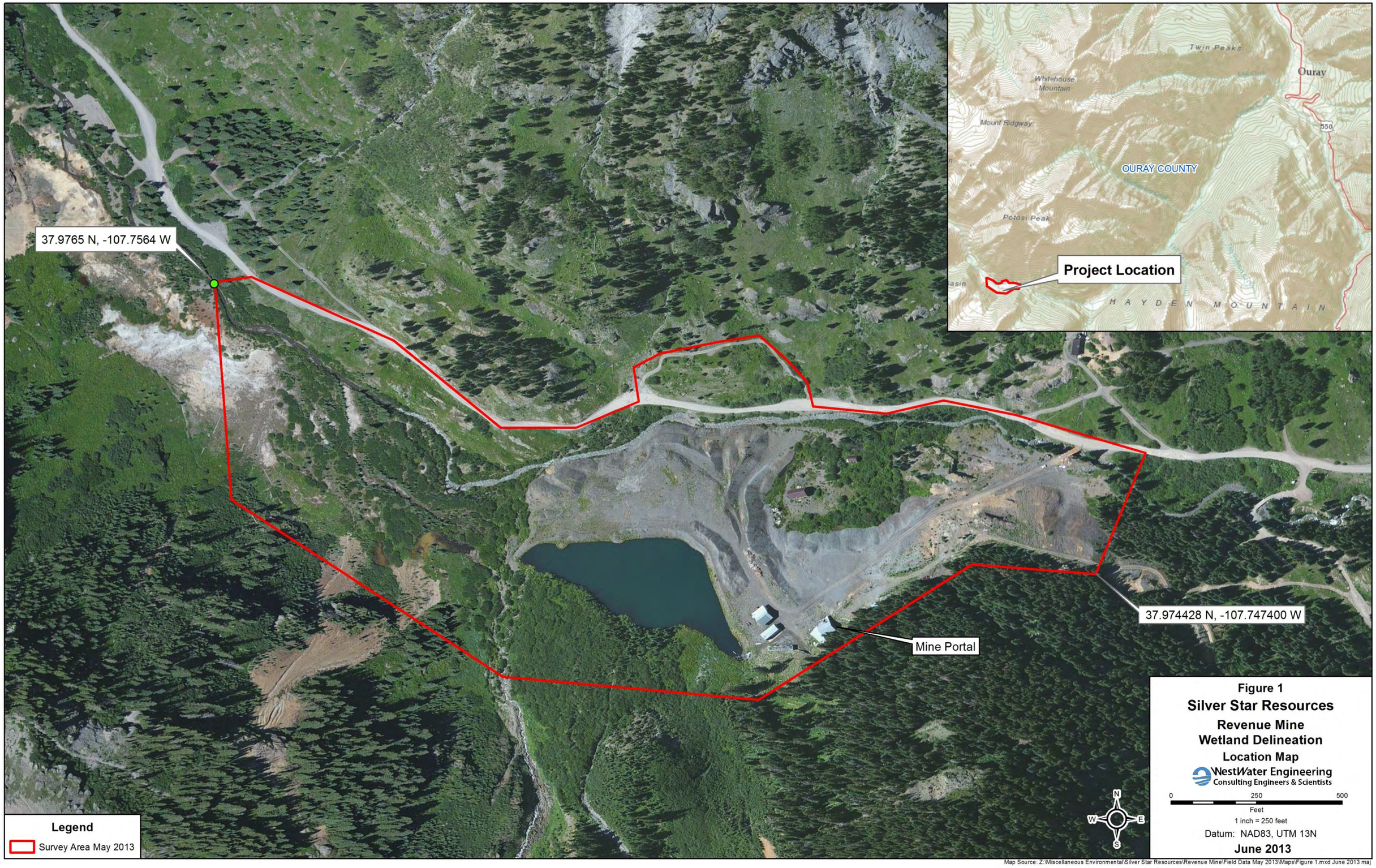


Figure 1

Silver Star Resources

Revenue Mine

Wetland Delineation

Location Map

WestWater Engineering
Consulting Engineers & Scientists

Datum: NAD83, UTM 13N

June 2013

Map Source: Z:\Miscellaneous Environmental\Silver Star Resources\Revenue Mine\Field Data May 2013\Maps\Figure 1.mxd June 2013 maj

Sneffels Creek

Revenue Seep

Ground Water Ponds

Atlas Creek

Mine Portal

Renevue Pond

Legend

- Revenue Pond June 18, 2013
- Data Points Revised July 2013
- Dry Channel
- Open Water
- Fringe Wetland
- Ground Water Wetland
- Pipe 8"
- Survey Area May 2013

Figure 2

Silver Star Resources

Revenue Mine

Wetland Delineation

Wetlands Map

NestWater Engineering
Consulting Engineers & Scientists

0 180 360
Feet

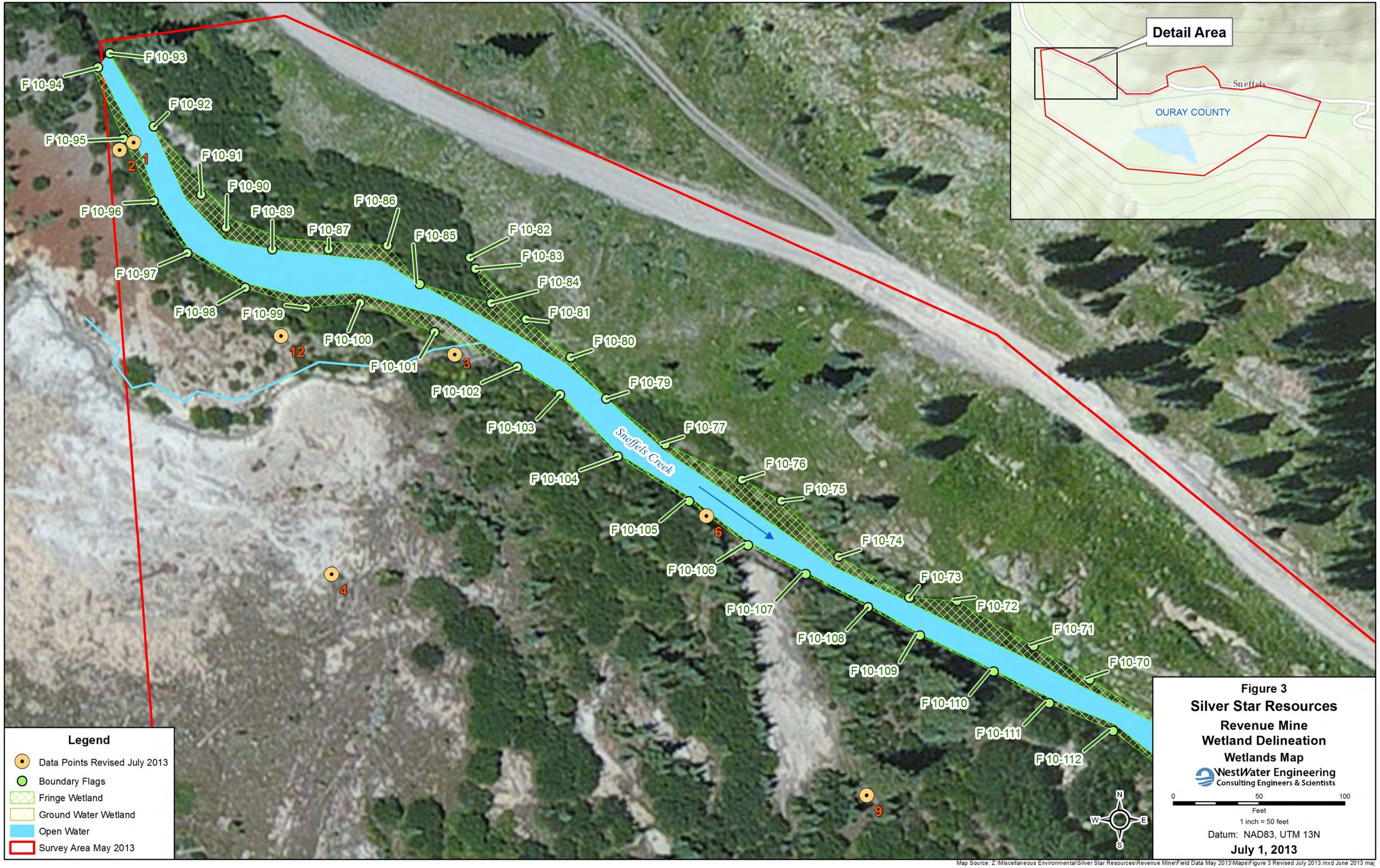
1 inch = 175 feet

Bing Aerial September 2011

Datum: NAD83, UTM 13N

August 16, 2013

Map Source: Z:\Miscellaneous Environmental\Silver Star Resources\Revenue Mine\Field Data May 2013\Maps\Figure 2 Revised July 2013.mxd June 2013 maj



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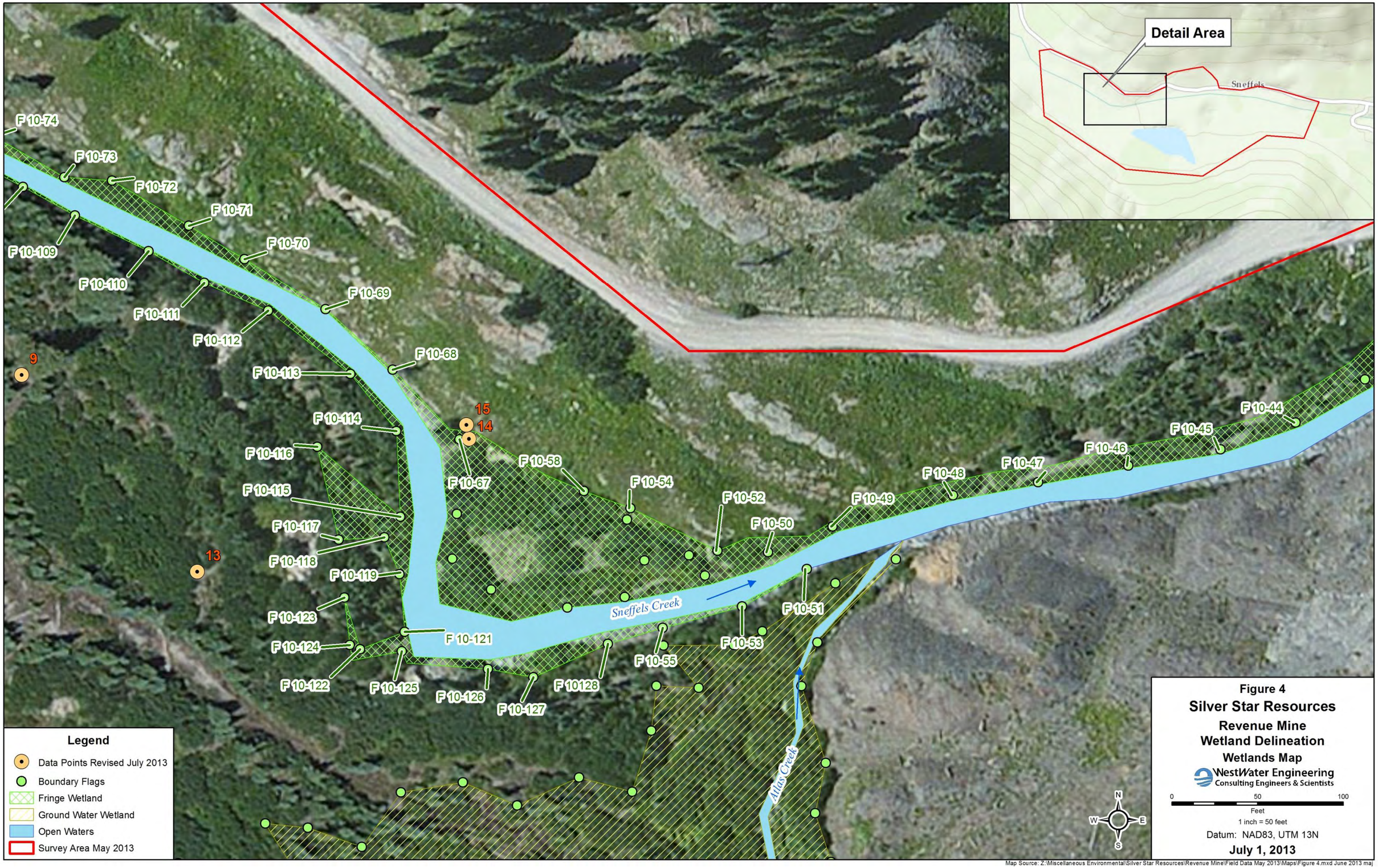

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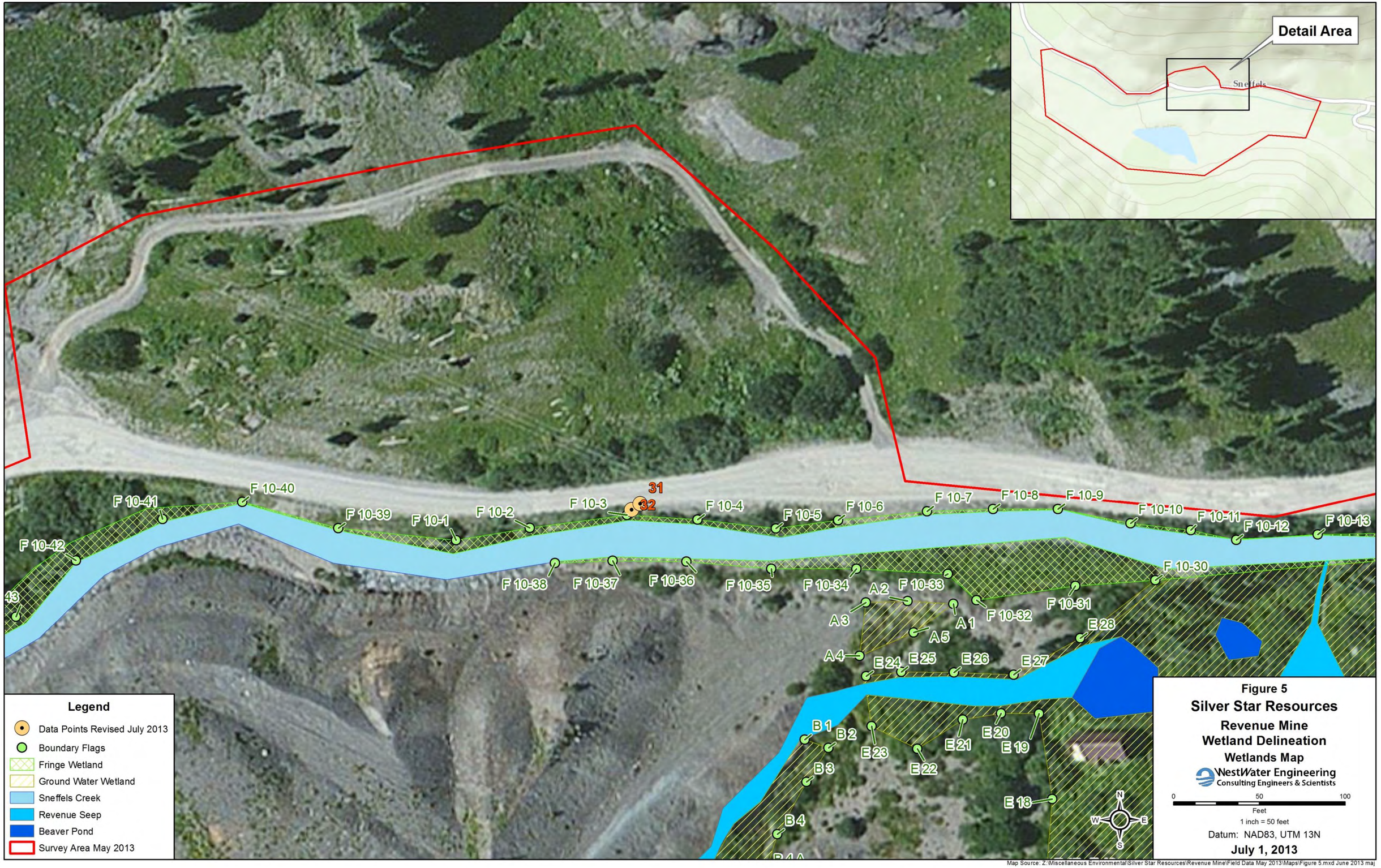

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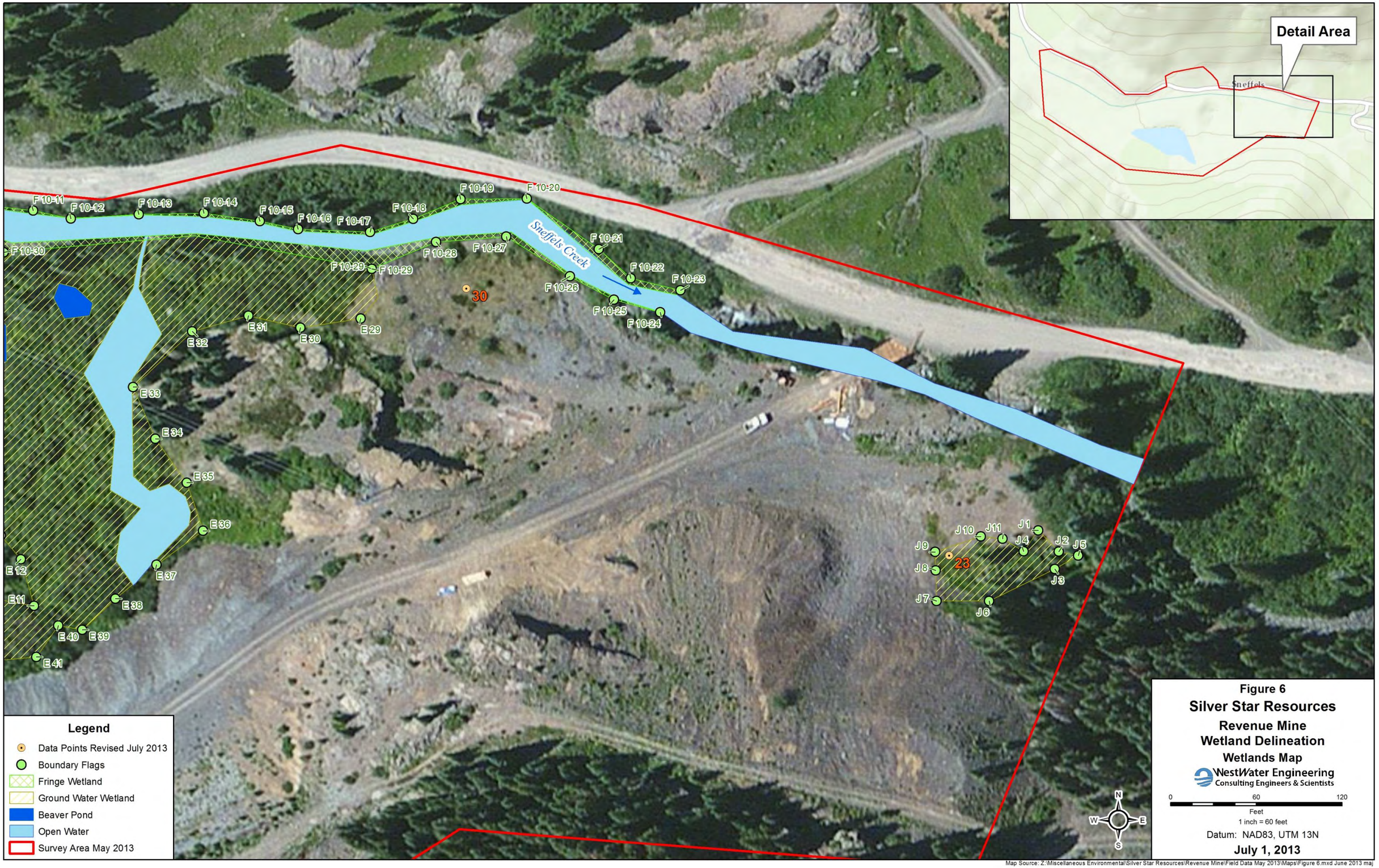

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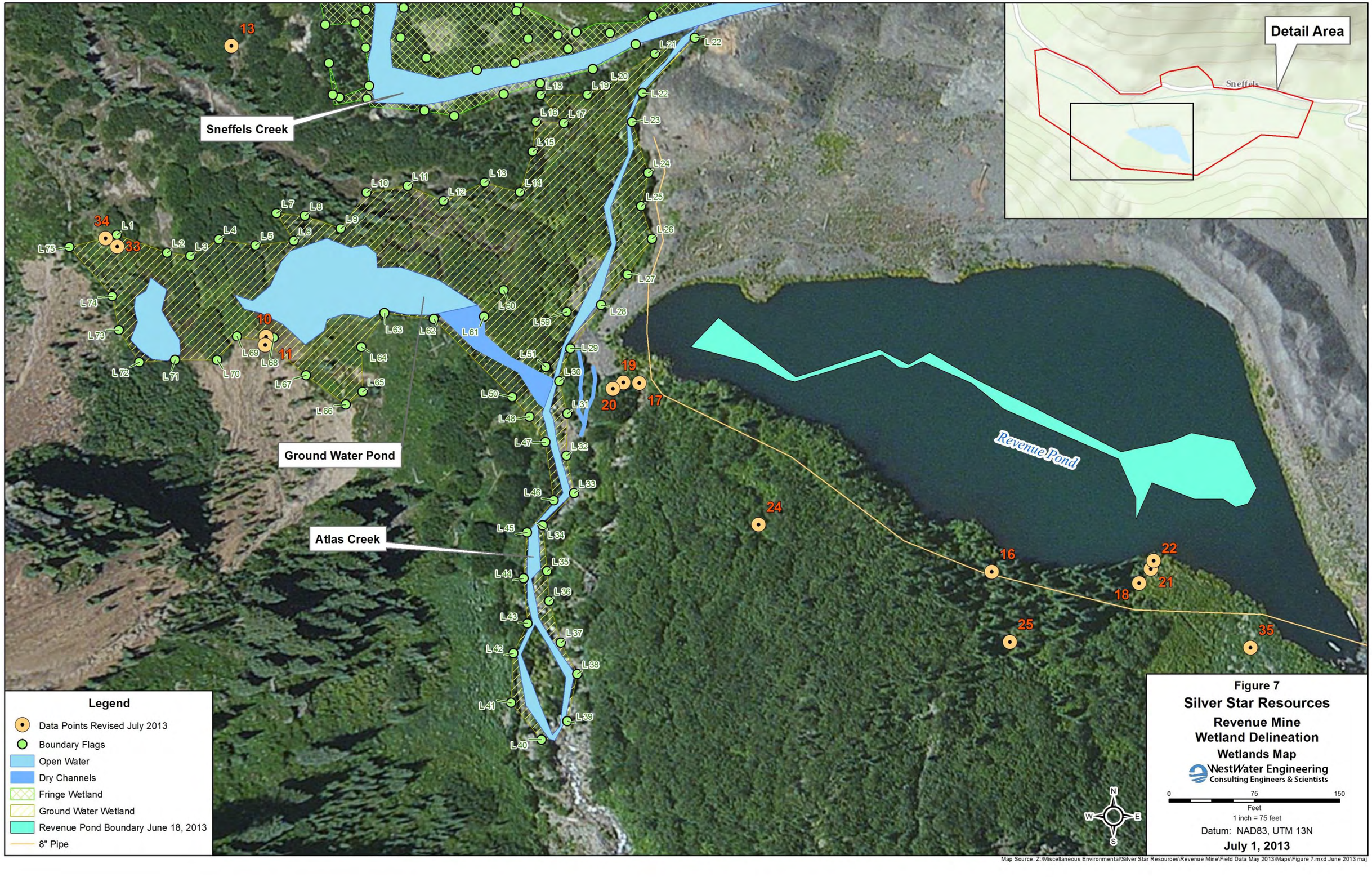

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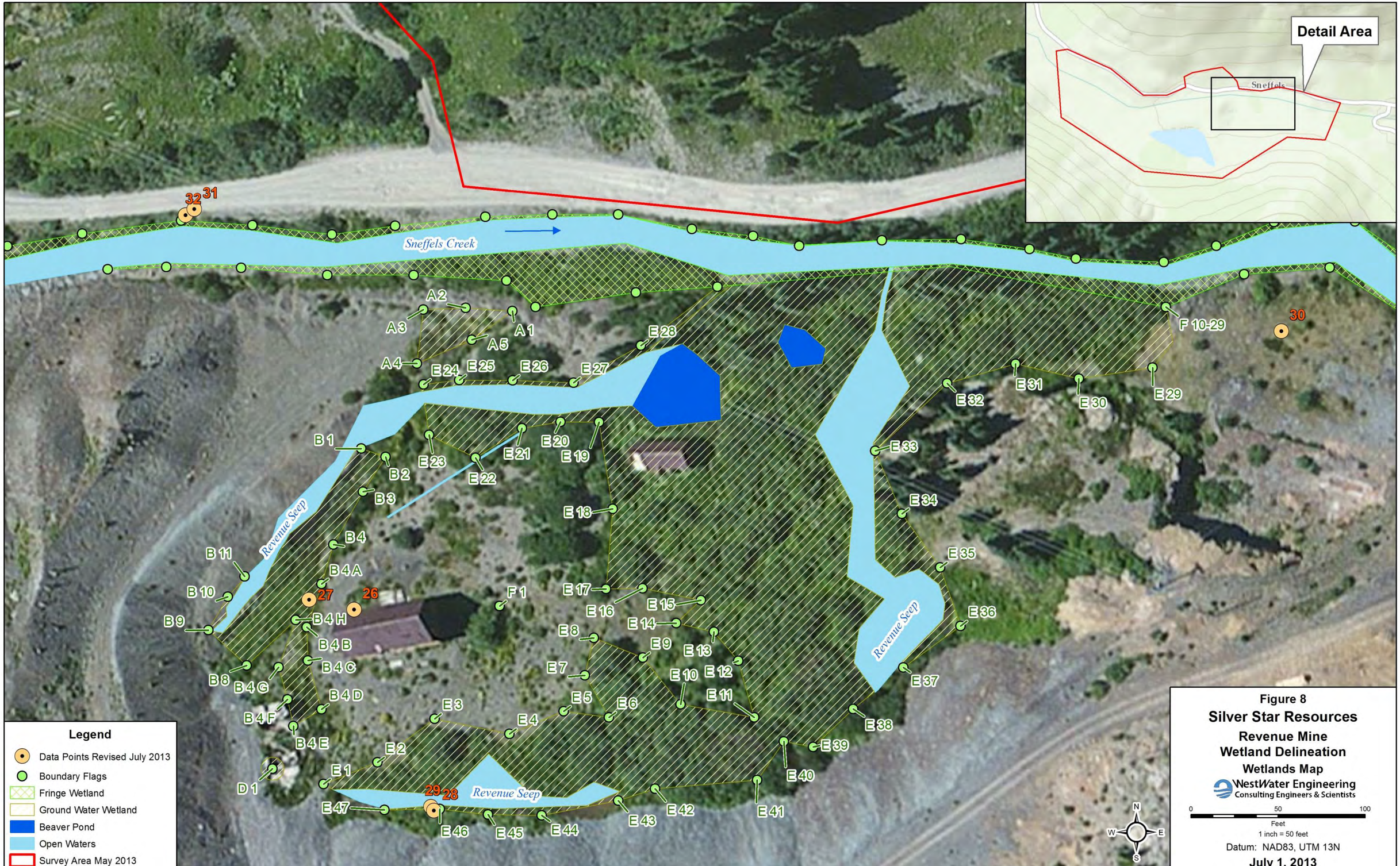

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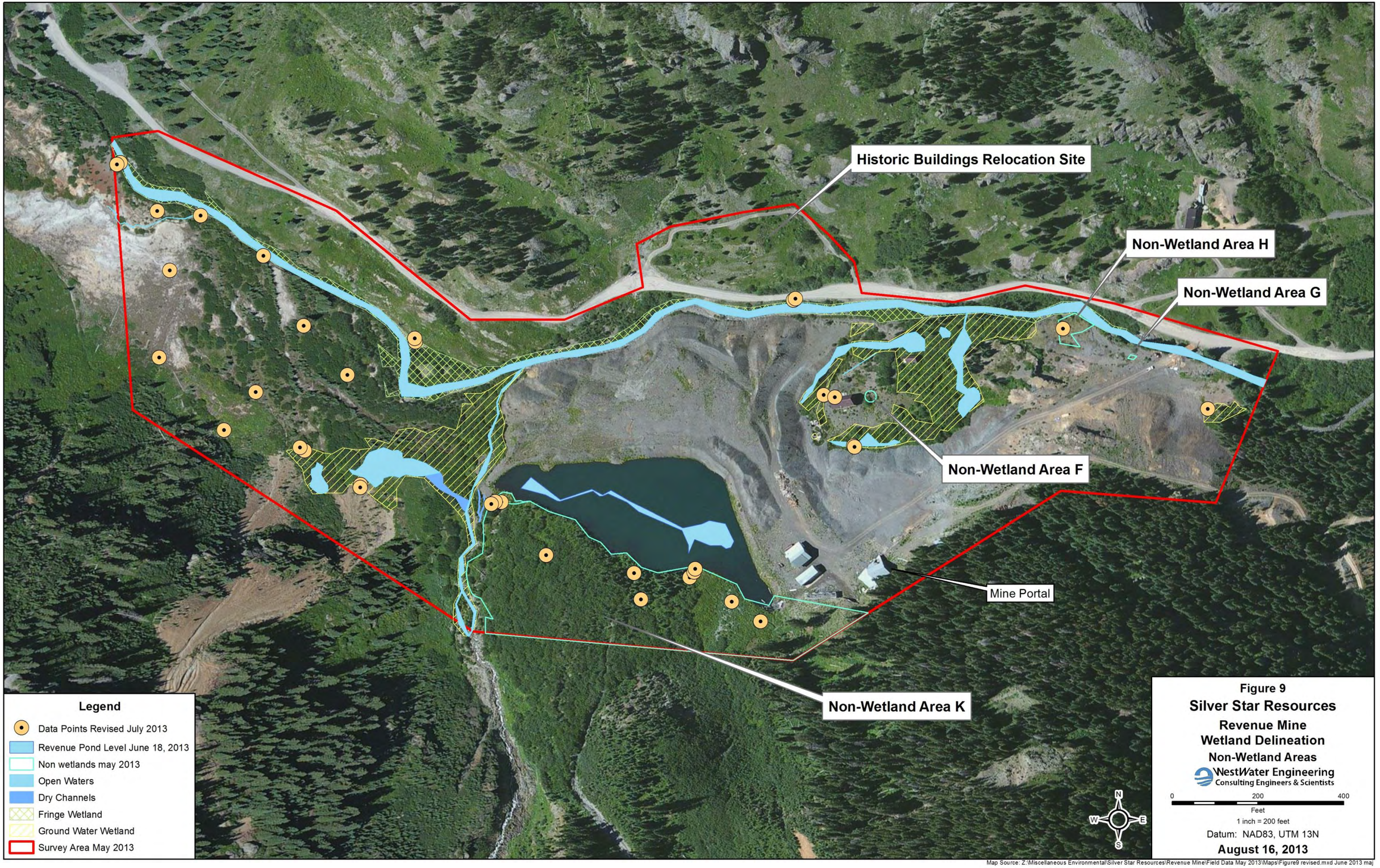


Figure 9

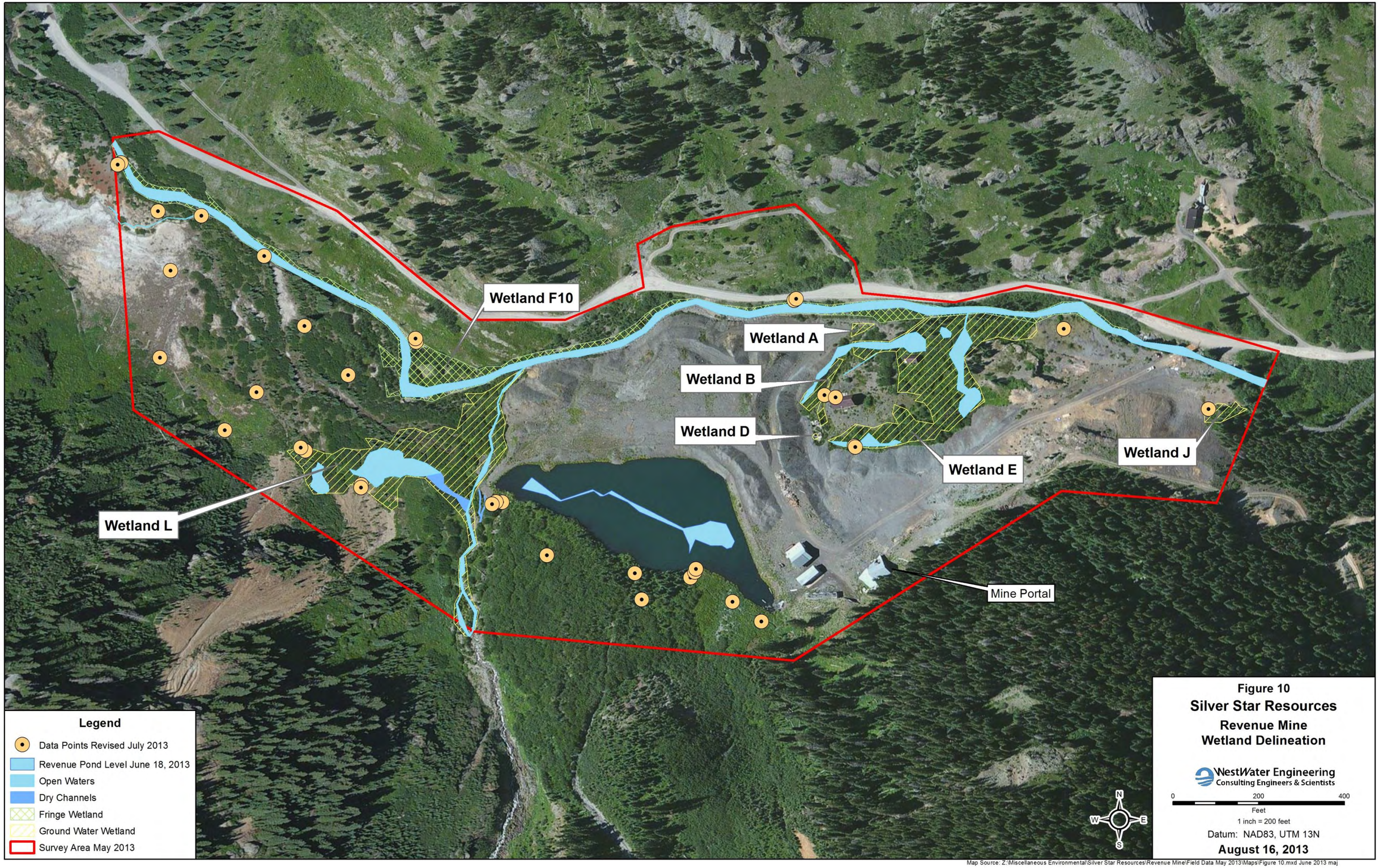
Silver Star Resources

Revenue Mine
Wetland Delineation
Non-Wetland Areas

NestWater Engineering
Consulting Engineers & Scientists

August 16, 2013

Map Source: Z:\Miscellaneous Environmental\Silver Star Resources\Revenue Mine\Field Data May 2013\Maps\Figure9 revised.mxd June 2013 maj



Map Source: Z:\Miscellaneous Environmental\Silver Star Resources\Revenue Mine\Field Data May 2013\Maps\Figure 10.mxd June 2013 maj

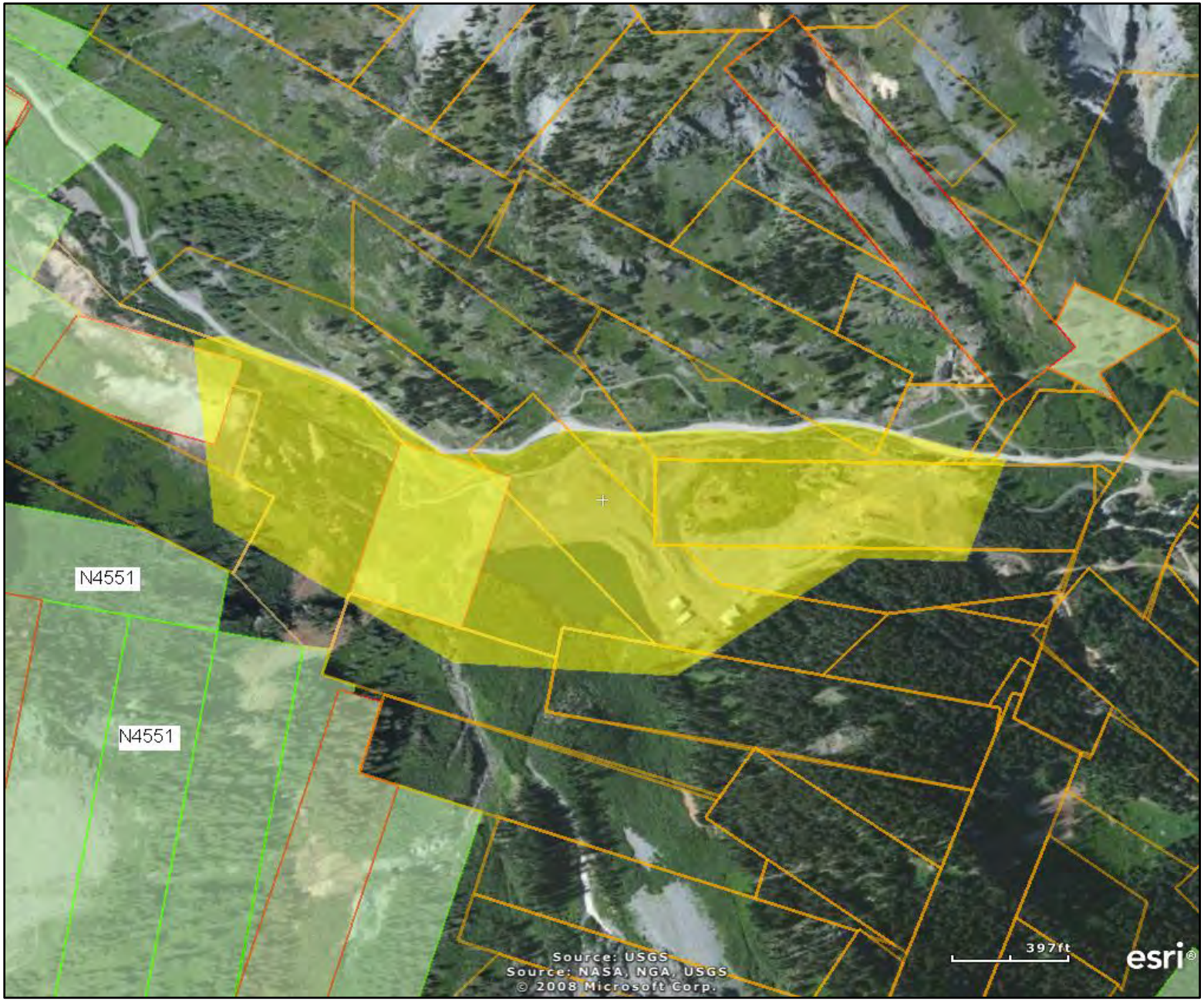
APPENDIX A

Mining Claim and Property Ownership

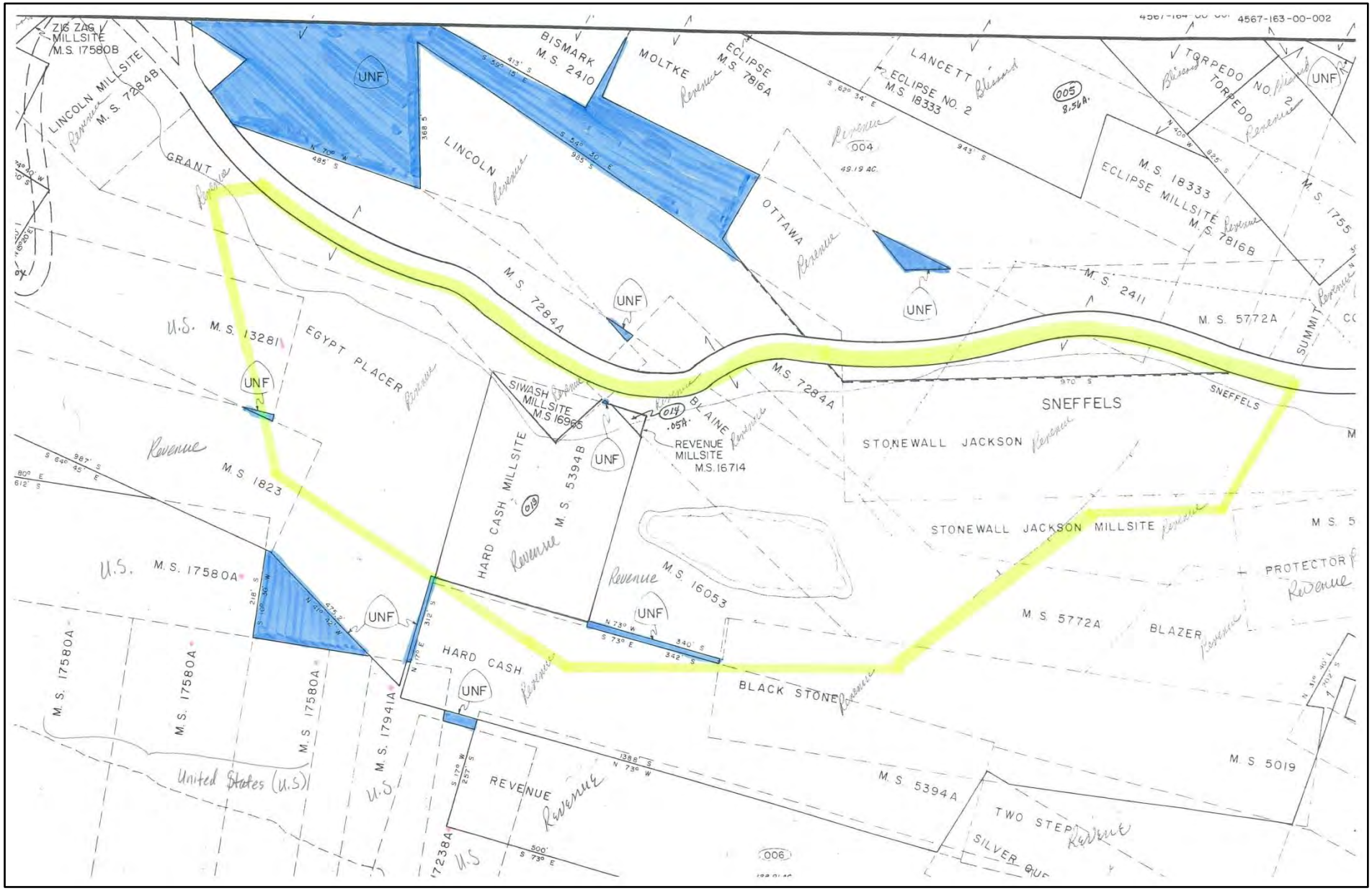
Account #	Mine Number	Mine Name	Acres	patent date	Owner	Parcel #
N004551	MS 13281	CANADIAN BOY	4.34		US	4777-101-00-013
N004551	MS 17238A	CHATTAHOOCHIE	?		US	4777-101-00-013
N004551	MS 17941A	DEKALB	2.09		US	4777-101-00-013
N004551	MS 17580A	GOLD CRESCENT	10.33		US	4777-101-00-013
N004551	MS 17580A	MABLE M	9.32		US	4777-101-00-013
N004551	MS 17580A	MAGIC	10.21		US	4777-101-00-013
N004551	MS 17580A	ZIG ZAG	10.22		US	4777-101-00-013
N004484	MS 5019	BLACK STONE	10.29	4/20/1891	REVENUE	4567-203-00-007
N004484	MS 5772A	BLAINE	9.41	6/18/1894	REVENUE	4567-203-00-007
N004484	MS 16494	BLAZER	5.77		REVENUE	4567-203-00-007
N004484	MS 16053	EGYPT PLACER	17.84	7/21/1904	REVENUE	4567-203-00-007
N004484	MS 7284A	GRANT	7.41	12/4/1893	REVENUE	4567-203-00-007
N004484	MS 5394A	HARD CASH	7.69	7/3/1896	REVENUE	4567-203-00-007
N004484	MS 7284A	LINCOLN	7.36	12/4/1893	REVENUE	4567-203-00-007
N004484	MS 7284B	LINCOLN MS	4.22	12/4/1893	REVENUE	4567-203-00-007
N004484	MS 16494	PROTECTOR	5.04		REVENUE	4567-203-00-007
N004484	MS 16714	REVENUE MS	0.05	5/16/1905	REVENUE	4567-203-00-007
N004484	MS 16965	SIWASH MS	0.4	4/3/1905	REVENUE	4567-203-00-007
N004484	MS 5772A	STONEWALL JACKSON	10.16	6/18/1894	REVENUE	4567-203-00-007
N004484	MS 5772B	STONEWALL JACKSON MS	5	6/18/1894	REVENUE	4567-203-00-007
N004484	MS 1823	VALLEY VIEW	10.33		REVENUE	4567-203-00-007
N004738	MS 1755	TORPEDO	6.92		REVENUE	4567-163-00-004
N004738	MS 13207	SUMMIT	6.77		REVENUE	4567-163-00-004
N004738	MS 7816B	ECLIPSE MS	2.26		REVENUE	4567-163-00-004
N004738	MS 2411	MOLTKE	10.33		REVENUE	4567-163-00-004
N004738	MS 5772A	OTTAWA	7.29	6/18/1894	REVENUE	4567-163-00-004
N004738	MS 2410	BISMARK	10.33		REVENUE	4567-163-00-004
N004533	MS 5723	REVENUE	8.6		REVENUE	4567-212-00-006
N004533	MS 345	SILVER QUEEN LODE	8.22		REVENUE	4567-212-00-006
N004533	MS 17500	TWO STEP	5.05		REVENUE	4567-212-00-006
	MS 840	LITTLE CHIEF	8.35	6/15/1883	REVENUE	
	MS 2655	LIZARD	10.19	4/8/1890	REVENUE	

Table 1. Mining Claim and Property Ownership in or Adjacent to Survey Area.

Mining Claim Boundaries in and adjacent to the survey area (Ouray County Assessor).



Mining Claim Parcel Plat and Survey Area (Ouray County Assessor).



APPENDIX B

Latitude and Longitude Locations for Wetland Boundary Flags and Data Points

Table 4. Wetland Boundary Flags and Data Point Locations

Label	Latitude	Longitude	Label	Latitude	Longitude
F 10-1	37.9755896	-107.7512206	E 23	37.9753116	-107.7503695
F 10-2	37.97561297	-107.7510721	E 24	37.9753913	-107.7503831
F 10-3	37.97563823	-107.7508763	E 25	37.9753998	-107.7503128
F 10-4	37.9756341	-107.7507335	E 26	37.9754016	-107.7502063
F 10-5	37.9756234	-107.750575	E 27	37.9754009	-107.750085
F 10-6	37.97563975	-107.7504495	E 28	37.9754624	-107.7499527
F 10-7	37.97565822	-107.7502703	E 29	37.9754516	-107.7489326
F 10-8	37.97566503	-107.7501367	E 30	37.9754306	-107.7490784
F 10-9	37.97566815	-107.7500055	E 31	37.9754511	-107.7492055
F 10-10	37.97564877	-107.7498582	E 32	37.9754174	-107.7493406
F 10-11	37.97564042	-107.7497359	E 33	37.9753073	-107.7494801
F 10-12	37.97562725	-107.7496435	E 34	37.9752093	-107.7494229
F 10-13	37.97563963	-107.7494791	E 35	37.9751266	-107.7493435
F 10-14	37.97564542	-107.7493211	E 36	37.9750352	-107.7492999
F 10-15	37.97563298	-107.7491844	E 37	37.974967	-107.749411
F 10-16	37.9756201	-107.7490913	E 38	37.9748992	-107.7495084
F 10-17	37.97561869	-107.7489161	E 39	37.9748377	-107.7495863
F 10-18	37.97564644	-107.7488124	E 40	37.9748448	-107.7496447
F 10-19	37.97568694	-107.7486988	E 41	37.9747829	-107.7496958
F 10-20	37.97569147	-107.7485378	E 42	37.9747642	-107.7498988
F 10-21	37.97559869	-107.7483592	E 43	37.9747438	-107.7499711
F 10-22	37.97554472	-107.74828	E 44	37.9747172	-107.7501226
F 10-23	37.97552454	-107.7481581	E 45	37.9747158	-107.75023
F 10-24	37.97548095	-107.7482059	E 46	37.9747224	-107.750326
F 10-25	37.97550252	-107.7483191	E 47	37.9747183	-107.7504361
F 10-26	37.97554484	-107.7484279	D 1	37.9747781	-107.7506617
F 10-27	37.97561749	-107.7485851	B 1	37.9752869	-107.750504
F 10-28	37.97560314	-107.7487554	B 2	37.975275	-107.7504551
F 10-29	37.97554787	-107.7489094	B 3	37.9752192	-107.7504979
F 10-30	37.97555893	-107.7498041	B 4	37.9751343	-107.7505535
F 10-31	37.97554582	-107.7499661	B 4 G	37.9749383	-107.7506554
F 10-32	37.97551842	-107.7501648	B 4 E	37.9748465	-107.7506226
F 10-33	37.97555887	-107.7502243	B 4 F	37.9748882	-107.7506358
F 10-34	37.97556312	-107.7504093	B 4 D	37.9748743	-107.7505674
F 10-35	37.97555882	-107.7505816	B 4 A	37.9750716	-107.7505748
F 10-36	37.9755663	-107.7507535	B 4 B	37.9750027	-107.7506018
F 10-37	37.97556408	-107.7509027	B 4 C	37.9749505	-107.7505979
F 10-38	37.97555792	-107.7510194	B 4 H	37.9750137	-107.7506241
F 10-39	37.9756035	-107.7514593	B 8	37.9749397	-107.7507192

Table 4. Wetland Boundary Flags and Data Point Locations

Label	Latitude	Longitude	Label	Latitude	Longitude
F 10-40	37.97564078	-107.7516552	B 9	37.9749939	-107.7507976
F 10-41	37.97560977	-107.751815	B 10	37.9750473	-107.750761
F 10-42	37.97553945	-107.7519875	B 11	37.9750799	-107.7507284
F 10-43	37.97544628	-107.7521059	A 1	37.9755111	-107.7502112
F 10-44	37.97537428	-107.7522436	A 2	37.9755137	-107.7503042
F 10-45	37.97532752	-107.752394	A 3	37.9755093	-107.7503883
F 10-46	37.97529725	-107.7525792	A 4	37.9754235	-107.7503979
F 10-47	37.97526645	-107.752761	A 5	37.9754638	-107.7502901
F 10-48	37.97524122	-107.7529322	L 1	37.9746193	-107.7547903
F 10-49	37.97518567	-107.7531744	L 2	37.9745795	-107.7546349
F 10-50	37.9751416	-107.7533035	L 3	37.9745738	-107.7545639
F 10-51	37.9751162	-107.753224	L 4	37.9746156	-107.7544784
F 10-52	37.97514153	-107.7534057	L 5	37.9746038	-107.7543659
F 10-53	37.97505355	-107.7533528	L 6	37.9746176	-107.7542494
F 10-54	37.97520522	-107.7535843	L 7	37.974683	-107.7543046
F 10-57	37.97518678	-107.7535906	L 8	37.9746785	-107.7542181
F 10-58	37.97523065	-107.7536797	L 9	37.9746501	-107.7541078
F 10-59	37.97513282	-107.7534633	L 10	37.9747394	-107.7540319
F 10-60	37.9751222	-107.7535531	L 11	37.9747583	-107.7539074
F 10-61	37.9751008	-107.7534296	L 12	37.9747241	-107.7537961
F 10-62	37.97506312	-107.7535905	L 13	37.9747717	-107.7536724
F 10-55	37.9750151	-107.7535123	L 14	37.9747512	-107.753564
F 10-63	37.97504313	-107.7537062	L 15	37.9748499	-107.753529
F 10-64	37.97506862	-107.7538616	L 16	37.9749221	-107.7535213
F 10-65	37.97511602	-107.7539423	L 17	37.9749211	-107.7534357
F 10-66	37.9751878	-107.7539356	L 18	37.9749871	-107.7535095
F 10-67	37.97530737	-107.7539346	L 19	37.9749912	-107.753367
F 10-68	37.97541575	-107.7540739	L 20	37.9750144	-107.75331
F 10-69	37.9755099	-107.7542134	L 21	37.9750948	-107.7531651
F 10-70	37.97558575	-107.7543807	L 22	37.9751361	-107.753044
F 10-71	37.97563652	-107.7544955	L 22	37.9749993	-107.7531983
F 10-72	37.9757052	-107.7546532	L 23	37.9749287	-107.7532279
F 10-73	37.97570845	-107.75475	L 24	37.9748068	-107.7531739
F 10-74	37.97577077	-107.7548957	L 25	37.9747259	-107.7531927
F 10-75	37.97585757	-107.7550145	L 26	37.9746482	-107.7531571
F 10-76	37.97588933	-107.7550955	L 27	37.9745596	-107.7532284
F 10-77	37.97594193	-107.7552527	L 28	37.9744845	-107.7533062
F 10-79	37.97601245	-107.7553746	L 29	37.9743772	-107.7533958
F 10-80	37.97607708	-107.7554497	L 30	37.9742977	-107.7534264

Table 4. Wetland Boundary Flags and Data Point Locations

Label	Latitude	Longitude	Label	Latitude	Longitude
F 10-81	37.97613575	-107.7555419	L 31	37.9742201	-107.7533991
F 10-82	37.97623188	-107.7556588	L 32	37.9741185	-107.7533986
F 10-83	37.97621415	-107.7556473	L 33	37.9740282	-107.7533718
F 10-84	37.97616032	-107.7556135	L 34	37.9739485	-107.7534647
F 10-85	37.97618693	-107.7557588	L 35	37.9738383	-107.7534464
F 10-86	37.97624707	-107.7558266	L 36	37.9737668	-107.7534379
F 10-87	37.9762387	-107.7559451	L 37	37.973667	-107.7533984
F 10-89	37.9762356	-107.7560592	L 38	37.9735925	-107.7533455
F 10-90	37.97626832	-107.756154	L 39	37.973478	-107.7533716
F 10-91	37.9763197	-107.7562063	L 40	37.9734316	-107.7534485
F 10-92	37.97642677	-107.7563063	L 41	37.9735183	-107.7535451
F 10-93	37.97654182	-107.7563994	L 42	37.973638	-107.7535425
F 10-94	37.97651867	-107.7564226	L 43	37.9737109	-107.7535017
F 10-95	37.97640582	-107.7563668	L 44	37.9738198	-107.7535181
F 10-96	37.97630688	-107.756302	L 45	37.9739302	-107.7535118
F 10-97	37.97622592	-107.7562312	L 46	37.9740096	-107.7534335
F 10-98	37.97617272	-107.7561115	L 47	37.9741502	-107.7534636
F 10-99	37.97614432	-107.755987	L 48	37.9742096	-107.7535145
F 10-100	37.97615435	-107.7558787	L 50	37.974256	-107.7535692
F 10-101	37.97611097	-107.7557259	L 51	37.9743311	-107.7534694
F 10-102	37.97605882	-107.7555567	L 59	37.9744659	-107.7534106
F 10-103	37.97601688	-107.7554686	L 60	37.974513	-107.7536048
F 10-104	37.97592053	-107.7553483	L 61	37.974448	-107.7536618
F 10-105	37.975852	-107.755201	L 62	37.9744387	-107.7538152
F 10-106	37.97578463	-107.7550797	L 63	37.9744496	-107.7539664
F 10-107	37.97574113	-107.7549608	L 64	37.9743657	-107.7540337
F 10-108	37.97569117	-107.7548332	L 65	37.9742581	-107.7540258
F 10-109	37.975648	-107.7547262	L 66	37.9742263	-107.7540764
F 10-110	37.97559413	-107.7545751	L 67	37.974294	-107.7542005
F 10-111	37.97554593	-107.7544605	L 68	37.9743823	-107.7543022
F 10-112	37.97550455	-107.7543298	L 69	37.9743834	-107.754414
F 10-113	37.97540688	-107.7541592	L 70	37.9743249	-107.7544729
F 10-114	37.97531798	-107.754063	L 71	37.9743219	-107.7546012
F 10-115	37.9751808	-107.7540499	L 72	37.9743134	-107.7547102
F 10-116	37.9752889	-107.7542222	L 73	37.9743895	-107.7547751
F 10-117	37.97514118	-107.7541729	L 74	37.9744708	-107.754798
F 10-118	37.97514725	-107.7540809	L 75	37.9745863	-107.7549339
F 10-119	37.9750888	-107.7540479	J	37.9750167	-107.7474194
F 10-121	37.97499675	-107.754034	J	37.9750012	-107.747456

Table 4. Wetland Boundary Flags and Data Point Locations

Label	Latitude	Longitude	Label	Latitude	Longitude
F 10-122	37.97496687	-107.7541232	J	37.9750833	-107.7472724
F 10-123	37.97504882	-107.7541578	J	37.9750438	-107.7472211
F 10-124	37.97497302	-107.754144	J	37.97501	-107.7472294
F 10-125	37.9749656	-107.7540389	J	37.9750421	-107.7473063
F 10-126	37.97494098	-107.7538631	J	37.9750369	-107.7471739
F 10-127	37.97493015	-107.7537709	J	37.9749446	-107.7473865
F 10128	37.97498692	-107.7536222	J	37.9749417	-107.7475143
E 1	37.97475605	-107.7505591	J	37.9750005	-107.7475187
E 2	37.9747928	-107.7504529	J	37.9750359	-107.7475208
E 3	37.97486448	-107.7503418	J	37.9750682	-107.7474112
E 4	37.97484393	-107.7501915	J	37.9750649	-107.7473584
E 5	37.97488202	-107.750085	10	37.974384329	-107.75432583
E 6	37.9748748	-107.7499944	11	37.974364486	-107.75432789
E 7	37.97494007	-107.7500453	14	37.975309021	-107.75391566
E 8	37.97499942	-107.7500296	15	37.975331053	-107.75392161
E 9	37.97497057	-107.7499305	16	37.973868933	-107.75209065
E 10	37.97489847	-107.7498527	17	37.9742993	-107.75318306
E 11	37.97488138	-107.7497051	18	37.973852285	-107.75164010
E 12	37.97496972	-107.7497404	23	37.975029521	-107.74748656
E 13	37.97501452	-107.7497907	24	37.973966334	-107.75280600
E 14	37.97502627	-107.7498662	25	37.973700734	-107.75202835
E 15	37.97506377	-107.7498182	21	37.973887084	-107.75160580
E 16	37.97507955	-107.7499354	22	37.973907134	-107.75159755
E 17	37.97507707	-107.7500078	20	37.974299300	-107.75323130
E 18	37.97520345	-107.7499996	19	37.974283967	-107.75326300
E 19	37.97533982	-107.7500318	27	37.975046217	-107.75059865
E 20	37.97533848	-107.7501084	26	37.975032800	-107.75050865
E 21	37.97532645	-107.7501852	29	37.974725600	-107.75034423
E 22	37.97527758	-107.7502758	28	37.974719567	-107.75033791
1	37.976400081	-107.75634647	32	37.975647050	-107.75086751
2	37.976387821	-107.75637423	31	37.975656900	-107.75085050
3	37.976076112	-107.75568432	30	37.975515167	-107.74867816
4	37.975718813	-107.75592023	12	37.976097867	-107.75603663
5	37.975159435	-107.75598514	33	37.974591167	-107.7547877
6	37.975829771	-107.75516575	34	37.974610117	-107.75482466
7	37.974957303	-107.75519650	13	37.975083417	-107.75445795
8	37.974707053	-107.75544392	35	37.973704628	-107.75129416
9	37.975390253	-107.75482487	36	37.973582927	-107.75105471

APPENDIX C

Army Corps of Engineers (COE) Data Sheets

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP1

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: °37.976400 N | Long: °107.756350 W | Datum: NAD 83

Soil Map Unit Name: Moran-Telluride-Rock outcrop complex | NWI classification: PSSB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ●	No ○	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ● No ○
Wetland Hydrology Present?	Yes ●	No ○	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum Plot Size			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum Plot Size 1m			
1. *Salix gereriana*	100	Yes	OBL
2. *Picea englemannii*	15		FAC
3.			
4.			
5.			
	115 = Total Cover		
Herb Stratum Plot Size 1m			
1. *Draba breweri*	20	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	20 = Total Cover		
Woody Vine Stratum Plot Size			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 60 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals:	(A) (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ● Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☒ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ● No ○

Remarks: Bryophytes present, significant change in vegetation within 2 feet of Sneffels creek. Soils comprised of mining waste rock no top soil present, some fine tailings.

SOIL

Sampling Point: DP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[4]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: mining waste rock

Depth (inches): surface

Hydric Soil Present? Yes ○ No ◉

Remarks: Mining waste rock and tailings, well drained.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☒ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☒ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☒ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present?	Yes	◉	No	○	Depth (inches): 1 ft
Water Table Present?	Yes	◉	No	○	Depth (inches): +4 inches
Saturation Present? (includes capillary fringe)	Yes	◉	No	○	Depth (inches): surface

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Capillary rise extends approximately 4 inches above creek surface water area. Small berm adjacent to the creek

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP2

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.976383 N | Long: 107.756350 W | Datum: NAD 83

Soil Map Unit Name: Moran-Telluride-Rock outcrop complex | NWI classification: PSSB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ●
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea englmannii*	30	Yes	FAC
2.			
3.			
4.			
	30 = Total Cover		
Sapling/Shrub Stratum (Plot Size 5m)			
1. *Picea englmannii*	25	Yes	FAC
2.			
3.			
4.			
5.			
	25 = Total Cover		
Herb Stratum (Plot Size 5m)			
1. *Draba breweri*	40	Yes	UPL
2. *Festuca brachyphylla*	20	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
	60 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 60 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

● Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☒ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: Significant change in vegetation within 2 feet of Sneffels creek. Soils comprised of mining waste rock no top soil present, some fine tailings. Some soil crusts

SOIL

Sampling Point: DP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[4]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: mining waste rock

Depth (inches): surface

Hydric Soil Present? Yes ○ No ◉

Remarks: Mining waste rock and tailings, well drained.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Capillary rise extends approximately 4 inches above creek surface water area. Small berm adjacent to creek

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP3

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.976067 N | Long: 107.755683 W | Datum: NAD 83

Soil Map Unit Name: Moran-Telluride-Rock outcrop complex | NWI classification: PSSB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ●
Wetland Hydrology Present?	Yes ●	No ○	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size 1m)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea englmannii*	15	Yes	FAC
2.			
3.			
4.			
	15 = Total Cover		
Sapling/Shrub Stratum (Plot Size 5m)			
1. *Salix gereriana*	10	Yes	OBL
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot Size 5m)			
1. *Draba breweri*	20	Yes	UPL
2. *Festuca brachyphylla*	20	Yes	UPL
3. *Trisetum spicatum*	10	Yes	FACU
4.			
5.			
6.			
7.			
8.			
	50 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 60 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ● Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☒ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: Near small tributary stream fine tailings for soil. 5m area was used to get vegetation coverage.

SOIL

Sampling Point: DP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:[4]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: mining waste rock

Depth (inches): surface

Hydric Soil Present? Yes ○ No ◉

Remarks: Mining waste rock and tailings, well drained.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ◉ No ○ Depth (inches): 0.5 inch

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Small tributary flowed through tailings pile. Did not appear to provide enough hydrology to support vegetation growth in that substrate. Waters would still be considered WoUS as a tributary.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP4

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.975717 N | Long: 107.755917 W | Datum: NAD 83

Soil Map Unit Name: Moran very gravelly loam, extremely stony | NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ○ No ●

Hydric Soil Present? Yes ○ No ●

Wetland Hydrology Present? Yes ○ No ●

Is the Sampled Area within a Wetland? Yes ○ No ●

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size 1m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot Size 5m)			
1. *Salix geyeriana*	10	Yes	OBL
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot Size 5m)			
1. *Festuca brachyphylla*	15	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	15 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 80 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

● Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☒ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: Fine tailings for soil, 5m area was used to get vegetation coverage.

SOIL

Sampling Point: DP4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture[3]	Remarks
0-30	7.5 YR 7/0	100					Fines	Grey tailings, almost powder
30-34	7.5 YR 3/0	80					loam	mixed with gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[4]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks: Augered tailings to a depth of 30 inches before getting to buried topsoil. Grey tailings showed no redoximorphic features, changes in color, or moisture throughout the layer. It appears that top soil was stored at this location and tailings were placed on top. Additional auger holes in the area revealed similar results with varying depths to the buried top soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ● Depth (inches): _____

Water Table Present? Yes ○ No ● Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ● Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP5

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.975167 N | Long: 107.755983 W | Datum: NAD 83

Soil Map Unit Name: Moran very gravelly loam, extremely stony | NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ●
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size 1m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot Size 5m)			
1. *Salix geyeriana*	20	Yes	OBL
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot Size 5m)			
1. *Festuca brachyphylla*	15	Yes	UPL
2. *Draba breweri*	15	Yes	UPL
3. *Trisetum spicatum*	10	Yes	FACU
4. *Deschampsia cespitosa*	10	Yes	FACW
5.			
6.			
7.			
8.			
	50 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 25 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

● Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: Fine tailings for soil, 5m area was used to get vegetation coverage.

SOIL

Sampling Point: DP5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-8	7.5 YR 7/0	100					Fines	Grey tailings, almost powder
8-20	7.5 YR 3/0	80					loam	mixed with gravel
24-30	7.5 YR 7/0	90					Fines w/gravel	Grey tailings

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:[4]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: Waste rock

Depth (inches): 30 inches

Hydric Soil Present? Yes ○ No ◉

Remarks: Some shallow top soil with layers of tailings to a depth of 30 inches. Grey tailings showed no redoximorphic features, changes in color, or moisture throughout the layer. It appears that top soil was stored at this location and tailings were placed on top. Additional auger holes in the area revealed similar results with varying depths to the buried top soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ◉ No ○ Depth (inches): 2"

Water Table Present? Yes ◉ No ○ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): +1"

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Small pools of surfacing ground water in tailings, no flow or traceable channel connection to other WoUS or wetlands.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP6

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.975833 N | Long: 107.755167 W | Datum: NAD 83

Soil Map Unit Name: Moran Telluride-Rock outcrop, extremely stony | NWI classification: PSSB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ◉

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size 1m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot Size 1m)			
1. *Salix geyeriana*	40	Yes	OBL
2. *Salix monticula*	20	Yes	OBL
3.			
4.			
5.			
	60 = Total Cover		
Herb Stratum (Plot Size 1m)			
1. *Draba breweri*	15	Yes	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	15 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 40 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals:	(A) (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: Small waste rock berm along Sneffels Creek vegetation concentrated on the berm sloping into the creek.

SOIL

Sampling Point: DP6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:[4]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: Waste rock

Depth (inches): surface

Hydric Soil Present? Yes ○ No ◉

Remarks: Waste rock with no fine particles, very rocky

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☒ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☒ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present?	Yes	○	No	◉	Depth (inches):
Water Table Present?	Yes	◉	No	○	Depth (inches): -2 inches
Saturation Present? (includes capillary fringe)	Yes	◉	No	○	Depth (inches): +1"

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Adjacent to Sneffels Creek. Stream appears to pick up ground water seepage in various locations.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP7

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.974950 N | Long: 107.755200 W | Datum: NAD 83

Soil Map Unit Name: Moran-Telluride-Rock outcrop | NWI classification: PSSB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●
Hydric Soil Present?	Yes ○	No ●
Wetland Hydrology Present?	Yes ○	No ●

Is the Sampled Area within a Wetland? Yes ○ No ●

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea engelmannii*	10	Yes	FAC
2.			
3.			
4.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot Size 5m)			
1. *Picea engelmannii*	20	Yes	FAC
2. *Salix monticola*	10	Yes	OBL
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot Size 5m)			
1. *Festuca brachyphylla*	15	Yes	UPL
2. *Trisetum spicatum*	15	Yes	UPL
3. *Vaccinium myrtillus*	10	Yes	UPL
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 60 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals:	(A) (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ● Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: Disturbed area mining waste piles and and uneven topography appears to be results from bulldozing and overburden storage from mining activities.

SOIL

Sampling Point: DP7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-2	10YR 2/2	70					organic	Mixed with tailings

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:[4]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: Waste rock

Depth (inches): near surface

Hydric Soil Present? Yes ○ No ◉

Remarks: Waste rock with some organic layer, very rocky

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP8

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.974700 N | Long: 107.755450 W | Datum: NAD 83

Soil Map Unit Name: Moran-Telluride-Rock outcrop | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ● No ○

Hydric Soil Present? Yes ○ No ●

Wetland Hydrology Present? Yes ○ No ●

Is the Sampled Area within a Wetland? Yes ○ No ●

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot Size 5m)			
1. *Salix geyeriana*	20	Yes	OBL
2. *Salix monticola*	15	Yes	OBL
3. *Picea engelmannii*	10	Yes	FAC
4.			
5.			
	45 = Total Cover		
Herb Stratum (Plot Size 5m)			
1. *Veratrum tenuipetalum*	30	Yes	FAC
2. *Festuca brachyphylla*	15	Yes	UPL
3. *Trisetum spicatum*	15	Yes	UPL
4. *Polemonium pulcherrimum*	10		UPL
5.			
6.			
7.			
8.			
	70 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 35 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ● No ○

Remarks: Disturbed area mining waste piles and and uneven topography appears to be results from bulldozing and overburden storage from mining activities.

SOIL

Sampling Point: DP8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[4]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: Waste rock

Depth (inches): at surface

Hydric Soil Present? Yes ○ No ◉

Remarks: Waste rock with some organic layer, very rocky

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Appears to have some wetland vegetation resultant from a shallow groundwater table, some small polls of water were visible; however, they were not associated with any channels or surface water flow pattern that would demonstrate connectivity.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP9

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.974383 N | Long: 107.754817 W | Datum: NAD 83

Soil Map Unit Name: Moran-Telluride- Rock outcrop, extremly stoney | NWI classification: PSSB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ●
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea engelmannii*	60	Yes	FAC
2.			
3.			
4.			
	60 = Total Cover		
Sapling/Shrub Stratum (Plot Size 5m)			
1. *Picea engelmannii*	30	Yes	FAC
2. *Pseudotsuga menziesii*	20	Yes	UPL
3.			
4.			
5.			
	50 = Total Cover		
Herb Stratum (Plot Size 5m)			
1. *Trisetum spicatum*	15	Yes	UPL
2. *Vaccinium myrtillus*	15	Yes	UPL
3. *Polemonium pulcherrimum*	10	Yes	UPL
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 50 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals:	(A) (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ● Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: Disturbed area mining waste piles and and uneven topography appears to be results from bulldozing and overburden storage from mining activities. Organic layer developing; however, it was not a significant thickness, <1".

SOIL

Sampling Point: DP9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:[4]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: Waste rock

Depth (inches): near surface

Hydric Soil Present? Yes ○ No ◉

Remarks: Waste rock with some organic layer, very rocky

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP10

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: °37.974383 N | Long: °107.754333 W | Datum: NAD 83

Soil Map Unit Name: Moran-Telluride- Rock outcrop, extremly stoney | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ●	No ○	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ● No ○
Wetland Hydrology Present?	Yes ●	No ○	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea engelmannii*	10	Yes	FAC
2.			
3.			
4.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot Size 5m)			
1. *Salix geyeriana*	25	Yes	OBL
2. *Salix monticula*	20	Yes	OBL
3. *Picea engelmannii*	10	Yes	FAC
4. *Picea pungens*	10	Yes	FAC
5.			
	65 = Total Cover		
Herb Stratum (Plot Size 5m)			
1. *Carex aquatilis*	60	Yes	OBL
2. *Juncus balticus*	20	Yes	OBL
3. *Veratrum tenuipetalum*	10		FAC
4.			
5.			
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ● No ○

Remarks: Tributary to Sneffels Creek was diverted and created small pond and associated wetland. thick bryophyte cover.

SOIL

Sampling Point: DP10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-2	10 YR 3/0	85					organic	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[4]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: Waste rock

Depth (inches): near surface

Hydric Soil Present? Yes ○ No ◉

Remarks: Waste rock with some organic layer, very rocky. thin layer of muck on pond bottom

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B
- ☐ Salt Crust (B11)
- ☒ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present?	Yes	◉	No	○	Depth (inches): 1'
Water Table Present?	Yes	◉	No	○	Depth (inches): -3"
Saturation Present? (includes capillary fringe)	Yes	◉	No	○	Depth (inches): surface

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: ground surface spongy from damp organics, thick bryophyte cover. lots of caddis flies and diptera larvae.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP11

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.974367 N | Long: 107.754333 W | Datum: NAD 83

Soil Map Unit Name: Moran-Telluride- Rock outcrop, extremly stoney | NWI classification: PSSB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ●	No ○	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ●
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea engelmannii*	10	Yes	FAC
2.			
3.			
4.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot Size 5m)			
1. *Picea engelmannii*	20	Yes	FAC
2. *Picea pungens*	15	Yes	FAC
3.			
4.			
5.			
	35 = Total Cover		
Herb Stratum (Plot Size 5m)			
1. *Trisetum spicatum*	35	Yes	UPL
2. *Festuca brachyphylla*	25	Yes	UPL
3. *Deschampsia cespitosa*	15		FACW
4. *Veratrum tenuipetalum*	10		FAC
5.			
6.			
7.			
8.			
	85 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals:	(A) (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ● No ○

Remarks: Tributary to Sneffels Creek was diverted and created small pond and associated wetland. thick bryophyte cover.

SOIL

Sampling Point: DP11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-2	10 YR 3/0	85					organic	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:[4]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: Waste rock

Depth (inches): near surface

Hydric Soil Present? Yes ○ No ◉

Remarks: Waste rock with some organic layer, very rocky.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: ground surface spongy from organics, some bryophyte cover.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 5/22/13

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP 12

Investigator(s): WWE: LRR, MAJ | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): None | Slope (%): 0-5 %

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.976098 N | Long: -107.756037 W | Datum: NAD 83

Soil Map Unit Name: Moran-Telluride-Rock outcrop complex | NWI classification: PSSB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [X] Soil [X] or Hydrology [X] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level, typically this area would not be assessable until July. The project area is located at a previously active mine site, soils and vegetation have been disturbed and a pond has been created. 2013 was below average snowfall.

VEGETATION

Tree Stratum (Plot Size)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea engelmanni*	20	Yes	FAC
2.			
3.			
4.			
	20 = Total Cover		
Sapling/Shrub Stratum (Plot Size)			
1. *Salix monticola*	40	Yes	OBL
2. *Salix geyeriana*	40	Yes	OBL
3.			
4.			
5.			
	80 = Total Cover		
Herb Stratum (Plot Size)			
1. *Deschampsia caespitosa*	30	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	30 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- [X] Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: DP 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture[3]	Remarks
0-12	10 YR 3/3	100					SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:[4]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 5/22/13

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP 13

Investigator(s): WWE: LRR, MAJ | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): None | Slope (%): 0-5 %

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.975083 N | Long: -107.754458 W | Datum: NAD 83

Soil Map Unit Name: Moran very gravelly loam | NWI classification: PSSB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [X] Soil [X] or Hydrology [X] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	**Is the Sampled Area within a Wetland?** Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level, typically this area would not be assessable until July. The project area is located at a previously active mine site, soils and vegetation have been disturbed and a pond has been created. 2013 was below average snowpack.

VEGETATION

Tree Stratum (Plot Size)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot Size)			
1. *Salix monticola*	40	Yes	OBL
2. *Salix geyeriana*	40	Yes	OBL
3.			
4.			
5.			
	80 = Total Cover		
Herb Stratum (Plot Size)			
1. *Calamagrostis canadensis*	15		FACW
2. *Draba albertina*	5		FAC
3. *Deschampsia caespitosa*	60	Yes	FACW
4.			
5.			
6.			
7.			
8.			
	80 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

[X] Dominance Test is >50%

Prevalence Index is ≤3.0[1]

[ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

[ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: DP 13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-2	2.5 Y 6/3	100					C	
2-4	7.5 YR 5/6	100					SL	
4-12	7.5 YR 3/2	100					SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[4]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ● Depth (inches): _____

Water Table Present? Yes ○ No ● Depth (inches): _____

Saturation Present? Yes ○ No ● Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP14

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.975317 N | Long: 107.753917 W | Datum: NAD 83

Soil Map Unit Name: Moran-Telluride- Rock outcrop, extremly stoney | NWI classification: PSSB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ●	No ○	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ● No ○
Wetland Hydrology Present?	Yes ●	No ○	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot Size 5m)			
1. *Salix geyeriana*	40	Yes	OBL
2. *Salix monticola*	25	Yes	OBL
3. *Picea engelmannii*	10		FAC
4.			
5.			
	75 = Total Cover		
Herb Stratum (Plot Size 5m)			
1. *Draba breweri*	25	Yes	OBL
2. *Vaccinium myrtillus*	15	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 40 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ● No ○

Remarks: Sneffels Creek and fringe wetland.

SOIL

Sampling Point: DP14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:[4]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: Waste rock

Depth (inches): surface

Hydric Soil Present? Yes ○ No ◉

Remarks: Waste rock along Sneffels Creek, very rocky. Area has been subject to irregular grading and stock piling, banks are steep and Berms and shallow channels are common.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present?	Yes	◉	No	○	Depth (inches): 1ft
Water Table Present?	Yes	◉	No	○	Depth (inches): +1"
Saturation Present? (includes capillary fringe)	Yes	◉	No	○	Depth (inches): surface

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Multiple small streams braid off from main channel on shallow point bar.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP15

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: °37.975333 N | Long: °107.753917 W | Datum: NAD 83

Soil Map Unit Name: Moran-Telluride- Rock outcrop, extremly stoney | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ◉

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot Size 5m)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot Size 5m)			
1. *Trisetum spicatum*	40	Yes	UPL
2. *Festuca brachyphylla*	30	Yes	UPL
3. *Vaccinium myrtillus*	15		UPL
4. *Taraxacum officinale*	10		UPL
5.			
6.			
7.			
8.			
	95 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

◉ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: Steep rocky banks separate wetlands from uplands, very abrupt change from toe of slope.

SOIL

Sampling Point: DP15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:[4]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: Waste rock

Depth (inches): surface

Hydric Soil Present? Yes ○ No ◉

Remarks: Waste rock

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP16

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.973867 N | Long: 107.752100 W | Datum: NAD 83

Soil Map Unit Name: Cryothents-Rock outcrop complex | NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ◉

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot Size 5m)			
1. *Salix monticola*	40	Yes	OBL
2. *Picea engelmannii*	20	Yes	FAC
3. *Ribes aureum*	10		FAC
4. *Symphoricarpos albus*	10		FACU
5.			
	80 = Total Cover		
Herb Stratum (Plot Size 5m)			
1. *Veratrum tenuipetalum*	40	Yes	FAC
2. *Trisetum spicatum*	20	Yes	UPL
3. *Vaccinium myrtillus*	15		UPL
4. *Festuca brachyphylla*	10		UPL
5. *Taraxacum officinale*	10		FACU
6.			
7.			
8.			
	95 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: Typically mountain slope entering the valley from the south. no springs seeps or surface water sources were identified along this slope.

SOIL

Sampling Point: DP16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:[4]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: bed rock

Depth (inches): surface

Hydric Soil Present? Yes ○ No ◉

Remarks: Small concentrations of glacial till were available for top soil, <2" inches. Vegetation appeared to be growing out of the rock.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No spring, seeps, or surface water runoff channels were identified across this slope.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP17

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: °37.974300 N | Long: °107.753183 W | Datum: NAD 83

Soil Map Unit Name: Cryothents-Rock outcrop complex | NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ●	No ○	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ●
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea engelmannii*	40	Yes	FAC
2. *Picea pungens*	15	Yes	FAC
3.			
4.			
	55 = Total Cover		
Sapling/Shrub Stratum (Plot Size 5m)			
1. *Salix monticola*	25	Yes	OBL
2. *Picea engelmannii*	20	Yes	FAC
3. *Ribes aureum*	10	Yes	FAC
4. *Symphoricarpos albus*	10	Yes	FACU
5.			
	65 = Total Cover		
Herb Stratum (Plot Size 5m)			
1. *Veratrum tenuipetalum*	40	Yes	FAC
2. *Trisetum spicatum*	20	Yes	UPL
3. *Vaccinium myrtillus*	15		UPL
4. *Festuca brachyphylla*	10		UPL
5. *Taraxacum officinale*	10		FACU
6.			
7.			
8.			
	95 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ● No ○

Remarks: Typically mountain slope entering the valley from the south. no springs seeps or surface water sources were identified along this slope.

SOIL

Sampling Point: DP17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:[4]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: bed rock

Depth (inches): surface

Hydric Soil Present? Yes ○ No ◉

Remarks: Small concentrations of glacial till were available for top soil, <2" inches. Vegetation appeared to be growing out of the rock.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No spring, seeps, or surface water runoff channels were identified across this slope.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP18

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: °37.973850 N | Long: °107.751633 W | Datum: NAD 83

Soil Map Unit Name: Cryothents-Rock outcrop complex | NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ●	No ○	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ●
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea engelmannii*	35	Yes	FAC
2. *Picea pungens*	20	Yes	FAC
3.			
4.			
	55 = Total Cover		
Sapling/Shrub Stratum (Plot Size 5m)			
1. *Salix monticola*	25	Yes	OBL
2. *Picea engelmannii*	20	Yes	FAC
3. *Ribes aureum*	15	Yes	FAC
4. *Symphoricarpos albus*	15	Yes	FACU
5.			
	75 = Total Cover		
Herb Stratum (Plot Size 5m)			
1. *Veratrum tenuipetalum*	40	Yes	FAC
2. *Trisetum spicatum*	20	Yes	UPL
3. *Vaccinium myrtillus*	15		UPL
4. *Festuca brachyphylla*	10		UPL
5. *Taraxacum officinale*	10		FACU
6.			
7.			
8.			
	95 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ● No ○

Remarks: Typically mountain slope entering the valley from the south. no springs seeps or surface water sources were identified along this slope.

SOIL

Sampling Point: DP18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:[4]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: bed rock

Depth (inches): surface

Hydric Soil Present? Yes ○ No ◉

Remarks: Small concentrations of glacial till were available for top soil, <2" inches. Vegetation appeared to be growing out of the rock.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No spring, seeps, or surface water runoff channels were identified across this slope.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 10/5/12

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP 19

Investigator(s): WWE: MAJ, LR | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): None | Slope (%): < 2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.97428397 N | Long: -107.753263 W | Datum: NAD 83

Soil Map Unit Name: Cryothents-Rock outcrop complex | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ◉

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot Size)			
1. *Salix geyeriana*	40	Yes	OBL
2.			
3.			
4.			
5.			
	40 = Total Cover		
Herb Stratum (Plot Size)			
1. *Calamagrostis candensis*	15		FACW
2. *Bromus ciliatus*	25	Yes	FAC
3. *Polemonium pulcherrimum*	15		UPL
4. *Violoa adunca*	10		FAC
5. *Thalictrum fendleri*	25	Yes	FAC
6. *Elytrigia repens*	10		UPL
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 20 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals:	(A) (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

SOIL

Sampling Point: DP 19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-12	7.5 YR 2.5/1	95						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[4]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: A lot of organic material. Was not able to get a sample below 12" due to severe rocky conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 10/5/12

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP 20

Investigator(s): WWE: MAJ, LR | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): None | Slope (%): < 2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.9742993 N | Long: -107.7532313 W | Datum:

Soil Map Unit Name: Cryothents-Rock outcrop complex | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ●	No ○	
Hydric Soil Present?	Yes ●	No ○	**Is the Sampled Area within a Wetland?** Yes ● No ○
Wetland Hydrology Present?	Yes ●	No ○	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum Plot Size			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum Plot Size			
1. *Salix geyeriana*	30	Yes	OBL
2.			
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum Plot Size			
1. *Deschampsia cepitosa*	20	Yes	FACW
2. *Calamagrostis canadensis*	20	Yes	FACW
3. *Rumex densiflorus*	20	Yes	FACW
4. *Geum macrophyllum*	10		FAC
5. *Viola adunca*	10		FAC
6. *Senecio triangularis*	20	Yes	FACW
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum Plot Size			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ● No ○

Remarks:

SOIL

Sampling Point: DP 20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-6	7.5 YR 3/1	95					sandy loam	
6-12	5YR 2.5/1	95					histic epipedon	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☒ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:[4]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks: organic layer in soil

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 12

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 10/5/12

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP 21

Investigator(s): WWE: MAJ, LR | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): None | Slope (%): < 2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.97388708 N | Long: -107.7516058 W | Datum:

Soil Map Unit Name: Cryothents-Rock outcrop complex | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ◉

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea engelmanni*	10	Yes	FAC
2.			
3.			
4.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot Size:)			
1. *Salix geyeriana*	15	Yes	OBL
2.			
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot Size:)			
1. *Bromus ciliatus*	10	Yes	FAC
2. *Polemonium pulcherimum*	10	Yes	UPL
3. *Carex microptera*	10	Yes	FACU
4. *Thalictrum fendleri*	5		FAC
5.			
6.			
7.			
8.			
	35 = Total Cover		
Woody Vine Stratum (Plot Size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 40 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

SOIL

Sampling Point: DP 21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
0-18	7.5 YR 3/2						silty loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:[4]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: Coarse gravel with silty loam soil. Unable to obtain sample deeper than 18" because of rocks. Found no hydric soil indicators, gleying, or redox.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Waste rock and alluvial fan feature, very porous

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 10/5/12

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP 22

Investigator(s): WWE: MAJ, LR | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): None | Slope (%): < 2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.97390713 N | Long: -107.7515976 W | Datum: NAD 83

Soil Map Unit Name: Cryothents-Rocks outcrop complex | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ●	No ○	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ●
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea engelmanni*	10	Yes	FAC
2.			
3.			
4.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot Size)			
1. *Salix geyeriana*	15	Yes	OBL
2.			
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot Size)			
1. *Rumex densiflorus*	30	Yes	FACW
2. *Viola adunca*	5		FAC
3. *Geranium richardsonii*	10		FAC
4. *Saxifraga odontoloma*	10		FACW
5. *Veratrum tenuipetalum*	30	Yes	UPL
6.			
7.			
8.			
	85 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 50 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ● No ○

Remarks:

SOIL

Sampling Point: DP 22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-18	7.5 YR 3/2	95					silty loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[4]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: Coarse gravel with silty loam soil. No redox features, no gleying. No hydric indicators within 1 foot of waters edge. Another test sample was taken with 3" of water surface which also had no hydric indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Soil dry at 18" in the soil sample which was below the water level of the pond. Very porous area with waste rock.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 06-02-2012

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP23

Investigator(s): WWE: BFF | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Valley | Local relief (concave, convex, none): none | Slope (%): <2%

Subregion (LRR): E - RM Forests & Rangeland | Lat: °37.975033 N | Long: °107.747483 W | Datum: NAD 83

Soil Map Unit Name: Cryothents-Rock outcrop complex | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ◉

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ◉ No ○
Wetland Hydrology Present?	Yes ◉	No ○	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot Size 10m)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot Size 5m)			
1. *Carex aquatilis*	25	Yes	OBL
2. *Juncus balticus*	20	Yes	OBL
3. *Deschampsia coespitosa*	15	Yes	FACW
4.			
5.			
6.			
7.			
8.			
	60 = Total Cover		
Woody Vine Stratum (Plot Size)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: Ground water induced wetland.

SOIL

Sampling Point: DP23

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:[4]

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: Waste rock

Depth (inches): surface

Hydric Soil Present? Yes ○ No ◉

Remarks: Waste rock, very rocky. Thin layer of muck in water. Waste rock substrate subject to previous disturbance.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present?	Yes	◉	No ○	Depth (inches):	0.5'
Water Table Present?	Yes	◉	No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes	◉	No ○	Depth (inches):	surface

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 10/5/12

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP 24

Investigator(s): WWE: MAJ, LR | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): hillslope | Local relief (concave, convex, none): None | Slope (%): 10%

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.97396633 N | Long: -107.752806 W | Datum:

Soil Map Unit Name: Cryothents-Rock outcrop complex | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ◉

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

Tree Stratum (Plot Size)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea engelmanni*	5	Yes	FAC
2.			
3.			
4.			
	5	= Total Cover	
Sapling/Shrub Stratum (Plot Size)			
1. *Salix geyeriana*	70	Yes	OBL
2.			
3.			
4.			
5.			
	70	= Total Cover	
Herb Stratum (Plot Size)			
1. *Carex microptera*	50	Yes	FACU
2. *Bromus ciliatus*	15		FAC
3. *Fragaria virginiana*	5		FACU
4. *Polemonium pulcherrimum*	5		UPL
5. *Calamogrostis canadensis*	5		FACW
6. *Geranium richardsonii*	5		FAC
7.			
8.			
	85	= Total Cover	
Woody Vine Stratum (Plot Size)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

SOIL

Sampling Point: DP 24

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-18	7.5 YR 3/2	95					silty loam	
18-20	5 YR 3/2	95					silty loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[4]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless distrubed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: No gleying, no redox features, found earthworms in sample. Could not go below 20" due to rocks

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B6)
- ☐ Iron Deposits (B6)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (no MLRA 1,2,4 A&B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Stained Leaves (B9) (MLRA 1,2, 4 A&B
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost- Heave Hummucks (D7)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: This area is a colluvium with alot of channelling. Area is very rocky and porous.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys and Coast Region

Project/Site: Revenue Mine | City/County: Camp Bird, Ouray | Sampling Date: 10/5/12

Applicant/Owner: Silver Star Resources | State: CO | Sampling Point: DP 25

Investigator(s): WWE: MAJ, LR | Section, Township, Range: Sec. 21 T43N R8W

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): None | Slope (%): 10 %

Subregion (LRR): E - RM Forests & Rangeland | Lat: 37.97370073 N | Long: -107.7520284 W | Datum: NAD 83

Soil Map Unit Name: Cryothents-Rock outcrop complex | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ●	No ○	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ●
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: 2012 was an unusually dry year with a snow pack below average. The site is at a 10,600 feet above sea level. The project area is located at a mine that has been periodically active for over 100 years. Vegetation, soils, and hydrology have been significantly disturbed from permitted mining activities.

VEGETATION

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum Plot Size			
1. *Picea engelmannii*	50	Yes	FAC
2.			
3.			
4.			
	50 = Total Cover		
Sapling/Shrub Stratum Plot Size			
1. *Picea engelmannii*	10	Yes	FAC
2. *Salix geyeriana*	20	Yes	OBL
3. *Salix brachycharpa*	20	Yes	FACW
4.			
5.			
	50 = Total Cover		
Herb Stratum Plot Size			
1. *Deschampsia cespitosa*	20	Yes	FACW
2. *Bromus ciliatus*	20	Yes	FAC
3. *Fragaria virginiana*	15	Yes	FACU
4. *Polemonium pulcherrimum*	3		UPL
5. *Veratrum tenuipetalum*	5		UPL
6. *Geranium richardsonii*	3		FAC
7. *Potentilla pulcherrimia*	5		UPL
8.			
	71 = Total Cover		
Woody Vine Stratum Plot Size			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 30 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ● No ○

Remarks: