2020
ANNUAL HYDROLOGIC REPORT

BOWIE RESOURCES, LLC

BOWIE RESOURCES, LLC
BOWIE NO. 2 MINE
P.O. BOX 483
PAONIA, COLORADO 81428
PERMIT C-1996-083

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2020 Annual Hydrology Report

Bowie Resources, LLC

Bowie No. 2 Mine

Permit Number C-1996-083

Paonia, Colorado

Introduction

The Bowie No. 2 Mine was built and opened by Bowie Resources during the spring and summer months of 1997 with coal production/development beginning on August 15, 1997. This room and pillar operation began developing a main and submain system of underground entries to provide the ventilation, haulage and coal conveyor support for years to come. These entries are driven carefully on projections, held to minimum widths with larger than normal coal pillars left in place to assure adequate support for the life of the mine. The mine began longwall production during November 1999.

The following 2019 Annual Hydrology Report describes the hydrologic monitoring for surface and ground water within the permit and adjacent area of the Bowie No. 2 Mine and presents baseline data for the natural mine plan progression.

In this report, springs, ponds and streams (including ditches, rivers, and canals) are considered surface water. Alluvial wells and drill holes are sampled and analyzed as ground water. Please refer to the permit application for a discussion of the methods employed during the gathering of field parameters. Permit Map-09 (attached as an exhibit in this report) indicates the location of all monitoring points referred to in this report.

At the request of the Division, we have included baseline data for all Springs, Streams, Drill Holes and Alluvial Wells on the annual tabulation figures. Previously, parameters not tested and tested but found below the Method Detection Limit (MDL) were left blank. Blank cells represent a "not tested" condition, while a "<MDL" notation is made for the condition where a parameter falls below the Method Detection Limit. Additional requests from the Division during the approval process for PR-04 have added other improvements to the tables, including minimum/maximum/average values for the baseline period and minimum/maximum/average values for the operational influenced period of the monitoring point.

Table 1 (immediately following this narrative) defines the monitoring points by type and sample frequency, field parameter sampling schedule and laboratory parameter sampling schedule.

Table 2 contains a listing of the laboratory parameters for surface and ground water to be tested in accordance with the mining permit application. Laboratory analysis are performed by ACZ Laboratories, INC., 2773 Downhill Dr, Steamboat Springs, CO 80407 and Enviro-Chem Analytical, Inc., 685 West Gunnison Avenue, Grand Junction, CO.

Table 3 contains a listing of the field parameters and their application to the Springs, Streams, Drill Holes and Ponds within the permit boundary. Flow readings for springs and small streams are reported in gallons per minute. Stream and river flows are reported in cubic feet per second.

Table 4 contains local precipitation data for the year. This data is available from the internet at www.wrcc.dri.edu/summary/Climsmco.html select Paonia 1 SW (056306). The average precipitation for the period of record (1893 through 2016) is 15.39 inches. Precipitation during 2016 totaled 11.61 inches which is below average. Data recorded at the Bowie no. 2 mine site through December 31, 2020 is 9.29 inches. That number does not necessarily reflect the total snowfall received at the mine, which was not a lot during the 2020 water year, which was a very dry year.

Table 5 contains a listing of all monitoring points, with descriptions of their locations and a reference to the Monitoring Point Figure that contains this year's monitoring data. The included charts are given a figure number. During 2015 and 2016, approval of Technical Revision Nos. 103 and 107 eliminated, or temporarily suspended forty-seven (47) monitoring points. Table 5 hi-lights the changes to the monitoring program.

Monitoring point figures follow this introduction. Each Monitoring Point has an individual table which tabulates the annual data collection and reports Minimum, Maximum, Average and Baseline data. A reference in each footnote explains the period used for baseline data.

Flow data for the North Fork of the Gunnison River is obtained from the USGS from a website http://nwis-colo.cr.usgs.gov/historic.html. This flow reading is obtained telemetrically from a station near Somerset, CO and is reflective of upper river flows only. This monitoring point is identified by the USGS as 09132500.

Flow data for the Fire Mountain Canal is obtained from Mr. Trey Dennison, member of the Fire Mountain Canal and Reservoir Company, whose phone number is (970) 527-5166 or cell (970) 589-2857. This flow is representative of the upper and lower flows.

Monitoring point identifiers near the mine portals are historic and follow no specific naming convention. Monitoring points located in other areas typically follow a convention where the first letter(s) designates a water source type, such as "S" for Spring or "SP" for Spring and Pond. The numeral(s) following the first letter designate what Section the water source is located, for instance, SP34-2 would be a spring and pond in Section 34. The numeral separated with a dash indicates an index number for that point. SP34-2 would be the second monitoring point found in Section 34.

CDPS Monitoring Points

DMRs are submitted monthly to the Colorado Department of Public Health and Environment with copies to the Division of Reclamation, Mining and Safety and are included herein by reference.

North Fork Alluvium Monitoring Wells

Alluvial monitoring wells AW-1 through AW-6 are located near the mine entrance along the north side of Bowie Road. These wells are monitored quarterly for field parameters and semi-annually for full suite laboratory parameters during the second and fourth quarters in accordance with the permit application. Alluvial monitoring wells AW-7 through AW-9 are located near the mine entrance along the south side of Bowie Road. AW-10 cannot be reliably sampled due to a collapse of the casing, and was eliminated from the monitoring plan. These wells were installed as a requirement of PR-03 which allowed the mine operator to relocate Sediment Pond B to the south side of the highway. Alluvial Wells 11 through 13 were installed during the fall of 2000 to monitor the alluvium in the area where the new coal loadout (PR-06) was constructed. Alluvial well 13 was eliminated by the construction of the unit train loadout. Alluvial well 14 was installed during 2003 west of Pond K. Alluvial wells 15 through 17 were installed during the fourth quarter of 2003 and are located north of Bowie Road below coal mine waste disposal area #2.

The 2020 sampling season provides results consistent with baseline information provided in the permit application, showing no adverse impact to groundwater during the construction of the mine, however 2020 was extremely dry so laboratory samples were not obtained for many well sites. There has not been any significant degradation of alluvial wells 11 and 12 which are located below gob pile #3. Alluvial well 6 did not have high conductivity values this year. Looking at the trendline on the chart for Conductivity, since November of 1996, conductivity has been trending higher. Alluvial well 3's conductivity values are also trending higher. The well is located below the coal stockpile pad, which has not held a significant amount of coal for the last two years. However, looking at the chart associated with AW-3, since November 1996 it too has been trending higher. AW-2 has a phosphorus value significantly higher than average, and it is unknown why. This value will be watched next year for a potential upward trend.

Surface Water Monitoring Stations: PONDS

Ponds were sampled for water quality when discharging or inflows/outflows were occurring. Ponds are typically spring-fed or seep-fed and exhibit diffuse non-concentrated areas of inflow. Often the pond outlets present the only point of concentrated flow at which flow measurements and field parameters can be obtained.

Where possible, quality measurements are obtained at the pond inlet. Stagnant water in ponds is not sampled since water quality results would show the effects of evaporation and stock use and could not be used to evaluate potential mine affects. Ponds are monitored quarterly. The following information is collected for the ponds; 1) inflow; 2) outflow; and 3) water level below spillway outlet or depth of water in pond measured from the bottom of the pond. Field data collected during the 2020 sampling season is consistent with baseline information provided in the permit application.

Surface Water Monitoring Stations: SPRINGS

Forty-nine springs and springs with ponds were monitored during the 2020 monitoring season in accordance with the Hydrologic Monitoring Plan. This plan indicates that identified springs will be inspected quarterly for field parameters with full suite laboratory parameters required on springs with flows greater than five (5) gallons per minute. During the construction phase of the mine, four (4) springs (S-6, S-7, S-9 and S-15) were eliminated by road and portal bench construction activities. The 2020 field and laboratory analysis are consistent with baseline data provided in the permit application. There has been a trend in many of the springs that shows the conductivity increases as the flow decreases. This trend is most likely caused by the increased time the water is in contact with the alluvium because of the lower flows.

Surface Water Monitoring Stations: STREAMS AND DITCHES

Twenty-three surface water monitoring stations including the North Fork of the Gunnison, Terror Creek, Hubbard Creek, Freeman Gulch, the Deer Trail Ditch, Stephens Draw, and the Fire Mountain Canal are monitored quarterly for field parameters and semi-annually for full suite analysis. The results of the 2020 field and laboratory studies are consistent with baseline information supplied in the permit application.

The USGS, with right of way permission from the USDA-Forest Service, installed continuous monitoring stations on both Hubbard and Terror Creeks. Similar stations are installed near each creek's confluence with the North Fork of the Gunnison River. These stations have been calibrated by the USGS's hydrology department and now provide accurate readings for the Annual Hydrology Reports. The USGS did not collect flow data for their station during 2019. Flow data for the creeks were determined by Bowie Resources, LLC during 2020.

Surface Water Monitoring Stations: SMALL AREA EXEMPTIONS

The locations of the small area exemptions are presented on Map 20. The Applicant will monitor the flow from the small area exemptions to assure compliance with 4.05.2(3). The Applicant will use its best efforts to obtain samples. The samples will be

analyzed for pH, conductivity and total settleable solids. Samples will be in compliance if they contain settleable solid levels of 0.5 ml/l or less and the pH is greater than 6.5 and less than 9.0. No small area exemption sampling was performed during the year.

Coal Member of Mesaverde

Eleven bedrock wells were monitored during the 2019 sampling season. These holes were monitored quarterly for field parameters and semi-annually for full suite laboratory analysis. Data collected and evaluated is consistent with the baseline information provided in the permit application except for DH-39 which is adjacent to the repaired DH-15. DH-39 had higher than average conductivity for the two quarters it was monitored. The trend in increased conductivity began after DH-15 was sealed and replaced with DH-15A, see description in the following paragraph. The mine construction work during 1997 required the elimination of four monitored drill holes. These holes are DH 42, DH 52, DH 54 and DH 55 and were located near the mine portals. Drill Holes DH-13 and DH-34b were eliminated by mining. Drill hole DH-34c was damaged by ground movement. DH-16 is blocked at 60-feet so no monitoring can be performed. Drill Holes DH-57, 57a and DH-58, 58a were added in conjunction with the Terror Creek Coal Exploration Plan, with monitoring beginning in the fall of 1999. Drill holes DH-57 and DH57a were destroyed by longwall mining during 2001. DH-58 and 58a were eliminated by mining during late 2003 so they are no longer monitored.

D-Seam monitoring wells DH-15, DH-25 and DH-38 can no longer be monitored since all three have damaged well casings. During 2016, DH-15 was sealed and replaced by new D-Seam monitoring well DH-15A. The new well is located near the old monitoring well. Monitoring of DH-15A began the fourth quarter of 2016.

Drill holes DH-65, DH-66, DH-67D, DH-67blw and DH-67abv were added in conjunction with the Iron Point Federal coal lease, with some monitoring beginning during the fall of 2000. DH-67D was damaged during 2003 so no monitoring was performed. The DH-67 holes were refurbished during 2004. DH-66 was eliminated by mining during early 2004 so it is no longer monitored. DH-67blw had a pinched casing so a new DH-67blw was drilled during 2014. Obtaining a sample from DH 67B has been challenging. Field parameters were obtained two quarters, but a full-suite sample was only obtained during the second quarter.

Drill holes DD-NM4X98-27, 28 and 29 were in-mine monitoring holes which were added to the monitoring program during 2003. The three monitoring points were abandoned when the mine activity retreated from the east mains in mid 2004. TC-03-01, 02 and 03 were added to the monitoring program during 2003. TC-03-03 was sealed in 2010 because a ventilation shaft was constructed where TC-03-03 was located. Monitoring wells TC-03-01 and TC-03-02 could not be rehabilitated during 2014. The wells could

be used as water level piezometers but the wells are not functional for water quality data. Monitoring results for these well is of questionable value.

Drill holes CWI-DH-58 and CWI-DH-60 were added to the monitoring program in 2011 with the approval of permit revision 12 to cover the area west of Terror Creek. Monitoring well CWI-DH-60 was cleaned and rehabilitated between August 20 and August 23, 2014. On August 22, 2014, the well was evacuated using the airlift and bailing techniques and the water quality showed a pH of 7.70 s.u., conductivity of 863 µS/cm, and temperature of 20.5° C. After a 12 hour recovery period, the SWL was measured at 892.0 feet btoc (August 23, 2014).

A new well CWI-DH-58a was drilled to replace CWI-DH-58 late in 2014. The Applicant drilled DH-2010-1SS and DH-2010-1B during 2011. DH-2010-1B is completed in the B-Seam and DH-2010-1SS is completed in a water bearing zone above the B-Seam. Drill hole 2010-1B was refurbished during 2014. After the 2014 well rehabilitation work, 2010-1B had the following water quality: pH 9.75 su, conductivity 277 umhos/cm, total iron 4.31 mg/l, manganese 0.0621 mg/l.

Conclusion

The results of the hydrologic monitoring conducted during the 2019 season indicate consistent chemical and physical properties when compared with the baseline values provided in the permit application. Longwall mining is the focus of all mining operations at Bowie No. 2 Mine. Longwall mining ceased February 26, 2016 so there was no mining during the calendar year. Prior mining has not affected the local hydrology during the current year. Water quality at all monitored sites remains good overall and no chemical or physical impacts have been noted. Except as noted above, none of the field or laboratory parameter results indicate an adverse impact associated with the mining operations of the Bowie No. 2 Mine on the local hydrology.

Many sites require four quarters of sampling for field parameters (Terror Creek Drainage system, Dove Gulch, nearly all of the Ponds, many of the S-Series Springs, etc.). However, due to drought conditions, many sites did not have water available to obtain samples for field or laboratory parameters. In those cases, if there were field parameters obtained and no laboratory data listed, it means there was not enough water to obtain a sample to send to the lab.

Summary of Hydrology Monitoring Stations

Station Number	Station Name	Elevation (ft.)	Depth (ft.)	Frequency of Measurements		Report Frequency	Report Format		Comments
				Field Par.	Lab. Par.		AHR	DMR	
Surface Water Monitoring - SPRINGS WITH PONDS									
SP5-1	Terror Creek-Spring/Pond 5-1	7400		Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
SP6-4	Terror Creek-Spring/Pond 6-4	8040		Quarterly	Quarterly	Annually	Yes	No	Temporarily Suspended TR-103
SP7-1	Terror Creek-Spring/Pond 7-1	7780		Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
SP7-5	Stevens Gulch-Spring/Pond 7-5	8300		Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
SP12-4	Stevens Gulch-Spring/Pond12-4	8040		Quarterly	Quarterly	Annually	Yes	No	Permanently Suspended TR-103
SP16	Terror Creek-Spring/Pond 16	7780		Quarterly	Quarterly	Annually	Yes	No	Temporarily Suspended TR-103
SP17	Terror Creek-Spring/Pond 17	7520		Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
SP18	Terror Creek-Spring/Pond 18	7280		Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
SP19	Stevens Gulch-Spring/Pond 19	8240		Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
SP20	Terror Creek-Spring/Pond 20	7840	4	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
SP22	Terror Creek-Spring/Pond 22	7560		Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
SP23	Stevens Gulch-Spring/Pond 23	7480		Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
SP34-11	Sheep Corral-Spring/Pond 34-11	7440	3	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
ST36-2	Flat Tanks	8160		Quarterly	Quarterly	Annually	Yes	No	Temporarily Suspended TR-103
ST36-4	Oak Hills Spring Lower Tank	8040		Quarterly	Quarterly	Annually	Yes	No	Temporarily Suspended TR-103
ST36-5	Oak Hiles Spring Upper Tank	8240		Quarterly	Quarterly	Annually	Yes	No	Temporarily Suspended TR-103
Surface Water Monitoring - SPRINGS									
S-1	B Gulch-Spring 1	6990	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S-2	Freeman Gulch-Spring 2	7920	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S-3	Freeman Gulch-Spring 3	7920	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S-4	Terror Creek-Spring 4	7880	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S-4a	Terror Creek-Spring 4a	7910	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S-5	Sheep Corral-Spring 5	7800	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S-5a	Sheep Corral-Spring 5a	7860	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S-5b	Sheep Corral-Spring 5b	7860	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S-8	C Gulch-Spring 8	7220	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S-10	Steven's Draw-Spring 10	7550	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S-11	Steven's Draw-Spring 11	7940	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S-12	B Gulch-Spring 12	7650	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S-13	Freeman Gulch-Spring 13	7500	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S-14	Steven's Draw-Spring 14	7100	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S-16	Terror Creek-Spring 16	7750	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S-17	Freeman Gulch-Spring 17	7110	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S-18	Terror Creek-Spring 18	7750	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1

Summary of Hydrology Monitoring Stations (Continued)

Station Number	Station Name	Elevation (ft.)	Depth (ft.)	Frequency of Measurements		Report Frequency	Report Format		Comments
				Field Par.	Lab. Par.		AHR	DMR	
Surface Water Monitoring Stations - SPRINGS (cont.)									
S1-3	Terror Creek-Spring 1-3	7860	N/A	Quarterly	Quarterly	Annually	Yes	No	Temporarily Suspended TR-103
S1-5	Terror Creek-Spring 1-5	8020	N/A	Quarterly	Quarterly	Annually	Yes	No	Temporarily Suspended TR-103
S2-2	Hubbard Creek-Spring 2-2	6740	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S2-3	Hubbard Creek-Spring 2-3	6740	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S2-9	Hubbard Creek-Spring 2-9	6320	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S2-10	Hubbard Creek-Spring 2-10	6320	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S3-1	Sheep Corral-Spring 3-1	6840	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S5-2	Seep West of Terror Creek Road	7200	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S5-3	Red's Spring & Pipeline	7200	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S5-4	Hugh's Family Pipe & Spring	7320	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S6-1	Terror Creek-Spring 6-1	7720	N/A	Quarterly	Quarterly	Annually	Yes	No	Temporarily Suspended TR-103
S6-6	Terror Creek-Spring 6-6	7860	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S6-7	West Fork Terror Ck Concrete Box	7600	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S7-4	Stevens Gulch-Spring 7-4	8190	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S7-9	Terror Creek-Spring 7-9	7800	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S7-10	Terror Creek-Spring 7-10	7880	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S8-5	Terror Creek-Spring 8-5	7800	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S21	Terror Creek-Spring 21	7100	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S33-4	Sheep Corral-Spring 33-4	7790	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S34-7	Sheep Corral-Spring 34-7	7390	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S34-10	Dove Gulch-Spring 34-10	6640	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S34-19	Hubbard Creek-Spring 34-19	6460	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S34-20	Hubbard Creek-Spring 34-20	6440	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S34-21	Hubbard Creek-Spring 34-21	6430	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S34-22	Hubbard Creek-Spring 34-22	6700	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S34-23	Hubbard Creek-Spring 34-23	6650	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S34-24	Hubbard Creek-Spring 34-24	6390	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S34-25	Dove Gulch-Spring 34-25	6680	N/A	Quarterly	Quarterly	Annually	Yes	No	No winter monitoring - Lab analysis >5gpm, List 1
S36-7	Seeps 11 Below Stevens Gulch Rd	8120	N/A	Quarterly	Quarterly	Annually	Yes	No	Temporarily Suspended TR-103

Summary of Hydrology Monitoring Stations (Continued)

Station Number	Station Name	Elevation (ft.)	Depth (ft.)	Frequency of Measurements		Report Frequency	Report Format		Comments
				Field Par.	Lab. Par.		AHR	DMR	
Surface Water Monitoring Stations - STREAMS AND DITCHES									
A-Gulch-lo	Drainage System	5960	N/A	Quarterly	Semi-Annually	Annually	Yes	No	Permanently Suspended TR-103
B-Gulch-lo	Drainage System	5960	N/A	Quarterly	Semi-Annually	Annually	Yes	No	Permanently Suspended TR-103
B-Gulch-up	Drainage System	7080	N/A	Quarterly	Semi-Annually	Annually	Yes	No	Permanently Suspended TR-103
C-Gulch-lo	Drainage System	5960	N/A	Quarterly	Semi-Annually	Annually	Yes	No	Permanently Suspended TR-103
C-Gulch-up	Drainage System	7120	N/A	Quarterly	Semi-Annually	Annually	Yes	No	Permanently Suspended TR-103
D2-1	Sheep Corral-Drainage System	6360	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring - 2nd & 4th Qrt, List 1
D21-1	Terror Creek-Confluence w/NFG	5760	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monit-2nd & 4th Qrt, List 1-Flow USGS
D32-4	Terror Creek-Drainage System	7480	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monit-2nd & 4th Qrt, List 1-Flow USGS
D33-14	Upper Sheep Corral Gulch	7320	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring - 2nd & 4th Qrt, List 1
D34-13	Dove Gulch-Drainage System	6440	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring - 2nd & 4th Qrt, List 1
D34-14	Hubbard Creek-Drainage System	6560	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monit-2nd & 4th Qrt, List 1-Flow USGS
Deer-low	Canal-Deer Trail Ditch	5920	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monit-2nd & 4th Qrt, List 1-Aug, List 2
Deer-up	Canal-Deer Trail Ditch	5960	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monit-2nd & 4th Qrt, List 1-Aug, List 2
D-Gulch-lo	Drainage System	5960	N/A	Quarterly	Semi-Annually	Annually	Yes	No	Permanently Suspended TR-103
D-Gulch-up	Drainage System	7160	N/A	Quarterly	Semi-Annually	Annually	Yes	No	Permanently Suspended TR-103
FMC-Low	Canal-Fire Mountain Canal	5920	N/A	May/Jul/Sep	Semi-Annually	Annually	Yes	No	No winter monitoring - 1st & 3rd Qrt, List 1
FMC-up	Canal-Fire Mountain Canal	5960	N/A	May/Jul/Sep	Semi-Annually	Annually	Yes	No	No winter monitoring - 1st & 3rd Qrt, List 1
Free-low	Freeman Gulch-Drainage System	7560	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring - 2nd & 4th Qrt, List 1
Free-up	Freeman Gulch-Drainage System	6360	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring - 2nd & 4th Qrt, List 1
Hub-low	Hubbard Creek-Drainage System	5880	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monit-2nd & 4th Qrt, List 1-Flow USGS
Hub-up	Hubbard Creek-Drainage System	6320	N/A	Quarterly	Semi-Annually	Annually	Yes	No	Permanently Suspended TR-103
NFG-low	North Fork-Drainage System	5680	N/A	Quarterly	Semi-Annually	Annually	Yes	No	2nd & 4th Qrt, List 1 - August, List 2 - Flow USGS
NFG-up	North Fork-Drainage System	5880	N/A	Quarterly	Semi-Annually	Annually	Yes	No	2nd & 4th Qrt, List 1 - August, List 2 - Flow USGS
Steph-low	Steven's Draw-Drainage System	7000	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring - 2nd & 4th Qrt, List 1
Steph-up	Steven's Draw-Drainage System	7920	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring - 2nd & 4th Qrt, List 1
SW-01	**West Fork Terror Ck-Downstream**	7140	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring - 2nd & 4th Qrt, List 1
SW-02	Terror Creek-Mid Stream	7040	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring - 2nd & 4th Qrt, List 1
SW-04	West Terror Creek Trib -Upstream	7880	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring - 2nd & 4th Qrt, List 1
SW-05	Stevens Gulch-Downstream	6600	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring - 2nd & 4th Qrt, List 1
SW-10	Terror Ditch	6480	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring - 2nd & 4th Qrt, List 1
SW-11	Stevens Gulch-Upstream	8084	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring - 2nd & 4th Qrt, List 1
SW-12	West Fork Terror Ck-Upstream	7920	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring - 2nd & 4th Qrt, List 1
EF-1	West Fork Ephemeral Channels	Varies	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring - 2nd & 4th Qrt, List 1
EF-2 thru 9	West Fork Ephemeral Channels	Varies	N/A	Quarterly	Semi-Annually	Annually	Yes	No	Temporarily Suspended TR-103
EF-7 thru 9	West Fork Ephemeral Channels	Varies	N/A	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring - 2nd & 4th Qrt, List 1

Summary of Hydrology Monitoring Stations (Continued)

Station Number	Station Name	Elevation (ft.)	Depth (ft.)	Frequency of Measurements		Report Frequency	Report Format		Comments
				Field Par.	Lab. Par.		AHR	DMR	
Coal Member of Mesaverde									
DH-15	Steven's Draw-Drill Hole	7143	218	Quarterly	Semi-Annually	Annually	Yes	No	Permanently Suspended TR-103
DH-25	C Gulch-Drill Hole	7144	325	Quarterly	N/A	Annually	Yes	No	Permanently Suspended TR-103
DH-38	D Gulch-Drill Hole	7245	454	Quarterly	N/A	Annually	Yes	No	Permanently Suspended TR-103
DH-15a	Steven's Draw-Drill Hole	7143	218	Quarterly	Semi-Annually	Annually	Yes	No	Permanently Suspended TR-103
DH-39	Steven's Draw-Drill Hole	7143	181	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring-Lab analysis 2nd & 4th Qrts
DH-49	B Gulch-Drill Hole	7203	324	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring-Lab analysis 2nd & 4th Qrts
DH-67B	Hubbard Creek-Monitoring Well	6451	594	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring-Lab analysis 2nd & 4th Qrts
DH-67D	Hubbard Creek-Monitoring Well	6450	325	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring-Lab analysis 2nd & 4th Qrts
DH-67abv	Hubbard Creek-Monitoring Well	6451	193	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring-Lab analysis 2nd & 4th Qrts
DH-67blw	Hubbard Creek-Monitoring Well	6451	360	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring-Lab analysis 2nd & 4th Qrts
TC-03-01(B)	Terror Creek - Monitoring Well-Upper	7118	713	Quarterly	Semi-Annually	Annually	Yes	No	Permanently Suspended TR-103
TC-03-02	Terror Creek - Monitoring Well	7095	586	Quarterly	Semi-Annually	Annually	Yes	No	Permanently Suspended TR-103
CWI-DH-58A	Upper B Seam	7442	575	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring-Lab analysis 2nd & 4th Qrts
CWI-DH-60	Upper B Seam (B1)	7921	1085	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring-Lab analysis 2nd & 4th Qrts
DH2010-1B	Above Upper B Seam - Deep	7545	1220	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring-Lab analysis 2nd & 4th Qrts
DH2010-1SS	Upper B Seam - Shallow	7545	1140	Quarterly	Semi-Annually	Annually	Yes	No	No winter monitoring-Lab analysis 2nd & 4th Qrts
North Fork Alluvium Monitoring Wells									
AW-1	Alluvial Well	5978	120	Quarterly	Semi-Annually	Annually	Yes	No	Lab anlaysis 2nd & 4th Qrts
AW-2	Alluvial Well	5967	50.4	Quarterly	Semi-Annually	Annually	Yes	No	Lab anlaysis 2nd & 4th Qrts
AW-3	Alluvial Well	5963	150	Quarterly	Semi-Annually	Annually	Yes	No	Lab anlaysis 2nd & 4th Qrts
AW-4	Alluvial Well	5978	60	Quarterly	Semi-Annually	Annually	Yes	No	Lab anlaysis 2nd & 4th Qrts
AW-5	Alluvial Well	5982	100	Quarterly	Semi-Annually	Annually	Yes	No	Lab anlaysis 2nd & 4th Qrts
AW-6	Alluvial Well	5981	112	Quarterly	Semi-Annually	Annually	Yes	No	Lab anlaysis 2nd & 4th Qrts
AW-7	Alluvial Well	5950	188	Quarterly	Semi-Annually	Annually	Yes	No	Installed Fall of 1999 - Lab 2nd & 4th Qrts
AW-8	Alluvial Well	5950	60	Quarterly	Semi-Annually	Annually	Yes	No	Installed Fall of 1999 - Lab 2nd & 4th Qrts
AW-9	Alluvial Well	5946	80	Quarterly	Semi-Annually	Annually	Yes	No	Installed Fall of 1999 - Lab 2nd & 4th Qrts
AW-11	Alluvial Well	5884	60.86	Quarterly	Semi-Annually	Annually	Yes	No	Installed Fall of 2000 - Lab 2nd & 4th Qrts
AW-12	Alluvial Well	5878	45.38	Quarterly	Semi-Annually	Annually	Yes	No	Installed Fall of 2000 - Lab 2nd & 4th Qrts
AW-14	Alluvial Well	5822	30	Quarterly	Semi-Annually	Annually	Yes	No	Installed Summer of 2003 - Lab 2nd & 4th Qrts
AW-15	Alluvial Well	5973	86	Quarterly	Semi-Annually	Annually	Yes	No	Installed Winter of 2003 - Lab 2nd & 4th Qrts
AW-16	Alluvial Well	5965	75	Quarterly	Semi-Annually	Annually	Yes	No	Installed Winter of 2003 - Lab 2nd & 4th Qrts
AW-17	Alluvial Well	5951	62	Quarterly	Semi-Annually	Annually	Yes	No	Installed Winter of 2003 - Lab 2nd & 4th Qrts

Summary of Hydrology Monitoring Stations (Continued)

Station Number	Station Name	Elevation (ft.)	Depth (ft.)	Frequency of Measurements		Report Frequency	Report Format		Comments
				Field Par.	Lab. Par.		AHR	DMR	
Surface Water Monitoring Stations - PONDS									
P-1	Steven's Draw-Pond 1	7080	5	Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P-2	Freeman Gulch-Pond 2	7600	5	Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P-3	Terror Creek-Pond 3	7730	4.5	Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P-4	Terror Creek-Pond 4	7880	3.5	Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P-5	Sheep Corral-Pond 5	7800	8	Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P-6	Terror Creek-Pond 6	7880	3	Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P1-4	W Fork Terror Creek-Pond 1-4	7960		Quarterly	N/A	Annually	Yes	No	Temporarily Suspended TR-103
P1-6	W Fork Terror Creek-Pond 1-6	7980		Quarterly	N/A	Annually	Yes	No	Temporarily Suspended TR-103
P1-11	W Fork Terror Creek-Pond 1-11	8000		Quarterly	N/A	Annually	Yes	No	Temporarily Suspended TR-103
P1-12	W Fork Terror Creek-Pond 1-12	7860		Quarterly	N/A	Annually	Yes	No	Temporarily Suspended TR-103
P5-5	Hugh's Pipe & Pond	7320		Quarterly	N/A	Annually	Yes	No	Temporarily Suspended TR-103
P6-2	W Fork Terror Creek-Pond 6-2	8000		Quarterly	N/A	Annually	Yes	No	Temporarily Suspended TR-103
P6-5	W Fork Terror Creek-Pond 6-5	8020		Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P7-2	Stevens Gulch-Pond 7-2	8190		Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P7-7	Stevens Gulch-Pond 7-7	8380		Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P7-11	Stevens Gulch-Pond 7-11	8400		Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P8-4	Terror Creek-Pond 8-4	6980		Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P12-1	Stevens Gulch-Pond 12-1	7950		Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P12-2	Stevens Gulch-Pond 12-2	8030		Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P12-9	Stevens Gulch-Pond 12-9	7800		Quarterly	N/A	Annually	Yes	No	Permanently Suspended TR-103
P12-10	Stevens Gulch-Pond 12-10	7820		Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P12-11	Stevens Gulch-Pond 12-11	7800		Quarterly	N/A	Annually	Yes	No	Permanently Suspended TR-103
P17-1	Coal Gulch-Pond 17-1	7340		Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P18-1	Coal Gulch-Pond 18-1	7760		Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P18-4	Stevens Gulch-Pond 18-4	8350		Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P81	Stevens Gulch-Pond 81	8640		Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P82	Terror Creek-Pond 82	7580		Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P83	Coal Gulch-Pond 83	7820	2.5	Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P33-3	Sheep Corral-Pond 33-3	7760	5.5	Quarterly	N/A	Annually	Yes	No	No winter monitoring-Reprt Inflow, Outflow, Depth
P31-1	Dry Pond Below Stevens Gulch Rd	8120		Quarterly	N/A	Annually	Yes	No	Temporarily Suspended TR-103
P36-1	Flat Pond Above Stevens Gulch Rd	8120		Quarterly	N/A	Annually	Yes	No	Temporarily Suspended TR-103
P36-3	Meadow Pond	8140		Quarterly	N/A	Annually	Yes	No	Temporarily Suspended TR-103
P36-6	Dry Pond 11	8140		Quarterly	N/A	Annually	Yes	No	Temporarily Suspended TR-103

LAB PARAMETER LIST

SURFACE WATER LIST 1

Field Parameters	
Flow Rate (gpm)	
Water Level	
pH (Standard Units)	
Conductivity (umhos/cm)	
Temerature (C)	
*Dissolved Oxygen (mg/l)	
Lab Parameters	
Wet Chemistry	**MDL**
Bicarbonate (HCO_3) (mg/l)	2 mg/L
Chloride (Cl^-) (mg/l)	0.5 mg/L
Conductivity (umhos/cm)	1 umhos/cm
Nitrate/Nitrite (mg/l)	0.1 mg/L
pH (Standard Units)	0.1 s.u.
Hardness (mg/l)	1 mg/L
Phosphate (PO_4^{-3} as P) (mg/l)	0.02 mg/L
Residue, Filterable (TDS) @180 C (mg/l)	0.5 mg/L
Residue, NonFilterable (TSS) (mg/l)	0.5 mg/L
Sodium Absorption Ratio in Water	0.15
Sulfate (SO_4^{--}) (mg/l)	0.6 mg/L
Metals	
Aluminum (Al), total recoverable (mg/l)	0.05 mg/L
Arsenic (As), total recoverable (mg/l)	0.002 mg/L
Cadmium (Cd), total recoverable (mg/l)	0.0002 mg/L
Calcium (Ca^{+2}), total recoverable (mg/l)	0.2 mg/L
Copper (Cu), total recoverable (mg/l)	0.01 mg/L
Iron (Fe), total recoverable & Diss (mg/l)	0.01 mg/L
Lead (Pb), total recoverable (mg/l)	0.02 mg/L
Magnesium (Mg^{+2}), total recoverable (mg/l)	0.2 mg/L
Manganese (Mn), total recoverable (mg/l)	0.01 mg/L
Mercury (Hg), total recoverable (mg/l)	0.000025 mg/L
Molybdenum (Mo), total recoverable (mg/l)	0.02 mg/L
Selenium (Se), total recoverable (mg/l)	0.001 mg/L
Sodium (NA^+), total recoverable (mg/l)	0.2 mg/L
Zinc (Zn), total recoverable (mg/l)	0.005 mg/L
Organic Analysis	
Oil and Grease (mg/l)	0.5 mg/L

SURFACE WATER LIST 2

Field Parameters	
Flow Rate (gpm)	
Water Level	
pH (Standard Units)	
Conductivity (umhos/cm)	
Temerature (C)	
*Dissolved Oxygen (mg/l)	
Lab Parameters	
Wet Chemistry	**MDL**
pH (Standard Units)	0.1 s.u.
Residue, Filterable (TDS) @180 C (mg/l)	0.5 mg/L
Ammonia (NH_3) (mg/l)	0.1 mg/L
Chloride (Cl) (mg/l)	0.5 mg/L
Cyanide (CN) (mg/l)	0.2 mg/L
Dissolved Oxygen (mg/l)	Report
Hardness (mg/l)	1 mg/L
Nitrate (NO_3) (mg/l)	0.1 mg/L
Nitrite (NO_2) (mg/l)	0.01 mg/L
Sulfide (S) (mg/l)	0.2 mg/L
Sulfate (SO_4^{--})(mg/l)	0.1 mg/L
Metals	
Arsenic (As), total recoverable (ug/l)	0.002 mg/L
Boron, total recoverabel (mg/l)	0.1 mg/L
Cadmium (Cd), total recoverable (ug/l)	0.0002 mg/L
Chromium III CrIII (ug/l)	0.01 mg/L
Chromium VI CrIV (ug/l)	0.02 mg/L
Copper (Cu), total recoverable (ug/l)	0.01 mg/L
Iron (Fe), dissolved (ug/l)	0.005 mg/L
Iron (Fe), total recoverable (ug/l)	0.001 mg/L
Lead (Pb), total recoverable (ug/l)	0.01 mg/L
Manganese (Mn), dissolved (ug/l)	0.01 mg/L
Manganese (Mn), total recoverable (ug/l)	0.01 mg/L
Mercury (Hg), total recoverable (ug/l)	0.000025 mg/L
Nickel, total recoverable (ug/l)	0.02 mg/L
Selenium (Se), total recoverable (ug/l)	0.001 mg/L
Silver (Ag), total recoverable (ug/l)	0.001 mg/L
Zinc (Zn), total recoverable (ug/l)	0.005 mg/L

GROUND WATER

Field Parameters	
Water Elevation (Feet)	
Depth to Water (Feet)	
pH (Standard Units)	
Conductivity (umhos/cm)	
Temperature (C)	
Lab Parameters	
Wet Chemistry	**MDL**
Bicarbonate (HCO_3) (mg/l)	2 mg/L
Carbonate (CO_3) (mg/l)	2 mg/L
Chloride (Cl^-) (mg/l)	0.5 mg/L
Conductivity (umhos/cm)	1 umhos/cm
Nitrate/Nitrite (mg/l)	0.1 mg/L
Ammonia (NH_3) (mg/l)	0.1 mg/L
pH (Lab Units)	0.1 mg/L
Hardness (mg/l)	1 mg/L
Phosphate (PO_4^{-3} as P) (mg/l)	0.02 mg/L
Residue, Filterable (TDS) @180 C (mg/l)	0.5 mg/L
Sulfate (SO_4^{--}) (mg/l)	0.6 mg/L
Metals	
Arsenic (As), dissolved (mg/l)	0.002 mg/L
Cadmium (Cd), dissolved (mg/l)	0.0002 mg/L
Calcium (Ca^{+2}), dissolved (mg/l)	0.2 mg/L
Iron (Fe), dissolved (mg/l)	0.01 mg/L
Iron (Fe), total recoverable (mg/l)	0.01 mg/L
Magnesium (Mg^{+2}), dissolved (mg/l)	0.2 mg/L
Manganese (Mn), dissolved (mg/l)	0.01 mg/L
Manganese (Mn), total recoverable (mg/l)	0.01 mg/L
Mercury (Hg), dissolved (mg/l)	0.000025 mg/L
Selenium (Se), dissolved (mg/l)	0.001 mg/L
Sodium (NA^+), dissolved (mg/l)	0.2 mg/L
Zinc (Zn), dissolved (mg/l)	0.005 mg/L

Refer to Pages 2.05-134 and 2.05-135 of Permit Application

Surface Water List 2 is applicable annually for North Fork Gunnison and Deer Trail Ditch only

NOTE: Springs are considered Surface Water

**Dissolved Oxygen is reported for Deer Trail Ditch, Fire Mountain Canal and North Fork Gunnison*

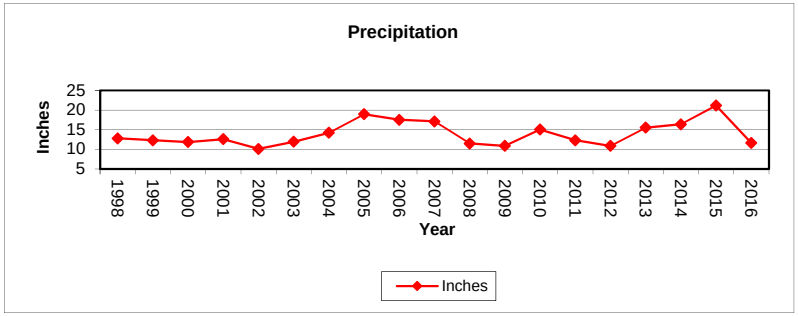
FIELD PARAMETER LIST

Parameter	Unit	Wells	Ponds	Streams	Springs
Conductivity	umhos/cm	Yes	Yes	Yes	Yes
Flow Rate	CFS/GPM	No	Yes	Yes	Yes
pH	Standard	Yes	Yes	Yes	Yes
Temperature	C	Yes	Yes	Yes	Yes
Water Level	Feet	Yes	Yes	No	No

PRECIPITATION VALUES

Monthly Precipitation Values

Month	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
January	1.13	1.08	1.93	0.73	0.55	0.26	1.31	2.05	0.81	0.68	1.67	0.91	0.42	0.49	1.22	1.83	0.66	1.02	0.9
February	0.83	0.38	1.27	1.06	0.11	1.35	1.46	1.38	0.28	0.92	1.1	1	1.66	0.87	1.41	0.89	2.16	1	0.85
March	1.43	0.42	1.03	0.42	1.03	1.17	0.14	1.93	1.58	1.39	0.54	0.89	1.2	1.22	0.3	1.14	0.77	0.76	0.3
April	1.43	2.54	0.42	0.57	0.61	0.49	3.3	1.37	0.83	1.2	0.77	1.09	0.51	1.68	0.62	1.3	1.31	1.75	1.21
May	0.16	1.00	0.67	1.75	0.28	1.81	0	1.22	0.17	1.18	0.64	2.73	1.68	0.83	0.09	1.24	1.71	3.86	1.33
June	0.47	0.94	0.86	0.39	0.04	0.48	0.34	1.64	0.5	0.99	0.67	0.63	0.55	0.32	0.05	0	0.21	1.05	0.51
July	0.66	2.7	0.89	1.31	0.28	0.76	0.02	0.4	3.06	0.85	0.24	0.27	1.44	1.74	1.26	1.37	1.11	2.43	0.8
August	1.18	1.42	1.27	2.35	0.66	0.46	0.48	1.71	0.87	1.16	2.07	0.33	2.09	0.46	2.35	0.78	2.13	1.96	1.81
September	0.75	1.16	1.27	0.34	2.43	1.93	2.85	2.84	2.32	3.2	0.62	0.32	1.15	1.2	0.92	3.28	2.96	1.2	1.07
October	1.88	0.05	0.75	0.84	2.53	0.46	1.37	2.11	5.08	1.37	0.74	0.58	1.84	1.55	0.64	2.12	1.17	1.94	0.49
November	1.87	0.07	0.73	1.85	0.9	1.74	1.72	0.84	1.39	0	0.91	0.77	0.58	0.96	0.61	0.91	0.65	1.48	0.16
December	1.00	0.57	0.78	0.99	0.71	1.03	1.26	1.47	0.65	4.20	1.55	1.36	1.91	1.01	1.41	0.69	1.56	2.70	2.18
Minimum	0.16	0.05	0.42	0.34	0.04	0.26	0.00	0.40	0.17	0.00	0.24	0.27	0.42	0.32	0.05	0.00	0.21	0.76	0.16
Average	1.07	1.03	0.99	1.05	0.84	1.00	1.19	1.58	1.46	1.43	0.96	0.91	1.25	1.03	0.91	1.30	1.37	1.76	0.97
Maximum	1.88	2.7	1.93	2.35	2.53	1.93	3.30	2.84	5.08	4.20	2.07	2.73	2.09	1.74	2.35	3.28	2.96	3.86	2.18
Total	12.79	12.33	11.87	12.60	10.13	11.94	14.25	18.96	17.54	17.14	11.52	10.88	15.03	12.33	10.88	15.55	16.40	21.15	11.61



This data is obtained from the internet at www.wrcc.dri.edu/summary/Climsmco.html select Paonia 1 SW (056306).

** No data recorded during the 2020 water year

Bowie Resources, LLC
Bowie No. 2 Mine
2020 Annual Hydrology Report

Table 5

Monitoring Point Reports
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Surface Water Monitoring Stations - STREAMS AND DITCHES

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Table 5

Monitoring Point Reports
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				Chart Fig No.
SW-05	Stevens Gulch - Downstream	Monitoring Point Report Figure No.	88	89
SW-10	Terror Ditch	Monitoring Point Report Figure No.	90	91
SW-11	Stevens Gulch - Upstream	Monitoring Point Report Figure No.	92	
SW-12	West Fork Terror Creek - Upstream	Monitoring Point Report Figure No.	93	
EFH-1	Ephemeral Channel in Spruce Stomp Lease	Monitoring Point Report Figure No.		
EFH-2	Ephemeral Channel in Spruce Stomp Lease	Monitoring Point Report Figure No.		
EFH-3	Ephemeral Channel in Spruce Stomp Lease	Monitoring Point Report Figure No.		
EFH-4	Ephemeral Channel in Spruce Stomp Lease	Monitoring Point Report Figure No.		
EFH-5	Ephemeral Channel in Spruce Stomp Lease	Monitoring Point Report Figure No.		
EFH-6	Ephemeral Channel in Spruce Stomp Lease	Monitoring Point Report Figure No.		
EFH-7	Ephemeral Channel in Spruce Stomp Lease	Monitoring Point Report Figure No.		
EFH-8	Ephemeral Channel in Spruce Stomp Lease	Monitoring Point Report Figure No.		
EFH-9	Ephemeral Channel in Spruce Stomp Lease	Monitoring Point Report Figure No.		

Coal Member of Mesaverde

DH-15	Stevens Draw - Drill Hole	Monitoring Point Report Figure No.		
DH-25	C Gulch - Drill Hole	Monitoring Point Report Figure No.		
DH-38	D Gulch - Drill Hole	Monitoring Point Report Figure No.		
DH-15a	Stevens Draw - Drill Hole	Monitoring Point Report Figure No.	94	
DH-39	Stevens Draw - Drill Hole	Monitoring Point Report Figure No.	95	96
DH-49	B Gulch - Drill Hole	Monitoring Point Report Figure No.	97	98
DH-67B	Hubbard Creek - Monitoring Well	Monitoring Point Report Figure No.	99	
DH-67D	Hubbard Creek - Monitoring Well	Monitoring Point Report Figure No.	100	
DH-67abv	Hubbard Creek - Monitoring Well	Monitoring Point Report Figure No.	101	
DH-67blw	Hubbard Creek - Monitoring Well	Monitoring Point Report Figure No.	102	
TC-03-01 Upper (B)	Terror Creek - Monitoring Well	Monitoring Point Report Figure No.		
TC-03-02	Terror Creek - Monitoring Well	Monitoring Point Report Figure No.		
CWI-DH-58A	Upper B Seam & Above (B1)	Monitoring Point Report Figure No.	103	
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North Fork Alluvium Monitoring Wells

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AW-3	Alluvial Well	Monitoring Point Report Figure No.	110	111
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Bowie Resources, LLC
Bowie No. 2 Mine
2020 Annual Hydrology Report

Table 5

Monitoring Point Reports
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Surface Water Monitoring Stations: PONDS

SP5-1
Terror Creek - Pond Spring 5-1
Elevation - 7400

Initiated	7/18/1985	7/18/1985	7/18/1985
Activated	3/31/2015	3/31/2015	3/31/2015
Date	10/6/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Outflow	GPM	0.00	0.94	7.36	0.00	1.15	4.12	Seep	Damp	Wet
Inflow	GPM	0.00	0.00	0.00	0.00	0.39	2.96	0.00	0.00	0.00
Freeboard	Feet	0.00	0.00	0.00	0.50	0.00	0.50	0.50	0.50	0.50
Temperature	Celsius	4.1	12.8	23.2	3.80	11.20	20.10			11.5
Conductivity	umhos/cm	490	672	804	697.00	789.83	830.00			809
pH	su	7.3	8.2	9.0	7.62	8.13	8.55			7.9
Field Comments										
Lab Parameters	UNITS									
Bicarbonate	mg/L	256.0	383.5	441.6	453.00	467.50	482.00			
Carbonate	mg/L	16.0	16.0	16.0	0.00	0.00	0.00			
Chloride	mg/L	2.0	6.4	10.0	3.90	4.27	4.50			
Conductivity	umhos/cm	552.0	656.8	974.0	680.00	690.67	700.00			
Hardness	mg/L	182.0	250.8	287.0	246.00	250.33	256.00			
Acidity	mg/L	14.0	14.0	14.0	-410.00	-390.00	-380.00			
pH	su	6.4	7.9	8.7	7.58	7.84	8.05			
ResidueFilterable-TDS	mg/L	320.0	374.9	451.0	428.00	442.67	457.00			
ResidueNonFilterable-TSS	mg/L	2.0	128.0	742.0	91.30	119.15	147.00			
SAR		1.2	1.7	2.5	2.31	2.42	2.52			
Sulfate	mg/L	16.0	34.3	70.0	16.90	18.37	19.80			
Calcium (Dissolved)	mg/L	30.0	57.8	69.0	0.00	0.00	0.00			
Magnesium (Total)	mg/L	18.0	25.9	28.0	22.00	23.27	23.90			
Sodium (Dissolved)	mg/L	43.0	61.0	76.0	0.00	0.00	0.00			
Iron (Total)	mg/L	0.4	0.4	0.4	0.25	0.60	0.98			
Iron (Dissolved)	mg/L	0.1	0.1	0.1	0.01	0.03	0.05			
Manganese (Total)	mg/L	0.06	0.06	0.06	0.05	0.11	0.16			

The area of concern for monitoring point SP5-1 was affected by the mining operation on or about March 31, 2015.

Negative value of acidity indicates alkalinity

Baseline Information Collection initiated on 7/18/85 and completed on March 31, 2015.
Point SP5-1 has been influenced by mining.

SP7-1
Terror Creek - Pond Spring 7-1
Depth 3'
Elevation - 7780

Initiated	7/25/1985	7/25/1985	7/25/1985	7/25/1985
Activated	6/1/2013	6/1/2013	6/1/2013	6/1/2013
Date	10/6/2020	8/31/2020	5/28/2020	11/19/2019

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max				
Outflow	GPM	0	3.35	30	0	2.90	16.91	No flow	No flow	2.4	No flow
Inflow	GPM	0	0.00	0	0	2.37	10.9	No flow	damp		No flow
Freeboard	Feet	0	1.07	3	0	0.37	1.5	1.5	1.5		1.1
Temperature	Celsius	10.3	16.68	32	7.4	14.86	22.8			16.8	
Conductivity	umhos/cm	353	602.53	928	539	615.00	654			645	
pH	su	6.7	7.95	9.4	7.46	8.15	8.63			7.46	
Field Comments											
Lab Parameters	UNITS										
Bicarbonate	mg/L	226	382.24	603	253.3	318.57	368				
Chloride	mg/L	2	8.98	54.59	2.3	5.27	13.08				
Conductivity	umhos/cm	450	633.06	1120	475	523.00	585				
Hardness	mg/L	145	233.44	295	190.3	227.57	254				
Nitrate-Nitrite	mg/L	0.3	0.30	0.3	0.031	0.03	0.031				
Oil and Grease	mg/L	0	<MDL	0	0	<MDL	0				
pH	su	7	7.81	8.4	7.18	7.95	8.22				
Phosphate	mg/L	0	<MDL	0	0.073	0.09	0.11				
ResidueFilterable-TDS	mg/L	280	404.33	808	348	366.50	382				
ResidueNonFilterable-TSS	mg/L	2	85.47	580	7	40.78	81.2				
SAR		1.2	1.70	2.9	1.37	2.01	3.681				
Sulfate	mg/L	10	20.32	39	27.99	29.97	33.6				
Aluminum (TREC)	mg/L	0.034	0.03	0.034	0.12	249.86	999				
Arsenic (TREC)	mg/L	0.06	0.06	0.06	0.002	0.00	0.002				
Cadmium (TREC)	mg/L	0.02	0.02	0.02	0.002	0.00	0.002				
Calcium (TREC)	mg/L	33	50.86	70.6	41.9	52.93	58.8				
Copper (TREC)	mg/L	0.003	0.00	0.003	0.009	0.01	0.009				
Iron (TREC)	mg/L	1.24	1.24	1.24	0.157	0.48	1.19				
Lead (TREC)	mg/L	0.02	0.02	0.02	0.02	0.02	0.02				
Magnesium (TREC)	mg/L	13.9	25.89	37	20.8	23.15	26.1				
Manganese (TREC)	mg/L	0.376	0.38	0.376	0.03	0.06	0.09				
Mercury (TREC)	mg/L	0.00003	0.00	0.00003	2E-05	0.00	2E-05				
Molybdenum (TREC)	mg/L	0.007	0.01	0.007	0.001	0.00	0.001				
Selenium (TREC)	mg/L	0.003	0.00	0.003	0.002	0.00	0.002				
Sodium (TREC)	mg/L	78.1	78.10	78.1	45.2	67.73	116.7				
Zinc (TREC)	mg/L	0.01	0.01	0.01	0.02	0.02	0.02				

The area of concern for monitoring point SP7-1was activated on or about 06/1/2013.

Baseline Information Collection initiated on 7/25/85 and not yet completed.
Point SP7-1 has not been influenced by mining.

SP7-5
Steven's Gulch - Pond Spring 7-5
Elevation - 8300

Initiated	7/6/1983	7/6/1983	7/6/1983	7/6/1983
Activated				
Date	10/6/2020	8/31/2020	5/28/2020	10/5/2019

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max				
Inflow	GPM	0.00	0.83	4.49				Damp	0.010	0.096	Damp
Outflow	GPM	0.00	0.13	0.75				0.000	0.000	No flow	0.000
Freeboard	Feet	0.00	0.43	2.20				0.5		1.5	0.5
Temperature	Celsius	3.5	9.5	21.7						5.5	
Conductivity	umhos/cm	202	325	800						274	
pH	su	6.4	7.5	9.0						6.99	
Field Comments								Dry	Dry		Dry
Lab Parameters	**UNITS**										
Bicarbonate	mg/L	71.81	183.45	227.00							
Chloride	mg/L	<MDL	4.39	19.82							
Conductivity	umhos/cm	184	298	430							
Hardness	mg/L	74.97	154.5	228.0							
Nitrate-Nitrite	mg/L	<MDL	0.256	0.256							
Oil & Grease	mg/L	<MDL	<MDL	<MDL							
pH	su	6.7	7.4	8.4							
Phosphate	mg/L	<MDL	<MDL	<MDL							
ResidueFilterable-TDS	mg/L	163	204	260							
ResidueNonFilterable-TSS	mg/L	<MDL	42	236							
SAR		0.250	0.350	0.933							
Sulfate	mg/L	<MDL	18.2	154.0							
Aluminum (TREC)	mg/L	<MDL	0.022	0.022							
Arsenic (TREC)	mg/L	<MDL	0.04	0.04							
Cadmium (TREC)	mg/L	<MDL	0.01	0.01							
Calcium (TREC)	mg/L	19.8	27.7	35.6							
Copper (TREC)	mg/L	<MDL	0.02	0.02							
Iron (TREC)	mg/L	0.10	0.31	0.62							
Lead (TREC)	mg/L	<MDL	0.05	0.05							
Magnesium (TREC)	mg/L	6.2	16.1	27.0							
Manganese (TREC)	mg/L	<MDL	0.02	0.02							
Mercury (TREC)	mg/L	<MDL	0.00004	0.00004							
Molybdenum (TREC)	mg/L	<MDL	0.006	0.006							
Selenium (TREC)	mg/L	<MDL	0.023	0.023							
Sodium (TREC)	mg/L	8.50	17.53	26.56							
Zinc (TREC)	mg/L	<MDL	0.006	0.006							

The area of concern for monitoring point SP7-5 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

Baseline Information Collection initiated on 7/6/83 and not yet considered complete.
Point SP7-5 has not been influenced by mining.

SP17
Terror Creek - Pond Spring 17
Depth 4'
Elevation - 7520

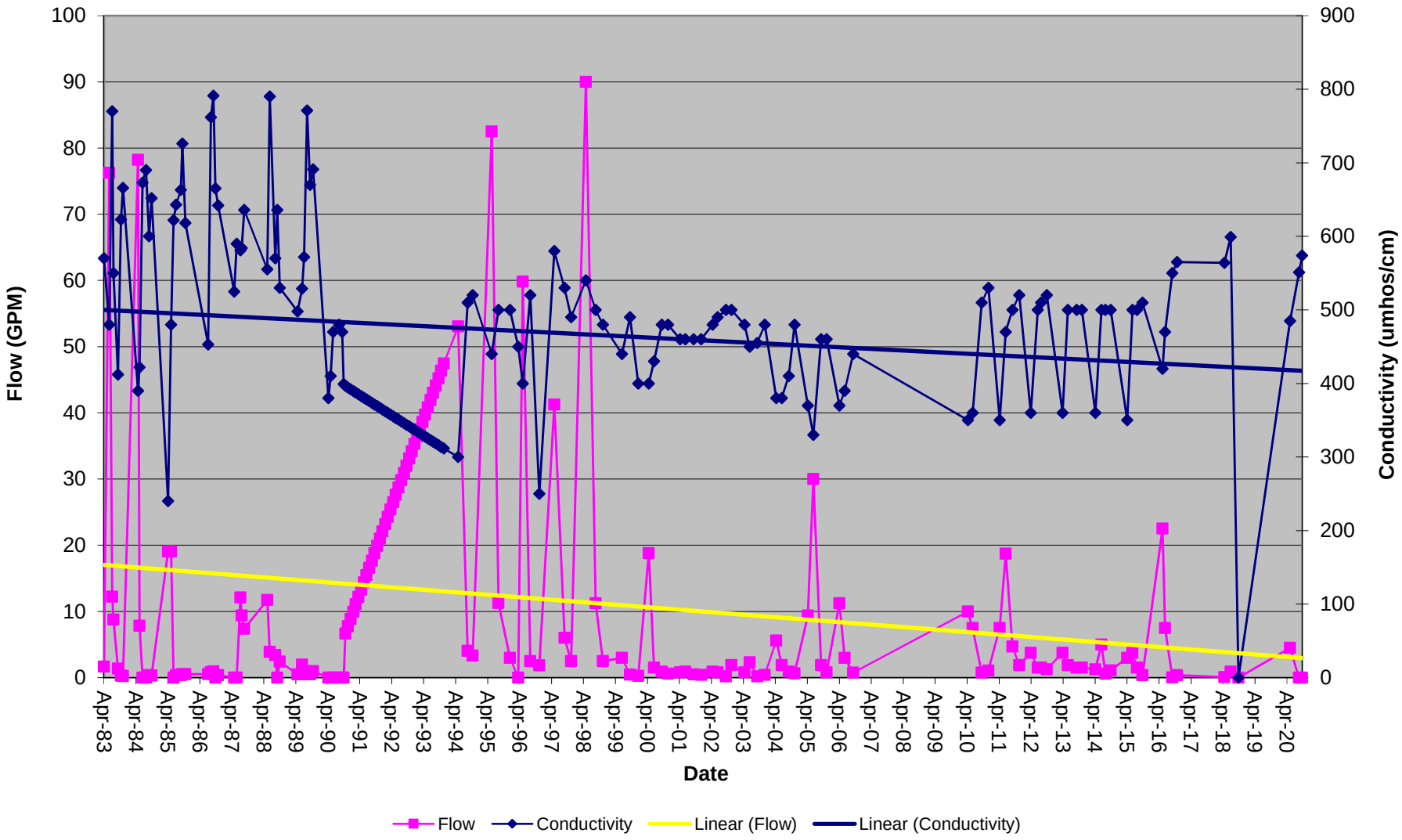
Initiated								4/15/1983	4/15/1983	4/15/1983	4/15/1983
Activated											
Date								10/6/2020	8/31/2020	5/20/2020	11/19/2019
		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Outflow	GPM	0	2.81	31.7				0.08	0.132	4.2	0.03
Inflow	GPM	0	11.64	90				No flow	0	4.5	0.03
Freeboard	Feet	0	0	0.6				0.5	0	0	0
Temperature	Celsius	3.6	9.6	25				9.7	9.5	7.4	6.5
Conductivity	umhos/cm	240	472	791				574	551	485	569
pH	su	6.77	7.6	9.3				7.53	7.66	6.77	7.56
Field Comments											
Lab Parameters	UNITS										
Bicarbonate	mg/L	186.0	263.2	361.0							
Chloride	mg/L	<MDL	11	202							
Conductivity	umhos/cm	325	483	686							
Hardness	mg/L	17.00	174.10	232.00							
Nitrate-Nitrite	mg/L	<MDL	0.63	1.1							
Oil and Grease	mg/L	<MDL	<MDL	<MDL							
pH	su	6.8	7.6	8.3							
Phosphate	mg/L	<MDL	<MDL	<MDL							
ResidueFilterable-TDS	mg/L	145	286	430							
ResidueNonFilterable-TSS	mg/L	<MDL	17	74							
SAR		1.08	2.58	41.10							
Sulfate	mg/L	5.35	27.03	68							
Aluminum (TREC)	mg/L	<MDL	242.112	1210							
Arsenic (TREC)	mg/L	<MDL	0.01	0.02							
Cadmium (TREC)	mg/L	<MDL	0.01	0.01							
Calcium (TREC)	mg/L	33.7	43.3	56.2							
Copper (TREC)	mg/L	<MDL	0.01	0.01							
Iron (TREC)	mg/L	0.0197	0.31	2.25							
Lead (TREC)	mg/L	<MDL	0.03	0.04							
Magnesium (TREC)	mg/L	10.3	14.9	18.9							
Manganese (TREC)	mg/L	<MDL	0.024	0.0862							
Mercury (TREC)	mg/L	<MDL	0.00008	0.00022							
Molybdenum (TREC)	mg/L	<MDL	0.003	0.006							
Selenium (TREC)	mg/L	<MDL	0.00531	0.014							
Sodium (TREC)	mg/L	32.2	49.8	112.6							
Zinc (TREC)	mg/L	<MDL	0.010	0.02							

The area of concern for monitoring point SP17 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

A diffuse flow from an area of approximately 30' x 20' discharges into a pond measuring approximately 30' x 50'. (Hanna, 99)

Baseline Information Collection initiated on 4/15/83 and not yet considered complete.
Point SP17 has not been influenced by mining.

Plot of Flow and Conductivity



SP17 - Terror Creek Spring Pond 17

Figure 5

SP18
Terror Creek - Pond Spring 18
Elevation - 7280

Initiated	4/15/1983	4/15/1983	4/15/1983
Activated			
Date	10/6/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Outflow	GPM	0.00	1.16	3.96				0.70	0.70	0.00
Inflow	GPM	0.09	2.86	17.50				seep	Seep	1.20
Freeboard	Feet	0.00	0.00	0.00					0	1.5
Temperature	Celsius	3.0	10.2	21.3				9.2	11.2	10.3
Conductivity	umhos/cm	260	628	832				672	659	683
pH	su	7.7	8.3	8.9				8.9	8.5	7.7
Field Comments										
Lab Parameters	**UNITS**									
Bicarbonate	mg/L	133.0	343.7	408.7						
Chloride	mg/L	3.00	7.94	62.04						
Conductivity	umhos/cm	230	606	892						
Hardness	mg/L	86.00	235.68	277.00						
Nitrate-Nitrite	mg/L	<MDL	0.5	0.8						
Oil and Grease	mg/L	<MDL	<MDL	<MDL						
pH	su	7.2	8.0	8.3						
Phosphate	mg/L	<MDL	0.023	0.024						
ResidueFilterable-TDS	mg/L	110	344	678						
ResidueNonFilterable-TSS	mg/L	2	39	171						
SAR		0.89	1.39	1.84						
Sulfate	mg/L	10	27	53						
Aluminum (TREC)	mg/L	0.028	260.405	806.000						
Arsenic (TREC)	mg/L	<MDL	0.04	0.04						
Cadmium (TREC)	mg/L	<MDL	0.01	0.01						
Calcium (TREC)	mg/L	57.9	62.4	66.8						
Copper TREC)	mg/L	<MDL	0.003	0.003						
Iron (TREC)	mg/L	0.24	1.24	4.51						
Lead (TREC)	mg/L	0.03	0.03	0.03						
Magnesium (TREC)	mg/L	21.0	24.7	28.1						
Manganese (TREC)	mg/L	0.01	3.04	21.20						
Mercury (TREC)	mg/L	<MDL	0.00007	0.00007						
Molybdenum (TREC)	mg/L	<MDL	0.010	0.010						
Selenium (TREC)	mg/L	<MDL	0.012	0.012						
Sodium (TREC)	mg/L	49.1	56.7	69.7						
Zinc (TREC)	mg/L	<MDL	0.004	0.004						

The area of concern for monitoring point SP18 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

Baseline Information Collection initiated on 4/15/83 and not yet considered complete.
Point SP18 has not been influenced by mining.

SP19
Steven's Gulch - Pond Spring 19
Elevation - 8240

Initiated	8/22/1983	8/22/1983	8/22/1983
Activated	2/28/2015	2/28/2015	2/28/2015
Date	10/6/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Outflow	GPM	0	0.41	8.62	0	0.36	3.75	0	0	0
Inflow	GPM	0	0.03	0.49	0	0.22	2.50	0	0	0
Freeboard	Feet	0	1.45	2.70	0	1.31	4.00		4	2.3
Temperature	Celsius	-1.4	17.66	27.50	12.5	15.20	17.90			
Conductivity	umhos/cm	110	286.89	545.00	140	146.75	153.50			
pH	su	7.7	8.43	10.00	8.1	8.23	8.35			
Field Comments								Dry		
Lab Parameters	**UNITS**									
Bicarbonate	mg/L	84.2	166.2	256.2						
Carbonate	mg/L									
Chloride	mg/L	<MDL	3	7						
Conductivity	umhos/cm	150	272	410						
Hardness	mg/L	61	120	185						
pH	su	6.9	7.5	8.4						
ResidueFilterable-TDS	mg/L	100	174	256						
ResidueNonFilterable-TSS	mg/L	6	64	396						
SAR		0.15	0.37	1.00						
Sulfate	mg/L	<MDL	24	101						
Calcium (Dissolved)	mg/L	16	28	41						
Magnesium (Total)	mg/L	5	12	20						
Sodium (Dissolved)	mg/L	3	9	23						

The area of concern for monitoring point SP19 was affected by the mining operation on or about February 28, 2015.

** Data not provided in field notes*

Baseline Information Collection initiated on 8/22/83 and complete February 28, 2015.
Point SP19 has been influenced by mining.

SP20
Terror Creek - Pond Spring 20
Depth 4'
Elevation - 7840

Initiated	5/15/1983	5/15/1983	5/15/1983
Activated	6/30/2013	6/30/2013	6/30/2013
Date	10/6/2020	8/31/2020	5/28/2020

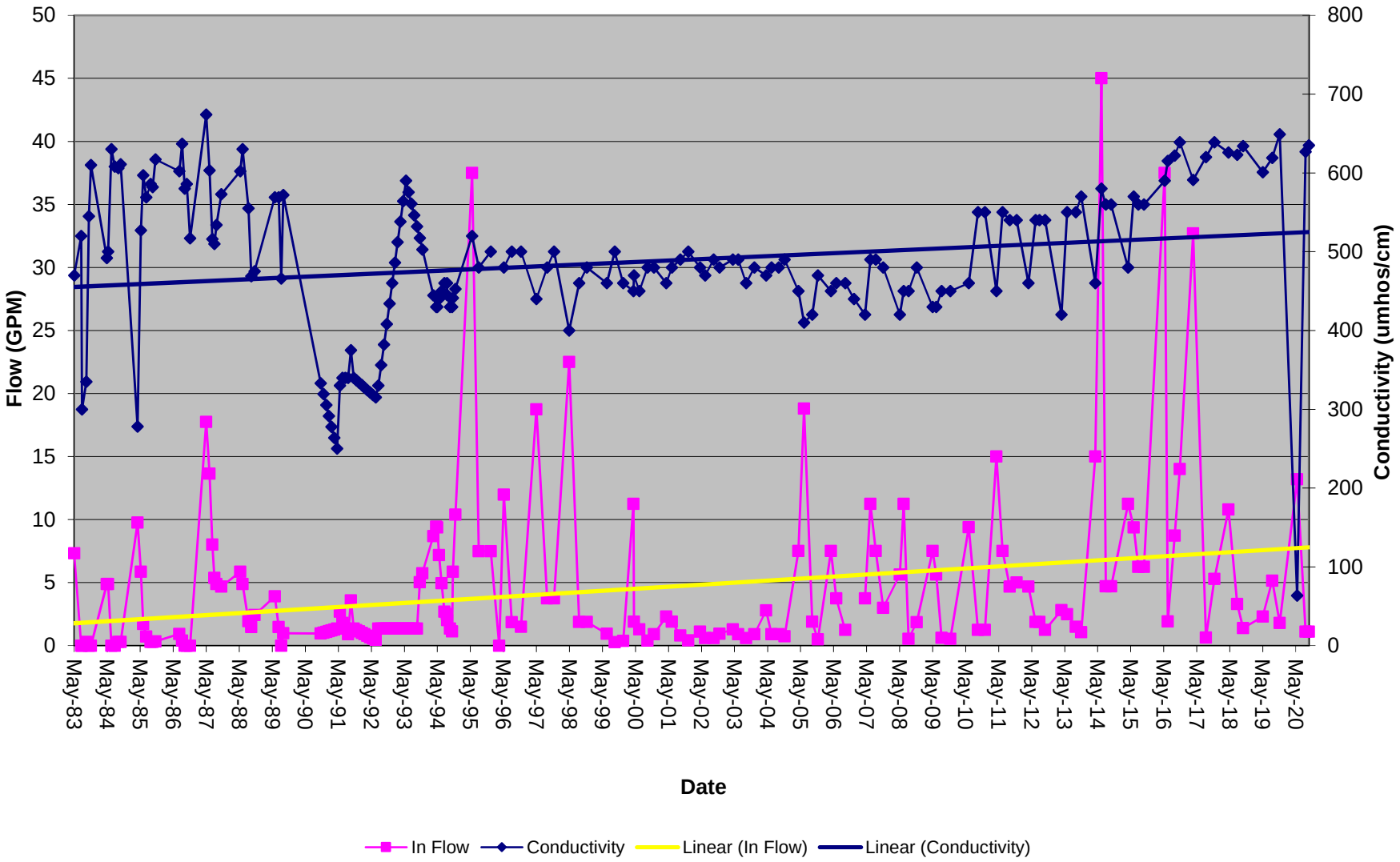
Field Parameters	UNITS	Summary Information Baseline Min	Ave	Max	Operation Min	Ave	Max			
Outflow	GPM	0.0	0.6	2.3	0.0	6.7	42.2	0.82	2.11	10.80
Inflow	GPM	0.0	3.5	37.5	0.6	11.1	45.0	1.11	1.1	13.2
Freeboard	Feet	0.0	0.0	0.8	0.0	0.0	0.0			
Temperature	Celsius	2.0	8.8	27.7	6.7	8.3	13.8	9.4	13.8	8.1
Conductivity	umhos/cm	250.0	471.2	674.0	460.0	592.4	649.0	635	627	635
pH	su	5.3	7.5	8.9	6.9	7.4	8.0	7.53	7.99	6.85
Field Comments										
Lab Parameters	UNITS									
Bicarbonate	mg/L	144.7	289.9	342.0	247.4	328.4	385.0			300
Chloride	mg/L	0.0	5.0	28.3	2.3	2.7	4.6			2.5
Conductivity	umhos/cm	311.5	513.5	714.0	484.0	525.4	591.0			573
Hardness	mg/L	108.0	207.6	511.9	197.0	224.1	243.0			232
Nitrate-Nitrite	mg/L	<MDL	0.3	0.3	<MDL	<MDL	0.1			0.03
Oil and Grease	mg/L	<MDL	<MDL	0.0	<MDL	<MDL	0.0			
pH	su	6.7	7.4	8.5	7.0	7.5	8.2			8.2
Phosphate	mg/L	<MDL	<MDL	0.0	<MDL	0.0	0.1			0.09
ResidueFilterable-TDS	mg/L	240.0	318.8	460.0	337.0	358.8	438.0			366
ResidueNonFilterable-TSS	mg/L	<MDL	88.9	1800.0	<MDL	11.0	13.0			13
SAR		0.5	1.3	2.3	1.2	1.9	5.4			1.4
Sulfate	mg/L	0.8	12.5	60.0	0.0	29.0	34.2			34.1
Aluminum (TREC)	mg/L	<MDL	0.2	0.5	<MDL	62.1	186.0			0.23
Arsenic (TREC)	mg/L	<MDL	0.0	0.0	<MDL	0.0	0.0			0.0003
Cadmium (TREC)	mg/L	<MDL	0.0	0.0	<MDL	0.0	0.0			<MDL
Calcium (TREC)	mg/L	36.3	69.1	128.3	42.1	53.8	59.8			56.8
Copper (TREC)	mg/L	<MDL	0.0	0.0	<MDL	0.0	0.0			<MDL
Iron (TREC)	mg/L	0.0	0.1	0.2	0.0	0.1	0.3			0.23
Lead (TREC)	mg/L	<MDL	0.0	0.0	<MDL	0.0	0.0			0.0002
Magnesium (TREC)	mg/L	17.2	28.6	46.5	20.2	21.8	22.9			21.9
Manganese (TREC)	mg/L	<MDL	0.0	0.0	<MDL	7.7	23.0			<MDL
Mercury (TREC)	mg/L	<MDL	0.0	0.0	<MDL	0.0	0.0			<MDL
Molybdenum (TREC)	mg/L	<MDL	0.0	0.0	<MDL	0.0	0.0			<MDL
Selenium (TREC)	mg/L	<MDL	0.0	0.0	<MDL	0.0	0.0			0.0002
Sodium (TREC)	mg/L	40.2	47.6	53.1	43.5	52.0	124.8			48.4
Zinc (TREC)	mg/L	<MDL	0.0	0.0	<MDL	0.0	0.0			<MDL

Activated 6/30/2013

This spring and pond consists of an area of approximately 20' x 20' of diffuse flow which is collected in a pond of approximately 30' x 60'. (Hanna, 99)

Baseline Information Collection initieated on 5/15/83 and not yet considered complete.
Point SP20 has not been influenced by mining.

Plot of Flow and Conductivity



SP20 - Terror Creek Spring Pond 20

Figure 9

SP22
Terror Creek - Pond Spring 22
Depth 4'
Elevation - 7480

Initiated	7/18/1983	7/18/1983	7/18/1983
Activated	8/5/2012	8/5/2012	8/5/2012
Date	10/6/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Inflow	GPM	0.00	0.33	5.63	0.00	0.19	5.81	0.00	0.00	0.00
Outflow	GPM	0.00	0.00	0.00	0.00	0.01	0.20	0.00	0.00	0.00
Freeboard	Feet	0.0	1.1	4.0	0.00	0.73	5.50	4.00	5.50	1.20
Temperature	Celsius	6.9	16.9	28.6						
Conductivity	umhos/cm	343	661	915						
pH	su	7.3	8.3	9.7						
Field Comments								No flow	No flow	No flow
Lab Parameters	UNITS									
Bicarbonate	mg/L	165.9	343.4	584						
Carbonate	mg/L	<MDL	1.928	11.71						
Chloride	mg/L	1	7.621	13						
Conductivity	umhos/cm	390	629.2	878						
Hardness	mg/L	132	277.6	377						
pH	su	7.3	8.013	8.56						
ResidueFilterable-TDS	mg/L	145	377.3	564						
ResidueNonFilterable-TSS	mg/L	4	20.58	65						
SAR		0.53	1.087	1.897						
Sulfate	mg/L	14	48.52	230						
Calcium (Dissolved)	mg/L	17	57.89	90						
Magnesium (Total)	mg/L	12	32.36	51						
Sodium (Dissolved)	mg/L	14	40.51	63						

The monitoring point for Spring and Pond 22 is located on an east facing slope that drains down toward Terror Creek.

Baseline Information is derived from monitoring events beginning on 7/18/83 through 8/5/2012,
Point SP22 influenced by mining on 8/5/12.

SP23
Stevens Gulch - Pond Spring 23
Elevation - 8300

Initiated	8/22/1983	8/22/1983	8/22/1983
Activated	7/15/2014	7/15/2014	7/15/2014
Date	10/6/2020	8/31/2020	5/21/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Outflow	GPM	0.00	1.05	9.29	0.00		62.50	Damp	no visible flow	0.18
Inflow	GPM							Damp	0.00	Damp
Freeboard	Feet	0.00	0.02	0.28	0.00	0.76	3.10	3	2	
Temperature	Celsius	-0.10	10.07	21.70	3.50	10.82	19.90			
Conductivity	umhos/cm	220.00	403.91	891.00	220	397	521			
pH	su	6.80	7.42	9.60	6.3	7.4	9.4			
Field Comments										no visible flow
Lab Parameters	UNITS									
Bicarbonate	mg/L	91.9	254.6	424.6						
Chloride	mg/L	<MDL	5.15	17.37						
Conductivity	umhos/cm	236	424	670						
Hardness	mg/L	105.00	209.37	322.00						
Nitrate-Nitrite	mg/L	0.11	0.11	0.11						
Oil and Grease	mg/L	<MDL	<MDL	<MDL						
pH	su	6.4	7.3	8.4						
Phosphate	mg/L	<MDL	<MDL	<MDL						
ResidueFilterable-TDS	mg/L	156	270	380						
ResidueNonFilterable-TSS	mg/L	2	61	216						
SAR		0.120	0.437	1.010						
Sulfate	mg/L	<MDL	10.08	43.00						
Aluminum (TREC)	mg/L	0.0210	0.0210	0.0210						
Arsenic (TREC)	mg/L	0.0200	0.0200	0.0200						
Cadmium (TREC)	mg/L	0.0100	0.0100	0.0100						
Calcium (TREC)	mg/L	41.300	41.300	41.300						
Copper (TREC)	mg/L	0.003	0.003	0.003						
Iron (TREC)	mg/L	0.15	0.54	1.15						
Lead (TREC)	mg/L	0.05	0.05	0.05						
Magnesium (TREC)	mg/L	11.0	23.4	38.0						
Manganese (TREC)	mg/L	0.010	0.067	0.110						
Mercury (TREC)	mg/L	0.00008	0.00008	0.00008						
Molybdenum (TREC)	mg/L	0.0030	0.0030	0.0030						
Selenium (TREC)	mg/L	0.0180	0.0180	0.0180						
Sodium (TREC)	mg/L	15.78	15.78	15.78						
Zinc (TREC)	mg/L	0.010	0.010	0.010						

**Multiple Seeps Inflow - Unmeasurable*

Activated 7/15/2014

Baseline Information Collection initiated on 8/22/83.
Point SP23 was influenced by mining 7/15/2014.

SP34-11
Sheep Corral - Spring/Pond 34-11
Elevation - 7440
Depth - 3'

Initiated	10/27/1997	10/27/1997	10/27/1997
Activated	6/1/2002	6/1/2002	6/1/2002
Date	12/2/2020	9/2/2020	5/21/2020

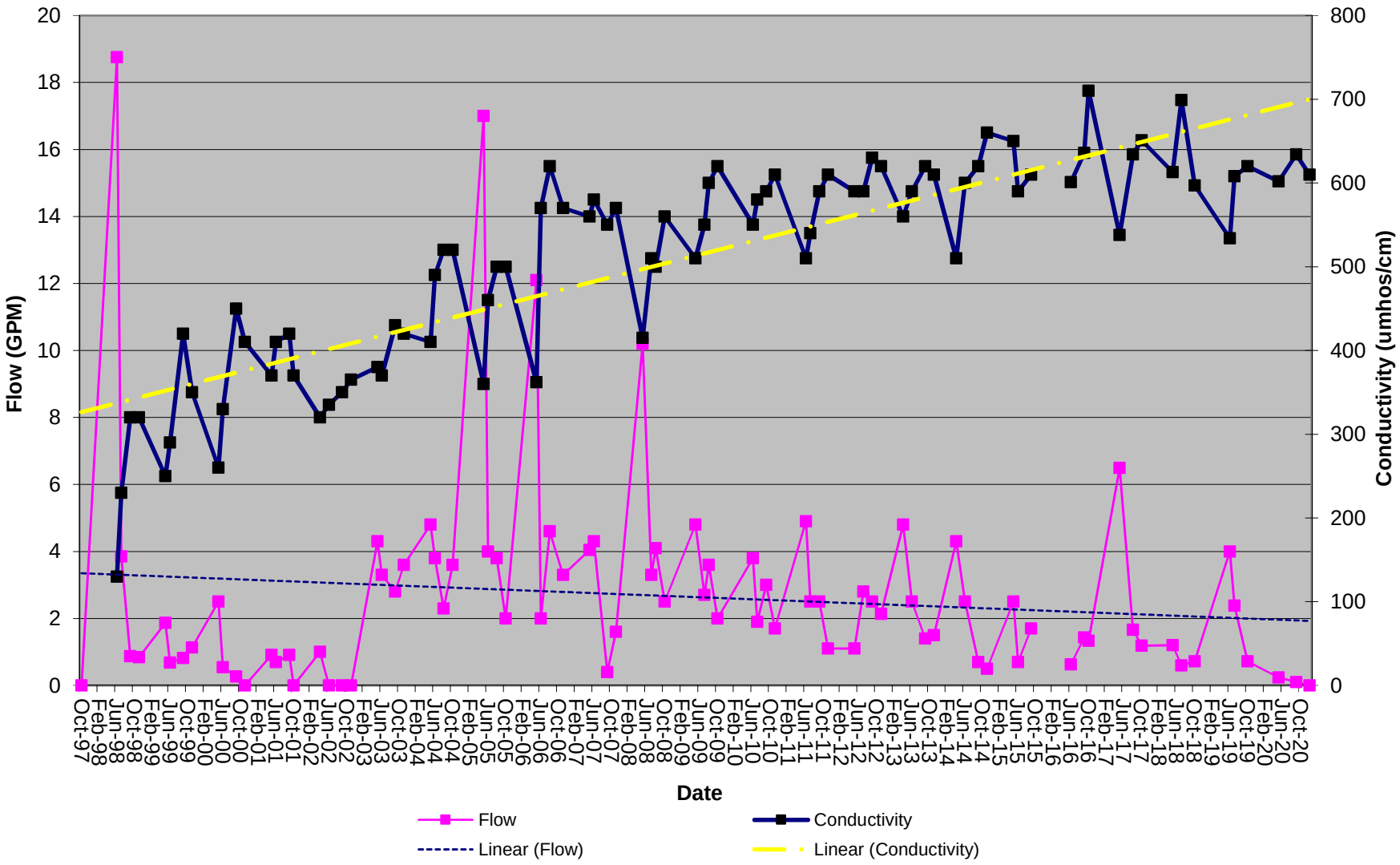
Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Outflow	GPM	0.0	2.2	18.8	0.0	2.87	17.00	0.09	Damp	0.1
Inflow	GPM				0.0	1.99	6.49	No flow	0.1	0.24
FieldComment										
ph	su	6.9	7.5	8.0	6.7	7.65	8.50	7.8	7.84	7.04
Conductivity	umhos/cm	130	325	450	360	559	710	610	634	603
Temperature	Celsius	6.1	10.0	15.1	4.5	7.9	12.8	5.8	8	6
Lab Parameters	UNITS									
Bicarbonate	mg/L	165	197	217	137.9	236.3	331.0			
Chloride	mg/L	<MDL	2	3	<MDL	5.30	11.79			
Conductivity	umhos/cm	324	412	482	367.8	469.8	554.0			
Hardness	mg/L	92	103	111	100.0	121.4	152.5			
Nitrate-Nitrite	mg/L	<MDL	0.03	0.09	<MDL	1.744	2.580			
Oil and Grease	mg/L	<MDL	<MDL	<MDL	<MDL	0.077	0.077			
pH	su	6.9	7.5	8.0	6.23	7.21	8.09			
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	0.048	0.072			
ResidueFilterable-TDS	mg/L	180	247	290	55.5	230.1	371.0			
ResidueNonFilterable-TSS	mg/L	<MDL	51	154	<MDL	31.4	60.5			
SAR		<MDL	<MDL	<MDL	2.09	3.25	4.75			
Sulfate	mg/L	30	33	40	26.34	41.42	57.42			
Aluminum	mg/L	0.04	2.15	6.34	<MDL	56.59	226.00			
Arsenic	mg/L	<MDL	0.0003	0.001	0.009	0.013	0.015			
Cadmium	mg/L	<MDL	<MDL	<MDL	<MDL	0.004	0.006			
Calcium	mg/L	27.5	30.3	32.1	7.7	30.4	43.6			
Copper	mg/L	<MDL	0.31	0.92	<MDL	<MDL	<MDL			
Iron (Total)	mg/L	0.04	2.35	6.89	0.01	0.16	0.38			
Lead	mg/L	<MDL	<MDL	<MDL	<MDL	0.03	0.03			
Magnesium	mg/L	5.7	6.7	7.5	3.41	7.02	10.60			
Manganese (Total)	mg/L	<MDL	0.046	0.137	<MDL	0.01	0.02			
Mercury	mg/L	<MDL	<MDL	<MDL	<MDL	0.0001	0.0002			
Molyebdenum	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
Selenium	mg/L	<MDL	<MDL	<MDL	0.0010	0.0205	0.0560			
Sodium	mg/L	30.8	49.5	64.1	59.7	216.9	807.0			
Zinc	mg/L	<MDL	0.01	0.04	0.01	0.02	0.02			

The monitoring point for SP34-11 is along the old coal exploration road winding down Sheep Corral Gulch. The spring in sandstone just above the pond surface.

Baseline Information for Point SP34-11 is derived from events beginning on 10/27/97 through 6/1/02.
Point influenced by mining on 6/1/02.

Plot of Flow and Conductivity



SP34-11 - Sheep Corral Spring and Pond 34-11

Figure 13

S-1
B Gulch - Spring 1
Elevation - 6990

Initiated	6/12/1995	6/12/1995	6/12/1995	6/12/1995
Activated	3/30/1997	3/30/1997	3/30/1997	3/30/1997
Date	12/2/2020	8/31/2020	5/21/2020	3/31/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max				
Flow	GPM	0.00	0.38	1.25	0.00	0.02	0.75	0	0	0	0
FieldComment								Dry	Dry	Dry	Damp
ph	su	8.4	8.6	8.7	8.1	8.3	8.5				
Conductivity	umhos/cm	1520	2053	2300	2000	2067	2200				
Temperature	Celsius	2.4	10.5	17.1	12.8	17.2	20.1				
Lab Parameters	**UNITS**										
Bicarbonate	mg/L	784	784	784							
Chloride	mg/L	28	28	28							
Conductivity	umhos/cm	2140	2140	2140							
Hardness	mg/L	570	570	570							
Nitrate-Nitrite	mg/L	<MDL	<MDL	<MDL							
Oil and Grease	mg/L	<MDL	<MDL	<MDL							
pH	su	7.5	7.5	7.5							
Phosphate	mg/L	<MDL	<MDL	<MDL							
ResidueFilterable-TDS	mg/L	1480	1480	1480							
ResidueNonFilterable-TSS	mg/L	30	30	30							
SAR		5.66	5.66	5.66							
Sulfate	mg/L	490	490	490							
Aluminum	mg/L	0.89	0.89	0.89							
Arsenic	mg/L	<MDL	<MDL	<MDL							
Cadmium	mg/L	<MDL	<MDL	<MDL							
Calcium	mg/L	52	52	52							
Copper	mg/L	<MDL	<MDL	<MDL							
Iron (Total)	mg/L	1.01	1.01	1.01							
Lead	mg/L	<MDL	<MDL	<MDL							
Magnesium	mg/L	107	107	107							
Manganese (Total)	mg/L	0.017	0.017	0.017							
Mercury	mg/L	<MDL	<MDL	<MDL							
Molyebdenum	mg/L	<MDL	<MDL	<MDL							
Selenium	mg/L	0.002	0.002	0.002							
Sodium	mg/L	307	307	307							
Zinc	mg/L	0.01	0.01	0.01							

The S-1 monitoring point location is along the Stevens Draw road where it crosses B Gulch. This spring is located on the upper side of the road, discharges along the road and eventually contributes its flow through Sediment Pond B.

Baseline Information for Point S-1 is derived from events beginning on 6/12/95 through 3/30/97.
Point influenced by mining on 3/20/97.

S-2
Freeman Gulch - Spring 2
Elevation - 7920

Initiated	6/12/1995	6/12/1995	6/12/1995
Activated	11/10/2001	11/10/2001	11/10/2001
Date	12/2/2020	9/2/2020	5/21/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.00	0.22	1.88	0.00	0.00	0.30	0	0	0
FieldComment								Dry	Dry	Dry
ph	su	6.8	7.3	7.8						
Conductivity	umhos/cm	40	106	525						
Temperature	Celsius	1.2	10.2	19.1						
Lab Parameters	**UNITS**									
Bicarbonate	mg/L	57	57	57						
Chloride	mg/L	1	1	1						
Conductivity	umhos/cm	126	126	126						
Hardness	mg/L	44	44	44						
Nitrate-Nitrite	mg/L	0.51	0.51	0.51						
Oil and Grease	mg/L	<MDL	<MDL	<MDL						
pH	su	6.0	6.0	6.0						
Phosphate	mg/L	<MDL	<MDL	<MDL						
ResidueFilterable-TDS	mg/L	90	90	90						
ResidueNonFilterable-TSS	mg/L	<MDL	<MDL	<MDL						
SAR		0.43	0.43	0.43						
Sulfate	mg/L	<MDL	<MDL	<MDL						
Aluminum	mg/L	0.10	0.10	0.10						
Arsenic	mg/L	0.002	0.002	0.002						
Cadmium	mg/L	<MDL	<MDL	<MDL						
Calcium	mg/L	14.2	14.2	14.2						
Copper	mg/L	<MDL	<MDL	<MDL						
Iron (Total)	mg/L	0.71	0.71	0.71						
Lead	mg/L	<MDL	<MDL	<MDL						
Magnesium	mg/L	2.1	2.1	2.1						
Manganese (Total)	mg/L	0.063	0.063	0.063						
Mercury	mg/L	<MDL	<MDL	<MDL						
Molyebdenum	mg/L	<MDL	<MDL	<MDL						
Selenium	mg/L	<MDL	<MDL	<MDL						
Sodium	mg/L	6.5	6.5	6.5						
Zinc	mg/L	<MDL	<MDL	<MDL						

The monitoring point for S-2 is located along the old coal exploration road which leads down into Freeman Gulch, to Pond 2, Drill holes 34B and 34C and the monitoring point for the Upper end of Freeman Gulch.

Baseline Information for Point S-2 is derived from events beginning on 6/12/95 through 11/10/01.
Point influenced by mining on 11/10/01.

S-3
Freeman Gulch - Spring 3
Elevation - 7920

Initiated	6/12/1995	6/12/1995	6/12/1995
Activated	10/15/2001	10/15/2001	10/15/2001
Date	12/2/2020	9/2/2020	5/21/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.00	0.29	3.75	0.00	0.00	0.00	0	0	0
FieldComment								Dry	Dry	Dry
ph	su	6.7	7.8	8.5						
Conductivity	umhos/cm	120	222	443						
Temperature	Celsius	7.6	15.6	28.7						
Lab Parameters	**UNITS**									
Bicarbonate	mg/L	77	77	77						
Chloride	mg/L	4	4	4						
Conductivity	umhos/cm	164	164	164						
Hardness	mg/L	72	72	72						
Nitrate-Nitrite	mg/L	0.05	0.05	0.05						
Oil and Grease	mg/L	<MDL	<MDL	<MDL						
pH	su	7.5	7.5	7.5						
Phosphate	mg/L	<MDL	<MDL	<MDL						
ResidueFilterable-TDS	mg/L	110	110	110						
ResidueNonFilterable-TSS	mg/L	8	8	8						
SAR		0.34	0.34	0.34						
Sulfate	mg/L	<MDL	<MDL	<MDL						
Aluminum	mg/L	0.35	0.35	0.35						
Arsenic	mg/L	<MDL	<MDL	<MDL						
Cadmium	mg/L	<MDL	<MDL	<MDL						
Calcium	mg/L	21.7	21.7	21.7						
Copper	mg/L	<MDL	<MDL	<MDL						
Iron (Total)	mg/L	0.37	0.37	0.37						
Lead	mg/L	<MDL	<MDL	<MDL						
Magnesium	mg/L	4.2	4.2	4.2						
Manganese (Total)	mg/L	0.014	0.014	0.014						
Mercury	mg/L	<MDL	<MDL	<MDL						
Molyebdenum	mg/L	<MDL	<MDL	<MDL						
Selenium	mg/L	<MDL	<MDL	<MDL						
Sodium	mg/L	6.6	6.6	6.6						
Zinc	mg/L	<MDL	<MDL	<MDL						

The monitoring point for S-3 is located along the old coal exploration road which leads down into Freeman Gulch, to Pond 2, Drill Holes 34B and 34C and the monitoring point for the Upper end of Freeman Gulch.

Baseline Information for Point S-3 is derived from events beginning on 6/12/95 through 10/15/01.
Point influenced by mining on 10/15/01.

S-4
Terror Creek - Spring 4
Elevation - 7880

Initiated	6/12/1995	6/12/1995	6/12/1995
Activated	1/15/2001	1/15/2001	1/15/2001
Date	12/2/2020	9/2/2020	5/21/2020

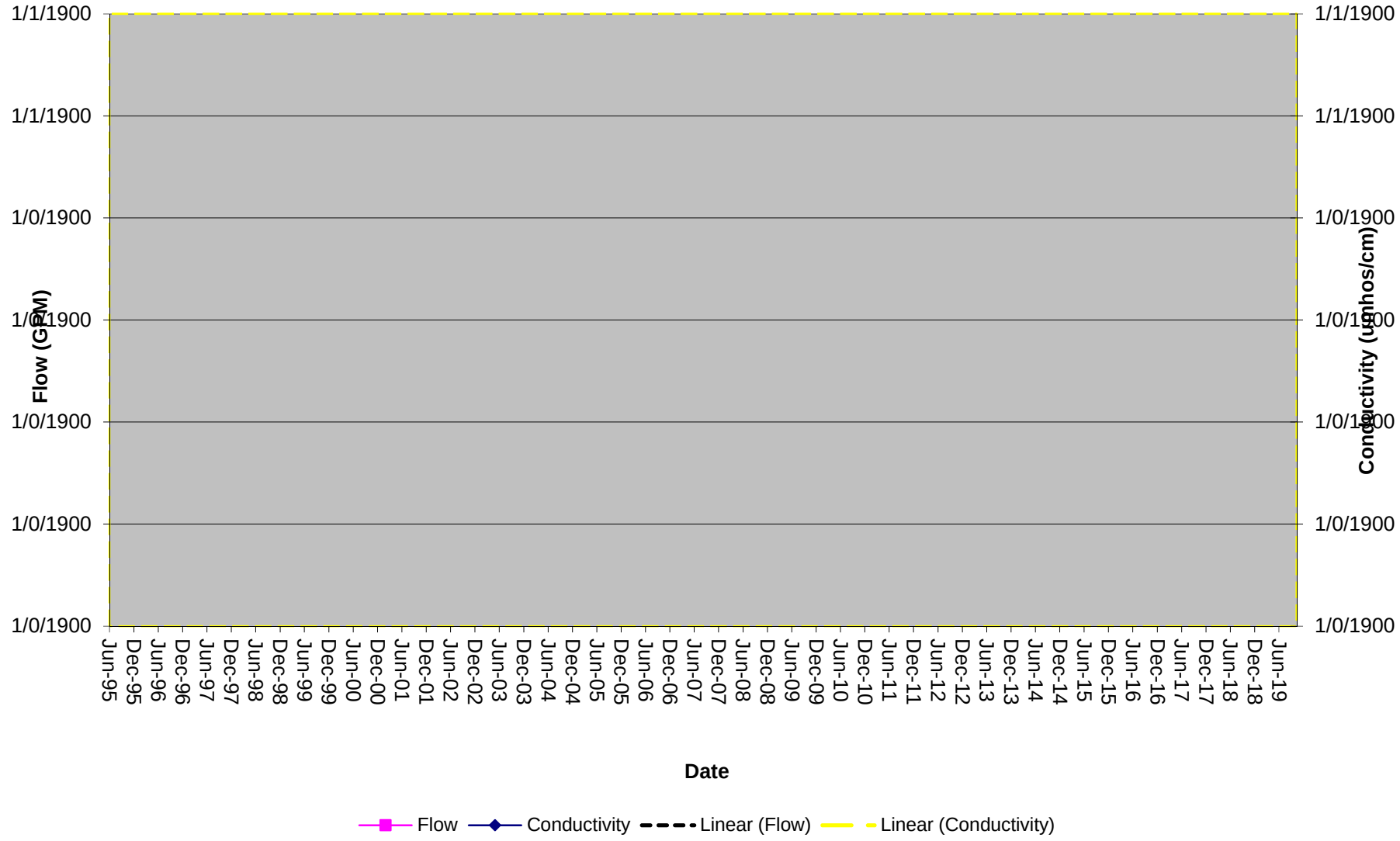
Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.00	0.24	3.75	0.00	0.25	2.37	0	0	0.624
FieldComment								no visible flow	no visible flow	
ph	su	6.4	7.4	9.0	6.8	7.5	8.0			6.83
Conductivity	umhos/cm	80	268	433	300	386	537			441
Temperature	Celsius	1.2	10.0	24.0	1.8	6.5	10.7			6
Lab Parameters	UNITS									
Bicarbonate	mg/L	56	56	56	231.8	231.8	231.8			
Chloride	mg/L	2	2	2	49.63	49.63	49.63			
Conductivity	umhos/cm	99	99	99	438	441	443			
Hardness	mg/L	44	44	44	150.69	150.69	150.69			
Nitrate-Nitrite	mg/L	0.62	0.62	0.62	0.32	0.32	0.32			
Oil and Grease	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
pH	su	6.7	6.7	6.7	6.8	6.9	7.1			
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
ResidueFilterable-TDS	mg/L	60	60	60	236	245	253			
ResidueNonFilterable-TSS	mg/L	16	16	16	1	19	36			
SAR		0.29	0.29	0.29	1.85	1.85	1.85			
Sulfate	mg/L	<MDL	<MDL	<MDL	60.51	60.51	60.51			
Aluminum (TREC)	mg/L	0.98	0.98	0.98	0.039	0.039	0.039			
Arsenic (TREC)	mg/L	<MDL	<MDL	<MDL	0.03	0.03	0.03			
Cadmium (TREC)	mg/L	<MDL	<MDL	<MDL	0.01	0.01	0.01			
Calcium (TREC)	mg/L	13.6	13.6	13.6	46	46	46			
Copper (TREC)	mg/L	<MDL	<MDL	<MDL	0.01	0.01	0.01			
Iron (TREC)	mg/L	0.88	0.88	0.88	0.15	0.56	0.97			
Lead (TREC)	mg/L	<MDL	<MDL	<MDL	0.03	0.03	0.03			
Magnesium (TREC)	mg/L	2.4	2.4	2.4	8.7	8.7	8.7			
Manganese (TREC)	mg/L	0.03	0.03	0.03	0.020	0.026	0.032			
Mercury (TREC)	mg/L	0.0002	0.0002	0.0002	0.00006	0.00006	0.00006			
Molyebdenum (TREC)	mg/L	<MDL	<MDL	<MDL	0.005	0.005	0.005			
Selenium (TREC)	mg/L	<MDL	<MDL	<MDL	0.008	0.008	0.008			
Sodium (TREC)	mg/L	4.5	4.5	4.5	52.9	52.9	52.9			
Zinc (TREC)	mg/L	<MDL	<MDL	<MDL	0.005	0.005	0.005			

The monitoring point for S-4 is located along an unmarked road in an un-named gulch leading down from the broad ridge that separates Sheep Corral and Freeman Gulches from Terror Creek. This spring feeds P-4.

Baseline Information for Point S-4 is derived from events beginning on 6/12/95 through 1/15/01.
Point influenced by mining on 1/15/01.

Plot of Flow and Conductivity



S-4 - Terror Creek Spring 4

Figure 18

S-4a
Terror Creek - Spring 4a
Elevation - 7910

Initiated	11/9/1995	11/9/1995	11/9/1995
Activated	1/15/2001	1/15/2001	1/15/2001
Date	12/2/2020	9/2/2020	5/21/2020

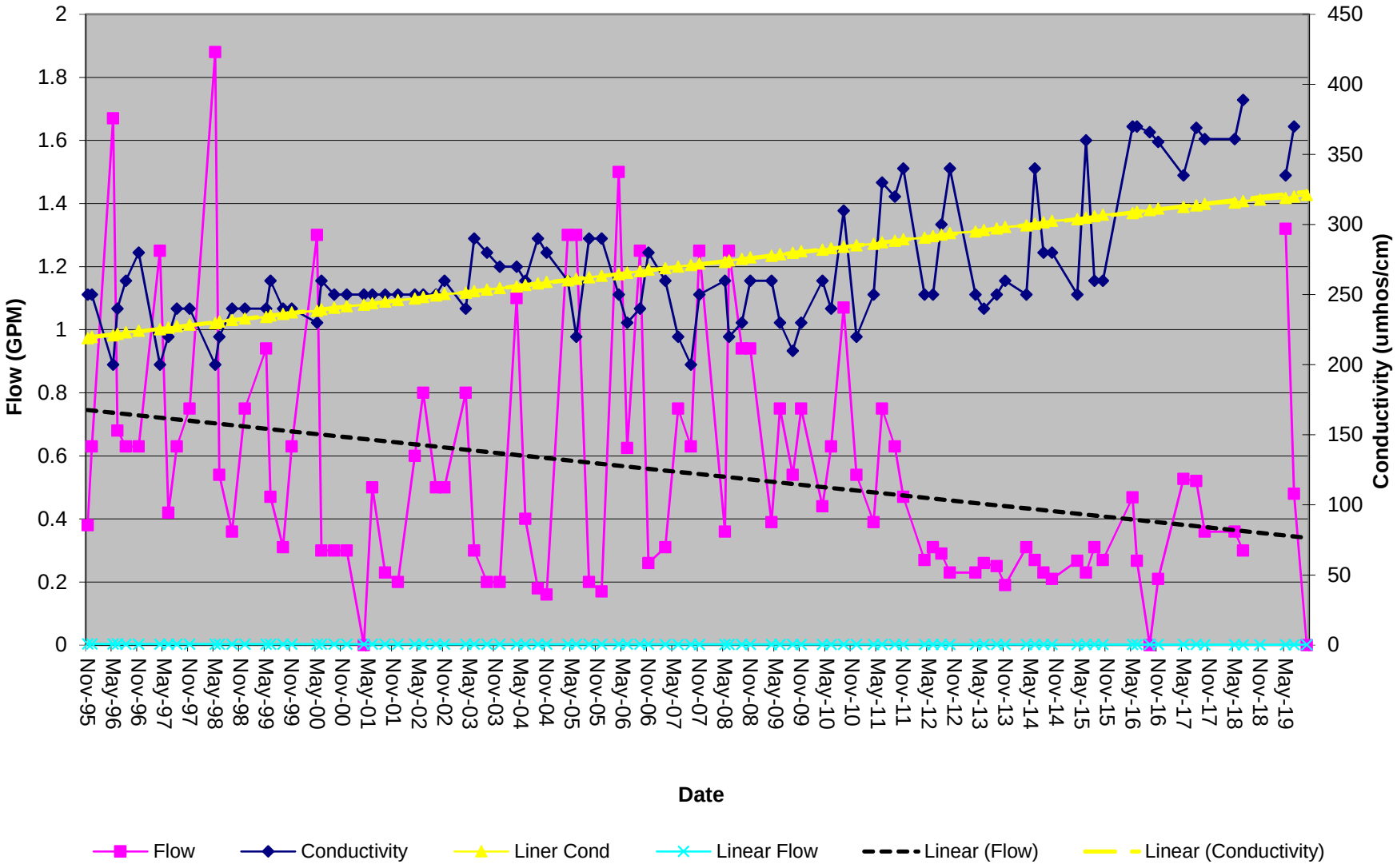
Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.30	0.72	1.88	0.00	0.51	1.50	Damp -	Seep-	0.474
FieldComment								No visible flow	No visibile flow	
ph	su	7.2	7.8	8.5	6.3	7.5	8.1			6.79
Conductivity	umhos/cm	200	239	280	200	280	389			360
Temperature	Celsius	2.4	7.4	14.2	4.3	6.6	15.0			6.7
Lab Parameters	UNITS									
Bicarbonate	mg/L	146	146	146	204.9	204.9	204.9			
Chloride	mg/L	2	2	2	47.15	47.15	47.15			
Conductivity	umhos/cm	289	289	289	313	321	330			
Hardness	mg/L	125	125	125	131.95	131.95	131.95			
Nitrate-Nitrite	mg/L	0.16	0.16	0.16	0.31	0.31	0.31			
Oil and Grease	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
pH	su	7.30	7.30	7.30	7.1	7.3	7.5			
Phosphate	mg/L	0.08	0.08	0.08	<MDL	<MDL	<MDL			
ResidueFilterable-TDS	mg/L	200	200	200	196	226	263			
ResidueNonFilterable-TSS	mg/L	<MDL	<MDL	<MDL	2	27	48			
SAR		0.49	0.49	0.49	0.658	0.658	0.658			
Sulfate	mg/L	13	13	13	14.41	14.41	14.41			
Aluminum (TREC)	mg/L	0.88	0.88	0.88	0.023	0.023	0.023			
Arsenic (TREC)	mg/L	<MDL	<MDL	<MDL	0.005	0.005	0.005			
Cadmium (TREC)	mg/L	<MDL	<MDL	<MDL	0.006	0.006	0.006			
Calcium (TREC)	mg/L	43.10	43.10	43.10	44.4	44.4	44.4			
Copper (TREC)	mg/L	<MDL	<MDL	<MDL	0.002	0.002	0.002			
Iron (TREC)	mg/L	1.23	1.23	1.23	0.08	0.54	1.24			
Lead (TREC)	mg/L	<MDL	<MDL	<MDL	0.03	0.03	0.03			
Magnesium (TREC)	mg/L	4.30	4.30	4.30	5.12	5.12	5.12			
Manganese (TREC)	mg/L	0.02	0.02	0.02	0.01	0.02	0.03			
Mercury (TREC)	mg/L	<MDL	<MDL	<MDL	0.00008	0.00008	0.00008			
Molyebdenum (TREC)	mg/L	<MDL	<MDL	<MDL	0.007	0.007	0.007			
Selenium (TREC)	mg/L	<MDL	<MDL	<MDL	0.008	0.008	0.008			
Sodium (TREC)	mg/L	12.5	12.5	12.5	17.6	17.6	17.6			
Zinc (TREC)	mg/L	0.03	0.03	0.03	0.006	0.006	0.006			

The monitoring point for S-4a is located along an unmarked road in an un-named gulch leading down from the broad ridge that separates Sheep Corral and Freeman Gulches from Terror Creek. This spring feeds P-4.

Baseline Information for Point S-4a is derived from events beginning on 11/9/95 through 1/15/01.
Point influenced by mining on 1/15/01.

Plot of Flow and Conductivity



S-4a - Terror Creek Spring 4a

Figure 20

S-5
Sheep Corral - Spring 5
Elevation - 7800

Initiated	6/12/1995	6/12/1995	6/12/1995
Activated	12/1/2001	12/1/2001	12/1/2001
Date	12/2/2020	9/12/2020	5/21/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.00	0.27	0.80	0.00	0.20	1.88	0	0	0
FieldComment								Dry	Dry	Dry
ph	su	7.2	7.6	8.1	7.1	7.4	8.4			
Conductivity	umhos/cm	190	332	400	310	359	430			
Temperature	Celsius	4.0	7.2	11.8	5.0	6.6	8.9			
Lab Parameters	UNITS									
Bicarbonate	mg/L	188	191	193	203.5	203.5	203.5			
Chloride	mg/L	2	2	2	32.26	32.26	32.26			
Conductivity	umhos/cm	406	407	407	414	414	414			
Hardness	mg/L	113	118	123	132.93	132.93	132.93			
Nitrate-Nitrite	mg/L	<MDL	0.08	0.15	0.31	0.31	0.31			
Oil and Grease	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
pH	su	6.90	7.00	7.10	7.08	7.08	7.08			
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
ResidueFilterable-TDS	mg/L	220	225	230	268	268	268			
ResidueNonFilterable-TSS	mg/L	<MDL	14	28	6	6	6			
SAR		1.51	1.52	1.53	1.78	1.78	1.78			
Sulfate	mg/L	17	23	29	33.75	33.75	33.75			
Aluminum (TREC)	mg/L	<MDL	0.16	0.32	0.028	0.028	0.028			
Arsenic (TREC)	mg/L	<MDL	0.001	0.001	0.006	0.006	0.006			
Cadmium (TREC)	mg/L	<MDL	<MDL	<MDL	0.008	0.008	0.008			
Calcium (TREC)	mg/L	34.00	35.55	37.10	40.9	40.9	40.9			
Copper (TREC)	mg/L	<MDL	<MDL	<MDL	0.002	0.002	0.002			
Iron (TREC)	mg/L	<MDL	0.32	0.64	0.05	0.05	0.05			
Lead (TREC)	mg/L	<MDL	<MDL	<MDL	0.03	0.03	0.03			
Magnesium (TREC)	mg/L	6.70	7.00	7.30	7.48	7.48	7.48			
Manganese (TREC)	mg/L	0.017	0.027	0.037	0.003	0.003	0.003			
Mercury (TREC)	mg/L	<MDL	<MDL	<MDL	0.00006	0.00006	0.00006			
Molyebdenum (TREC)	mg/L	<MDL	<MDL	<MDL	0.011	0.011	0.011			
Selenium (TREC)	mg/L	<MDL	<MDL	<MDL	0.012	0.012	0.012			
Sodium (TREC)	mg/L	36.50	37.45	38.40	47.8	47.8	47.8			
Zinc (TREC)	mg/L	<MDL	0.005	0.010	0.006	0.006	0.006			

The monitoring point location for S-5 is locate along an unmapped road which leads down an un-named gulch which leads into Sheep Corral Gulch. This spring feeds Pond 5.

Baseline Information for Point S-5 is derived from events beginning on 6/12/95 through 12/1/01.
Point influenced by mining on 12/1/01.

S-5a
Sheep Corral - Spring 5A
Elevation - 7860

Initiated	6/12/1995	6/12/1995	6/12/1995
Activated	12/1/2001	12/1/2001	12/1/2001
Date	12/2/2020	9/12/2020	5/21/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.13	0.89	4.30	0.00	0.26	3.00	0	0	0
FieldComment								Dry	Dry	Dry
ph	su	6.9	7.4	8.0	7.0	7.3	8.3			
Conductivity	umhos/cm	160	301	400	340	386	448			
Temperature	Celsius	4.0	6.7	9.1	5.1	6.6	7.8			
Lab Parameters	**UNITS**									
Bicarbonate	mg/L	184.00	185.00	186.00						
Chloride	mg/L	2.00	2.00	2.00						
Conductivity	umhos/cm	388	391	393						
Hardness	mg/L	125.00	128.00	131.00						
Nitrate-Nitrite	mg/L	<MDL	0.03	0.05						
Oil and Grease	mg/L	<MDL	<MDL	<MDL						
pH	su	6.90	7.40	7.90						
Phosphate	mg/L	<MDL	<MDL	<MDL						
ResidueFilterable-TDS	mg/L	190.00	205.00	220.00						
ResidueNonFilterable-TSS	mg/L	<MDL	17.00	34.00						
SAR		1.10	1.11	1.12						
Sulfate	mg/L	21.00	25.00	29.00						
Aluminum	mg/L	<MDL	0.34	0.69						
Arsenic	mg/L	<MDL	<MDL	<MDL						
Cadmium	mg/L	<MDL	<MDL	<MDL						
Calcium	mg/L	37.80	38.70	39.60						
Copper	mg/L	<MDL	<MDL	<MDL						
Iron (Total)	mg/L	0.02	0.48	0.95						
Lead	mg/L	<MDL	<MDL	<MDL						
Magnesium	mg/L	7.50	7.70	7.90						
Manganese (Total)	mg/L	<MDL	0.019	0.037						
Mercury	mg/L	<MDL	<MDL	<MDL						
Molyebdenum	mg/L	<MDL	<MDL	<MDL						
Selenium	mg/L	<MDL	<MDL	<MDL						
Sodium	mg/L	28.10	28.60	29.10						
Zinc	mg/L	0.02	0.02	0.02						

The monitoring point location for S-5a is located along an unmapped road which is down an un-named gulch which leads into Sheep Corral Gulch. This spring feeds Pond 5.

Baseline Information for Point S-5a is derived from events beginning on 9/27/95 through 12/1/01.
Point influenced by mining on 12/1/01.

S-5b
Sheep Corral - Spring 5B
Elevation - 7860

Initiated	6/12/1995	6/12/1995	6/12/1995
Activated	12/1/2001	12/1/2001	12/1/2001
Date	12/2/2020	9/12/2020	5/21/2020

Summary Information

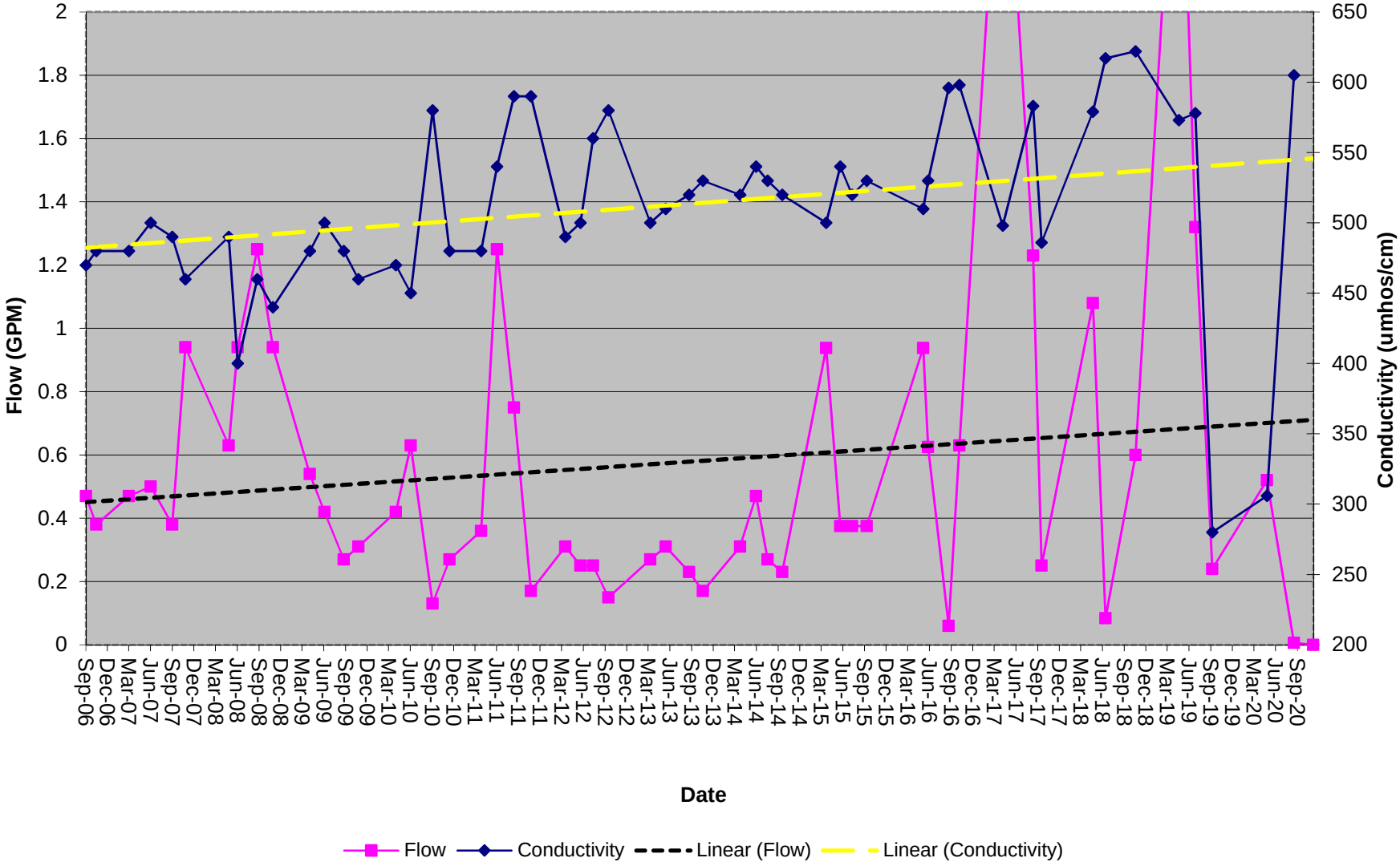
Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM				0.01	0.58	2.90	Damp	0.006	0.52
FieldComment								Iced over		
ph	su				7.0	7.9	8.9		7.9	7.0
Conductivity	umhos/cm				400	523	622		605	603
Temperature	Celsius				4.6	8.0	12.8		9.8	7.5
Lab Parameters	UNITS									
Bicarbonate	mg/L				277.8	277.8	277.8			
Chloride	mg/L				22.33	22.33	22.33			
Conductivity	umhos/cm				541	562	580			
Hardness	mg/L				114.78	114.78	114.78			
Nitrate-Nitrite	mg/L				0.32	0.32	0.32			
Oil and Grease	mg/L				<MDL	<MDL	<MDL			
pH	su				7.30	7.54	7.77			
Phosphate	mg/L				<MDL	<MDL	<MDL			
ResidueFilterable-TDS	mg/L				312	353	406			
ResidueNonFilterable-TSS	mg/L				14	30	60			
SAR					3.62	3.62	3.62			
Sulfate	mg/L				41.98	41.98	41.98			
Aluminum (TREC)	mg/L				0.034	0.034	0.034			
Arsenic (TREC)	mg/L				0.055	0.055	0.055			
Cadmium (TREC)	mg/L				0.01	0.01	0.01			
Calcium (TREC)	mg/L				33.4	33.4	33.4			
Copper (TREC)	mg/L				0.01	0.01	0.01			
Iron (TREC)	mg/L				0.24	0.51	0.81			
Lead (TREC)	mg/L				0.02	0.02	0.02			
Magnesium (TREC)	mg/L				7.62	7.62	7.62			
Manganese (TREC)	mg/L				0.083	0.118	0.180			
Mercury (TREC)	mg/L				0.00004	0.00004	0.00004			
Molyebdenum (TREC)	mg/L				0.013	0.013	0.013			
Selenium (TREC)	mg/L				0.004	0.004	0.004			
Sodium (TREC)	mg/L				90.5	90.5	90.5			
Zinc (TREC)	mg/L				0.005	0.005	0.005			

The area of concern for monitoring point S-5b was affected by the mining operation before its establishment. Therefore, all recorded monitoring events are considered Operational.

The monitoring point location for S-5b is located along an unmapped road which is down an un-named gulch which leads into Sheep Corral Gulch. It is located across the draw from Springs 5 and 5a to the west.

There is no baseline information collection possible for points initiated after the influence of mining.

Plot of Flow and Conductivity



S-5b - Sheep Corral Spring 5b

Figure 24

S-8
C Gulch - Spring 8
Elevation - 7220

Initiated	6/12/1995	6/12/1995	6/12/1995	6/12/1995
Activated	11/1/2002	11/1/2002	11/1/2002	11/1/2002
Date	12/2/2020	8/31/2020	5/21/2021	3/31/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max				
Flow	GPM	0.00	0.08	2.50	0.00	0.00	0.00	0	0	0	0
FieldComment								Dry	Dry	Dry	Dry
ph	su	6.90	6.90	6.90							
Conductivity	umhos/cm	1380	1380	1380							
Temperature	Celsius	13.70	13.70	13.70							
Lab Parameters	UNITS										
Bicarbonate	mg/L										
Chloride	mg/L										
Conductivity	umhos/cm										
Hardness	mg/L										
Nitrate-Nitrite	mg/L										
Oil and Grease	mg/L										
pH	su										
Phosphate	mg/L										
ResidueFilterable-TDS	mg/L										
ResidueNonFilterable-TSS	mg/L										
SAR											
Sulfate	mg/L										
Aluminum	mg/L										
Arsenic	mg/L										
Cadmium	mg/L										
Calcium	mg/L										
Copper	mg/L										
Iron (Total)	mg/L										
Lead	mg/L										
Magnesium	mg/L										
Manganese (Total)	mg/L										
Mercury	mg/L										
Molyebdenum	mg/L										
Selenium	mg/L										
Sodium	mg/L										
Zinc	mg/L										

The monitoring point for S-8 is located just above the mine portal road which crosses over the mine portals on the utility bench of the mine.

Baseline Information for Point S-8 is derived from events beginning on 6/12/95 through 11/1/02.
Point influenced by mining on 11/1/02.

S-10
Stevens Draw - Spring 10
Elevation - 7550

Initiated	7/12/1995	7/12/1995	7/12/1995
Activated	11/1/2002	11/1/2002	11/1/2002
Date	12/2/2020	8/31/2020	5/21/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.00	0.17	2.50	0.00	0.00	0.00	0	0	0
FieldComment								Dry	Dry	Dry
ph	su	8.40	8.50	8.60						
Conductivity	umhos/cm	620	640	660						
Temperature	Celsius	19.80	21.10	22.40						
Lab Parameters	UNITS									
Bicarbonate	mg/L									
Chloride	mg/L									
Conductivity	umhos/cm									
Hardness	mg/L									
Nitrate-Nitrite	mg/L									
Oil and Grease	mg/L									
pH	su									
Phosphate	mg/L									
ResidueFilterable-TDS	mg/L									
ResidueNonFilterable-TSS	mg/L									
SAR										
Sulfate	mg/L									
Aluminum	mg/L									
Arsenic	mg/L									
Cadmium	mg/L									
Calcium	mg/L									
Copper	mg/L									
Iron (Total)	mg/L									
Lead	mg/L									
Magnesium	mg/L									
Manganese (Total)	mg/L									
Mercury	mg/L									
Molyebdenum	mg/L									
Selenium	mg/L									
Sodium	mg/L									
Zinc	mg/L									

The monitoring point for S-10 is located along the Stevens Draw road and is located on the lower side of the road.

Baseline Information for Point S-10 is derived from events beginning on 7/12/95 through 11/1/02.
Point influenced by mining on 11/1/02.

S-11
Stevens Draw - Spring 11
Elevation - 7940

Initiated	7/12/1995	7/12/1995	7/12/1995
Activated	1/15/2001	1/15/2001	1/15/2001
Date	12/2/2020	9/2/2020	2/11/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.00	0.00	0.00	0.00	0.06	4.00	0	0	0
FieldComment								Dry	Dry	Dry
ph	su				7.6	7.6	7.6			
Conductivity	umhos/cm				160	160	160			
Temperature	Celsius				7.7	7.7	7.7			
Lab Parameters	UNITS									
Bicarbonate	mg/L									
Chloride	mg/L									
Conductivity	umhos/cm									
Hardness	mg/L									
Nitrate-Nitrite	mg/L									
Oil and Grease	mg/L									
pH	su									
Phosphate	mg/L									
ResidueFilterable -TDS	mg/L									
ResidueNonFilterable-TSS	mg/L									
SAR										
Sulfate	mg/L									
Aluminum	mg/L									
Arsenic	mg/L									
Cadmium	mg/L									
Calcium	mg/L									
Copper	mg/L									
Iron (Total)	mg/L									
Lead	mg/L									
Magnesium	mg/L									
Manganese (Total)	mg/L									
Mercury	mg/L									
Molyebdenum	mg/L									
Selenium	mg/L									
Sodium	mg/L									
Zinc	mg/L									

The monitoring point for S-11 is located along the Stevens Draw road and is located on the lower side of the road.

Baseline Information for Point S-11 is derived from events beginning on 7/12/95 through 1/15/01.
Point influenced by mining on 1/15/01.

S-12
B Gulch - Spring 12
Elevation - 7650

Initiated	7/12/1995	7/12/1995	7/12/1995
Activated	7/1/2004	7/1/2004	7/1/2004
Date	12/2/2020	9/2/2020	5/21/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
FieldComment								Dry	Dry	Dry
ph	su									
Conductivity	umhos/cm									
Temperature	Celsius									
Lab Parameters	**UNITS**									
Bicarbonate	mg/L									
Chloride	mg/L									
Conductivity	umhos/cm									
Hardness	mg/L									
Nitrate-Nitrite	mg/L									
Oil and Grease	mg/L									
pH	su									
Phosphate	mg/L									
ResidueFilterable-TDS	mg/L									
ResidueNonFilterable -TSS	mg/L									
SAR										
Sulfate	mg/L									
Aluminum	mg/L									
Arsenic	mg/L									
Cadmium	mg/L									
Calcium	mg/L									
Copper	mg/L									
Iron (Total)	mg/L									
Lead	mg/L									
Magnesium	mg/L									
Manganese (Total)	mg/L									
Mercury	mg/L									
Molyebdenum	mg/L									
Selenium	mg/L									
Sodium	mg/L									
Zinc	mg/L									

The monitoring point for S-12 is located along a switchback road that ascends the southern facing exposure of the canyon wall of the Nor Fork of the Gunnison River. The road leads to the broad ridge which separates the Hubbard Creek and Terror Creek drainage systems.

Baseline Information for Point S-12 is derived from events beginning on 7/12/95 through 7/1/04.
Point Influenced by mining on 7/1/04.

S-13
Freeman Gulch - Spring 13
Elevation - 7500

Initiated	9/27/1995	9/27/1995	9/27/1995
Activated	11/18/1999	11/18/1999	11/18/1999
Date	12/2/2020	9/2/2020	5/21/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.00	0.01	0.27	0.00	0.01	0.94	0	0	0
FieldComment								Dry	Dry	Dry
ph	su	8.2	8.2	8.2						
Conductivity	umhos/cm	300	300	300						
Temperature	Celsius	10.0	10.0	10.0						
Lab Parameters	**UNITS**									
Bicarbonate	mg/L									
Chloride	mg/L									
Conductivity	umhos/cm									
Hardness	mg/L									
Nitrate-Nitrite	mg/L									
Oil and Grease	mg/L									
pH	su									
Phosphate	mg/L									
ResidueFilterable-TDS	mg/L									
ResidueNonFilterable-TSS	mg/L									
SAR										
Sulfate	mg/L									
Aluminum	mg/L									
Arsenic	mg/L									
Cadmium	mg/L									
Calcium	mg/L									
Copper	mg/L									
Iron (Total)	mg/L									
Lead	mg/L									
Magnesium	mg/L									
Manganese (Total)	mg/L									
Mercury	mg/L									
Molyebdenum	mg/L									
Selenium	mg/L									
Sodium	mg/L									
Zinc	mg/L									

The monitoring point for S-13 is located along an old coal exploration road which eventually reaches Drillhole 13. This spring is located on the northern facing slopes of Freeman Gulch.

Baseline Information for Point S-13 is derived from events beginning on 9/27/95 through 11/18/99.
Point influenced by mining on 11/18/99.

S-14
Stevens Draw - Spring 14
Elevation - 7100

Initiated	9/27/1995	9/27/1995	9/27/1995	9/27/1995
Activated				
Date	12/2/2020	8/31/2020	5/21/2020	3/31/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max				
Flow	GPM	0.00	0.14	1.50				0	0	0	0
FieldComment								Dry	Dry	Dry	Dry
ph	su	7.6	8.1	8.6							
Conductivity	umhos/cm	1020	1124	1300							
Temperature	Celsius	3.1	11.2	22.2							
Lab Parameters	UNITS										
Bicarbonate	mg/L	472	472	472							
Chloride	mg/L	16	16	16							
Conductivity	umhos/cm	1220	1220	1220							
Hardness	mg/L	414	414	414							
Nitrate-Nitrite	mg/L	<MDL	<MDL	<MDL							
Oil and Grease	mg/L	<MDL	<MDL	<MDL							
pH	su	7.2	7.2	7.2							
Phosphate	mg/L	<MDL	<MDL	<MDL							
ResidueFilterable -TDS	mg/L	780	780	780							
ResidueNonFilterable-TSS	mg/L	22	22	22							
SAR		2.55	2.55	2.55							
Sulfate	mg/L	209.0	209.0	209.0							
Aluminum	mg/L	0.24	0.24	0.24							
Arsenic	mg/L	0.002	0.002	0.002							
Cadmium	mg/L	<MDL	<MDL	<MDL							
Calcium	mg/L	80.1	80.1	80.1							
Copper	mg/L	<MDL	<MDL	<MDL							
Iron (Total)	mg/L	1.68	1.68	1.68							
Lead	mg/L	<MDL	<MDL	<MDL							
Magnesium	mg/L	51.9	51.9	51.9							
Manganese (Total)	mg/L	0.184	0.184	0.184							
Mercury	mg/L	<MDL	<MDL	<MDL							
Molyebdenum	mg/L	<MDL	<MDL	<MDL							
Selenium	mg/L	<MDL	<MDL	<MDL							
Sodium	mg/L	118	118	118							
Zinc	mg/L	<MDL	<MDL	<MDL							

The area of concern for monitoring point S-14 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

The monitoring point for S-14 is located on a fork of the Stevens Draw road just above Pond 1. Spring seeps from the east bank of drainage along about 100' sections. (Hanna, 1995)

Baseline Information Collection initiated on 9/27/95 and not yet considered complete.
Point S-14 has not been influenced by mining.

S-16
Terror Creek - Spring 16
Elevation - 7750

Initiated	10/11/1995	10/11/1995	10/11/1995
Activated	1/15/2001	1/15/2001	1/15/2001
Date	12/3/2020	9/2/2020	5/21/2020

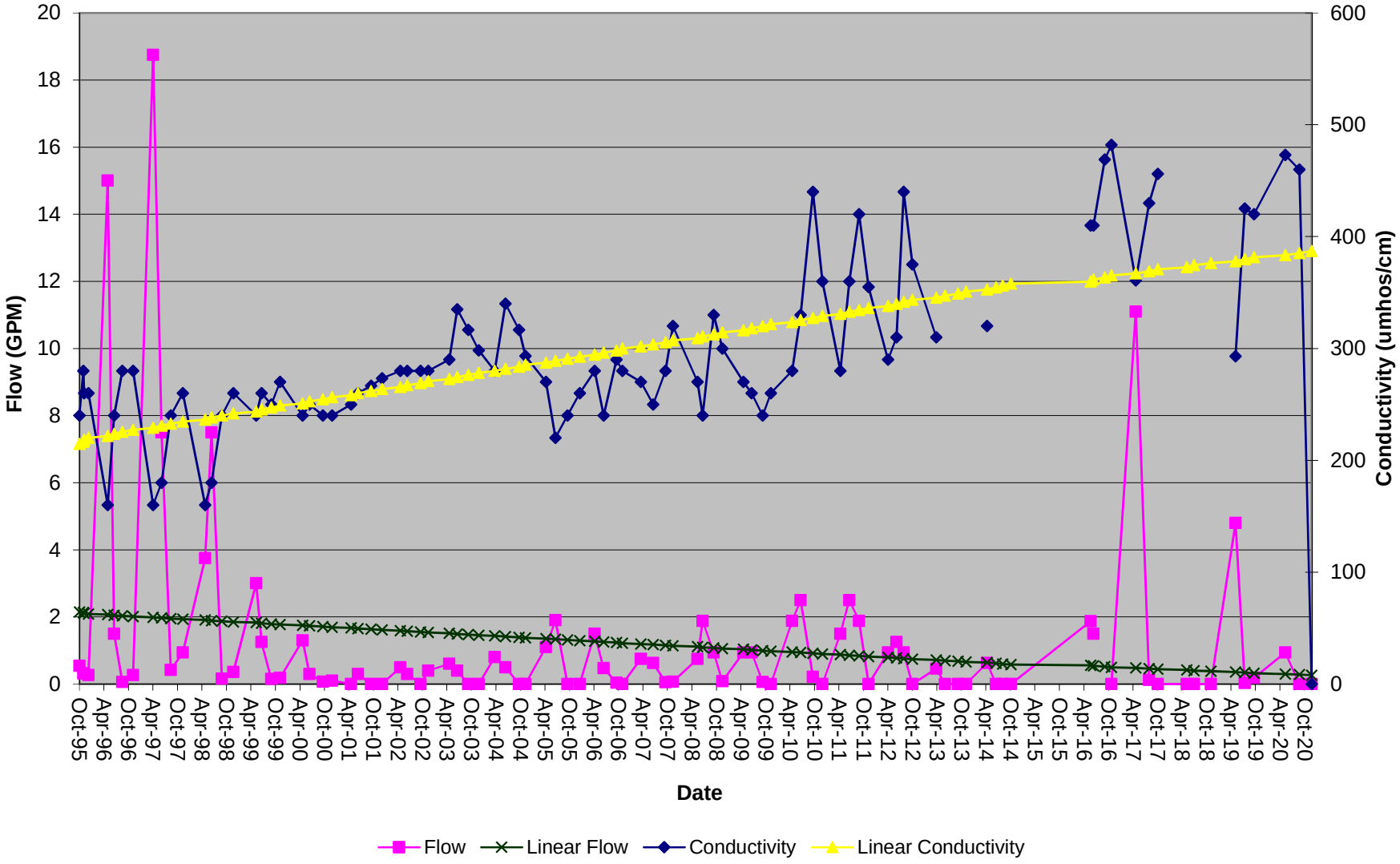
Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.06	2.67	18.75	0.00	0.77	11.10			0.94
FieldComment								Damp-frozen	Seep	
ph	su	6.9	7.2	7.6	6.7	7.4	7.9		7.63	6.73
Conductivity	umhos/cm	160	236	280	220	331	482		460	473
Temperature	Celsius	4.5	7.0	12.0	5.2	7.0	12.8		12.8	6.7
Lab Parameters	UNITS									
Bicarbonate	mg/L	107	129	159	140.0	170.6	193.8			
Chloride	mg/L	<MDL	2	5	1.70	13.57	37.22			
Conductivity	umhos/cm	230	260	296	242	353	449			
Hardness	mg/L	59	93	114	76.80	103.17	117.72			
Nitrate-Nitrite	mg/L	<MDL	0.10	0.24	<MDL	0.31	0.31			
Oil and Grease	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
pH	su	6.4	6.9	7.5	6.69	7.06	7.63			
Phosphate	mg/L	<MDL	0.07	0.33	<MDL	<MDL	<MDL			
ResidueFilterable-TDS	mg/L	140	164	190	169	223	284			
ResidueNonFilterable-TSS	mg/L	<MDL	2	8	2	13	31			
SAR		0.60	0.70	0.75	1.30	1.35	1.42			
Sulfate	mg/L	<MDL	3.4	12.0	18.30	25.53	38.69			
Aluminum (TREC)	mg/L	0.03	0.07	0.17	0.017	0.098	0.179			
Arsenic (TREC)	mg/L	<MDL	<MDL	<MDL	0.005	0.005	0.005			
Cadmium (TREC)	mg/L	<MDL	<MDL	<MDL	0.007	0.007	0.007			
Calcium (TREC)	mg/L	18.2	28.7	35.1	23.5	31.7	35.9			
Copper (TREC)	mg/L	<MDL	0.002	0.010	<MDL	0.003	0.003			
Iron (TREC)	mg/L	0.03	0.15	0.49	0.02	0.18	0.42			
Lead (TREC)	mg/L	<MDL	<MDL	<MDL	0.02	0.02	0.02			
Magnesium (TREC)	mg/L	3.2	5.3	6.5	<MDL	5.81	6.94			
Manganese (TREC)	mg/L	<MDL	0.005	0.017	<MDL	0.013	0.030			
Mercury (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.0001	0.0001			
Molyebdenum (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.009	0.009			
Selenium (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.002	0.002			
Sodium (TREC)	mg/L	10.5	15.4	18.2	23.9	31.0	36.1			
Zinc (TREC)	mg/L	<MDL	0.01	0.02	<MDL	0.007	0.007			

The monitoring point for S-16 is located on an un-mapped road in an un-named gulch which discharges eventually into Terror Creek. The flow from S-16 contributes to Pond 3, which is just below it.

Baseline Information for Point S-16 is derived from events beginning on 10/11/95 through 1/15/02.
Point influenced by mining on 1/15/01.

Plot of Flow and Conductivity



S-16 - Terror Creek Spring 16

Figure 32

S-17
Freeman Gulch - Spring 17
Elevation - 7110

Initiated	5/9/1996	5/9/1996	5/9/1996
Activated	12/7/2000	12/7/2000	12/7/2000
Date	12/3/2020	9/2/2020	5/21/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.00	2.11	20.00	0.00	0.00	0.00	0	0	0
FieldComment								Dry	Dry	Dry
ph	su	8.40	8.61	8.80						
Conductivity	umhos/cm	480.00	532.50	580.00						
Temperature	Celsius	8.40	16.33	25.00						
Lab Parameters	UNITS									
Bicarbonate	mg/L	266.00	280.25	298.00						
Chloride	mg/L	2.00	2.50	3.00						
Conductivity	umhos/cm	511.00	538.25	586.00						
Hardness	mg/L	177.00	200.00	216.00						
Nitrate-Nitrite	mg/L	<MDL	0.02	0.04						
Oil and Grease	mg/L	<MDL	<MDL	<MDL						
pH	su	8.10	8.25	8.40						
Phosphate	mg/L	<MDL	0.01	0.03						
ResidueFilterable-TDS	mg/L	300.00	342.50	380.00						
ResidueNonFilterable-TSS	mg/L	<MDL	72.00	134.00						
SAR		1.15	1.50	2.08						
Sulfate	mg/L	20.00	27.50	30.00						
Aluminum	mg/L	0.10	2.52	5.42						
Arsenic	mg/L	<MDL	0.001	0.005						
Cadmium	mg/L	<MDL	<MDL	<MDL						
Calcium	mg/L	42.00	50.33	55.00						
Copper	mg/L	<MDL	0.003	0.01						
Iron (Total)	mg/L	0.10	2.80	6.08						
Lead	mg/L	<MDL	0.01	0.02						
Magnesium	mg/L	17.50	18.05	19.00						
Manganese (Total)	mg/L	<MDL	0.04	0.09						
Mercury	mg/L	<MDL	<MDL	<MDL						
Molyebdenum	mg/L	<MDL	<MDL	<MDL						
Selenium	mg/L	<MDL	0.0003	0.001						
Sodium	mg/L	38.30	47.70	62.70						
Zinc	mg/L	<MDL	0.02	0.04						

Baseline Closed at end of 2000 Monitoring Season

The monitoring point location for S-17 is located on the southern facing slopes of Freeman Gulch and is accessed by foot from trails that originate on the Hubbard Creek Road.

Baseline Information for Point S-17 is derived from events beginning on 5/9/96 through 12/7/00.
Point influenced by mining on 12/7/00.

S-18
Terror Creek - Spring 18
Elevation - 7750

Initiated	6/28/1999	6/28/1999	6/28/1999
Activated			
Date	12/3/2020	9/15/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.00	0.73	5.00						0.72
FieldComment								No flow	No flow	
ph	su	6.7	8.0	10.2						7.34
Conductivity	umhos/cm	220	380	670						438
Temperature	Celsius	2.9	10.4	17.8						8.3
Lab Parameters	UNITS									
Bicarbonate	mg/L	167.7	248.2	401.0						
Chloride	mg/L	<MDL	<MDL	<MDL						
Conductivity	umhos/cm	331.1	426.0	600.0						
Hardness	mg/L	115.9	165.6	266.0						
Nitrate-Nitrite	mg/L	<MDL	1.09	2.13						
Oil and Grease	mg/L	<MDL	<MDL	<MDL						
pH	su	6.52	7.72	8.33						
Phosphate	mg/L	<MDL	<MDL	<MDL						
ResidueFilterable-TDS	mg/L	117.5	229.6	377.0						
ResidueNonFilterable-TSS	mg/L	1	22	64						
SAR		1.35	1.49	1.68						
Sulfate	mg/L	14.41	21.34	25.73						
Aluminum	mg/L	<MDL	0.86	1.59						
Arsenic	mg/L	<MDL	0.008	0.010						
Cadmium	mg/L	<MDL	0.002	0.002						
Calcium	mg/L	30.0	43.7	66.8						
Copper	mg/L	<MDL	<MDL	<MDL						
Iron (Total)	mg/L	0.023	0.750	1.800						
Lead	mg/L	<MDL	0.01	0.01						
Magnesium	mg/L	8.92	13.76	24.20						
Manganese (Total)	mg/L	<MDL	0.02	0.02						
Mercury	mg/L	<MDL	0.00004	0.00004						
Molyebdenum	mg/L	<MDL	<MDL	<MDL						
Selenium	mg/L	<MDL	0.070	0.086						
Sodium	mg/L	36.0	44.0	53.8						
Zinc	mg/L	0.01	0.02	0.03						

The area of concern for monitoring point S-18 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

The monitoring point for S-18 is located on an unmapped road in an un-named gulch which discharges eventually into Terror Creek. The flow from S-18 contributes to Pond 6, which is just below it.

Baseline Information Collection initiated on 6/28/99 and not yet considered complete.
Point S-18 has not been influenced by mining.

S2-2
Hubbard Creek - Spring 2-2
Elevation - 6740

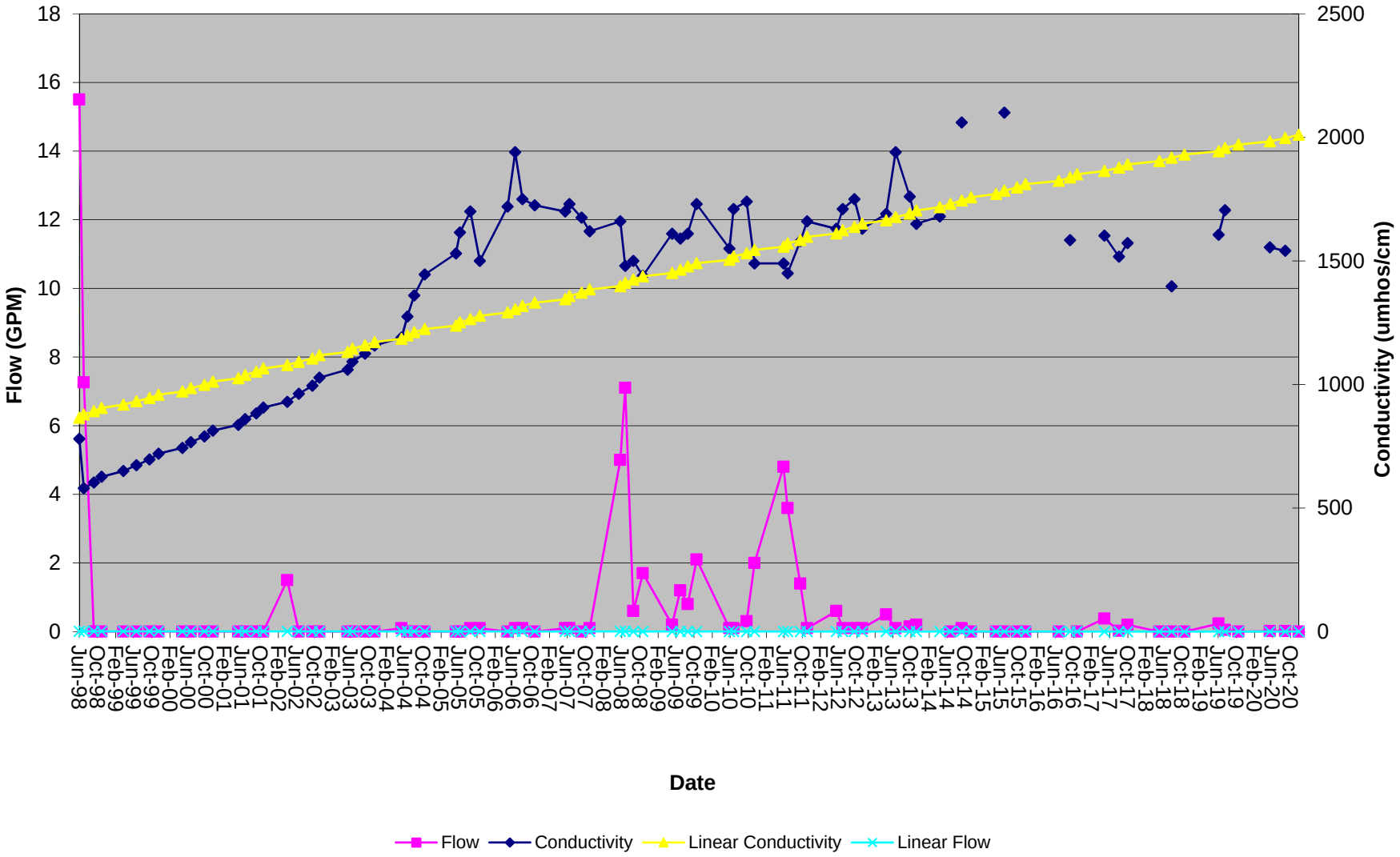
Initiated	6/9/1998	6/9/1998	6/9/1998
Activated	9/15/2001	9/15/2001	9/15/2001
Date	12/2/2020	9/2/2020	5/21/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.0	1.5	15.5	0.0	0.6	7.1	0	0.015	0.015
FieldComment								Dry		
ph	su	6.9	7.5	8.0	7.4	8.6	9.3		8.71	7.74
Conductivity	umhos/cm	580	680	780	930	1623	2100		1541	1555
Temperature	Celsius	11.5	12.3	13.2	0.1	14.4	26.3		14.8	10.2
Lab Parameters	UNITS									
Bicarbonate	mg/L	339	350	361	489.6	536.9	584.2			
Carbonate	mg/L	<MDL	<MDL	<MDL	15.6	19.5	23.4			
Chloride	mg/L	2	3	3	<MDL	2.5	2.5			
Conductivity	umhos/cm	685	702	718	1042.2	1142.9	1243.7			
Hardness	mg/L	208	212	215	132.5	144.6	156.7			
Nitrate-Nitrite	mg/L	0.07	0.09	0.12	<MDL	<MDL	<MDL			
Oil and Grease	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
pH	su	7.7	7.8	7.8	8.5	8.7	8.8			
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
ResidueFilterable-TDS	mg/L	390.0	420.0	450.0	941	964	987			
ResidueNonFilterable-TSS	mg/L	38.0	49.0	60.0	130	252	374			
SAR		<MDL	<MDL	<MDL	8.6	10.4	12.3			
Sulfate	mg/L	40.0	40.0	40.0	179.5	199.0	218.6			
Aluminum	mg/L	1.94	2.15	2.36	0.19	0.48	0.77			
Arsenic	mg/L	<MDL	<MDL	<MDL	0.077	0.092	0.107			
Cadmium	mg/L	<MDL	<MDL	<MDL	0.010	0.011	0.012			
Calcium	mg/L	51.5	52.5	53.6	24.70	27.91	31.11			
Copper	mg/L	<MDL	<MDL	<MDL	<MDL	0.013	0.013			
Iron (Total)	mg/L	1.56	1.90	2.25	0.375	1.948	3.520			
Lead	mg/L	<MDL	<MDL	<MDL	<MDL	0.06	0.06			
Magnesium	mg/L	19.4	19.6	19.8	17.19	18.19	19.18			
Manganese (Total)	mg/L	0.017	0.021	0.024	0.012	0.023	0.034			
Mercury	mg/L	<MDL	<MDL	<MDL	0.0001	0.0002	0.0003			
Molyebdenum	mg/L	<MDL	<MDL	<MDL	<MDL	0.005	0.005			
Selenium	mg/L	<MDL	<MDL	<MDL	0.005	0.076	0.146			
Sodium	mg/L	69.4	78.6	87.8	247.8	273.4	299.0			
Zinc	mg/L	0.02	0.02	0.02	0.02	0.03	0.03			

Baseline Information for Point S2-2 is derived from events beginning on 6/9/98 through 9/15/2001.
Point influenced by mining on 9/15/01.

Plot of Flow and Conductivity



S2-2 - Hubbard Creek Spring 2-2

Figure 36

S2-3
Hubbard Creek - Spring 2-3
Elevation - 6740

Initiated	6/9/1998	6/9/1998	6/9/1998
Activated	9/15/2001	9/15/2001	9/15/2001
Date	12/2/2020	9/2/2020	5/21/2020

Summary Information

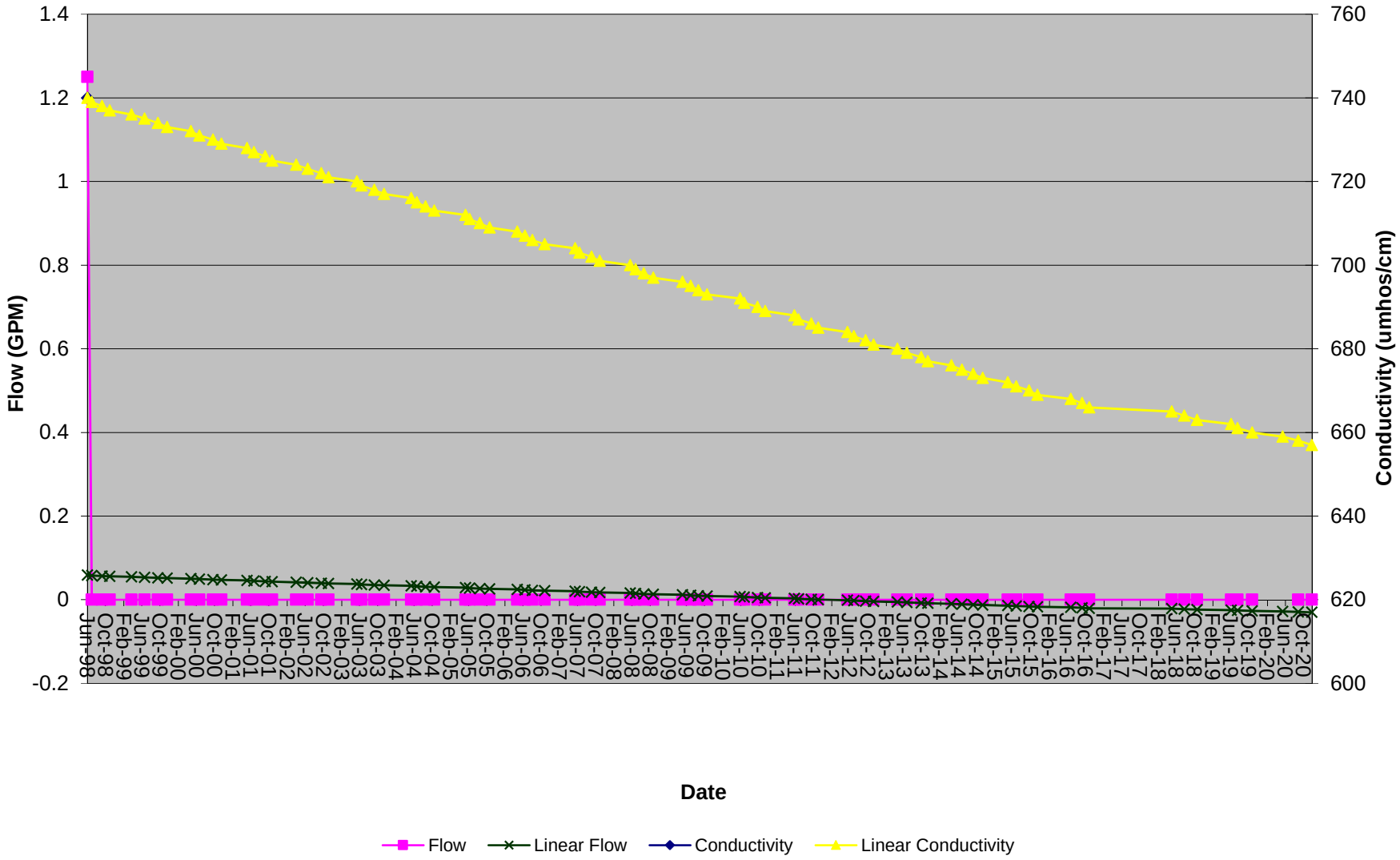
Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.0	0.2	1.3	0.0	0.00	0.00	0	0	0
FieldComment								Dry	Dry	Dry
ph	su	7.8	7.8	7.8						
Conductivity	umhos/cm	740	740	740						
Temperature	Celsius	12.1	12.1	12.1						
Lab Parameters	UNITS									
Bicarbonate	mg/L									
Chloride	mg/L									
Conductivity	umhos/cm									
Hardness	mg/L									
Nitrate-Nitrite	mg/L									
Oil and Grease	mg/L									
pH	su									
Phosphate	mg/L									
ResidueFilterable -TDS	mg/L									
ResidueNonFilterable-TSS	mg/L									
SAR										
Sulfate	mg/L									
Aluminum	mg/L									
Arsenic	mg/L									
Cadmium	mg/L									
Calcium	mg/L									
Copper	mg/L									
Iron (Total)	mg/L									
Lead	mg/L									
Magnesium	mg/L									
Manganese (Total)	mg/L									
Mercury	mg/L									
Molyebdenum	mg/L									
Selenium	mg/L									
Sodium	mg/L									
Zinc	mg/L									

Influenced by the disturbance of Freeman Gulch

The monitoring point for S2-3 is located along the same old coal exploration road used to access S2-2. It is located near the bottom of Freeman Gulch, along the upper edge of the road.

Baseline Information for Point S2-3 is derived from events beginning on 6/9/98 through 9/24/99.
Point influenced by mining on 9/24/99.

Plot of Flow and Conductivity



S2-3 - Hubbard Creek Spring 2-3

Figure 38

S2-9
Hubbard Creek - Spring 2-9
Elevation - 6320'

Initiated	4/1/1999	4/1/1999	4/1/1999	4/1/1999
Activated	9/24/1999	9/24/1999	9/24/1999	9/24/1999
Date	12/4/2020	9/7/2020	6/3/2020	3/31/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max				
Flow	GPM	0.0	1.3	3.8	0.0	0.00	0.00	0	0	0	0
FieldComment								Dry	Dry	Dry	Dry
ph	su	7.5	7.5	7.5							
Conductivity	umhos/cm	1340	1340	1340							
Temperature	Celsius	4.6	4.6	4.6							
Lab Parameters	UNITS										
Bicarbonate	mg/L										
Chloride	mg/L										
Conductivity	umhos/cm										
Hardness	mg/L										
Nitrate-Nitrite	mg/L										
Oil and Grease	mg/L										
pH	su										
Phosphate	mg/L										
Residue Filterable-TDS	mg/L										
Residue NonFilterable-TSS	mg/L										
SAR											
Sulfate	mg/L										
Aluminum	mg/L										
Arsenic	mg/L										
Cadmium	mg/L										
Calcium	mg/L										
Copper	mg/L										
Iron (Total)	mg/L										
Lead	mg/L										
Magnesium	mg/L										
Manganese (Total)	mg/L										
Mercury	mg/L										
Molyebdenum	mg/L										
Selenium	mg/L										
Sodium	mg/L										
Zinc	mg/L										

The monitoring point for S2-9 is found along the Hubbard Creek road near the mouth of Freeman Gulch. The flow and field parameters are measured at the outlet end of a 24" culvert that directs this runoff from this spring into Hubbard Creek.

Baseline Information for Point S2-9 is derived from events beginning on 4/1/99 through 9/24/99.
Point influenced by mining on 9/24/99.

S2 - 10
Hubbard Creek - Spring 2-10
Elevation - 6320'

Initiated	4/1/1999	4/1/1999	4/1/1999	4/1/1999
Activated	9/24/1999	9/24/1999	9/24/1999	9/24/1999
Date	12/4/2020	9/7/2020	6/3/2020	3/31/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max				
Flow	GPM	0.0	0.9	3.6	0.0	0.1	4.2	0	0	0	0
FieldComment								Dry	Dry	Dry	Dry
ph	su	7.4	7.4	7.4	8.0	8.6	10.2				
Conductivity	umhos/cm	840	840	840	940	1294	1670				
Temperature	Celsius	4.9	4.9	4.9	4.0	17.2	24.6				
Lab Parameters	UNITS										
Bicarbonate	mg/L				570.7	570.7	570.7				
Chloride	mg/L				<MDL	<MDL	<MDL				
Conductivity	umhos/cm				1048.5	1048.5	1048.5				
Hardness	mg/L				375.48	375.48	375.48				
Nitrate-Nitrite	mg/L				<MDL	<MDL	<MDL				
Oil and Grease	mg/L				11.39	11.39	11.39				
pH	su				8.34	8.34	8.34				
Phosphate	mg/L				<MDL	<MDL	<MDL				
Residue Filterable-TDS	mg/L				1052	1052	1052				
Residue NonFilterable-TSS	mg/L				15	15	15				
SAR					0.29	0.29	0.29				
Sulfate	mg/L				205.39	205.39	205.39				
Aluminum	mg/L				0.25	0.25	0.25				
Arsenic	mg/L				0.0066	0.0066	0.0066				
Cadmium	mg/L				<MDL	<MDL	<MDL				
Calcium	mg/L				53.4	53.4	53.4				
Copper	mg/L				0.06	0.06	0.06				
Iron (Total)	mg/L				0.51	0.51	0.51				
Lead	mg/L				0.08	0.08	0.08				
Magnesium	mg/L				58.8	58.8	58.8				
Manganese (Total)	mg/L				0.03	0.03	0.03				
Mercury	mg/L				0.0002	0.0002	0.0002				
Molyebdenum	mg/L				<MDL	<MDL	<MDL				
Selenium	mg/L				0.0068	0.0068	0.0068				
Sodium	mg/L				12.94	12.94	12.94				
Zinc	mg/L				0.055	0.055	0.055				

Influenced by the disturbance of Freeman Gulch.

The monitoring point for S2-10 is found along the Hubbard Creek road near the mouth of Freeman Gulch. The flow and field parameters are measured where the flow crosses the Hubbard Creek road, just before it enters Hubbard Creek.

Baseline information for Point S2-10 is derived from events beginning on 4/1/99 through 11/25/99.
Point influenced by mining on 11/25/99.

S3-1
Sheep Corral - Spring 3-1
Elevation - 6840

Initiated	5/21/2003	5/21/2003	5/21/2003
Activated	5/21/2003	5/21/2003	5/21/2003
Date	12/2/2020	9/2/2020	5/21/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM				0.00	0.66	6.34			
FieldComment								Dry	Dry	Dry
ph	su				6.8	8.0	8.6			
Conductivity	umhos/cm				968	1237	1520			
Temperature	Celsius				4.1	10.5	19.5			
Lab Parameters	UNITS									
Bicarbonate	mg/L				489.0	489.0	489.0			
Chloride	mg/L				3.0	3.0	3.0			
Conductivity	umhos/cm				845.0	845.0	845.0			
Hardness	mg/L				326.0	326.0	326.0			
Nitrate-Nitrite	mg/L				0.2	0.2	0.2			
Oil and Grease	mg/L				0.0	<MDL	0.0			
pH	su				7.8	7.8	7.8			
Phosphate	mg/L				0.0	<MDL	0.0			
Residue Filterable-TDS	mg/L				557.0	557.0	557.0			
Residue NonFilterable-TSS	mg/L				0.0	<MDL	0.0			
SAR					2.2	2.2	2.2			
Sulfate	mg/L				96.3	96.3	96.3			
Aluminum	mg/L				0.0	<MDL	0.0			
Arsenic	mg/L				0.0	<MDL	0.0			
Cadmium	mg/L				0.0	0.0	0.0			
Calcium	mg/L				83.3	83.3	83.3			
Copper	mg/L				0.0	<MDL	0.0			
Iron (Total)	mg/L				0.0	<MDL	0.0			
Lead	mg/L				0.0	<MDL	0.0			
Magnesium	mg/L				28.6	28.6	28.6			
Manganese (Total)	mg/L				0.0	<MDL	0.0			
Mercury	mg/L				0.0	<MDL	0.0			
Molyebdenum	mg/L				0.0	0.0	0.0			
Selenium	mg/L				0.1	0.1	0.1			
Sodium	mg/L				108.0	108.0	108.0			
Zinc	mg/L				0.0	<MDL	0.0			

The area of concern for monitoring point S3-1 was affected by the mining operation before its establishment. Therefore, all recorded monitoring events are considered Operational.

There is no baseline collection possible for points initiated after the influence of mining.

S5-2
Powerline Seep - Spring 5-2
Elevation - 7200

Initiated	10/29/2012	10/29/2012	10/29/2012
Activated			
Date	12/3/2020	8/31/2020	5/28/2020

Summary Information

Field		Baseline			Operation					
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max			
Flow	GPM	0.34	0.34	0.34				Dry	Dry	Dry
Temperature	Celsius	9.2	9.2	9.2						
Conductivity	umhos/cm	850	850	850						
pH	su	7.6	7.6	7.6						
Field Comments										
Lab										

The area of concern for monitoring point S5-2 has not been affected by the mining operation. Therefore, all record monitoring events are considered Baseline.

S6-6
Terror Creek - Spring 6-6
Elevation - 7860

Initiated	7/19/1983	7/19/1983	7/19/1983
Activated	7/22/2012	7/22/2012	7/22/2012
Date	10/6/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.00	0.11	3.10				0	0	0
Temperature	Celsius	15.8	18.3	21.1						
Conductivity	umhos/cm	239	298	432						
pH	su	7.8	8.3	8.7						
Field Comments								Dry	Dry	Dry
Lab Parameters	UNITS									
Bicarbonate	mg/L	117.1	117.1	117.1						
Carbonate	mg/L									
Chloride	mg/L	1	1	1						
Conductivity	umhos/cm	235	235	235						
Hardness	mg/L	95	95	95						
pH	su	7.9	7.9	7.9						
Residue Filterable-TDS	mg/L	132	132	132						
ResidueNon Filterable-TSS	mg/L	32	32	32						
SAR		0.71	0.71	0.71						
Sulfate	mg/L	10	10	10						
Calcium (Dissolved)	mg/L	25	25	25						
Magnesium (Total)	mg/L	8	8	8						
Sodium (Dissolved)	mg/L	16	16	16						
Potassium	mg/L									
TDS Ratio (grav./calc.)										

The area of concern for monitoring point S6-6 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

Baseline Information Collection initiated on 7/5/83 and not yet considered complete.
Point S6-6 has not been influenced by mining.

S7-4
Steven's Gulch - Spring 7-4
Elevation - 7780

Initiated	7/19/1983	7/19/1983	7/19/1983
Activated			
Date	10/6/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.00	1.80	11.13						
Temperature	Celsius	8.1	12.1	24.3						
Conductivity	umhos/cm	250	336	530						
pH	su	6.6	7.5	8.2						
Field Comments								Dry	Dry	Dry
Lab Parameters	UNITS									
Bicarbonate	mg/L	40.9	155.3	225.7						
Chloride	mg/L	<MDL	7.58	22.33						
Conductivity	umhos/cm	226	286	353						
Hardness	mg/L	124.53	149.11	184.00						
Nitrate-Nitrite	mg/L	<MDL	<MDL	<MDL						
Oil and Grease	mg/L	<MDL	<MDL	<MDL						
pH	su	6.6	7.4	8.2						
Phosphate	mg/L	<MDL	<MDL	<MDL						
Residue Filterable-TDS	mg/L	172	218	305						
ResidueNon Filterable-TSS	mg/L	11	35	52						
SAR		0.25	0.77	2.63						
Sulfate	mg/L	<MDL	8.71	14.82						
Aluminum (TREC)	mg/L	<MDL	0.024	0.024						
Arsenic (TREC)	mg/L	<MDL	0.026	0.026						
Cadmium (TREC)	mg/L	<MDL	0.02	0.02						
Calcium (TREC)	mg/L	25.30	25.30	25.30						
Copper (TREC)	mg/L	0.01	0.01	0.01						
Iron (TREC)	mg/L	0.35	0.47	0.58						
Lead (TREC)	mg/L	0.04	0.04	0.04						
Magnesium (TREC)	mg/L	13.0	15.0	18.0						
Manganese (TREC)	mg/L	0.01	0.01	0.01						
Mercury (TREC)	mg/L	<MDL	0.00007	0.00007						
Molybdenum (TREC)	mg/L	<MDL	0.002	0.002						
Selenium (TREC)	mg/L	<MDL	0.018	0.018						
Sodium (TREC)	mg/L	12.99	12.99	12.99						
Zinc (TREC)	mg/L	<MDL	0.01	0.01						

The area of concern for monitoring point S7-4 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

Baseline Information Collection initiated on 7/1/83 and net yet considered complete.
Point S7-4 has not been influenced by mining.

S7-9
Terror Creek - Spring 7-9
Elevation - 7800

Initiated	7/19/1983	7/19/1983	7/19/1983
Activated	7/22/2012	7/22/2012	7/22/2012
Date	10/6/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.00	0.01	0.27	0.00	0.00	0.00			
Temperature	Celsius	8.6	11.3	15.2						
Conductivity	umhos/cm	271	614	791						
pH	su	7.0	7.5	8.0						
Field Comments								Dry	Dry	Dry
Lab Parameters	UNITS									
Bicarbonate	mg/L	139.1	326.2	427.0						
Carbonate	mg/L									
Chloride	mg/L	1.0	5.7	11.0						
Conductivity	umhos/cm	259.0	522.3	678.0						
Hardness	mg/L	104.0	264.3	347.0						
pH	su	6.7	7.5	8.0						
Residue Filterable-TDS	mg/L	144.0	327.0	425.0						
ResidueNon Filterable-TSS	mg/L	94.0	129.3	170.0						
SAR		0.1	0.6	0.9						
Sulfate	mg/L	4.0	26.0	43.0						
Calcium (Dissolved)	mg/L	30.0	68.0	88.0						
Magnesium (Total)	mg/L	7.0	23.0	31.0						
Sodium (Dissolved)	mg/L	3.0	24.7	38.0						
Potassium	mg/L									
TDS Ratio (grav./calc.)										

The monitoring point for Spring 7-9 is located on an east facing slope that drains down toward Terror Creek.

Baseline Information is derived from monitoring events beginning on 7/19/83 through 7/22/2012.
Point S7-9 influenced by mining on 7/22/12.

S7-10
Terror Creek - Spring 7-10
Elevation - 7880

Initiated	8/1/1983	8/1/1983	8/1/1983
Activated	12/31/2013	12/31/2013	12/31/2013
Date	10/6/2020	8/31/2020	5/28/2020

Field Parameters	UNITS	Summary Information Baseline Min	Ave	Max	Operation Min	Ave	Max			
Flow	GPM	0.00	1.56	18.75	0.00	1.27	3.75			0.14
Temperature	Celsius	1.6	7.81	21.7	6.40	7.66	10.30			7.4
Conductivity	umhos/cm	190	480	660	420.00	595.72	686.00			632
pH	su	7.0	7.6	8.4	6.58	7.39	7.93			7.06
Field Comments										
Lab Parameters	UNITS									
Bicarbonate	mg/L	142.00	259.51	384.00	241.77	296.89	352.00			
Chloride	mg/L	<MDL	6.8	54.6	4.6	7.8	10.9			
Conductivity	umhos/cm	292	487	722	542	561	580			
Hardness	mg/L	3.00	203.62	258.00	214.04	220.02	226.00			
Nitrate-Nitrite	mg/L	0.3	0.3	0.31	<MDL					
Oil & Grease	mg/L	<MDL	<MDL	<MDL	<MDL					
pH	su	6.76	7.58	8.59	7.08	7.22	7.35			
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL					
Residue Filterable-TDS	mg/L	190	319	476	358	394	430			
Residue NonFilterable-TSS	mg/L	<MDL	57	272	14	14	14			
SAR		0.470	0.920	3.959	1.610	2.785	3.959			
Sulfate	mg/L	0.4	22.0	49.8	35.9	42.9	49.8			
Aluminum (TREC)	mg/L	0.023	0.023	0.110	0.110	0.110	0.110			
Arsenic (TREC)	mg/L	0.0100	0.0100	0.0100	0.0010	0.0010	0.0010			
Cadmium (TREC)	mg/L	0.020	0.020	0.020	0.002	0.002	0.002			
Calcium (TREC)	mg/L	36.1	36.1	54.9	43.5	49.2	54.90			
Copper (TREC)	mg/L	0.0010	0.0010	0.0120	0.0120	0.0120	0.0120			
Iron (TREC)	mg/L	0.06	0.22	0.49	0.02	0.17	0.31			
Magnesium (TREC)	mg/L	24.70	24.70	25.60	21.50	23.55	25.60			
Manganese (TREC)	mg/L	<MDL	0.0123	0.0260	0.0260	0.0260	0.03			
Mercury (TREC)	mg/L	0.0000	0.0000	0.0000	0.00002	0.00002	0.00002			
Molybdenum (TREC)	mg/L	0.003	0.003	0.003	0.001	0.001	0.001			
Selenium (TREC)	mg/L	0.023	0.023	0.023	0.003	0.003	0.003			
Sodium (TREC)	mg/L	32.3	32.3	133.1	55.8	94.5	133.1			
Zinc (TREC)	mg/L	0.006	0.006	0.011	0.011	0.011	0.011			

This spring consists of a small 2' x 5' area of exposed rocks. Spring water bubbles up through the rocks. (Hanna, 99)

Activated December 31, 2013

Baseline Information Collection initiated on 8/1/83.
Point S7-10 was influenced by mining 12/31/2013.

S8-5
Terror Creek - Spring 8-5
Elevation - 7800

Initiated	7/19/1983	7/19/1983	7/19/1983
Activated	7/15/2012	7/15/2012	7/15/2012
Date	10/6/2020	8/31/2020	5/28/2020

Summary Information

Field		Baseline			Operation					
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max			
Flow	GPM	0	0.50	8.62	0.00	0.00	3.00			
Temperature	Celsius	7.5	13.80	24.4						
Conductivity	umhos/cm	660	746.00	920						
pH	su	7.3	8.01	8.8						
Field Comments								Dry	Dry	Dry
Lab										
Parameters	UNITS									
Bicarbonate	mg/L	334	397.13	475						
Carbonate	mg/L									
Chloride	mg/L	6	8.50	11						
Conductivity	umhos/cm	606	686.00	774						
Hardness	mg/L	247	315.13	380						
pH	su	7.0	7.89	8.2						
Residue Filterable-TDS	mg/L	355	404.38	460						
Residue NonFilterable-TSS	mg/L	4	146.00	502						
SAR		0.89	0.99	1.24						
Sulfate	mg/L	30	40.13	56						
Calcium (Dissolved)	mg/L	64.1	75.60	96.7						
Magnesium (Total)	mg/L	21.1	30.71	36.0						
Sodium (Dissolved)	mg/L	31.9	40.14	48						
Potassium	mg/L	1.10	1.10	1.10						
TDS Ratio (grav./calc.)		1.11	1.11	1.11						

The monitoring point for Spring 8.5 is located on an east facing slope that drains down toward Terror Creek.

Baseline Information is derived from monitoring events beginning on 7/19/83 through 7/15/2012.
Point S8-5 influenced by mining 7/15/12.

S21
Terror Creek - Spring 21
Elevation - 7100

Initiated	4/15/1983	4/15/1983	4/15/1983
Activated	12/1/2010	12/1/2010	12/1/2010
Date	10/6/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0	1.03	7.5	0	0.93	9.11			
Temperature	Celsius	2.5	12.1	20.2	4	9.16	16.2			
Conductivity	umhos/cm	360	687	907	667	1157.11	1592			
pH	su	7.2	7.9	8.5	7.65	9.12	17.1			
Field Comments					0	#DIV/0!	0	Dry	Dry	Damp
Lab Parameters	UNITS									
Bicarbonate	mg/L	268	388.56	456	93.08	294.04	495			
Carbonate	mg/L	<MDL	0.23	3.5						
Chloride	mg/L	2	8.78	14	10.4	16.10	21.8			
Conductivity	umhos/cm	555	679.72	775	434	636.00	838			
Hardness	mg/L	279	350.00	442	323	335.31	347.625			
Nitrate-Nitrite	mg/L				0.1	0.10	0.1			
Oil/Grease	mg/L				<MDL	<MDL	<MDL			
pH	su	7	7.88	8.4	7.76	7.93	8.09			
ResidueFilterable-TDS	mg/L	330	408.44	535	340	463.50	587			
ResidueNonFilterable-TSS	mg/L	2	24.92	106	6.6	11.80	17			
SAR		0.48	0.65	1	2.259	2.785	3.31			
Sulfate	mg/L	30	50.22	91	89.6	96.66	103.72			
Calcium (Dissolved)	mg/L	58	84.47	108						
Magnesium (Total)	mg/L	25	33.81	42	35.4	43.90	52.4			
Sodium (Dissolved)	mg/L	22	27.92	44						
Potassium	mg/L	2	2.00	2						
TDS Ratio (grav./calc.)		1	1.00	1						
Aluminum, TREC	mg/L				<MDL	0.20	0.2			
Arsenic, TREC	mg/L				<MDL	0.00	0.001			
Cadmium, TREC	mg/L				<MDL	0.00	0.002			
Calcium, TREC	mg/L				52.8	64.00	75.2			
Copper, TREC	mg/L				<MDL	0.01	0.01			
Iron, TREC	mg/L				0.0855	0.18	0.27			
Lead, TREC	mg/L				<MDL	0.06	0.06			
Manganese, TREC	mg/L				0.0108	0.04	0.06			
Mercury, TREC	mg/L				<MDL	3.000E-05	3.000E-05			
Molybdenum, TREC	mg/L				<MDL	0.00	0.001			
Selenium, TREC	mg/L				<MDL	0.01	0.007			
Sodium, TREC	mg/L				96.8	111.90	127			
Zinc, TREC	mg/L				<MDL	0.01	0.01			

Baseline Information for Point S21 is derived from events beginning on 4/15/83 through 12/1/10.
Point influenced by mining on 12/1/10.

S33-4
Sheep Corral - Spring 33-4
Elevation - 7790

Initiated	10/30/1997	10/30/1997	10/30/1997
Activated	12/1/2001	12/1/2001	12/1/2001
Date	12/2/2020	9/2/2020	5/21/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.0	0.0	0.0	0.0	0.0	0.0			
FieldComment								Dry	Dry	Dry
ph	su									
Conductivity	umhos/cm									
Temperature	Celsius									
Lab Parameters	**UNITS**									
Bicarbonate	mg/L									
Chloride	mg/L									
Conductivity	umhos/cm									
Hardness	mg/L									
Nitrate-Nitrite	mg/L									
Oil and Grease	mg/L									
pH	su									
Phosphate	mg/L									
ResidueFilterable-TDS	mg/L									
ResidueNonFilterable-TSS	mg/L									
SAR										
Sulfate	mg/L									
Aluminum	mg/L									
Arsenic	mg/L									
Cadmium	mg/L									
Calcium	mg/L									
Copper	mg/L									
Iron (Total)	mg/L									
Lead	mg/L									
Magnesium	mg/L									
Manganese (Total)	mg/L									
Mercury	mg/L									
Molyebdenum	mg/L									
Selenium	mg/L									
Sodium	mg/L									
Zinc	mg/L									

This spring was found during the fall of 1997 and was not locatable after 1998.

The monitoring point for S33-4 (Spring 33-4) is located above P33-3 in a roadless fork. Evidence of a dry spring was found in Octobe and has not been relocated.

Baseline Information for Point S33-4 is derived from events beginning on 10/30/97 through 12/1/01.
Point influenced by mining on 12/1/01.

S34-7
Sheep Corral - Spring 34-7
Elevation - 7390

Initiated	10/27/1997	10/27/1997	10/27/1997
Activated	6/1/2002	6/1/2002	6/1/2002
Date	12/2/2020	9/2/2020	5/21/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.00	0.30	4.41	0.0	0.03	1.00			
FieldComment								Dry	Dry	Dry
ph	su	6.8	7.5	8.0	7.2	7.9	8.4			
Conductivity	umhos/cm	160	258	300	330	625	1170			
Temperature	Celsius	5.9	11.2	19.8	3.7	13.6	24.5			
Lab Parameters	**UNITS**									
Bicarbonate	mg/L	200	200	200						
Chloride	mg/L	4	4	4						
Conductivity	umhos/cm	420	420	420						
Hardness	mg/L	129	129	129						
Nitrate-Nitrite	mg/L	<MDL	<MDL	<MDL						
Oil and Grease	mg/L	4	4	4						
pH	su	8.0	8.0	8.0						
Phosphate	mg/L	<MDL	<MDL	<MDL						
ResidueFilterable-TDS	mg/L	230	230	230						
ResidueNonFilterable-TSS	mg/L	138	138	138						
SAR		<MDL	<MDL	<MDL						
Sulfate	mg/L	30.0	30.0	30.0						
Aluminum	mg/L	3.51	3.51	3.51						
Arsenic	mg/L	0.001	0.001	0.001						
Cadmium	mg/L	<MDL	<MDL	<MDL						
Calcium	mg/L	37.0	37.0	37.0						
Copper	mg/L	<MDL	<MDL	<MDL						
Iron (Total)	mg/L	3.58	3.58	3.58						
Lead	mg/L	<MDL	<MDL	<MDL						
Magnesium	mg/L	8.9	8.9	8.9						
Manganese (Total)	mg/L	0.113	0.113	0.113						
Mercury	mg/L	<MDL	<MDL	<MDL						
Molyebdenum	mg/L	<MDL	<MDL	<MDL						
Selenium	mg/L	<MDL	<MDL	<MDL						
Sodium	mg/L	41.0	41.0	41.0						
Zinc	mg/L	0.03	0.03	0.03						

The monitoring point for S34-7 is located just to the south of an old coal exploration road which winds down Sheep Corral Gulch.

Baseline Information for Point S34-7 is derived from events beginning on 10/27/97 through 6/1/02.
Point influenced by mining on 6/1/02.

S34-10
Dove Gulch - Spring 34-10
Elevation - 6640

Initiated	6/2/1998	6/2/1998	6/2/1998
Activated			
Date	12/2/2020	9/7/2020	6/3/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.0	0.6	11.0	0.0	0.4	16.4			
FieldComment								Dry	Dry	Dry
ph	su	7.3	7.4	7.4	8.2	8.4	8.7			
Conductivity	umhos/cm	320	435	550	1160	1340	1689			
Temperature	Celsius	8.2	9.1	10.6	6.7	11.6	19.6			
Lab Parameters	**UNITS**									
Bicarbonate	mg/L	325	335	344	284.2	284.2	284.2			
Carbonate	mg/L	<MDL	<MDL	<MDL	3.6	3.6	3.6			
Chloride	mg/L	5	5	5	0.86	0.86	0.86			
Conductivity	umhos/cm	622	681	740	1032.1	1032.1	1032.1			
Hardness	mg/L	170	186	202	236.3	236.3	236.3			
Nitrate-Nitrite	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
Oil and Grease	mg/L	<MDL	<MDL	<MDL	2.43	2.43	2.43			
pH	su	7.8	7.8	7.8	8.43	8.43	8.43			
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
ResidueFilterable-TDS	mg/L	370	400	430	751	751	751			
ResidueNonFilterable-TSS	mg/L	<MDL	31	62	29	29	29			
SAR		<MDL	<MDL	<MDL	3.39	3.39	3.39			
Sulfate	mg/L	40	50	60	194.69	194.69	194.69			
Aluminum	mg/L	0.07	1.96	3.86	0.25	0.25	0.25			
Arsenic	mg/L	<MDL	0.001	0.001	0.064	0.064	0.064			
Cadmium	mg/L	<MDL	<MDL	<MDL	0.015	0.015	0.015			
Calcium	mg/L	40.1	43.4	46.8	55.4	55.4	55.4			
Copper	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
Iron (Total)	mg/L	0.05	1.65	3.26	0.102	0.102	0.102			
Lead	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
Magnesium	mg/L	16.9	18.8	20.7	23.8	23.8	23.8			
Manganese (Total)	mg/L	<MDL	0.027	0.055	<MDL	<MDL	<MDL			
Mercury	mg/L	<MDL	<MDL	<MDL	0.0001	0.0001	0.0001			
Molyebdenum	mg/L	<MDL	<MDL	<MDL	0.01	0.01	0.01			
Selenium	mg/L	0.001	0.001	0.001	0.0036	0.0036	0.0036			
Sodium	mg/L	70.2	77.4	84.6	119.8	119.8	119.8			
Zinc	mg/L	<MDL	0.01	0.03	0.011	0.011	0.011			

The monitoring point for S34-10 is located high on the northern facing slopes that forms the Dove Gulch Canyon. It is accessed on foot remnants of an old coal exploration road in the mouth of Dove Gulch. It is one of three springs found in this location, originating in the s outcrop and discharges via sheet flow into Dove Gulch.

Baseline Information for Point S34-10 is derived from events beginning on 10/31/97 through 12/1/03.
Point influenced by mining on 12/1/03.

S34-19
Hubbard Creek - Spring 34-19
Elevation - 6460

Initiated	6/9/1998	6/9/1998	6/9/1998	6/9/1998
Activated				
Date	12/2/2020	9/7/2020	6/3/2020	3/31/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max				
Flow	GPM	0.0	0.2	7.5							
FieldComment								Dry	Dry	Dry	Dry
ph	su	7.1	7.9	8.6							
Conductivity	umhos/cm	149	1008	2400							
Temperature	Celsius	3.3	13.5	22.4							
Lab Parameters	**UNITS**										
Bicarbonate	mg/L	434	434	434							
Chloride	mg/L	9	9	9							
Conductivity	umhos/cm	911	911	911							
Hardness	mg/L	197	197	197							
Nitrate-Nitrite	mg/L	0.1	0.1	0.1							
Oil and Grease	mg/L	<MDL	<MDL	<MDL							
pH	su	7.6	7.6	7.6							
Phosphate	mg/L	<MDL	<MDL	<MDL							
ResidueFilterable-TDS	mg/L	550	550	550							
ResidueNonFilterable-TSS	mg/L	<MDL	<MDL	<MDL							
SAR		<MDL	<MDL	<MDL							
Sulfate	mg/L	290.0	290.0	290.0							
Aluminum	mg/L	0.2	0.2	0.2							
Arsenic	mg/L	<MDL	<MDL	<MDL							
Cadmium	mg/L	<MDL	<MDL	<MDL							
Calcium	mg/L	44.7	44.7	44.7							
Copper	mg/L	<MDL	<MDL	<MDL							
Iron (Total)	mg/L	0.2	0.2	0.2							
Lead	mg/L	<MDL	<MDL	<MDL							
Magnesium	mg/L	20.8	20.8	20.8							
Manganese (Total)	mg/L	0.006	0.006	0.006							
Mercury	mg/L	<MDL	<MDL	<MDL							
Molyebdenum	mg/L	<MDL	<MDL	<MDL							
Selenium	mg/L	0.002	0.002	0.002							
Sodium	mg/L	132.0	132.0	132.0							
Zinc	mg/L	<MDL	<MDL	<MDL							

The area of concern for monitoring point S34-19 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

The monitoring point fos S34-19 is found along the Hubbard Creek Trail. It is a diverse flow along the upper edge of the trail.

Baseline Information Collection initiated on 6/9/98 and not yet considered complete.
Point S34-19 has not been influenced by mining.

S34-20
Hubbard Creek - Spring 34-20
Elevation - 6440

Initiated	6/2/1998	6/3/1998	6/4/1998	6/5/1998
Activated				
Date	12/2/2020	9/7/2020	6/3/2020	3/31/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max				
Flow	GPM	0.0	0.0	0.6							
FieldComment								Dry	Dry	Dry	Wet-no flow
ph	su	7.6	7.8	8.2							
Conductivity	umhos/cm	860	1140	1320							
Temperature	Celsius	12.5	18.4	24.1							
Lab Parameters	**UNITS**										
Bicarbonate	mg/L										
Chloride	mg/L										
Conductivity	umhos/cm										
Hardness	mg/L										
Nitrate-Nitrite	mg/L										
Oil and Grease	mg/L										
pH	su										
Phosphate	mg/L										
ResidueFilterable-TDS	mg/L										
ResidueNonFilterable-TSS	mg/L										
SAR											
Sulfate	mg/L										
Aluminum	mg/L										
Arsenic	mg/L										
Cadmium	mg/L										
Calcium	mg/L										
Copper	mg/L										
Iron (Total)	mg/L										
Lead	mg/L										
Magnesium	mg/L										
Manganese (Total)	mg/L										
Mercury	mg/L										
Molyebdenum	mg/L										
Selenium	mg/L										
Sodium	mg/L										
Zinc	mg/L										

The area of concern for monitoring point S34-20 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

The monitoring point for S34-20 is found along the Hubbard Creek Trail. It is a diverse flow along the upper edge of the trail.

Baseline Information Collection initiated on 6/2/98 and not yet considered complete.
Point S34-20 has not been influenced by mining.

S34-21
Hubbard Creek - Spring 34-21
Elevation - 6430

Initiated	6/2/1998	6/2/1998	6/2/1998	6/2/1998
Activated				
Date	12/2/2020	9/7/2020	6/3/2020	3/21/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max				
Flow	GPM	0.0	0.5	10.7	0.0	0.1	3.2	0	0	0	0
FieldComment								Dry	Dry	Dry	Damp
ph	su	7.6	7.6	7.6	7.4	7.8	8.4				
Conductivity	umhos/cm	620	620	620	700	1531	1980				
Temperature	Celsius	18.7	18.7	18.7	15.3	19.7	26.4				
Lab Parameters	**UNITS**										
Bicarbonate	mg/L	454	454	454							
Chloride	mg/L	6	6	6							
Conductivity	umhos/cm	831	831	831							
Hardness	mg/L	226	226	226							
Nitrate-Nitrite	mg/L	0.2	0.2	0.2							
Oil and Grease	mg/L	3.0	3.0	3.0							
pH	su	8.1	8.1	8.1							
Phosphate	mg/L	<MDL	<MDL	<MDL							
ResidueFilterable-TDS	mg/L	490	490	490							
ResidueNonFilterable-TSS	mg/L	<MDL	<MDL	<MDL							
SAR		<MDL	<MDL	<MDL							
Sulfate	mg/L	70	70	70							
Aluminum	mg/L	0.18	0.18	0.18							
Arsenic	mg/L	<MDL	<MDL	<MDL							
Cadmium	mg/L	<MDL	<MDL	<MDL							
Calcium	mg/L	52.9	52.9	52.9							
Copper	mg/L	<MDL	<MDL	<MDL							
Iron (Total)	mg/L	0.14	0.14	0.14							
Lead	mg/L	<MDL	<MDL	<MDL							
Magnesium	mg/L	22.9	22.9	22.9							
Manganese (Total)	mg/L	<MDL	<MDL	<MDL							
Mercury	mg/L	<MDL	<MDL	<MDL							
Molyebdenum	mg/L	<MDL	<MDL	<MDL							
Selenium	mg/L	<MDL	<MDL	<MDL							
Sodium	mg/L	105.0	105.0	105.0							
Zinc	mg/L	<MDL	<MDL	<MDL							

The monitoring point for S34-21 is found along the Hubbard Creek Trail. It is a diverse flow along the upper edge of the trail.

Baseline Information for Point S34-21 is derived from events beginning on 6/9/98 through 11/10/03.
Point influenced by mining on 11/10/03.

S34-22
Hubbard Creek - Spring 34-22
Elevation - 6700

Initiated	6/2/1998	6/2/1998	6/2/1998
Activated			
Date	12/2/2020	9/7/2020	6/3/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.0	1.5	35.0	0.0	0.3	13.6	0	0	0
FieldComment								Dry	Dry	Dry
ph	su	7.2	7.3	7.4	7.8	8.0	8.4			
Conductivity	umhos/cm	230	230	230	1260	1499	1808			
Temperature	Celsius	17.2	17.2	17.2	8.5	9.9	12.1			
Lab Parameters	UNITS									
Bicarbonate	mg/L	302	302	302	285.4	285.4	285.4			
Carbonate	mg/L	12	15	18	18.1	18.1	18.1			
Chloride	mg/L	4	4	4	<MDL	<MDL	<MDL			
Conductivity	umhos/cm	602	602	602	1011.5	1011.5	1011.5			
Hardness	mg/L	171	171	171	238.8	238.8	238.8			
Nitrate-Nitrite	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
Oil and Grease	mg/L	<MDL	<MDL	<MDL	2.41	2.41	2.41			
pH	su	8.2	8.2	8.2	8.8	8.8	8.8			
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
ResidueFilterable-TDS	mg/L	380	380	380	854	854	854			
ResidueNonFilterable-TSS	mg/L	<MDL	<MDL	<MDL	40	40	40			
SAR		<MDL	<MDL	<MDL	4.19	4.19	4.19			
Sulfate	mg/L	50	50	50	223.91	223.91	223.91			
Aluminum	mg/L	0.31	0.31	0.31	0.23	0.23	0.23			
Arsenic	mg/L	<MDL	<MDL	<MDL	0.064	0.064	0.064			
Cadmium	mg/L	<MDL	<MDL	<MDL	0.026	0.026	0.026			
Calcium	mg/L	38.3	38.3	38.3	53.9	53.9	53.9			
Copper	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
Iron (Total)	mg/L	0.27	0.27	0.27	0.187	0.187	0.187			
Lead	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
Magnesium	mg/L	18.3	18.3	18.3	25.3	25.3	25.3			
Manganese (Total)	mg/L	<MDL	<MDL	<MDL	0.1	0.1	0.1			
Mercury	mg/L	<MDL	<MDL	<MDL	0.0001	0.0001	0.0001			
Molyebdenum	mg/L	<MDL	<MDL	<MDL	0.01	0.01	0.01			
Selenium	mg/L	<MDL	<MDL	<MDL	0.0048	0.0048	0.0048			
Sodium	mg/L	74.4	74.4	74.4	149	149	149			
Zinc	mg/L	<MDL	<MDL	<MDL	0.006	0.006	0.006			

The monitoring point for S34-22 is located high on the northern facing slopes that forms the Dove Gulch Canyon. It is accessed on foot from the remnants of an old coal exploration road in the mouth of Dove Gulch. It is one of three springs found in this location, originatin in the sandstone outcrop and discharges via sheet flow into Dove Gulch.

Baseline Information for Point S34-22 is derived from events beginning on 6/9/98 through 11/20/03.
Point influenced by mining on 11/20/03.

S34-23
Hubbard Creek - Spring 34-23
Elevation - 6650

Initiated	6/2/1998	6/2/1998	6/2/1998
Activated			
Date	12/2/2020	9/7/2020	6/3/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.0	3.5	75.0	0.0	0.1	4.6	0	0	0
FieldComment								Dry	Dry	Dry
ph	su	7.6	7.8	8.0	8.5	8.5	8.5			
Conductivity	umhos/cm	320	390	460	900	900	900			
Temperature	Celsius	12.1	14.0	15.9	9.0	9.0	9.0			
Lab Parameters	UNITS									
Bicarbonate	mg/L	249	268	287						
Chloride	mg/L	2	3	4						
Conductivity	umhos/cm	537	545	552						
Hardness	mg/L	169	171	173						
Nitrate-Nitrite	mg/L	<MDL	0.01	0.02						
Oil and Grease	mg/L	<MDL	<MDL	<MDL						
pH	su	8.1	8.3	8.4						
Phosphate	mg/L	<MDL	<MDL	<MDL						
ResidueFilterable-TDS	mg/L	330	335	340						
ResidueNonFilterable-TSS	mg/L	<MDL	11	22						
SAR		<MDL	<MDL	<MDL						
Sulfate	mg/L	30	40	50						
Aluminum	mg/L	0.32	0.95	1.57						
Arsenic	mg/L	<MDL	<MDL	<MDL						
Cadmium	mg/L	<MDL	<MDL	<MDL						
Calcium	mg/L	40.5	41.8	43.1						
Copper	mg/L	<MDL	<MDL	<MDL						
Iron (Total)	mg/L	0.25	0.77	1.29						
Lead	mg/L	<MDL	<MDL	<MDL						
Magnesium	mg/L	15.9	16.1	16.4						
Manganese (Total)	mg/L	<MDL	0.013	0.026						
Mercury	mg/L	<MDL	<MDL	<MDL						
Molyebdenum	mg/L	<MDL	<MDL	<MDL						
Selenium	mg/L	0.001	0.001	0.001						
Sodium	mg/L	59.8	61.1	62.4						
Zinc	mg/L	<MDL	0.005	0.010						

The monitoring point for S34-23 is located high on the northern facing slopes that forms the Dove Gulch Canyon. It is accessed on foot drom the remnants of an old coal exploration road in the mouth of Dove Gulch. It in one of three springs found in this location, orginating in the sandstone outcrops and discharges via sheet flow into Dove Gulch.

Baseline Information for Point S34-23 is derived from events beginning on 6/9/98 through 12/8/03.
Point influenced by mining on 12/8/03.

S34-24
Hubbard Creek - Spring 34-24
Elevation - 6390

Initiated	6/2/1998	6/2/1998	6/2/1998	6/2/1998
Activated	4/1/2002	4/1/2002	4/1/2002	4/1/2002
Date	12/2/2020	9/7/2020	6/3/2020	3/31/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max				
Flow	GPM	0.00	0.06	0.91	0.0	0.00	0.10	0	0	0	0
FieldComment								Dry	Dry	Dry	Dry
ph	su	7.8	7.8	7.8	7.8	8.0	8.2				
Conductivity	umhos/cm	1010	1010	1010	1210	1740	2400				
Temperature	Celsius	19.0	19.0	19.0	9.0	20.3	24.8				
Lab Parameters	UNITS										
Bicarbonate	mg/L										
Chloride	mg/L										
Conductivity	umhos/cm										
Hardness	mg/L										
Nitrate-Nitrite	mg/L										
Oil and Grease	mg/L										
pH	su										
Phosphate	mg/L										
ResidueFilterable-TDS	mg/L										
ResidueNonFilterable-TSS	mg/L										
SAR											
Sulfate	mg/L										
Aluminum	mg/L										
Arsenic	mg/L										
Cadmium	mg/L										
Calcium	mg/L										
Copper	mg/L										
Iron (Total)	mg/L										
Lead	mg/L										
Magnesium	mg/L										
Manganese (Total)	mg/L										
Mercury	mg/L										
Molyebdenum	mg/L										
Selenium	mg/L										
Sodium	mg/L										
Zinc	mg/L										

The monitoring point for S34-24 is found along the Hubbard Creek Trail. It is a diverse flow along the upper edge of the trail.

Baseline Information for Point S34-24 is derived from events beginning on 6/2/98 through 4/1/02.
Point influenced by mining on 4/1/02.

Initiated	6/2/1998	6/2/1998	6/2/1998
Activated	10/30/2008	10/30/2008	10/30/2008
Date	12/2/2020	9/7/2020	6/3/2020

Summary Information

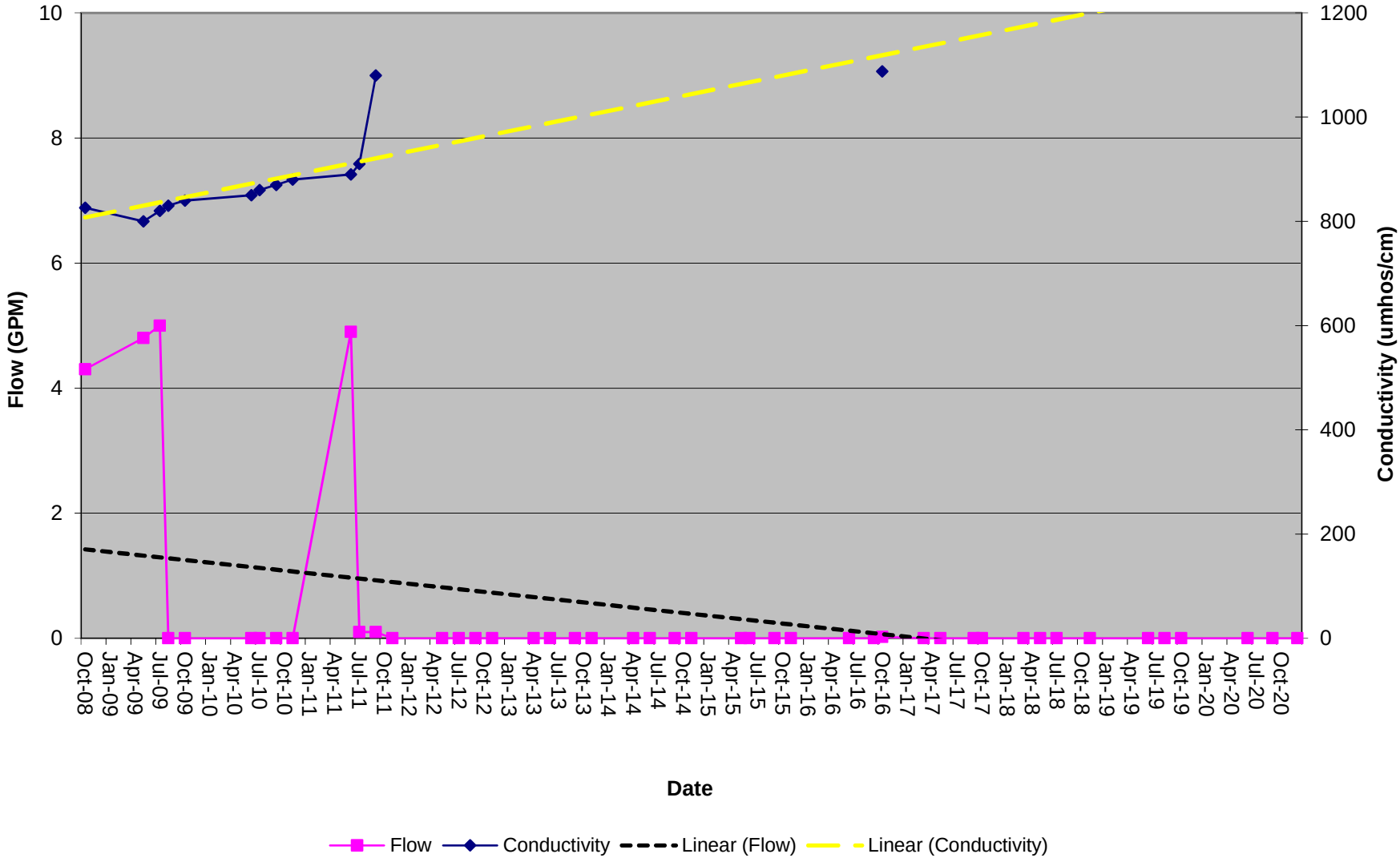
Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM				0.0	0.4	5.0	0	0	0
FieldComment								Dry	Dry	Dry
ph	su				8.1	8.4	8.8			
Conductivity	umhos/cm				800	916	1088			
Temperature	Celsius				5.0	10.5	17.9			
Lab Parameters	UNITS									
Bicarbonate	mg/L				335	335	335			
Carbonate	mg/L				37	37	37			
Chloride	mg/L				3	3	3			
Conductivity	umhos/cm				759	759	759			
Hardness	mg/L				120	120	120			
Nitrate-Nitrite	mg/L				0.03	0.03	0.03			
Oil and Grease	mg/L				<MDL	<MDL	<MDL			
pH	su				8.8	8.8	8.8			
Phosphate	mg/L				<MDL	<MDL	<MDL			
ResidueFilterable-TDS	mg/L				490	490	490			
ResidueNonFilterable-TSS	mg/L				19	19	19			
SAR					5.99	5.99	5.99			
Sulfate	mg/L				67	67	67			
Aluminum	mg/L				0.61	0.61	0.61			
Arsenic	mg/L				<MDL	<MDL	<MDL			
Cadmium	mg/L				<MDL	<MDL	<MDL			
Calcium	mg/L				27.6	27.6	27.6			
Copper	mg/L				<MDL	<MDL	<MDL			
Iron (Total)	mg/L				0.51	0.51	0.51			
Lead	mg/L				0.0004	0.0004	0.0004			
Magnesium	mg/L				12.4	12.4	12.4			
Manganese (Total)	mg/L				<MDL	<MDL	<MDL			
Mercury	mg/L				<MDL	<MDL	<MDL			
Molyebdenum	mg/L				<MDL	<MDL	<MDL			
Selenium	mg/L				0.0016	0.0016	0.0016			
Sodium	mg/L				149	149	149			
Zinc	mg/L				<MDL	<MDL	<MDL			

The area of concern for monitoring point S34-25 was affected by the mining operation before its establishment. Therefore, all recorded monitoring events are considered operational.

The monitoring point for S34-25 is found on drill site GVB-8A-A, 8A & 9D in the Dove Gulch drainage.

There is no baseline collection possible for points initiated after the influence of mining.

Plot of Flow and Conductivity



S34-25 - Dove Gulch Spring and Pond 34-25

Figure 59

D2-1
Sheep Corral - Drainage System
Elevation - 6360

Initiated	11/6/1998	11/6/1998	11/6/1998
Activated	11/1/2003	11/1/2003	11/1/2003
Date	12/1/2020	9/14/2020	5/13/2020

		Summary Information								
Field		Baseline			Operation					
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max			
Flow	GPM	0.00	0.32	4.55	0.00	0.40	13.60	0	0	0
FieldComment								Dry	Dry	Dry
ph	su	7.1	7.8	8.4	7.4	8.1	8.6			
Conductivity	umhos/cm	940	1210	1640	1140	1499	2000			
Temperature	Celsius	4.1	11.1	19.4	5.0	16.8	25.4			
Lab										
Parameters	UNITS									
Bicarbonate	mg/L	540	540	540	398.95	593.87	772.59			
Chloride	mg/L	11	11	11	<MDL	15.41	20.81			
Conductivity	umhos/cm	1230	1230	1230	1173.0	1508.7	1847.3			
Hardness	mg/L	291	291	291	228.45	325.43	372.55			
Nitrate-Nitrite	mg/L	<MDL	<MDL	<MDL	<MDL	1.866	2.730			
Oil and Grease	mg/L	<MDL	<MDL	<MDL	<MDL	2.060	4.050			
pH	su	8.2	8.2	8.2	7.8	8.4	8.9			
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
ResidueFilterable-TDS	mg/L	790	790	790	824	1060	1321			
ResidueNonFilterable-TSS	mg/L	<MDL	<MDL	<MDL	1.0	64.9	296.0			
SAR		5.3	5.3	5.3	1.34	5.08	11.30			
Sulfate	mg/L	190	190	190	230.00	275.24	380.32			
Aluminum	mg/L	0.39	0.39	0.39	0.057	0.377	1.23			
Arsenic	mg/L	<MDL	<MDL	<MDL	0.0017	0.054	0.142			
Cadmium	mg/L	<MDL	<MDL	<MDL	<MDL	0.006	0.015			
Calcium	mg/L	49.8	49.8	49.8	36.9	55.3	66.6			
Copper	mg/L	<MDL	<MDL	<MDL	<MDL	0.284	0.552			
Iron (Total)	mg/L	0.3	0.3	0.3	0.10	0.49	1.22			
Lead	mg/L	<MDL	<MDL	<MDL	<MDL	0.03	0.05			
Magnesium	mg/L	40.6	40.6	40.6	33.1	45.5	57.3			
Manganese (Total)	mg/L	0.01	0.01	0.01	<MDL	0.053	0.084			
Mercury	mg/L	<MDL	<MDL	<MDL	<MDL	0.0001	0.0002			
Molyebdenum	mg/L	<MDL	<MDL	<MDL	<MDL	0.003	0.003			
Selenium	mg/L	<MDL	<MDL	<MDL	0.0002	0.0492	0.1680			
Sodium	mg/L	205	205	205	54.8	200.8	393.8			
Zinc	mg/L	<MDL	<MDL	<MDL	<MDL	0.032	0.090			

The D2-1 Monitoring point is at the lower extreme of Sheep Corral Gulch. It is located just below the Hubbard Creek Road, just north of the Blue Ribbon Mine.

Baseline Information for Point D2-1 is derived from events beginning on 10/31/97 through 4/1/02.
Point influenced by mining on 4/1/02.

D21-1
Terror Creek - Confluence w/NFG
Elevation - 5760

Initiated	3/23/2010	3/23/2010	3/23/2010
Activated			
Date	12/1/2020	9/14/2020	5/13/2020

Field Parameters	UNITS	Summary Information Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	CFS	0.02	4.77	46.00				0.55	9.57	4.43
FieldComment										
ph	su	7.1	8.4	9.0				8.02	8.63	7.08
Conductivity	umhos/cm	79	323	820				344	268	115.9
Temperature	Celsius	0.4	10.2	20.6				3.8	11.7	6.9
Lab Parameters	**UNITS**									
Bicarbonate	mg/L	39.70	131.80	292.00						50.2
Chloride	mg/L	0.6	41.9	188.5						50.2
Conductivity	umhos/cm	65	312	744						102
Hardness	mg/L	31.50	142.32	297.20						46
Nitrate-Nitrite	mg/L	<MDL	0.212	0.570						<MDL
Oil and Grease	mg/L	<MDL	<MDL	<MDL						
pH	su	6.77	7.91	8.53						8.1
Phosphate	mg/L	<MDL	0.062	0.280						0.09
ResidueFilterable-TDS	mg/L	1	234	494						100
ResidueNonFilterable-TSS	mg/L	<MDL	41	302						1
SAR		0.25	0.73	1.70						0.34
Sulfate	mg/L	1.23	27.54	72.03						1.5
Aluminum (TREC)	mg/L	0.008	0.637	1.750						1.62
Arsenic (TREC)	mg/L	0.000	0.016	0.060						0.0004
Cadmium (TREC)	mg/L	0.002	0.006	0.020						<MDL
Calcium (TREC)	mg/L	6.05	29.31	67.30						11.7
Copper (TREC)	mg/L	0.002	0.007	0.017						<MDL
Iron (TREC)	mg/L	0.06	0.99	11.70						11.7
Lead (TREC)	mg/L	0.00	0.01	0.05						0.0003
Magnesium (TREC)	mg/L	2.96	15.93	44.40						4.1
Manganese (TREC)	mg/L	<MDL	1.053	23.700						0.02
Mercury (TREC)	mg/L	0.00001	0.00006	0.00012						<MDL
Molyebdenum (TREC)	mg/L	0.000	0.003	0.008						<MDL
Selenium (TREC)	mg/L	<MDL	0.00922	0.03600						0.0001
Sodium (TREC)	mg/L	3.45	20.02	67.50						5.2
Zinc (TREC)	mg/L	0.003	0.025	0.110						<MDL

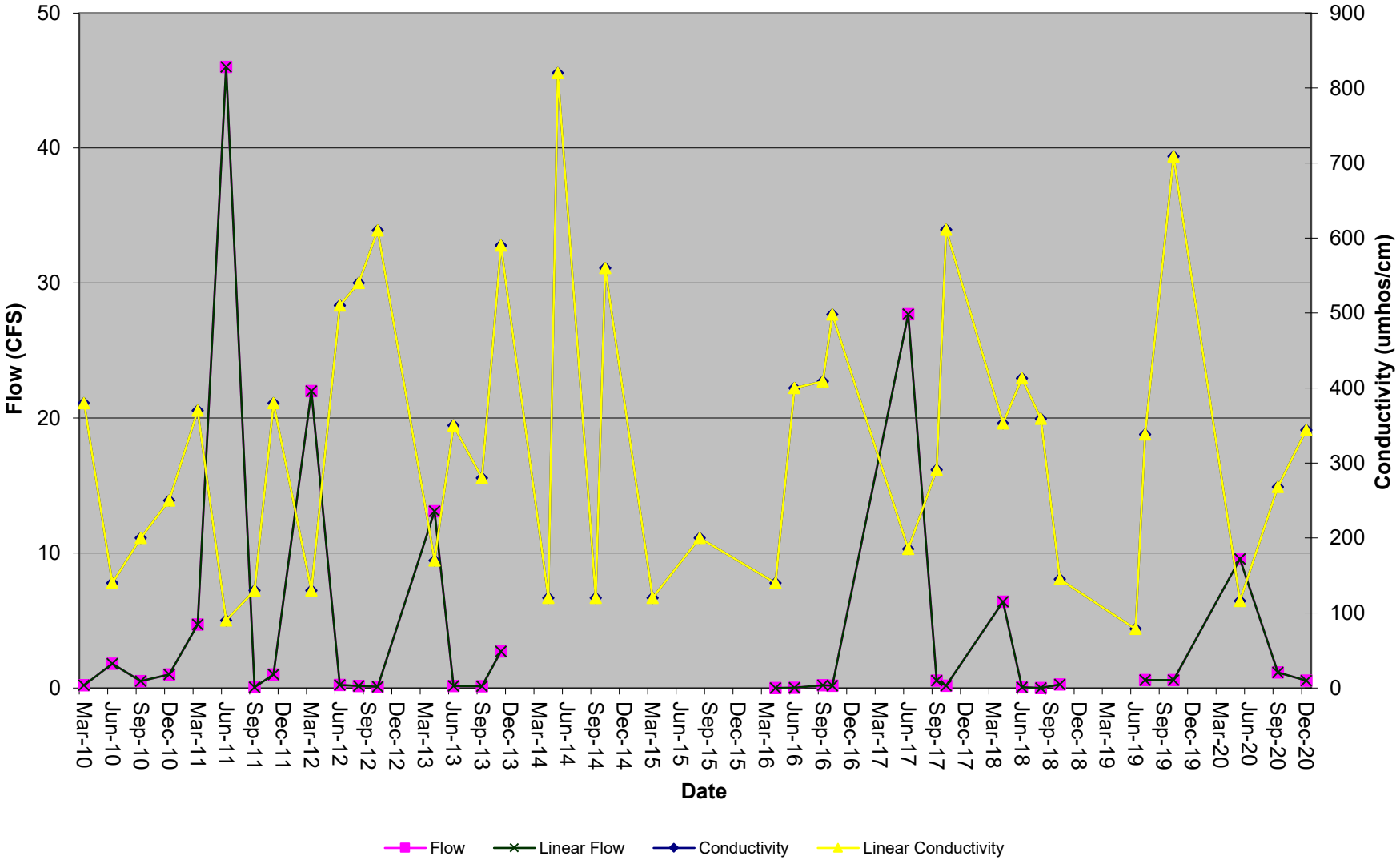
The area of concern for monitoring point D21-1 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

The D21-1 Monitoring point is at downstream Terror Creek-Confluence w/NFG.

** Stream flow too low for measurement*
*** Strem flow too high for measurement*

Baseline Information Collection initiated 3/23/10 and not yet considered complete.
Point D21-1 has not been influence by mining.

Plot of Flow and Conductivity



D21-1 - Terror Creek Drainage System

Figure 62

D32-4
Terror Creek - Drainage System
Elevation - 7480

Initiated	3/23/2010	3/23/2010	3/23/2010
Activated			
Date	12/1/2020	9/14/2020	5/13/2020

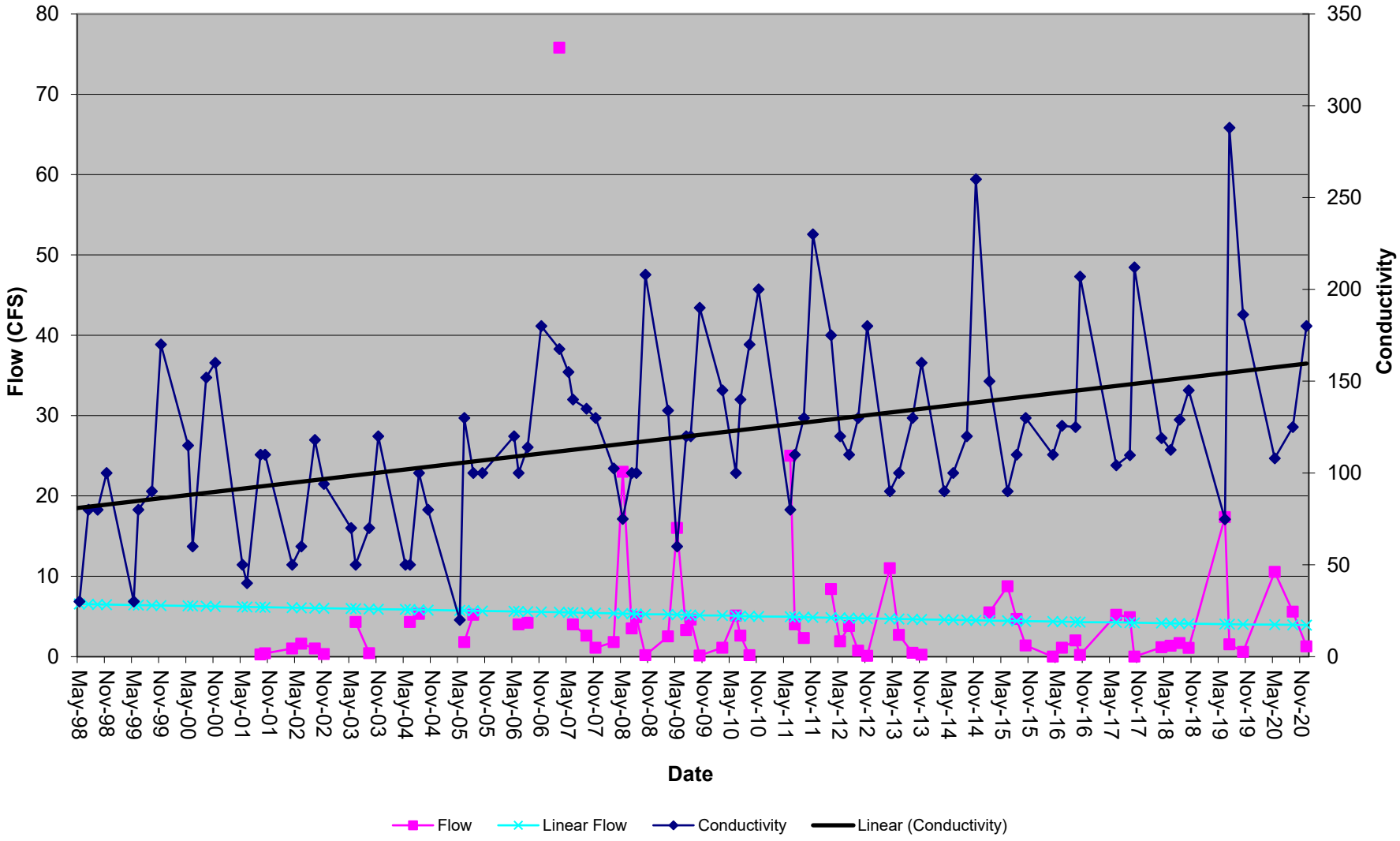
Field Parameters	UNITS	Summary Information Baseline Min	Ave	Max	Operation Min	Ave	Max			
Flow	CFS	0.04	5.18	75.80				1.27	5.58	10.53
FieldComment										
ph	su	6.9	8.0	8.8				8.0	8.3	7.3
Conductivity	umhos/cm	20	118	288				180.1	124.6	107.6
Temperature	Celsius	0.1	9.8	19.0				1.1	11.4	8.7
Lab Parameters	**UNITS**									
Bicarbonate	mg/L	1.7	62.2	144.6						50.2
Chloride	mg/L	<MDL	4.8	76.9						1.2
Conductivity	umhos/cm	60.8	130.9	429.0						95
Hardness	mg/L	22.3	57.3	192.3						45.0
Nitrate-Nitrite	mg/L	<MDL	0.7	8.1						<MDL
Oil & Grease	mg/L	<MDL	2.4	6.4						
pH	su	6.6	7.5	8.3						8.1
Phosphate	mg/L	<MDL	0.15	1.37						0.0600
ResidueFilterable-TDS	mg/L	37	117	342						86
ResidueNonFilterable-TSS	mg/L	<MDL	30	450						17.0000
SAR		<MDL	0.80	28.16						0.2500
Sulfate	mg/L	<MDL	8.3	54.8						<MDL
Aluminum (TREC)	mg/L	<MDL	1.29	11.17						1.03
Arsenic (TREC)	mg/L	<MDL	0.0102	0.1680						0.0003
Cadmium (TREC)	mg/L	<MDL	0.0724	2.0700						<MDL
Calcium (TREC)	mg/L	<MDL	13.9	65.4						11
Copper (TREC)	mg/L	<MDL	0.005	0.050						<MDL
Iron (Dissolved)	mg/L	<MDL	6.43	165.00						<MDL
Iron (TREC)	mg/L	0.020	0.945	5.420						0.8
Lead (TREC)	mg/L	<MDL	0.0084	0.0500						0.0003
Magnesium (TREC)	mg/L	<MDL	5.35	11.10						4.3
Manganese (TREC)	mg/L	<MDL	0.043	0.277						0.04
Mercury (TREC)	mg/L	<MDL	0.00007	0.00027						<MDL
Molyebdenum (TREC)	mg/L	<MDL	0.037	0.900						<MDL
Selenium (TREC)	mg/L	<MDL	0.005	0.024						0.0002
Sodium (TREC)	mg/L	2.3	5.3	20.3						3.8
Zinc (TREC)	mg/L	<MDL	0.023	0.160						<MDL

The area of concern for monitoring point D32-4 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

The D32-4 Monitoring Point is on upper Terror Creek. It is located at the Cottonwood Stomp ford. This point is used to obtain conductivity, pH and temperature readings. The irregular stream channel found at this location does not provide an adequate method of determining flow values. Flow values are taken by Resource Engineering.

Baseline Information Collection initiated on 10/31/97 and not yet considered complete.
Point D32-4 has not been influenced by mining.

Plot of Flow and Conductivity



D32-4 Terror Creek Drainage System

Figure 64

D33-14
Upper Sheep Corral Gulch
Elevation - 7320

Initiated	11/6/1998	11/6/1998	11/6/1998
Activated	11/1/2003	11/1/2003	11/1/2003
Date	12/2/2020	9/2/2020	6/18/2020

		Summary Information								
Field		Baseline			Operation					
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max			
Flow	GPM	0.00	0.00	0.00	0.00	2.16	98.86	2.2	11.74	98.86
FieldComment										
ph	su				6.5	7.8	8.5	8.3	7.93	7.77
Conductivity	umhos/cm				330	655	800	800	701	710
Temperature	Celsius				2.0	8.3	26.5	2	10.5	8.1
Lab										
Parameters	UNITS									
Bicarbonate	mg/L				124.0	270.3	392.0			318
Chloride	mg/L				1.2	1.7	2.0			1.7
Conductivity	umhos/cm				192.0	472.6	670.0			670
Hardness	mg/L				63	90	118			63
Nitrate-Nitrite	mg/L				<MDL	0.74	2.13			0.03
Oil and Grease	mg/L				<MDL	0.82	0.82			
pH	su				6.82	7.87	8.50			8.5
Phosphate	mg/L				<MDL	0.02	0.02			<MDL
ResidueFilterable-TDS	mg/L				126	283	402			402
ResidueNonFilterable-TSS	mg/L				<MDL	3	3			<MDL
SAR					0.71	4.28	7.70			7.7
Sulfate	mg/L				6.50	30.51	42.50			38.7
Aluminum	mg/L				<MDL	<MDL	<MDL			<MDL
Arsenic	mg/L				0.009	0.009	0.009			<MDL
Cadmium	mg/L				<MDL	<MDL	<MDL			<MDL
Calcium	mg/L				20.1	25.9	32.7			20.1
Copper	mg/L				<MDL	<MDL	<MDL			<MDL
Iron (Total)	mg/L				0.02	0.05	0.08			<MDL
Lead	mg/L				<MDL	<MDL	<MDL			<MDL
Magnesium	mg/L				3.00	5.21	8.78			3
Manganese (Total)	mg/L				0.01	0.01	0.02			<MDL
Mercury	mg/L				<MDL	<MDL	<MDL			<MDL
Molyebdenum	mg/L				<MDL	<MDL	<MDL			<MDL
Selenium	mg/L				0.000	0.029	0.051			0.0001
Sodium	mg/L				12.1	84.8	138.0			138
Zinc	mg/L				<MDL	<MDL	<MDL			<MDL

Note: Site not accesible during 1Q 2018
Not enough water for sample during 2Q 2018

The location for monitoring point D33-14 can be found just to the south of an old coal exploration road winding through Sheep Corral Gulch. It is just above Spring and Pond SP34-11.

Baseline Information for Point D33-14 is derived from events beginning on 11/6/98 through 11/1/03.
Point influenced by mining on 11/1/03.

D34-13
Dove Gulch - Drainage System
Elevation - 6440

Initiated								10/31/1997	10/31/1997	10/31/1997	10/31/1997
Activated											
Date								12/2/2020	9/7/2020	6/3/2020	3/31/2020
		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Flow	GPM	0.00	0.00	0.00				0	0	0	0
FieldComment								Dry	Dry	Dry	Dry
ph	su										
Conductivity	umhos/cm										
Temperature	Celsius										
Lab											
Parameters	UNITS										
Bicarbonate	mg/L										
Chloride	mg/L										
Conductivity	umhos/cm										
Hardness	mg/L										
Nitrate-Nitrite	mg/L										
Oil and Grease	mg/L										
pH	su										
Phosphate	mg/L										
ResidueFilterable-TDS	mg/L										
ResidueNonFilterable-TSS	mg/L										
SAR											
Sulfate	mg/L										
Aluminum	mg/L										
Arsenic	mg/L										
Cadmium	mg/L										
Calcium	mg/L										
Copper	mg/L										
Iron (Total)	mg/L										
Lead	mg/L										
Magnesium	mg/L										
Manganese (Total)	mg/L										
Mercury	mg/L										
Molyebdenum	mg/L										
Selenium	mg/L										
Sodium	mg/L										
Zinc	mg/L										

The area of concern for monitoring point D34-13 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

The location for D34-13 is at the lower extreme of Dove Gulch, along the western edge of Hubbard Creek Trail.

Baseline Information Collection initiated on 10/31/97 and not yet considered complete.
Point D34-13 has not been influenced by mining.

D34-14
Hubbard Creek - Drainage System
Elevation - 6560

Initiated	9/30/1996	9/30/1996	9/30/1996
Activated	4/1/2002	4/1/2002	4/1/2002
Date	12/1/2020	9/14/2020	5/13/2020

		Summary Information								
Field		Baseline			Operation					
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max			
Flow	CFS	0.49	23.73	220.00						
FieldComment										
ph	su	6.8	8.1	8.9				8.1	8.7	7.5
Conductivity	umhos/cm	50	201	347				322	230	99
Temperature	Celsius	0.2	9.4	20.9				1.5	10.6	5.5
Lab Parameters	UNITS									
Bicarbonate	mg/L	36.1	100.6	187.0						42.4
Chloride	mg/L	<MDL	4.80	84.89						1.4
Conductivity	umhos/cm	82.1	199.7	439.0						87
Hardness	mg/L	<MDL	84.50	150.00						43
Nitrate-Nitrite	mg/L	<MDL	1.711	41.530						<MDL
Oil & Grease	mg/L	<MDL	0.973	2.330						
Phosphate	mg/L	<MDL	0.65	8.33						0.06
ResidueFilterable-TDS	mg/L	33	144	353						104
ResidueNonFilterable-TSS	mg/L	<MDL	20.7	166.0						91
SAR		<MDL	1.13	20.50						0.24
Sulfate	mg/L	<MDL	30.96	1234.8						<MDL
Aluminum (TREC)	mg/L	<MDL	0.680	9.690						2.18
Arsenic (TREC)	mg/L	<MDL	0.0075	0.1290						0.0006
Cadmium (TREC)	mg/L	<MDL	0.3268	11.3000						<MDL
Calcium (TREC)	mg/L	4.57	23.76	43.60						12.2
Copper (TREC)	mg/L	<MDL	0.009	0.200						<MDL
Iron (Dissolved)	mg/L	<MDL	<MDL	<MDL						0.12
Iron (TREC)	mg/L	0.010	0.545	13.600						2
Lead (TREC)	mg/L	<MDL	0.085	2.800						0.0008
Magnesium (TREC)	mg/L	0.42	6.54	16.30						3.1
Manganese (TREC)	mg/L	<MDL	0.105	3.900						0.060
Mercury (TREC)	mg/L	<MDL	0.00009	0.00079						<MDL
Molyebdenum (TREC)	mg/L	<MDL	0.042	1.130						<MDL
Selenium (TREC)	mg/L	<MDL	0.0823	3.2700						0.0002
Sodium (TREC)	mg/L	3.16	12.61	42.00						3.6
Zinc (TREC)	mg/L	<MDL	0.016	0.116						<MDL

The area of concern for monitoring point D34-14 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

The location for the D34-14 monitoring point is on Hubbard creek just below the igneous intrusion noted as Iron Point. The location can be found where a sapling has been painted white. The point where field parameters were taken did not provide an adequate method to determine flow values. Flow values are taken by Resource Engineering.

Baseline Information Collection initiated on 10/31/97 and not yet considered complete.
Point D34-14 has not been influenced by mining.

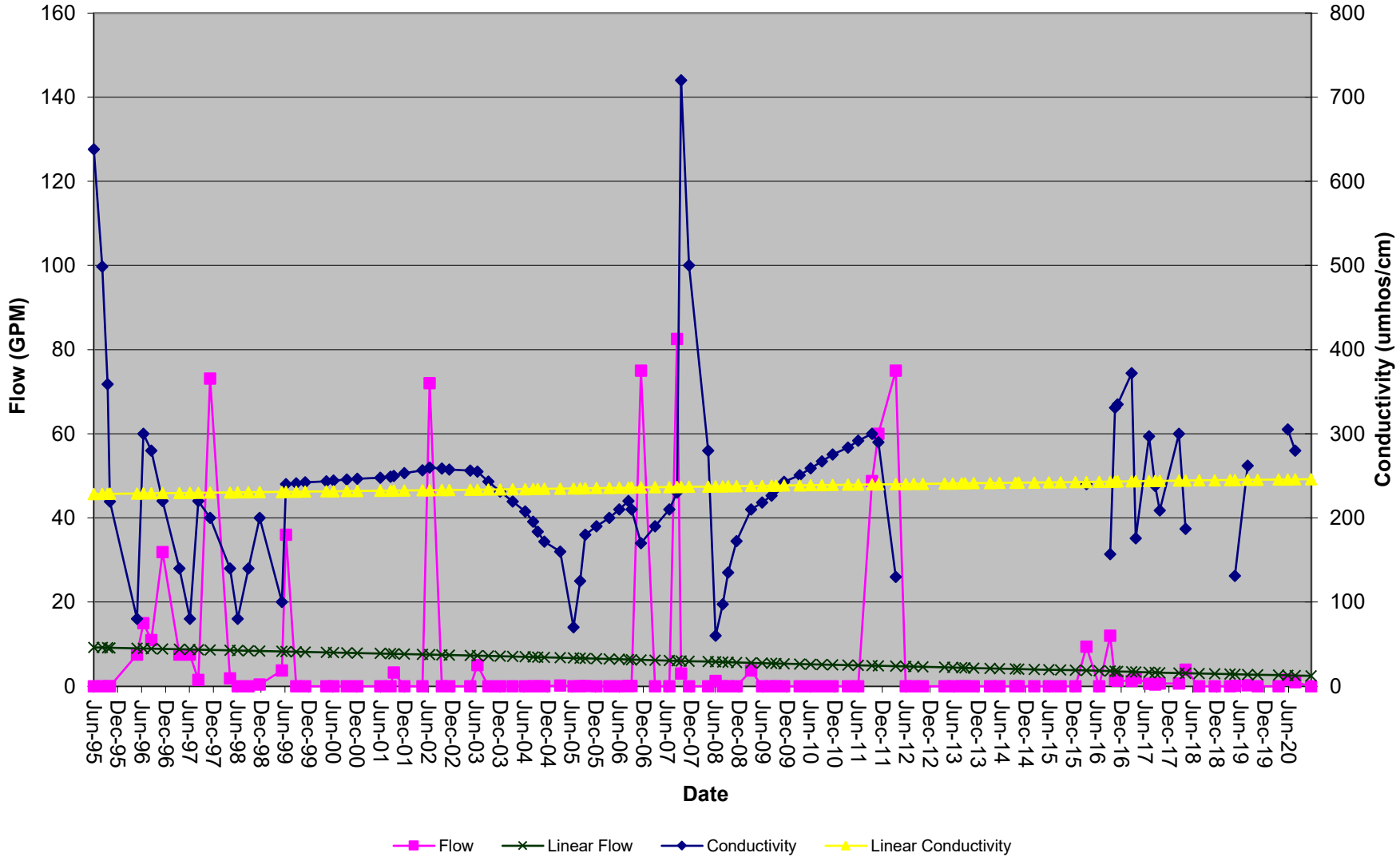
Deer-low
Canal - Deer Trail Ditch
Elevation - 5920

Initiated								6/14/1995	6/14/1995	6/14/1995	6/14/1995
Activated								3/30/1997	3/30/1997	3/30/1997	3/30/1997
Date								12/4/2020	8/4/2020	6/10/2020	3/31/2020
		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Flow	GPM	0	8	32	0	6	83		0.98	1.57	
Water Level in Flume	Feet				0.00	0.14	0.40		0.2	0.35	
FieldComment								Dry			No flow
ph	su	6.8	8.3	9.0	7.1	8.4	9.2		8.3	8.5	
Conductivity	umhos/cm	80	276	638	60	226	720		280	305	
Temperature	Celsius	4.9	13.1	21.2	3.1	11.4	21.5		19.0	14.4	
DO	mg/L	0.0	3.7	10.7	0.0	6.6	12.1				
Lab Parameters	UNITS										
Bicarbonate	mg/L	41	70	118	39	95	131			131	
Chloride	mg/L	<MDL	1	2	<MDL	1.8	4.0		1.9	2.1	
Chromium III CrIII	mg/L				<MDL	<MDL	<MDL			<MDL	
Chromium VI CrIV	mg/L				<MDL	<MDL	<MDL		<MDL		
Cyanide, Total	mg/L				<MDL	<MDL	<MDL		<MDL		
Conductivity	umhos/cm	97	148	238	98	196	308			284	
Hardness	mg/L	48	67	96	33	84	119			105	
Nitrate-Nitrite	mg/L	<MDL	0.07	0.17	<MDL	0.01	0.04		<MDL	<MDL	
Nitrate	mg/L	<MDL	0.08	0.17	<MDL	0.47	2.69		<MDL		
Nitrite	mg/L	<MDL	0.01	0.02	<MDL	0.00	0.01		<MDL		
Dissolved Oxygen		0	0	0	<MDL	7.93	7.95				
Ammonia	mg/L				0.10	0.18	0.25		<MDL		
Oil and Grease	mg/L	<MDL	<MDL	<MDL	<MDL	2	2				
pH	su	7.5	7.8	8.0	7.7	8.1	8.6		8.4	8.5	
Phosphate	mg/L	<MDL	0.03	0.08	<MDL	0.03	0.08			<MDL	
ResidueFilterable-TDS	mg/L	30	93	150	70	167	302		156	186	
ResidueNonFilterable-TSS	mg/L	6	101	286	<MDL	15	41			6	
SAR		0.21	0.38	0.68	<MDL	0.86	6.50				
Sulfate	mg/L	<MDL	7	10	<MDL	11	20		12.6	18.9	
Sulfide S	mg/L				<MDL	<MDL	<MDL		<MDL		
Aluminum (TREC)	mg/L	0.25	3.03	7.68	0.14	0.59	1.58			0.37	
Arsenic (TREC)	mg/L	<MDL	0.001	0.002	<MDL	0.0021	0.0150		0.0008	0.0004	
Boron	mg/L				0.78	0.78	0.78		<MDL		
Cadmium (TREC)	mg/L	<MDL	0.001	0.003	<MDL	0.01	0.05		<MDL	<MDL	
Calcium (TREC)	mg/L	13.4	18.8	26.9	9.1	23.2	33.8		<MDL	30.2	
Copper (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.004	0.017		<MDL	<MDL	
Iron (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.06	0.15		<MDL	<MDL	
Iron (TREC)	mg/L	0.45	3.83	9.79	0.10	0.76	5.29		0.38	0.34	
Lead (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.0062	0.0400		0.0004	0.0003	
Magnesium (TREC)	mg/L	3.4	4.9	6.9	2.5	6.2	8.6		6.2	7.1	
Manganese (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	1.6	6.2		<MDL	<MDL	
Manganese (TREC)	mg/L	0.012	0.075	0.193	0.001	0.041	0.166		<MDL	<MDL	
Mercury (TREC)	mg/L	<MDL	0.00007	0.0002	<MDL	0.00005	0.0002		<MDL	<MDL	
Molyebdenum (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.0003	0.0010			<MDL	
Nickel	mg/L				<MDL	<MDL	<MDL		<MDL		
Selenium (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.002	0.010		0.0001	0.0001	
Silver	mg/L				<MDL	<MDL	<MDL		<MDL		
Sodium (TREC)	mg/L	3.7	7.6	15.3	3.9	11.7	31.5			23.0	
Zinc (TREC)	mg/L	0.03	0.03	0.04	<MDL	0.02	0.05		<MDL	<MDL	

The lower end of Deer Trail Ditch is monitored at a point where the ditch empties into the Fire Mountain Canal.

Baseline Information for Point Deer-low is derived from events beginning on 6/14/95 through 3/30/97.
Point influenced by mining on 3/30/97.

Plot of Flow and Conductivity



Deer-low - Canal - Deer Trail Ditch

Figure 69

Deer-up
Canal - Deer Trail Ditch
Elevation - 5960

Initiated	6/14/1995	6/14/1995	6/14/1995	6/14/1995
Activated	3/30/1997	3/30/1997	3/30/1997	3/30/1997
Date	12/4/2020	8/4/2020	5/20/2020	3/31/2020

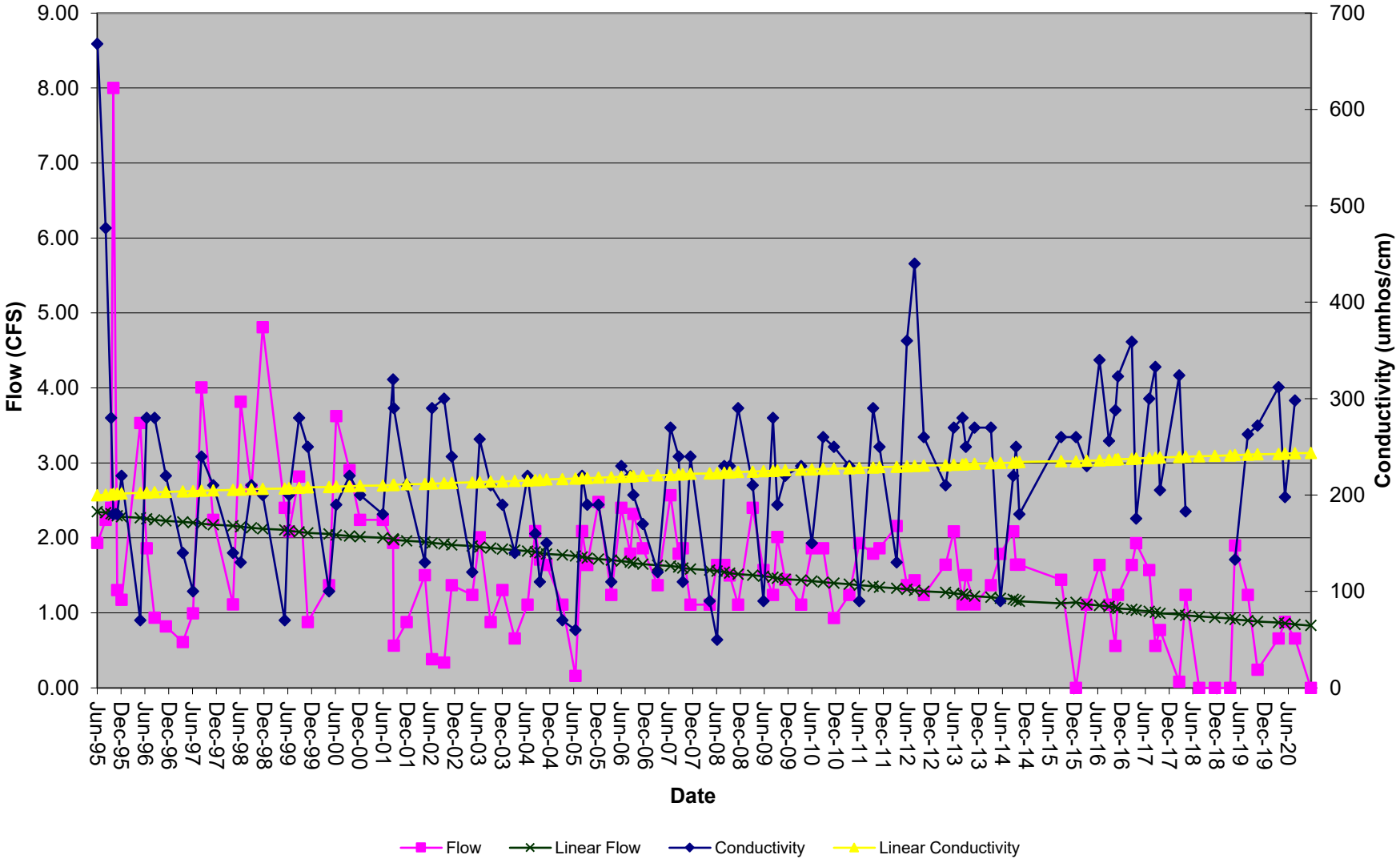
		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Flow	CFS	0.8	1.8	3.5	0.1	1.6	4.8		0.66	0.88	0.66
Water Level in Flume	Feet	0.23	0.37	0.59	0.05	0.34	0.72		0.2	0.24	0.2
FieldComment								Dry			
ph	su	6.4	8.5	9.1	7.4	8.4	9.1		7.9	7.6	8.2
Conductivity	umhos/cm	70	286	668	50	213	440		298	108	312
Temperature	Celsius	0.8	11.4	20.3	0.2	9.6	22.1		16.5	9.3	8.9
DO	mg/L	0.0	3.5	7.7	0.0	9.7	69.9		0.13	69.9	
Lab											
Parameters	UNITS										
Bicarbonate	mg/L	51.0	73.0	117.0	-42.5	103.6	176.0			47.1	
Hydroxide	mg/L	0	0	0	0	0	0				
Chloride	mg/L	<MDL	1.67	3.00	<MDL	19.99	190.50	1.8		1.1	
Chromium III CrIII	mg/L				<MDL	<MDL	<MDL				
Chromium VI CrIV	mg/L				<MDL	0.01	0.01	<MDL			
Cyanide, Total	mg/L				<MDL	<MDL	<MDL	<MDL			
Conductivity	umhos/cm	100	148	235	85	248	573			100	
Hardness	mg/L	42	61	94	<MDL	96	168			45	
Nitrate-Nitrite	mg/L	<MDL	0.02	0.07	<MDL	0.20	1.25	<MDL		<MDL	
Nitrate	mg/L	<MDL	0.02	0.07	<MDL	0.33	2.87	<MDL		<MDL	
Nitrite	mg/L	<MDL	0.01	0.02	<MDL	0.003	0.016	<MDL		<MDL	
Dissolved Oxygen	mg/L	0	0.00	0.00	<MDL	9.375	10.850				
Ammonia	mg/L				<MDL	0.149	0.290	<MDL			
Oil and Grease	mg/L				<MDL	4.3	5.5				
pH	su	7.6	7.8	8.1	0.1	7.9	8.7	8.4		0.1	
Phosphate	mg/L	<MDL	0.01	0.03	<MDL	7.07	141.00			0.09	
ResidueFilterable-TDS	mg/L	50	100	150	60	185	475	164		90	
ResidueNonFilterable-TSS	mg/L	<MDL	25	52	<MDL	12	40			11	
SAR		0.24	0.37	0.62	<MDL	0.73	2.29			0.30	
Sulfate	mg/L	<MDL	10	20	<MDL	12.4	37.5	11.8			
Sulfide S	mg/L				<MDL	0.13	0.13	<MDL			
Aluminum (TREC)	mg/L	0.24	1.09	1.77	<MDL	0.37	2.03			0.92	
Arsenic (TREC)	mg/L	<MDL	0.0003	0.0010	<MDL	0.0051	0.0300	0.0006		0.0005	
Boron	mg/L				<MDL	0.82	1.40	<MDL			
Cadmium (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.006	0.040	<MDL		<MDL	
Calcium (TREC)	mg/L	11.8	17.2	26.5	8.29	28.62	134.00	27.4		12.9	
Copper (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.004	0.019	<MDL		<MDL	
Iron (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.07	0.25	<MDL		0.14	
Iron (TREC)	mg/L	0.38	1.19	1.85	0.03	11.23	618.00	0.10		0.81	
Lead (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.0102	0.1000	<MDL		0.0004	
Magnesium (TREC)	mg/L	3.0	4.4	6.7	2.5	7.7	17.6	6.3		3.0	
Manganese (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.8	6.7	<MDL		<MDL	
Manganese (TREC)	mg/L	0.02	0.03	0.03	0.002	0.910	26.700	<MDL		0.02	
Mercury (TREC)	mg/L	<MDL	0.0001	0.0002	<MDL	0.00007	0.0004	<MDL		<MDL	
Molyebdenum (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.003	0.011			<MDL	
Nickel	mg/L				<MDL	0.0088	0.0120	<MDL			
Selenium (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.0037	0.0230	0.0001		0.0002	
Silver	mg/L				<MDL	0.0030	0.0030				
Sodium (TREC)	mg/L	3.6	7.1	13.8	3.8	18.7	66.5	<MDL		4.6	
Zinc (TREC)	mg/L	0.01	0.02	0.03	<MDL	0.01	0.04	<MDL		<MDL	

The upper end of Deer Trail Ditch is monitored at the headgate located on Hubbard Creek. This monitoring point is fitted with a 2' Parshall Flume.

Negative Acidity value indicates equivalent value of alkalinity

Baseline Information for Point Deer-up is derived from events beginning on 6/14/95 through 3/30/97.
Point influenced by mining on 3/30/97.

Plot of Flow and Conductivity



Deer-up - Canal - Deer Trail Ditch

Figure 71

FMC-low
Canal - Fire Mountain Canal
Elevation - 5920'

No water in canal
in September

Initiated	5/19/1999	5/19/1999
Activated	5/19/1999	5/19/1999
Date	8/4/2020	5/13/2020

Field Parameters	UNITS	Summary Information Baseline Min	Ave	Max	Operation Min	Ave	Max		
Flow	CFS				44	161	182	165	167
FieldComment									
ph	su				6.8	8.2	8.9	8.3	8.3
Conductivity	umhos/cm				40	145	280	206	123
Temperature	Celsius				5.4	12.2	22.1	16.1	7.6
DO	mg/L				0.0	9.1	81.6	7.4	81.6
Lab Parameters	UNITS								
Bicarbonate	mg/L				25	79.7	133.8	97.20	51.00
Chloride	mg/L				<MDL	8.6	51.0	3.4	51
Conductivity	umhos/cm				71	170	346	188	110
Hardness	mg/L				27.58	80.11	521.00	87	49
Nitrate-Nitrite	mg/L				<MDL	0.38	2.70	<MDL	<MDL
Oil and Grease	mg/L				<MDL	46.51	68.00		
pH	su				6.4	7.7	8.4	8.3	8.1
Phosphate	mg/L				<MDL	0.06	0.24	0.03	0.06
ResidueFilterable-TDS	mg/L				40	120	300	124	74
ResidueNonFilterable-TSS	mg/L				<MDL	68	474	19	25
SAR					<MDL	0.52	1.55	0.39	0.3
Sulfate	mg/L				<MDL	12.48	51.86	5.5	5.3
Aluminum (TREC)	mg/L				<MDL	1.34	12.70	1.52	1.43
Arsenic (TREC)	mg/L				<MDL	0.0053	0.1000	0.0007	0.0006
Cadmium (TREC)	mg/L				<MDL	0.0068	0.1000	<MDL	<MDL
Calcium (TREC)	mg/L				7.45	20.1	37.1	27.3	15.5
Copper (TREC)	mg/L				<MDL	0.015	0.149	<MDL	<MDL
Iron (TREC)	mg/L				0.02	1.46	12.30	1.24	1.16
Lead (TREC)	mg/L				<MDL	0.0071	0.0500	0.0007	0.0007
Magnesium (TREC)	mg/L				1.87	4.51	15.20	4.5	2.6
Manganese (TREC)	mg/L				0.007	0.043	0.222	0.02	0.02
Mercury (TREC)	mg/L				<MDL	0.000186	0.003000	<MDL	<MDL
Molybdenum (TREC)	mg/L				<MDL	0.004	0.02	<MDL	<MDL
Selenium (TREC)	mg/L				<MDL	0.0023	0.0120	0.0002	0.0002
Sodium (TREC)	mg/L				3.2	11.5	41.4	8.2	4.8
Zinc (TREC)	mg/L				<MDL	0.038	0.630	<MDL	<MDL

The area of concern for monitoring point FMC-low was affected by the mining operation before its establishment. Therefore, all recorded monitoring events are considered operational.

The lower monitoring point for the Fire Mountain Canal is located at a point just south of its crossing under old State Hwy 133. Flow data is received from Fire Mountain Canal records (Trey Dennison 970-527-5166 or cell 970-589-2857).

** Flow at full capacity near Somerset from their website. Did not receive a call back with actual values.*
*** Average flow values from last five years*

Note: The Fire Mountain Canal was dry before field parameters could be obtained 3Q (2017)

There is no baseline collection possible for points initiated after the influence of mining.

FMC-up
Canal - Fire Mountain Canal
Elevation - 5960'

No water in canal
in September

Initiated	5/19/1999	5/19/1999
Activated	5/19/1999	5/19/1999
Date	8/4/2020	5/13/2020

Field Parameters	UNITS	Summary Information Baseline Min	Ave	Max	Operation Min	Ave	Max		
Flow	CFS				13	157	182	166	167
FieldComment									
ph	su				7.0	8.2	8.9	7.7	7.3
Conductivity	umhos/cm				40	142	290	209	123
Temperature	Celsius				4.9	12.1	22.2	15.8	7.7
DO	mg/L				0.0	9.1	82.3	8.8	82.3
Lab Parameters	UNITS								
Bicarbonate	mg/L				2.00	76.70	147.00	96.8	51.2
Chloride	mg/L				<MDL	11.1	103	2.5	1.8
Conductivity	umhos/cm				64	174	402	189	108
Hardness	mg/L				27.78	71.06	172.49	86	50
Nitrate-Nitrite	mg/L				<MDL	0.30	2.15	<MDL	<MDL
Oil and Grease	mg/L				<MDL	<MDL	<MDL		
pH	su				6.6	7.8	8.6	8.3	8.1
Phosphate	mg/L				<MDL	0.05	0.24	0.06	0.03
ResidueFilterable-TDS	mg/L				40	118	269	122	78
ResidueNonFilterable-TSS	mg/L				<MDL	67	472	20	23
SAR					<MDL	0.49	1.77	0.39	0.30
Sulfate	mg/L				<MDL	11.66	51.86	5.6	5.8
Aluminum (TREC)	mg/L				<MDL	1.36	14.00	1.61	1.36
Arsenic (TREC)	mg/L				<MDL	0.0048	0.0450	0.0006	0.0005
Cadmium (TREC)	mg/L				<MDL	0.0022	0.0100	<MDL	<MDL
Calcium (TREC)	mg/L				2.3	20.3	45.0	26.8	15.8
Copper (TREC)	mg/L				<MDL	0.0150	0.1440	<MDL	<MDL
Iron (TREC)	mg/L				0.03	1.46	13.30	1.33	1.08
Lead (TREC)	mg/L				<MDL	0.0057	0.0300	0.0007	0.0007
Magnesium (TREC)	mg/L				1.8	4.5	14.6	4.5	2.6
Manganese (TREC)	mg/L				0.007	0.046	0.250	0.03	0.02
Mercury (TREC)	mg/L				<MDL	0.00004	0.00018	<MDL	<MDL
Molybdenum (TREC)	mg/L				<MDL	0.004	0.030	<MDL	<MDL
Selenium (TREC)	mg/L				<MDL	0.0022	0.0110	0.0002	0.0002
Sodium (TREC)	mg/L				3.0	10.7	36.6	8.2	4.8
Zinc (TREC)	mg/L				<MDL	0.015	0.090	<MDL	<MDL

The area of concern for monitoring point FMC-up was affected by the mining operation before its establishment. Therefore, all recorded monitoring events are considered operational.

The upper monitoring point for the Fire Mountain Canal is located where the ditch crosses Hubbard Creek. Flow data is received from Fire Mountain Canal records (Trey Dennison 970-527-5166 or cell 970-589-2857).

** Flow at full capacity near Somerset from their website. Did not receive a call back with actual values.*
*** Average flow values from last five years*

Note: The Fire Mountain Canal was dry before field parameters could be obtained 3Q (2017)

There is no baseline collection possible for points initiated after the influence of mining.

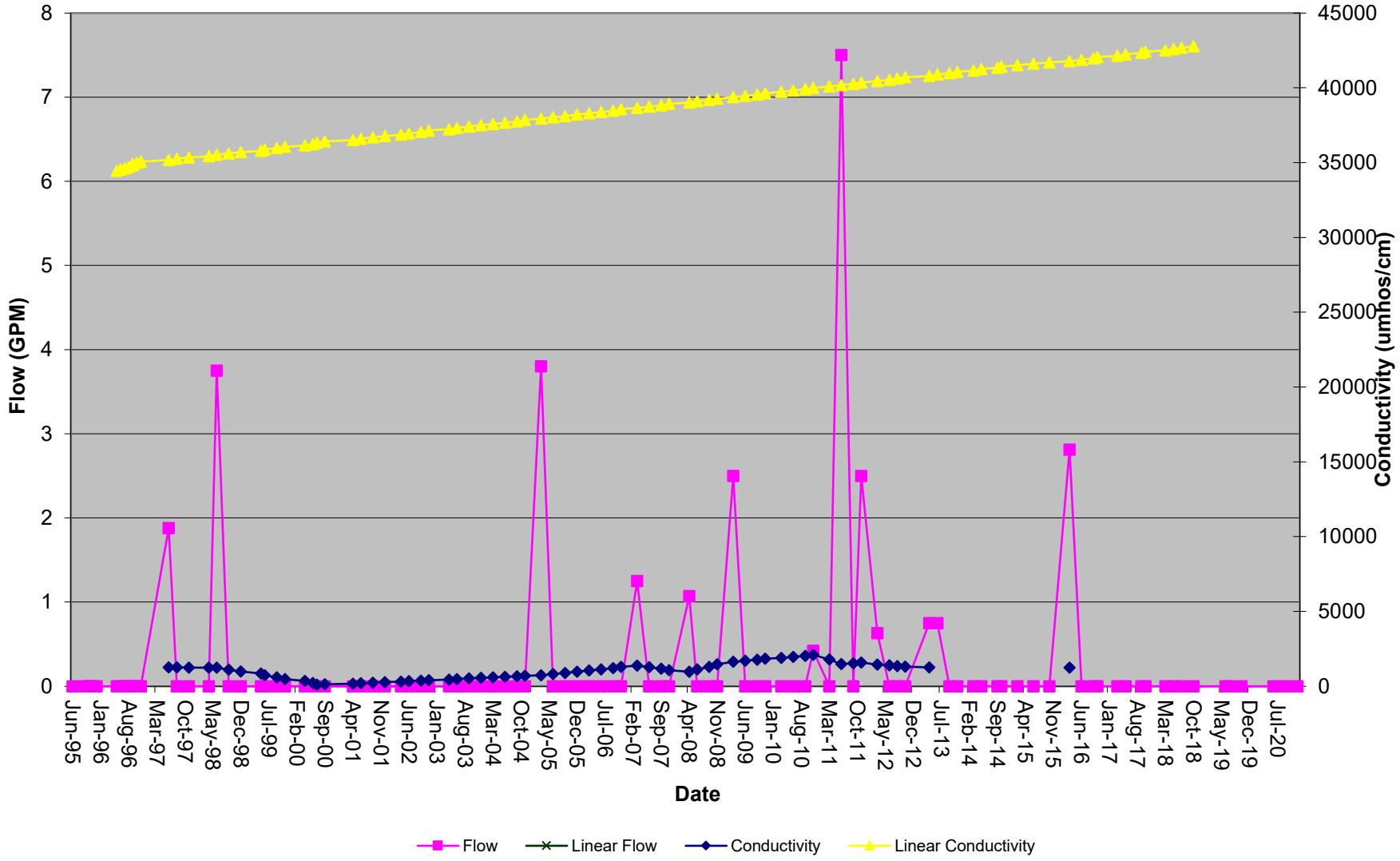
Free-low
Freeman Gulch - Drainage System
Elevation - 7560

Initiated	6/12/1995	6/12/1995	6/12/1995
Activated	6/23/1999	6/23/1999	6/23/1999
Date	12/4/2020	9/7/2020	6/3/2020

Field Parameters	UNITS	Summary Information Baseline Min	Ave	Max	Operation Min	Ave	Max			
Flow	GPM	0.00	0.24	3.75	0.00	0.29	7.50	0	0	0
FieldComment								Dry	Dry	Dry
ph	su	8.3	8.5	8.6	7.3	8.2	8.6			
Conductivity	umhos/cm	1240	1250	1260	90	1303	2100			
Temperature	Celsius	18.4	19.8	21.2	0.6	12.3	23.0			
Lab Parameters	UNITS									
Bicarbonate	mg/L	594	604	614	238.6	342.4	543.9			
Chloride	mg/L	16	18	19	3.06	8.13	11.41			
Conductivity	umhos/cm	1170	1190	1210	1321	1754	2470			
Hardness	mg/L	404	430	456	308.0	404.7	578.9			
Nitrate-Nitrite	mg/L	<MDL	<MDL	<MDL	0.48	0.48	0.48			
Oil and Grease	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
pH	su	8.3	8.3	8.4	7.6	7.7	7.8			
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			
ResidueFilterable-TDS	mg/L	730	765	800	1056	1263	1590			
ResidueNonFilterable-TSS	mg/L	<MDL	3	6	6	36	90			
SAR		2.48	2.63	2.78	2.91	4.45	5.30			
Sulfate	mg/L	130	130	130	316.9	382.4	507.5			
Aluminum (TREC)	mg/L	0.13	0.21	0.29	<MDL	0.40	0.61			
Arsenic (TREC)	mg/L	<MDL	<MDL	<MDL	0.002	0.005	0.006			
Cadmium (TREC)	mg/L	<MDL	<MDL	<MDL	0.002	0.005	0.010			
Calcium (TREC)	mg/L	56.4	61.2	65.9	50.80	66.93	98.40			
Copper (TREC)	mg/L	<MDL	0.005	0.01	0.01	0.02	0.02			
Iron (TREC)	mg/L	0.11	0.15	0.19	0.06	0.08	0.10			
Lead (TREC)	mg/L	<MDL	<MDL	<MDL	0.02	0.03	0.03			
Magnesium (TREC)	mg/L	64.1	67.5	70.8	44.0	57.7	80.9			
Manganese (TREC)	mg/L	0.010	0.013	0.016	0.00	0.03	0.06			
Mercury (TREC)	mg/L	<MDL	<MDL	<MDL	0.00001	0.00006	0.00008			
Molyebdenum (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.003	0.005			
Selenium (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.016	0.018			
Sodium (TREC)	mg/L	120	124	127	163.0	199.3	223.5			
Zinc (TREC)	mg/L	<MDL	0.01	0.03	<MDL	0.03	0.06			

Baseline Information for Point Free-low is derived from events beginning 6/12/95 through 6/23/99.
Point influenced by mining on 6/23/99.

Plot of Flow and Conductivity



Free-low - Freeman Gulch Drainage System

Figure 75

Free-up
Freeman Gulch - Drainage System
Elevation - 6360

Initiated	6/12/1995	6/12/1995	6/12/1995	6/12/1995
Activated	6/28/1999	6/28/1999	6/28/1999	6/28/1999
Date	10/2/2020	9/2/2020	5/21/2020	3/31/2020

Field Parameters	UNITS	Summary Information Baseline Min	Ave	Max	Operation Min	Ave	Max				
Flow	GPM	0.00	0.00	0.00	0.00	0.27	10.30	0	0	0	0
FieldComment								Dry	Dry	Damp	Dry
ph	su				6.68	7.50	8.00				
Conductivity	umhos/cm				710.00	723.50	759.00				
Temperature	Celsius				7.20	8.65	11.50				
Lab Parameters	UNITS										
Bicarbonate	mg/L				323.00	341.50	360.00				
Chloride	mg/L				<MDL	<MDL	2.20				
Conductivity	umhos/cm				519.00	587.50	656.00				
Hardness	mg/L				237.00	241.00	245.00				
Nitrate-Nitrite	mg/L				0.00	<MDL	0.00				
Oil and Grease	mg/L				0.00	<MDL	0.00				
pH	su				7.37	7.37	7.55				
Phosphate	mg/L				0.02	<MDL	0.02				
ResidueFilterable-TDS	mg/L				418.00	429.00	429.00				
ResidueNonFilterable-TSS	mg/L				7.40	<MDL	7.40				
SAR					1.86	1.86	1.91				
Sulfate	mg/L				96.50	<MDL	96.50				
Aluminum	mg/L				0.00	<MDL	0.00				
Arsenic	mg/L				0.00	<MDL	0.00				
Cadmium	mg/L				0.02	0.02	0.02				
Calcium	mg/L				66.10	67.70	67.70				
Copper	mg/L				0.00	<MDL	0.00				
Iron (Total)	mg/L				0.03	0.03	0.07				
Lead	mg/L				0.00	<MDL	0.00				
Magnesium	mg/L				17.40	18.50	18.50				
Manganese (Total)	mg/L				0.01	0.01	0.01				
Mercury	mg/L				0.11	<MDL	0.11				
Molyebdenum	mg/L				0.00	<MDL	0.00				
Selenium	mg/L				0.08	0.08	0.08				
Sodium	mg/L				57.60	68.20	68.20				
Zinc	mg/L				0.00	<MDL	0.00				

Upper Freeman Gulch is monitored just below Pond 2 at the upper end of Freeman Gulch, near drill holes DH34-B and DH34-C.

Note: Site was not accessible during 1Q 2018

Baseline Information for Point Free-up is derived from events beginning 6/12/95 through 6/28/99.
Point influenced by mining on 6/28/99.

HUB-low
Hubbard Creek - Drainage System
Elevation - 5880

Initiated	9/30/1996	9/30/1996	9/30/1996
Activated	6/23/1999	6/23/1999	6/23/1999
Date	11/30/2020	9/14/2020	5/13/2020

		Summary Information								
Field		Baseline			Operation					
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max			
Flow	CFS	2.90	19.67	85.51	0.04	25.66	294.00	2.05	0.51	88.93
FieldComment										
ph	su	8.0	8.5	9.3	7.1	8.3	9.0	8.6	8.6	7.3
Conductivity	umhos/cm	80	198	390	50	308	850	302	583	105
Temperature	Celsius	2.3	11.1	20.2	0.3	9.5	21.7	1.4	11.3	6.0
Lab										
Parameters	UNITS									
Bicarbonate	mg/L	62	115	155	28	141	690			44.7
Chloride	mg/L	<MDL	1.7	3.0	<MDL	27.1	203.6			1.5
Conductivity	umhos/cm	118	254	406	87	323	711			92
Hardness	mg/L	49	96	138	0.06	124.06	315.52			45
Nitrate-Nitrite	mg/L	<MDL	0.05	0.29	<MDL	0.17	1.62			<MDL
Oil and Grease	mg/L	<MDL	3.0	3.0	<MDL	3.0	3.0			
pH	su	7.5	7.9	8.3	6.9	8.0	8.4			8.1
Phosphate	mg/L	<MDL	0.004	0.030	<MDL	0.04	0.27			0.03
ResidueFilterable-TDS	mg/L	100	163	260	60	233	563			84
ResidueNonFilterable-TSS	mg/L	<MDL	33	170	<MDL	20	200			16
SAR		<MDL	0.47	1.04	<MDL	0.86	2.62			0.28
Sulfate	mg/L	<MDL	17	50	<MDL	33	102			<MDL
Aluminum (TREC)	mg/L	0.05	0.58	1.91	<MDL	21.27	733.00			1.42
Arsenic (TREC)	mg/L	<MDL	0.0004	0.0010	<MDL	0.0080	0.0600			0.0005
Cadmium (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.010	0.040			<MDL
Calcium (TREC)	mg/L	13.8	26.2	36.7	8.5	31.8	70.7			12.7
Copper (TREC)	mg/L	<MDL	0.001	0.010	<MDL	0.008	0.060			<MDL
Iron (TREC)	mg/L	0.09	0.54	1.44	0.06	0.33	1.28			1.26
Iron (Dissolved)	mg/L	0.00	#DIV/0!	0.00	0.07	0.11	0.16			0.07
Lead (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.0141	0.0700			0.0005
Magnesium (TREC)	mg/L	3.6	7.4	11.2	2.4	11.1	34.6			3.1
Manganese (TREC)	mg/L	0.009	0.016	0.034	<MDL	0.022	0.080			0.04
Mercury (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.00007	0.00018			<MDL
Molyebdenum (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.006	0.030			<MDL
Selenium (TREC)	mg/L	<MDL	0.001	0.010	<MDL	0.0044	0.0200			0.0001
Sodium (TREC)	mg/L	5.3	15.9	27.6	3.6	25.2	73.0			4.2
Zinc (TREC)	mg/L	<MDL	0.01	0.04	<MDL	0.009	0.037			<MDL

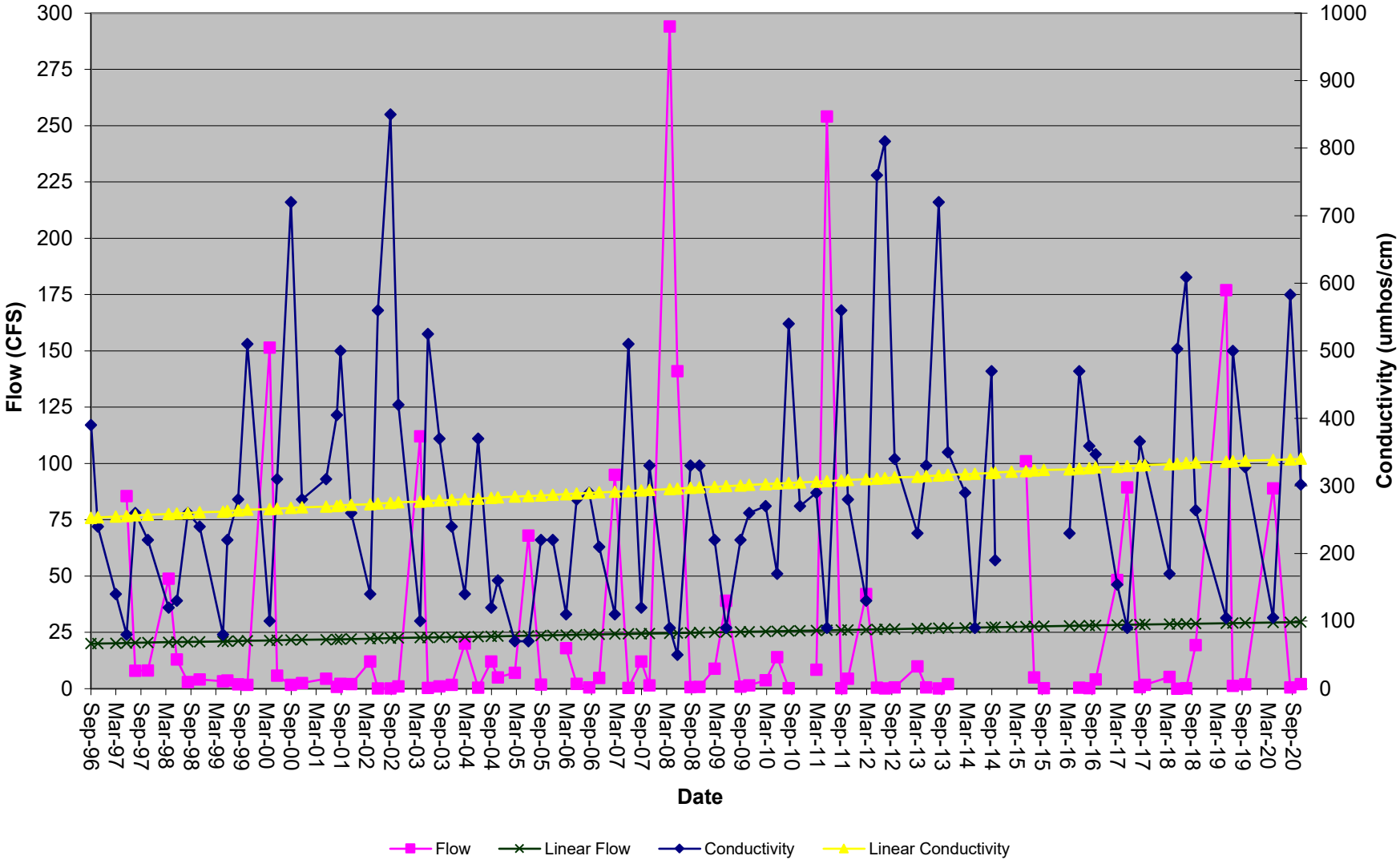
Note 1: USGS did not collect flow values.

** Flow not provided*

The Lower Hubbard Creek monitoring point is located at a concrete box culvert under the Union Pacific railroad track just above the North Fork of the Gunnison. Flow values are taken by Resource Engineering Inc.

Baseline Information for Point Hub-low is derived from events beginning on 9/30/96 through 6/23/99.
Point influenced by mining on 6/23/99.

Plot of Flow and Conductivity



Hub-low - Hubbard Creek Drainage System

Figure 78

NFG-low
North Fork - Drainage System
Elevation - 5680

Initiated	9/30/1996	9/30/1996	9/30/1996	9/30/1996
Activated	3/31/1997	3/31/1997	3/31/1997	3/31/1997
Date	11/30/2020	8/4/2020	5/13/2020	3/25/2020

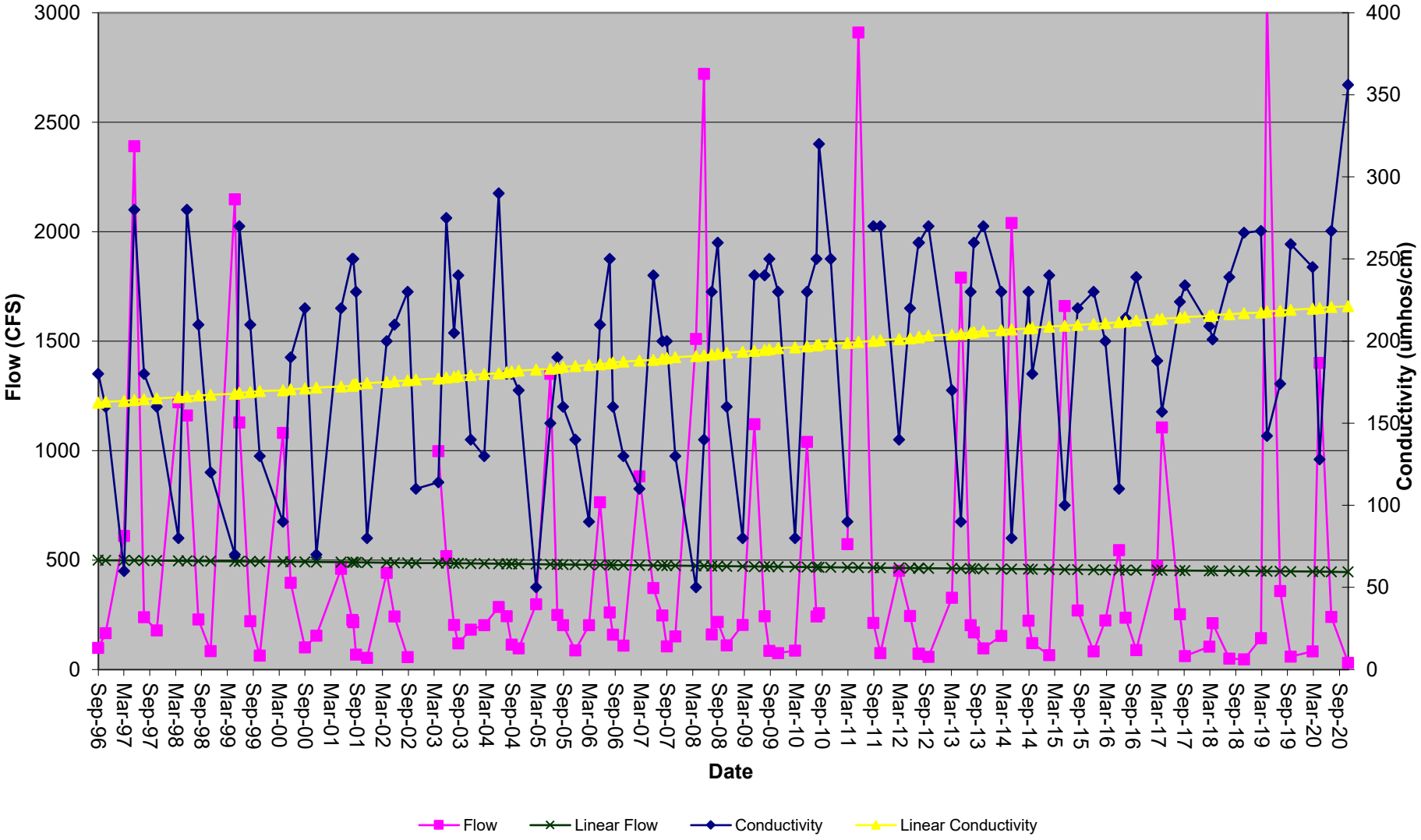
		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Flow	CFS	99	292	610	30	478	3080	83	1400	240	30
FieldComment											
ph	su	8.1	8.4	8.7	7.6	8.3	9.1	8.5	8.4	7.6	8.6
Conductivity	umhos/cm	160	180	200	50	192	356	356	267	128	245.0
Temperature	Celsius	4.0	8.5	14.6	0.3	10.9	22.6	2.1	16.4	7.4	5.9
DO	mg/L				0.0	9.6	91.7	8.99	9.04	91.7	*
Lab											
Parameters	UNITS										
Bicarbonate	mg/L	95	100	105	28.1	84.7	148.0				53.3
Chloride	mg/L	2.00	2.50	3.00	<MDL	25.08	288.30		3.1		53.3
Chromium III CrIII	mg/L				<MDL	<MDL	<MDL				
Chromium VI CrIV	mg/L				<MDL	<MDL	<MDL		<MDL		
Cyanide, Total	mg/L				<MDL	<MDL	<MDL		<MDL		
Conductivity	umhos/cm	201	222	242	78	213	754				115
Hardness	mg/L	84	85	85	<MDL	84.80	270.40		106		53
Nitrate	mg/L	<MDL	0.08	0.16	<MDL	0.33	3.90		<MDL		<MDL
Nitrate-Nitrite	mg/L	0.00	0.08	0.16	<MDL	<MDL	<MDL		<MDL		<MDL
Nitrite	mg/L	<MDL	<MDL	<MDL	<MDL	0.002	0.010		<MDL		
Ammonia	mg/L	<MDL	<MDL	<MDL	<MDL	0.06	0.31		<MDL		
Oil & Grease	mg/L	<MDL	<MDL	<MDL	<MDL	4	5				
pH	su	8.0	8.0	8.0	7.0	7.9	8.8		8.5		8.2
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	0.10	1.50				0.03
ResidueFilterable-TDS	mg/L	130	140	150	50	157	692		150		76
ResidueNonFilterable-TSS	mg/L	<MDL	3	6	<MDL	23	141				33
SAR		0.55	0.61	0.66	<MDL	0.62	2.42				0.3
Sulfate	mg/L	10.0	15.0	20.0	<MDL	16.3	82.5		17.8		7
Sulfide S	mg/L				<MDL	0.04	0.04		<MDL		
Aluminum (TREC)	mg/L	0.10	0.15	0.21	<MDL	0.40	1.77				1.77
Arsenic (TREC)	mg/L	<MDL	0.001	0.001	<MDL	0.0058	0.0500		0.0005		0.0006
Boron	mg/L				0.02	0.56	1.35		<MDL		
Cadmium (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.0029	0.0180		<MDL		<MDL
Calcium (TREC)	mg/L	24.6	24.8	25.0	6.9	27.1	132.0		30.6		16.2
Copper (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.012	0.198		<MDL		<MDL
Iron, Dissolved	mg/L	<MDL	<MDL	<MDL	<MDL	0.35	12.90		<MDL		<MDL
Iron (TREC)	mg/L	0.14	0.21	0.27	<MDL	0.41	4.17		0.36		1.51
Lead (TREC)	mg/L	<MDL	0.010	0.020	<MDL	0.0114	0.1500		0.0003		0.0009
Magnesium (TREC)	mg/L	5.30	5.50	5.70	2.00	6.10	18.80		7.3		3.1
Manganese (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.146	2.900		0.01		
Manganese (TREC)	mg/L	0.021	0.090	0.160	0.007	0.044	0.802		0.02		0.03
Mercury (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.00007	0.00030		<MDL		<MDL
Molyebdenum (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.004	0.030				<MDL
Nickel	mg/L				<MDL	0.010	0.010		<MDL		
Selenium (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.004	0.034		0.0002		0.0002
Silver	mg/L				<MDL	<MDL	<MDL		<MDL		
Sodium (TREC)	mg/L	11.5	12.2	12.9	3.0	15.0	91.5				5.0
Zinc (TREC)	mg/L	0.02	0.02	0.03	<MDL	0.02	0.16		<MDL		<MDL

Field parameters, except flow, for the Lower North Fork of the Gunnison River are taken on the river approximately 1500' below the confluence of Terror Creek and the North Fork of the Gunnison. Flow data for the North Fork of the Gunnison river is obtained from USGS station #09132500.

** Data not provided*

Baseline Information for Point NFG-low is derived from events beginning on 9/30/96 through 3/31/97. Point influenced by mining on 3/31/97.

Plot of Flow and Conductivity



NFG-low - North Fork Drainage System

Figure 80

NFG-up
North Fork - Drainage System
Elevation - 5880

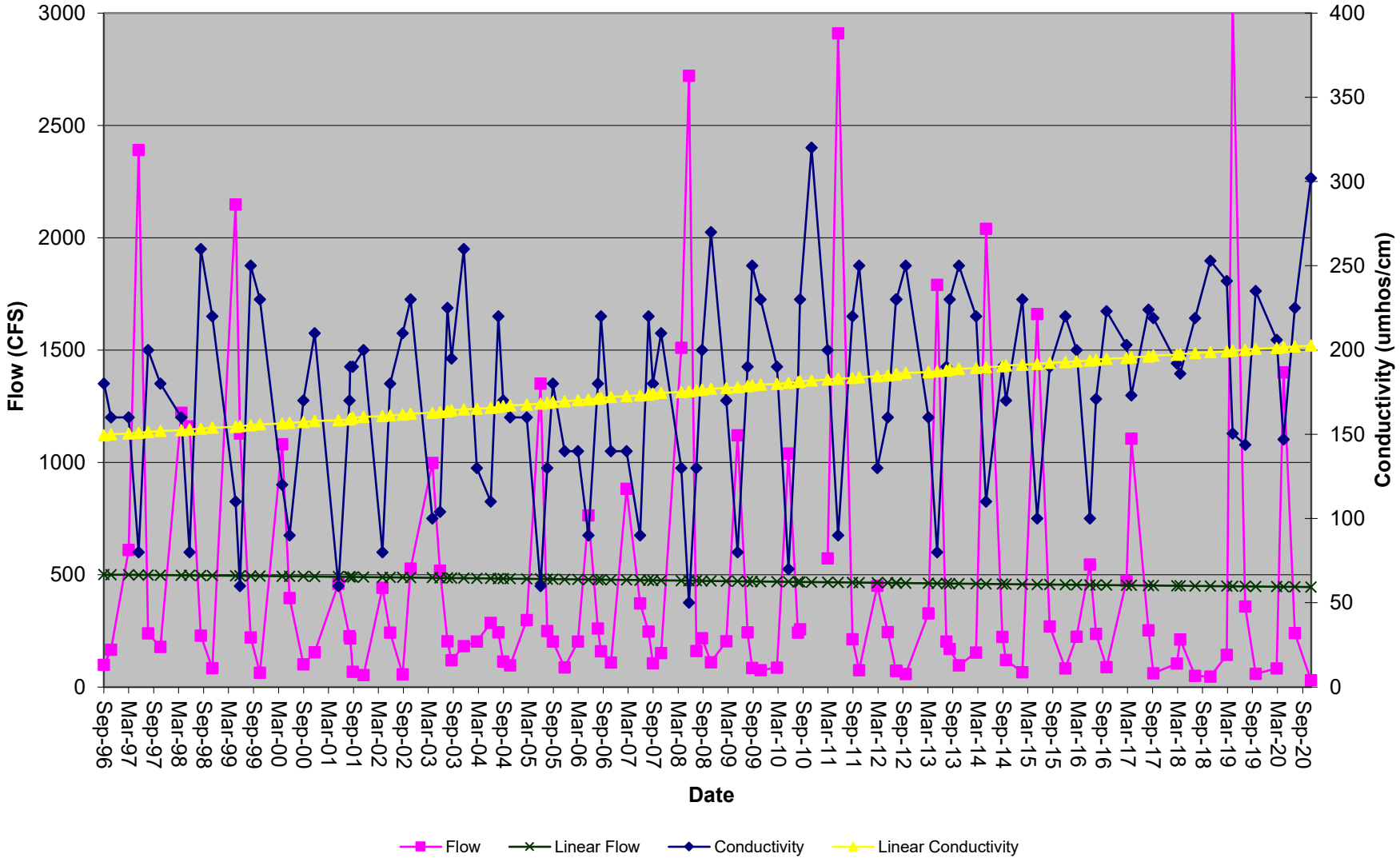
Initiated								9/30/1996	9/30/1996	9/30/1996	9/30/1996
Activated								3/31/1997	3/31/1997	3/31/1997	3/31/1997
Date								11/30/2020	8/4/2020	5/13/2020	3/25/2020
		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Flow	CFS	99	292	610	30	478	3080	83	1400	240	30
FieldComment											
ph	su	8.1	8.5	8.8	7.1	8.3	9.7	8.6	8.3	7.1	8.6
Conductivity	umhos/cm	160	167	180	50	176	320	302.0	225.0	146.9	206.0
Temperature	Celsius	3.6	7.3	13.7	0.2	10.2	22.6	2.1	15.3	7.7	5.0
DO	mg/L				7.2	10.3	91.2	8.5	8.3	91.2	*
Lab											
Parameters	UNITS										
Bicarbonate	mg/L	88	93	98	31	84	203				54.8
Chloride	mg/L	2.0	2.5	3.0	<MDL	29.7	471.5		2.2		2
Chromium III CrIII	mg/L				<MDL	<MDL	<MDL				
Chromium VI CrIV	mg/L				<MDL	0.008	0.008		<MDL		
Cyanide, Total	mg/L				<MDL	0.067	0.081		<MDL		
Conductivity	umhos/cm	185	205	225	7	203	668				129
Hardness	mg/L	74	77	79	26.5	80.0	253.0		83.00		57
Nitrate	mg/L	<MDL	0.05	0.09	<MDL	0.36	3.47		<MDL		
Nitrate/Nitrite	mg/L	0.00	0.05	0.09	<MDL	0.3	3		<MDL		0.03
Nitrite	mg/L	<MDL	<MDL	<MDL	<MDL	0.004	0.017		<MDL		
Ammonia	mg/L	<MDL	<MDL	<MDL	<MDL	0.04	0.23		<MDL		
Oil & Grease	mg/L	<MDL	<MDL	<MDL	<MDL	7	11				
pH	su	7.9	8.0	8.0	6.9	7.9	9.0		8.4		8.1
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	0.13	1.90				0.003
ResidueFilterable-TDS	mg/L	120	130	140	9	145	522		122		94
ResidueNonFilterable-TSS	mg/L	10	11	12	<MDL	23	131				40
SAR		0.42	0.60	0.78	<MDL	0.65	2.39				0.35
Sulfate	mg/L	10	15	20	<MDL	18	80		9.3		10.4
Sulfide S	mg/L				<MDL	0.05	0.05		<MDL		
Aluminum (TREC)	mg/L	0.08	0.18	0.27	<MDL	17.33	691.00				1.52
Arsenic (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.0041	0.0350		0.0007		0.0006
Boron	mg/L				0.02	0.49	1.20		<MDL		
Cadmium (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.007	0.031		<MDL		<MDL
Calcium (TREC)	mg/L	21.9	22.9	24.0	7.0	24.6	138.0		26.1		17
Copper (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.012	0.197		<MDL		<MDL
Iron, Dissolved	mg/L				<MDL	0.77	22.80		<MDL		<MDL
Iron (TREC)	mg/L	0.09	0.09	0.09	0.03	2.06	81.00		0.99		1.29
Lead (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.0116	0.1200		0.0008		0.0008
Magnesium (TREC)	mg/L	4.70	4.70	4.70	1.88	5.50	23.40		4.4		3.4
Manganese (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.27	2.90		<MDL		
Manganese (TREC)	mg/L	0.011	0.015	0.019	<MDL	0.172	7.600		0.02		0.03
Mercury (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.00006	0.00022		<MDL		<MDL
Molyebdenum (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.004	0.030				<MDL
Nickel	mg/L				<MDL	0.01	0.01		<MDL		
Selenium (TREC)	mg/L	<MDL	<MDL	<MDL	<MDL	0.003	0.027		0.0002		0.0003
Silver	mg/L				<MDL	<MDL	<MDL		<MDL		
Sodium (TREC)	mg/L	8.6	12.0	15.3	3.3	135.1	5420.0				6.0
Zinc (TREC)	mg/L	0.020	0.025	0.030	<MDL	0.015	0.143		<MDL		<MDL

Field parameters, except flow in the Upper North Fork of the Gunnison River monitoring point are taken on the river just above its confluence with Hubbard Creek. Flow data for the North Fork of the Gunnison river is obtained from USGS station #09132500.

** Data not provided*

Baseline Information for Point NFG-up is derived from events beginning on 9/30/96 through 3/31/97.
Point influenced by mining on 3/31/97.

Plot of Flow and Conductivity



NFG-up - North Fork Drainage System

Figure 82

Steph-low
Stevens Draw - Drainage System
Elevation - 7000'

Initiated	7/12/1995	7/12/1995	7/12/1995	7/12/1995
Activated	7/1/2002	7/1/2002	7/1/2002	7/1/2002
Date	12/2/2020	8/31/2020	5/21/2020	3/31/2020

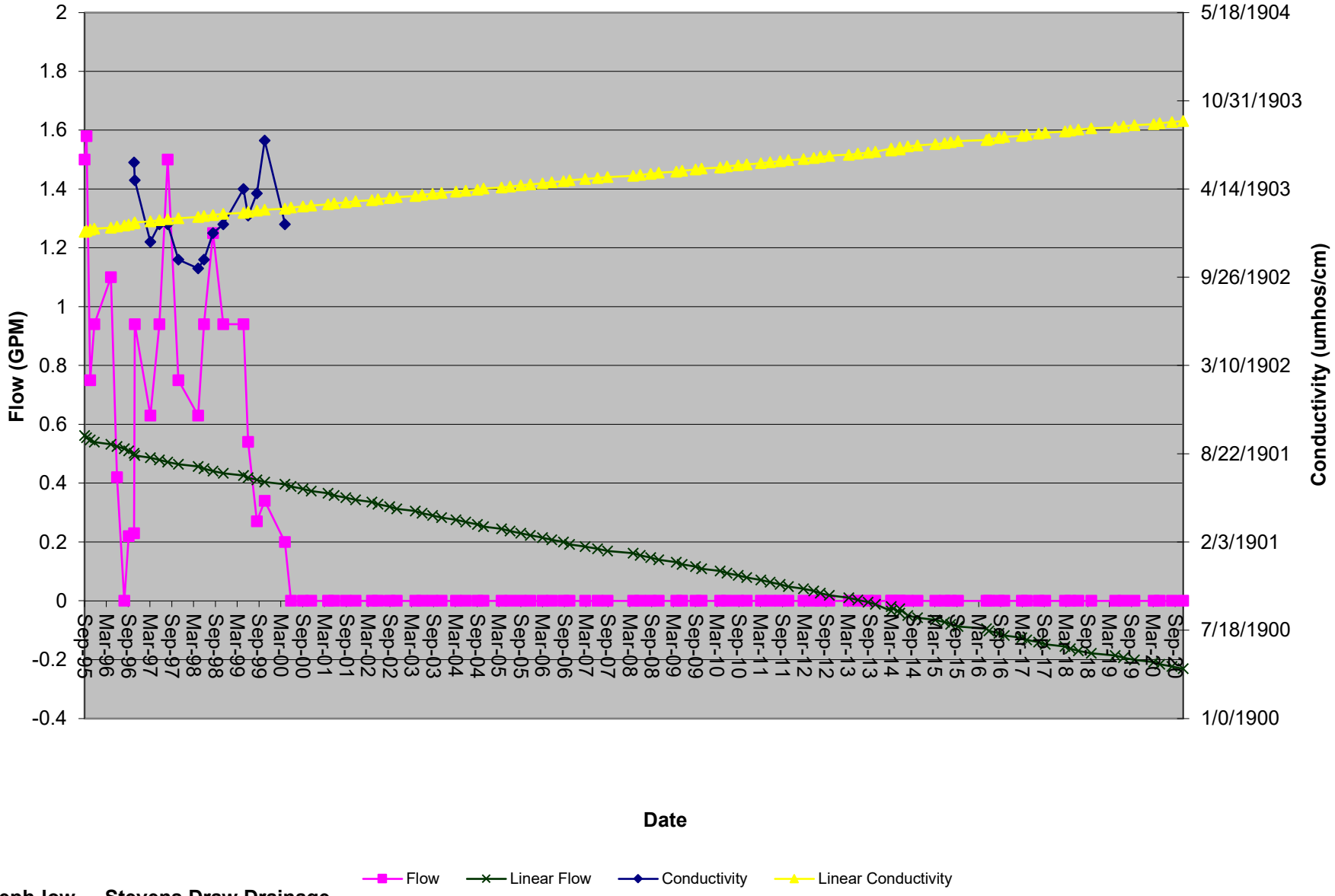
		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Flow	GPM	0.00	0.17	1.58				0	0	0	0
FieldComment								Dry	Dry	Dry	Dry
ph	su	7.9	8.2	8.4							
Conductivity	umhos/cm	1020	1139	1310							
Temperature	Celsius	3.8	10.8	17.2							
Lab											
Parameters	UNITS										
Bicarbonate	mg/L	452	495	554							
Chloride	mg/L	14	16	20							
Conductivity	umhos/cm	1020	1093	1180							
Hardness	mg/L	343	382	433							
Nitrate-Nitrite	mg/L	0.02	0.20	0.97							
Oil and Grease	mg/L	<MDL	1	4							
pH	su	8.0	8.2	8.3							
Phosphate	mg/L	<MDL	<MDL	<MDL							
ResidueFilterable-TDS	mg/L	660	718	780							
ResidueNonFilterable-TSS	mg/L	<MDL	21	58							
SAR		<MDL	2.28	3.22							
Sulfate	mg/L	150	170	190							
Aluminum	mg/L	0.05	0.53	1.71							
Arsenic	mg/L	<MDL	0.001	0.002							
Cadmium	mg/L	<MDL	<MDL	<MDL							
Calcium	mg/L	49.4	59.6	72.4							
Copper	mg/L	<MDL	0.002	0.010							
Iron (Total)	mg/L	0.27	0.82	2.57							
Lead	mg/L	<MDL	<MDL	<MDL							
Magnesium	mg/L	41.3	55.9	66.2							
Manganese (Total)	mg/L	0.070	0.211	0.566							
Mercury	mg/L	<MDL	<MDL	<MDL							
Molyebdenum	mg/L	<MDL	<MDL	<MDL							
Selenium	mg/L	<MDL	0.0002	0.001							
Sodium	mg/L	99.8	120.0	152.0							
Zinc	mg/L	<MDL	0.01	0.03							

The area of concern for monitoring point Steph-low has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

The monitoring point location for Lower Stevens Draw is located in Stevens Draw, just below Pond 1 and Spring 14. It is accessed by a southern fork of the Stevens Draw road.

Baseline Information Collection initiated on 9/27/95 and not yet considered complete.
Point Steph-low has not been influenced by mining.

Plot of Flow and Conductivity



Steph-low - Stevens Draw Drainage System

Figure 84

Steph-up
Stevens Draw - Drainage System
Elevation - 7920'

Initiated	7/12/1995	7/12/1995	7/12/1995
Activated	7/1/2002	7/1/2002	7/1/2002
Date	12/2/2020	9/2/2020	5/21/2020

Field Parameters	UNITS	Summary Information Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	GPM	0.00	0.15	5.00	0.00	0.05	3.75	0	0	0
FieldComment								Dry	Dry	Dry
ph	su				7.7	7.7	7.7			
Conductivity	umhos/cm				200	200	200			
Temperature	Celsius				11.2	11.2	11.2			
Lab Parameters	UNITS									
Bicarbonate	mg/L									
Chloride	mg/L									
Conductivity	umhos/cm									
Hardness	mg/L									
Nitrate-Nitrite	mg/L									
Oil and Grease	mg/L									
pH	su									
Phosphate	mg/L									
ResidueFilterable-TDS	mg/L									
ResidueNonFilterable-TSS	mg/L									
SAR										
Sulfate	mg/L									
Aluminum	mg/L									
Arsenic	mg/L									
Cadmium	mg/L									
Calcium	mg/L									
Copper	mg/L									
Iron (Total)	mg/L									
Lead	mg/L									
Magnesium	mg/L									
Manganese (Total)	mg/L									
Mercury	mg/L									
Molyebdenum	mg/L									
Selenium	mg/L									
Sodium	mg/L									
Zinc	mg/L									

Note: 1Q 2019 site inaccessible

The monitoring point for Upper Stevens Draw is located in Stevens Draw, just below Spring 11. It is accessed by the Stevens Draw road.

Baseline Information for Point Steph-up is derived from events beginning 7/12/95 through 7/1/02.
Point influenced by mining on 7/1/02.

SW-01
West Terror Creek - Downstream
Elevation - 7140

Initiated								10/24/2013	10/25/2013	10/26/2013
Activated										
Date								12/1/2020	9/14/2020	5/20/2020
		Summary Information								
Field		Baseline			Operation					
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max			
Flow	CFS	0.20	3.85	52.00				0.4	0.2	0.8
Water Level in Flume	Feet	0.100	0.632	2.000						
Temperature	Celsius	0	6.6	20.2				7.9	8.4	7.3
Conductivity	umhos/cm	80.2	137	192				192	137	80
pH	su	0.7	8.1	10.6				0.7	10.6	7.4
Field Comments										
Lab										
Parameters	UNITS									37.1
Bicarbonate	mg/L	41.6	73.2	90.6						
Chloride	mg/L	0.56	0.85	1.30						0.8
Conductivity	umhos/cm	65.4	106	139						72
Hardness	mg/L	34	54.54	69.90						34
Acidity	mg/L	-76	-54.44	-25.00						<MDL
Nitrate-Nitrite	mg/L	<MDL	<MDL	<MDL						
Oil and Grease	mg/L	<MDL	<MDL	<MDL						
Phosphate	mg/L	0.017	0.06	0.23						
ResidueFilterable-TDS	mg/L	86.7	104	144						
ResidueNonFilterable-TSS	mg/L	<MDL	13	34						0.06
SAR		0.226	0.330	0.505						
Sulfate	mg/L	1.8	8.1	82.0						82
Aluminum (TREC)	mg/L	<MDL	8.956	101.000						8
Arsenic (TREC)	mg/L	<MDL	<MDL	<MDL						0.26
Cadmium (TREC)	mg/L	<MDL	<MDL	<MDL						
Calcium (TREC)	mg/L	8.6	14.1	18.0						<MDL
Calcium (Dissolved)	mg/L	1.2	14.1	18.2						1.16
Copper (TREC)	mg/L	<MDL	<MDL	<MDL						0.0003
Iron (Dissolved)	mg/L	0.0310	3.8880	41.6000						<MDL
Iron (TREC)	mg/L	0.074	0.991	9.000						9.0
Lead (TREC)	mg/L	<MDL	<MDL	<MDL						<MDL
Magnesium (TREC)	mg/L	0.10	4.39	6.07						0.1
Magnesium (Dissolved)	mg/L	0.89	4.72	6.09						0.89
Manganese (TREC)	mg/L	0.0003	0.0137	0.0334						0.0003
Mercury (TREC)	mg/L	<MDL	<MDL	<MDL						2.9
Molybdenum (TREC)	mg/L	<MDL	<MDL	<MDL						
Selenium (TREC)	mg/L	<MDL	<MDL	<MDL						0.010
Sodium (TREC)	mg/L	3.37	5.69	8.50						<MDL
Sodium (Dissolved)	mg/L	3.48	5.78	8.66						<MDL
Zinc (TREC)	mg/L	<MDL	<MDL	<MDL						0.0001

The area of concern for monitoring point SW-01 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.
Negative acidity value indicates equivalent value of alkalinity

SW-02
Terror Creek - Mid Stream
Elevation - 7040

Initiated	10/24/2013	10/24/2013	10/24/2013
Activated			
Date	12/1/2020	9/14/2020	5/20/2020

Field Parameters	UNITS	Summary Information Baseline Min	Ave	Max	Operation Min	Ave	Max			
Flow	CFS	0.00	5.69	81.22				0.423	0.423	1.069
Water Level in Flume	Feet	0.00	0.36	2.80				0.100	0.100	0.180
Temperature	Celsius	-0.7	9.0	20.3						
Conductivity	umhos/cm	2.9	125	320						
pH	su	5.3	8.2	10.2						
Field Comments										
Lab Parameters	UNITS									
Bicarbonate	mg/L	38	84	148						
Chloride	mg/L	0.57	25.49	198.50						
Conductivity	umhos/cm	65.4	184	548						
Hardness	mg/L	29.02	72.44	157.58						
Nitrate-Nitrite	mg/L	<MDL	0.24	0.61						
Oil and Grease	mg/L	<MDL	<MDL	<MDL						
pH	su	6.7	7.7	8.8						
Phosphate	mg/L	<MDL	0.82	7.79						
ResidueFilterable-TDS	mg/L	70	150	430						
ResidueNonFilterable-TSS	mg/L	<MDL	29	174						
SAR		0.11	0.49	2.22						
Sulfate	mg/L	1.70	10.76	35.00						
Aluminum (TREC)	mg/L	<MDL	24.078	400.000						
Arsenic (TREC)	mg/L	<MDL	0.023	0.075						
Cadmium (TREC)	mg/L	<MDL	0.008	0.020						
Calcium (TREC)	mg/L	5.42	18.41	42.00						
Copper (TREC)	mg/L	<MDL	0.004	0.010						
Iron (TREC)	mg/L	0.033	0.522	1.250						
Lead (TREC)	mg/L	<MDL	0.013	0.050						
Magnesium (TREC)	mg/L	3.24	8.74	18.10						
Manganese (TREC)	mg/L	0.01	0.03	0.05						
Mercury (TREC)	mg/L	<MDL	0.00006	0.00016						
Molybdenum (TREC)	mg/L	<MDL	0.004	0.006						
Selenium (TREC)	mg/L	<MDL	0.00614	0.02300						
Sodium (TREC)	mg/L	3.5	14.2	64.0						
Zinc (TREC)	mg/L	<MDL	0.027	0.060						

The area of concern for monitoring point SW-02 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

SW-02 is located on the East Fork of Terror Creek in the NW1/4 SE1/4 Sec 5, T13S, R91W, of the 6th P.M. A 48" Parshall flume manufactu by the Thompson Pipe and Steel Company of Denver, Colorado was installed at this location.

SW-05
Stevens Gulch - Downstream
Elevation - 6600

Initiated	1/1/1983	1/1/1983	1/1/1983	1/1/1983
Activated				
Date	12/3/2020	9/2/2020	6/10/2020	3/5/2020

Summary Information

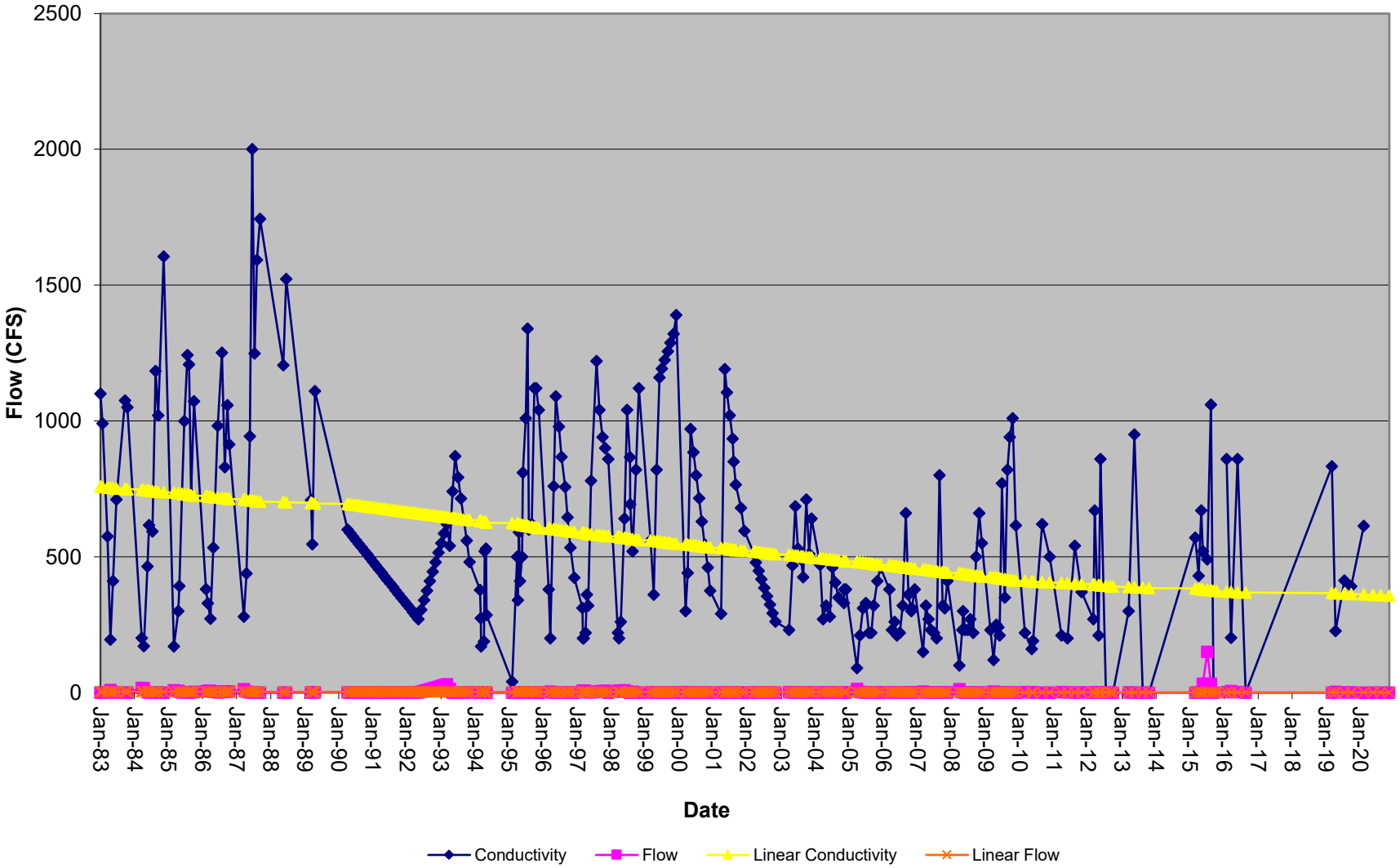
Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max				
Flow	CFS	0.00	1.61	30.13							0.01
Water Level in Flume	Feet	0.00	0.09	1.06							0.01
Temperature	Celsius	-0.5	10.3	23.7							22
Conductivity	umhos/cm	0	551	2000							613
pH	su	0.0	8.2	9.9							8.26
Field Comments								Dry	Dry	Dry	
Lab Parameters	UNITS										
Bicarbonate	mg/L	66	219	456							
Chloride	mg/L	<MDL	21.00	223.41							
Conductivity	umhos/cm	149	578	1560							
Hardness	mg/L	35.6	245.8	625.7							
Nitrate-Nitrite	mg/L	<MDL	0.34	0.88							
Oil and Grease	mg/L	<MDL	<MDL	<MDL							
pH	su	6.8	8.1	8.7							
Phosphate	mg/L	<MDL	0.18	0.47							
ResidueFilterable-TDS	mg/L	106	386	1130							
ResidueNonFilterable-TSS	mg/L	<MDL	34	438							
SAR		0.23	1.04	2.06							
Sulfate	mg/L	<MDL	97.7	450.0							
Aluminum (TREC)	mg/L	0.022	0.284	0.530							
Arsenic (TREC)	mg/L	<MDL	0.020	0.040							
Cadmium (TREC)	mg/L	<MDL	0.007	0.010							
Calcium (TREC)	mg/L	8.81	49.06	103.00							
Copper (TREC)	mg/L	<MDL	0.008	0.020							
Iron (TREC)	mg/L	0.03	0.38	1.46							
Lead (TREC)	mg/L	0.00	0.02	0.04							
Magnesium (TREC)	mg/L	7.10	26.36	61.20							
Manganese (TREC)	mg/L	0.01	0.52	7.30							
Mercury (TREC)	mg/L	0.00002	0.00011	0.00027							
Molybdenum (TREC)	mg/L	0.002	0.006	0.015							
Selenium (TREC)	mg/L	<MDL	0.007	0.018							
Sodium (TREC)	mg/L	9.60	32.78	64.00							
Zinc (TREC)	mg/L	0.005	0.009	0.020							

The area of concern for monitoring point SW-05 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

** Flow not measureable*

The Stevens Gulch stream gauge, SW-05, is located near Bowie No. 1 mine's timber storage area in the NE1/4NW1/4, Sec 25, T13S, R92W, of the 6th P.M. A 36" Parshall flume was installed at this locations.

Plot of Flow and Conductivity



SW-05 Stevens Gulch Drainage

Figure 89

SW-10
Terror Ditch
Elevation - 6480

Initiated	7/1/1983	7/1/1983	7/1/1983
Activated			
Date	12/3/2020	8/31/2020	5/20/2020

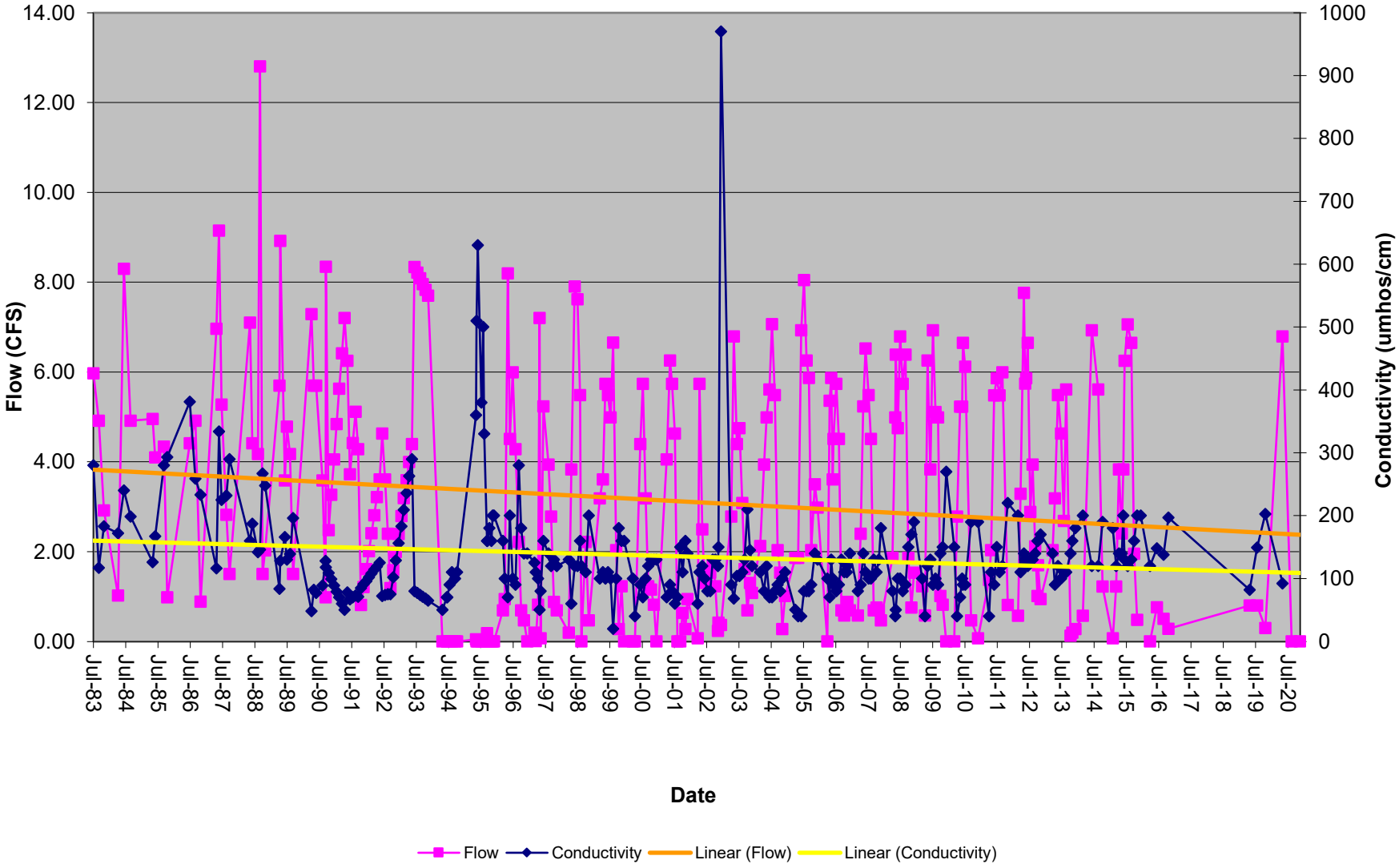
Field Parameters	UNITS	Summary Information Baseline Min	Ave	Max	Operation Min	Ave	Max			
Flow	CFS	0.00	3.16	12.80						6.79
Water Level in Flume	Feet	0.00	0.43	0.87						0.78
Temperature	Celsius	0.1	9.1	21.3						8.6
Conductivity	umhos/cm	20	138	970						92.2
pH	su	5.6	8.2	9.2						7.43
Field Comments								Ditch off	Ditch off	
Lab Parameters	UNITS									
Bicarbonate	mg/L	25.3	80.3	188.0						42.4
Chloride	mg/L	<MDL	18.7	186.1						0.7
Conductivity	umhos/cm	53	174	756						82
Hardness	mg/L	32	66	141						37
Nitrate-Nitrite	mg/L	<MDL	0.18	0.54						<MDL
Oil and Grease	mg/L	<MDL	<MDL	<MDL						
pH	su	6.9	7.7	8.5						8
Phosphate	mg/L	<MDL	<MDL	<MDL						0.09
ResidueFilterable-TDS	mg/L	50	132	610						86
ResidueNonFilterable-TSS	mg/L	<MDL	25.2	136.0						7
SAR		0.11	0.64	6.43						0.27
Sulfate	mg/L	<MDL	11.83	68.50						<MDL
Aluminum (TREC)	mg/L	<MDL	19.820	154.000						1.04
Arsenic (TREC)	mg/L	<MDL	0.012	0.030						0.0003
Cadmium (TREC)	mg/L	<MDL	0.010	0.022						<MDL
Copper (TREC)	mg/L	<MDL	0.006	0.010						<MDL
Calcium (TREC)	mg/L	6.07	16.23	22.00						9.6
Iron (TREC)	mg/L	0.014	0.465	1.730						0.81
Lead (TREC)	mg/L	0.002	0.017	0.060						0.0153
Magnesium (TREC)	mg/L	3.00	8.49	21.00						3.2
Manganese (TREC)	mg/L	0.010	0.022	0.072						0.01
Mercury (TREC)	mg/L	<MDL	0.00007	0.00020						<MDL
Molybdenum (TREC)	mg/L	<MDL	0.0022	0.0060						<MDL
Selenium (TREC)	mg/L	<MDL	0.005	0.018						0.0001
Sodium (TREC)	mg/L	3.64	20.37	144.00						3.8
Zinc (TREC)	mg/L	<MDL	0.014	0.050						<MDL

The area of concern for monitoring point SW-10 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

A stilling well and recorder were installed on a 30" Parshall flume on the Terror Ditch. This stream gauge is located in the NE1/4NE1/4, Sec 17, T

**** No data in the field notes*

Plot of Flow and Conductivity



SW-10 - Terror Ditch

Figure 91

SW-11
Stevens Gulch - Upstream
Elevation - 8084

Initiated	6/6/2010	6/6/2010	6/6/2010
Activated			
Date	12/1/2020	9/30/2020	5/20/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Flow	CFS	0	0.1	3.8						
Water Level in Flume	Feet	0	0.0	0.0						
Temperature	Celsius									
Conductivity	umhos/cm									
pH	su									
Field Comments								Dry	Dry	Dry
Lab Parameters	**UNITS**									
Bicarbonate	mg/L	55.9	63.6	71.3				*		
Carbonate	mg/L	0.0	0.0	0.0						
Chloride	mg/L	<MDL	2.8	3.0						
Conductivity	umhos/cm	98.7	107	116						
Hardness	mg/L	43.60	48.45	53.30						
Acidity	mg/L	-46.7	-42.35	-38.00						
Nitrate-Nitrite	mg/L	<MDL	0.00	0.00						
Oil and Grease	mg/L	<MDL	<MDL	<MDL						
pH	su	7.2	7.4	7.7						
Phosphate	mg/L	<MDL	0.12	0.13						
ResidueFilterable-TDS	mg/L	117	119	120						
ResidueNonFilterable-TSS	mg/L	<MDL	22	24						
SAR		0.37	0.39	0.40						
Aluminum (TREC)	mg/L	0.549	0.725	0.900						
Arsenic (TREC)	mg/L	<MDL	<MDL	0.000						
Cadmium (TREC)	mg/L	<MDL	<MDL	0.00						
Calcium (TREC)	mg/L	12.6	13.90	15.20						
Calcium (Dissolved)	mg/L	0	0.00	0.00						
Copper (TREC)	mg/L	<MDL	<MDL	0.00						
Iron (Dissolved)	mg/L	0.24	0.24	0.24						
Iron (TREC)	mg/L	0.42	0.82	1.23						
Lead (TREC)	mg/L	<MDL	<MDL	0.00						
Magnesium (TREC)	mg/L	2.94	3.34	3.73						
Manganese (TREC)	mg/L	0.03	0.06	0.08						
Mercury (TREC)	mg/L	<MDL	<MDL	0						
Molybdenum (TREC)	mg/L	<MDL	<MDL	0.000						
Selenium (TREC)	mg/L	<MDL	<MDL	0.000						
Sodium (TREC)	mg/L	5.65	5.80	5.94						
Sodium (Dissolved)	mg/L	0	0.00	0.00						
Zinc (TREC)	mg/L	<MDL	<MDL	0.00						

** Not enough water available for a sample*

SW-12
West Fork Terror Creek - Upstream
Elevation - 7920

Initiated	5/16/1983	5/16/1983	5/16/1983
Activated			
Date	12/1/2020	9/30/2020	5/20/2020

		Summary Information								
Field		Baseline			Operation					
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max			
Flow	CFS	0.04	4.01	52.00				0.35	0.37	**
Water Level in Flume	Feet	0.050	0.595	2.000				0.2	0.21	
Temperature	Celsius	0.1	6.1	14.9				1.8	5	5.4
Conductivity	umhos/cm	68.8	118	180				157.4	141.9	71.6
pH	su	7.24	8.2	8.9				8.6	8.2	7.2
Field Comments										
Lab Parameters	UNITS									
Bicarbonate	mg/L	34.3	62.0	83.4						
Chloride	mg/L	<MDL	0.74	1.40						
Conductivity	umhos/cm	53.5	88.5	121.0						
Hardness	mg/L	27.3	46.9	61.9						
Acidity	mg/L	-64.0	-46.4	-20.0						
Nitrate-Nitrite	mg/L	<MDL	<MDL	<MDL						
Oil and Grease	mg/L	<MDL	<MDL	<MDL						
Phosphate	mg/L	<MDL	0.04	0.12						
ResidueFilterable-TDS	mg/L	65	88	108						
ResidueNonFilterable-TSS	mg/L	<MDL	17.0	37.0						
SAR		0.174	0.269	0.486						
Sulfate	mg/L	1.2	2.4	3.3						
Aluminum (TREC)	mg/L	0.104	0.633	1.710				1.17		
Arsenic (TREC)	mg/L	<MDL	<MDL	<MDL				0.0003		
Cadmium (TREC)	mg/L	<MDL	<MDL	<MDL				<MDL		
Calcium (TREC)	mg/L	7.1	586.4	8630.0				7.8		
Calcium (Dissolved)	mg/L	11.2	13.3	14.6				<MDL		
Copper (TREC)	mg/L	<MDL	<MDL	<MDL				<MDL		
Iron (Dissolved)	mg/L	0.0300	2.9342	######				0.09		
Iron (TREC)	mg/L	0.101	0.521	1.370				0.86		
Lead (TREC)	mg/L	<MDL	<MDL	<MDL				0.0003		
Magnesium (TREC)	mg/L	2.35	4.04	5.58				2.5		
Magnesium (Dissolved)	mg/L	3.38	4.53	5.21						
Manganese (TREC)	mg/L	0.0011	0.0118	0.03				<MDL		
Mercury (TREC)	mg/L	<MDL	<MDL	<MDL				<MDL		
Molybdenum (TREC)	mg/L	<MDL	<MDL	<MDL				<MDL		
Selenium (TREC)	mg/L	<MDL	<MDL	<MDL				0.0001		
Sodium (TREC)	mg/L	2.60	4.26	7.77				2.6		
Sodium (Dissolved)	mg/L	2.69	4.25	5.97						
Zinc (TREC)	mg/L	<MDL	<MDL	<MDL				<MDL		

The area of concern for monitoring point SW-12 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

Negative acidity value indicates equivalent value of alkalinity
** Data not provided*
*** Flow to high unable to read gauge*

DH-15a
Stevens Draw - Drill Hole
Pipe Elevation - 7143.3
Pipe 1.8' above ground
Depth - 215'

Initiated	6/12/1995	6/12/1995
Activated		
Date	6/4/2020	3/31/2020

		Summary Information							
Field		Baseline			Operation				
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max		
Static Water Level	Feet				187.50	192.84	194.80	190.8	191.7
Water Elevation	Feet				6948.50	6950.46	6955.80	6952.5	6951.6
FieldComment									
ph	su				7.06	7.52	8.00	7.1	7.2
Conductivity	umhos/cm				4.12	3526.27	4100.00	4.12	4100
Temperature	Celsius				7.77	12.94	15.50	13.7	13.2
Lab									
Parameters	UNITS								
Bicarbonate	mg/L				953.00	1187.57	1380.00	953	
Carbonate	mg/L				<MDL	<MDL	0.00	<MDL	
Chloride	mg/L				34.20	35.77	39.20	39.2	
Conductivity	umhos/cm				2740.00	3517.14	3920.00	3920	
Hardness	mg/L				323.00	705.00	929.00	929	
Nitrate-Nitrite	mg/L				<MDL	<MDL	0.00	<MDL	
Ammonia	mg/L				0.29	0.85	1.20	1.2	
pH	su				7.35	7.75	8.03	8.0	
Phosphate	mg/L				0.04	0.10	0.13	0.12	
ResidueFilterable-TDS	mg/L				1980.00	2711.43	3100.00	3100	
Sulfate	mg/L				556.00	1173.86	1500.00	1500	
Arsenic (Dissolved)	mg/L				<MDL	<MDL	0.05	<MDL	
Cadmium (Dissolved)	mg/L				<MDL	<MDL	0.00	<MDL	
Calcium (Dissolved)	mg/L				50.20	120.59	161.00	161.0	
Iron (Dissolved)	mg/L				<MDL	<MDL	0.12	<MDL	
Iron (TREC)	mg/L				0.39	8.43	53.90	0.60	
Magnesium (Dissolved)	mg/L				43.10	97.37	128.00	128.0	
Manganese (Dissolved)	mg/L				0.10	0.14	0.17	0.12	
Manganese (TREC)	mg/L				0.13	0.17	0.23	0.17	
Mercury (Dissolved)	mg/L				<MDL	<MDL	0.00	<MDL	
Selenium (Dissolved)	mg/L				<MDL	<MDL	0.00	<MDL	
Sodium (Dissolved)	mg/L				547.00	661.57	771.00	652	
Zinc (Dissolved)	mg/L				<MDL	<MDL	0.00	<MDL	

DH-15a is a replacment well for DH-15. All data is considered operational.

Drill Hole 15a is located on the western edge of the Stevens Draw road.

Baseline Information Collection initiated on 6/12/95 and not yet considered complete.
Point DH-15 has not been influenced by mining.

DH-39
Stevens Draw - Drill Hole
Pipe Elevation - 7142.65
Pipe 1.2' above ground
Depth - 181'

Initiated	6/12/1995	6/12/1995
Activated		
Date	6/4/2020	3/31/2020

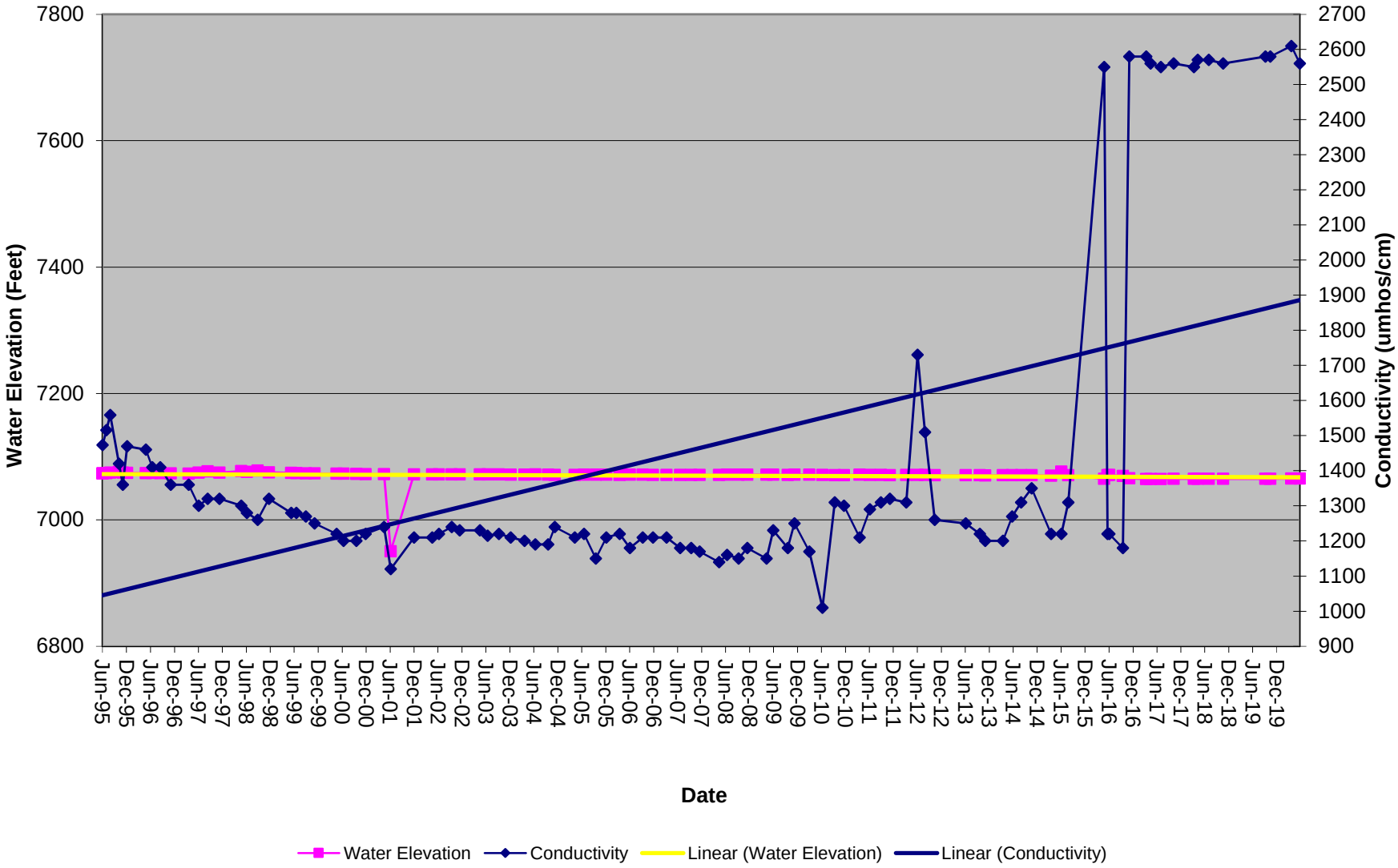
Field Parameters	UNITS	Summary Information Baseline Min	Ave	Max	Operation Min	Ave	Max		
Static Water Level	Feet	64.55	72.67	192.55				77.4	77.4
Water Elevation	Feet	6950.1	7070.0	7078.1				7065.25	7065.25
FieldComment									
ph	su	6.8	7.3	8.3				7.61	7.23
Conductivity	umhos/cm	1010	1443	2610				2560	2610
Temperature	Celsius	8.1	10.4	14.3				11.5	10.7
Lab Parameters	UNITS								
Bicarbonate	mg/L	384.69	558.55	786.00				682	
Carbonate	mg/L	<MDL	1.38	10.83				9.9	
Chloride	mg/L	1.36	17.87	47.14				30.1	
Conductivity	umhos/cm	1025	1505	3340				2440	
Hardness	mg/L	<MDL	426.09	771.50				441	
Nitrate-Nitrite	mg/L	<MDL	0.74	7.06				0.73	
Ammonia	mg/L	<MDL	0.31	1.00				<MDL	
pH	su	7.0	7.6	8.5				8.3	
Phosphate	mg/L	<MDL	0.03	0.09				0.07	
ResidueFilterable-TDS	mg/L	443	1017	2655				1770	
Sulfate	mg/L	101.25	257.45	753.00				722	
Arsenic (Dissolved)	mg/L	<MDL	0.0113	0.1730				<MDL	
Cadmium (Dissolved)	mg/L	<MDL	0.007	0.035				<MDL	
Calcium (Dissolved)	mg/L	6.5	84.2	161.0				161	
Iron (Dissolved)	mg/L	<MDL	0.70	13.00				<MDL	
Iron (TREC)	mg/L	0.01	10.67	43.70				0.6	
Magnesium (Dissolved)	mg/L	<MDL	60.9	146.0				128	
Manganese (Dissolved)	mg/L	<MDL	1.423	60.100				0.12	
Manganese (TREC)	mg/L	0.026	0.418	2.470				<MDL	
Mercury (Dissolved)	mg/L	<MDL	0.000264	0.00550				<MDL	
Selenium (Dissolved)	mg/L	<MDL	0.006	0.021				<MDL	
Sodium (Dissolved)	mg/L	95.8	206.7	652.0				652	
Zinc (Dissolved)	mg/L	<MDL	0.01	0.10				<MDL	

The area of concern for monitoring point DH-39 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

Drill Hole 39 is located in Stevens Draw right next to Drill Hole 15. It is accessed by the Stevens Draw road.

Baseline Information Collection initiated on 6/12/95 and not yet considered complete.
Point DH-39 has not been influenced by mining.

Plot of Conductivity and Water Level



DH-39 - Stevens Draw Drill Hole

Figure 96

DH-49
B Gulch - Drill Hole
Pipe Elevation - 7203.4
Pipe 0.7' above ground
Depth - 324'

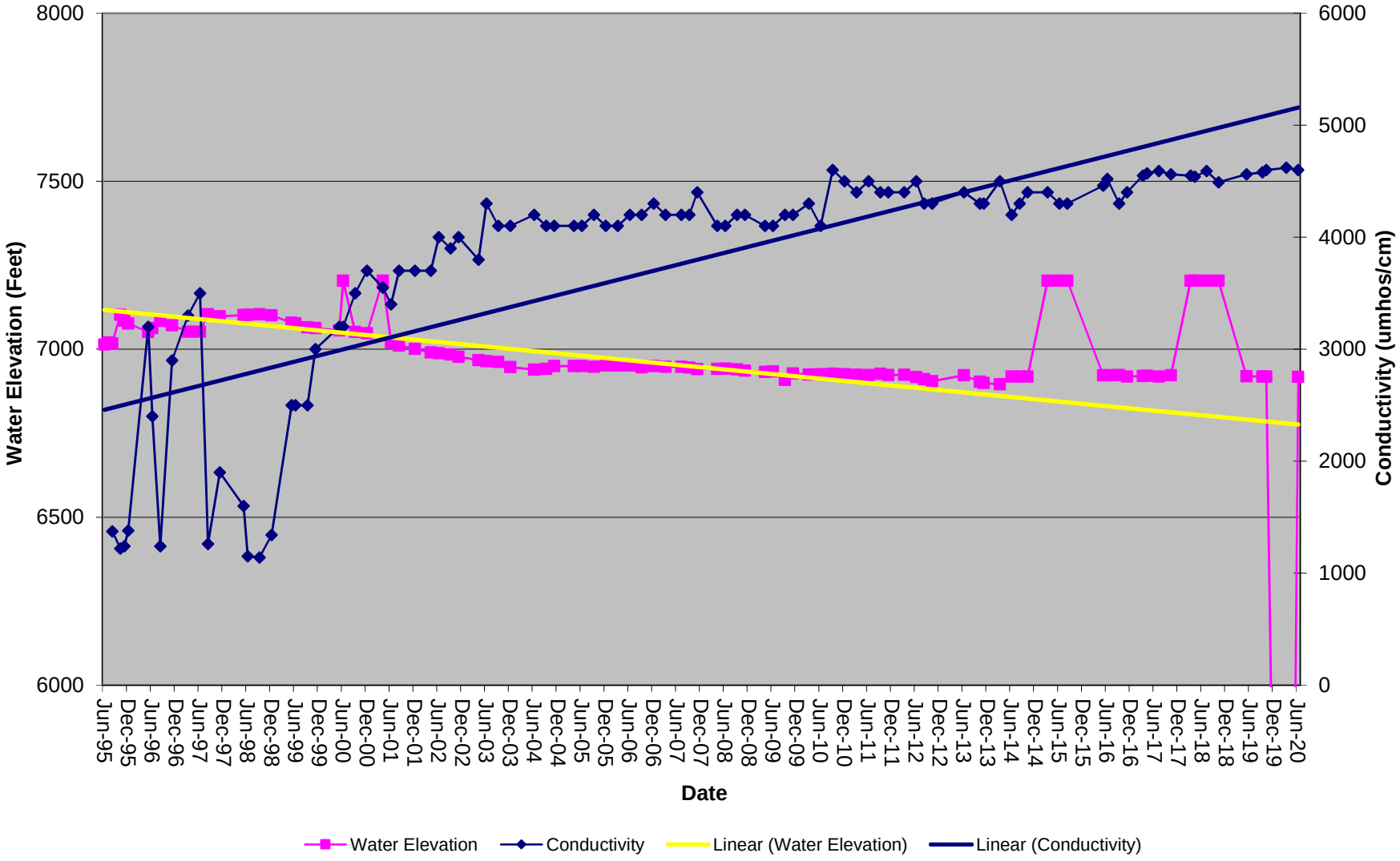
Initiated	6/12/1995	6/12/1995
Activated	3/30/1997	3/30/1997
Date	6/4/2020	3/31/2020

		Summary Information							
		Baseline			Operation				
Field Parameters	UNITS	Min	Ave	Max	Min	Ave	Max		
Static Water Level	Feet	100.84	145.8	189.79	99.57	243.9402	311.46	285.5	285.2
Water Elevation	Feet	7013.6	7057.6	7102.6	6891.9	6959.5	7103.8	6917.9	6918.2
FieldComment									
ph	su	7.1	7.3	7.5	6.9	7.4	8.2	7.34	7.38
Conductivity	umhos/cm	1220	2028	3300	1140	3952	4620	4620	4600
Temperature	Celsius	10	11.9	13.5	10.8	13.7	17.3	15.6	14.6
Lab Parameters	UNITS								
Bicarbonate	mg/L	496	834	1090	313.4	1457.049	2130	1900	
Carbonate	mg/L	<MDL	<MDL	<MDL	<MDL	9.34	79.46	5.1	
Chloride	mg/L	14	15	16	<MDL	38.9	344.61	21.8	
Conductivity	umhos/cm	1250	2023	2470	1160	3666.195	5920	4380	
Hardness	mg/L	34	300	491	<MDL	190	463	171	
Nitrate-Nitrite	mg/L	0.63	1.0	1.43	0.028	4.70	8.9	8.5	
Ammonia	mg/L	0.14	1.9	3.8	<MDL	1.19	5	<MDL	
pH	su	7.1	7.4	7.7	7.2	7.7	8.7	8.3	
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	0.77	21.3	21.3	
ResidueFilterable (TDS)	mg/L	790	1347	1790	700	2646	3411	3140	
Sulfate	mg/L	216	362	470	180	639.12	828	765	
Arsenic (Dissolved)	mg/L	<MDL	0.001	0.002	<MDL	0.045	0.560	0.001	
Cadmium (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.011	0.040	<MDL	
Calcium (Dissolved)	mg/L	11	62	100	0.55	34.0	98.4	28.4	
Iron (Dissolved)	mg/L	0.05	0.4	1.1	<MDL	0.137	1.12	<MDL	
Iron (TREC)	mg/L	0.2	12.4	29.4	0.0186	33.07	1310	1.5	
Magnesium (Dissolved)	mg/L	1.6	35.1	58.6	18.7	30.9	71.5	24.3	
Manganese (Dissolved)	mg/L	<MDL	0.038	0.105	<MDL	0.065	0.35	<MDL	
Manganese (TREC)	mg/L	0.007	0.19	0.308	<MDL	2.17	68.7	0.08	
Mercury (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.00008	0.00050	<MDL	
Selenium (Dissolved)	mg/L	<MDL	0.003	0.007	<MDL	0.036011	0.283	0.0003	
Sodium (Dissolved)	mg/L	5.2	230.7	556	109	907	2070	1070	
Zinc (Dissolved)	mg/L	<MDL	0.003	0.01	<MDL	0.018	0.04	<MDL	

Drill Hole 49 is located just above Stevens Draw road approximately 1000 feet southwest of the mine portals. It is accessed by the Stevens Draw road.

Baseline Information for Point DH-49 is derived from events beginning on 6/12/95 through 3/30/97.
Point influenced by mining on 3/30/97.

Plot of Conductivity and Water Level



DH-49 - B Gulch Drill Hole

Figure 98

DH-67abv
Hubbard Creek - Monitoring Well
Elevation - 6450.5
Depth - 193'

Initiated	6/26/2005	6/26/2005
Activated		
Date	6/4/2020	3/31/2020

Field Parameters	UNITS	Summary Information Baseline Min	Ave	Max	Operation Min	Ave	Max		
Static Water Level	Feet	29.5	44.2	59.7				41.9	41.9
Water Elevation	Feet	6391	6406.4	6421.0				6409.1	6409.1
FieldComment									
ph	su	7.1	7.7	8.4				8.37	8.19
Conductivity	umhos/cm	2000	2660	3700				2450	2430
Temperature	Celsius	5.6	10.3	12.4				9.6	10.8
Lab Parameters	UNITS								
Bicarbonate	mg/L	1.44	2014.34	#######					
Carbonate	mg/L	<MDL	58.2	138.5					
Chloride	mg/L	<MDL	88.8	407.0					
Conductivity	umhos/cm	1370	2823	5850					
Hardness	mg/L	8.54	46.31	145.95					
Nitrate-Nitrite	mg/L	<MDL	3.2	32.3					
Ammonia	mg/L	<MDL	0.9	2.5					
pH	su	7.1	8.0	9.1					
Phosphate	mg/L	<MDL	0.3	1.8					
ResidueFilterable-TDS	mg/L	794	1901	3900					
Sulfate	mg/L	<MDL	22.82	288.00					
Arsenic (Dissolved)	mg/L	<MDL	0.055	0.415					
Cadmium (Dissolved)	mg/L	<MDL	0.02	0.07					
Calcium (Dissolved)	mg/L	<MDL	20.5	115.0					
Iron (Dissolved)	mg/L	<MDL	0.20	2.97					
Iron (TREC)	mg/L	0.01	0.56	1.82					
Magnesium (Dissolved)	mg/L	<MDL	4.5	18.1					
Manganese (Dissolved)	mg/L	<MDL	2.918	86.700					
Manganese (TREC)	mg/L	0.006	0.039	0.132					
Mercury (Dissolved)	mg/L	<MDL	0.00008	0.00036					
Selenium (Dissolved)	mg/L	<MDL	0.030	0.149					
Sodium (Dissolved)	mg/L	218	834	2093					
Zinc (Dissolved)	mg/L	<MDL	0.022	0.067					

The area of concern for monitoring point DH-67abv has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

Baseline Information Collection initiated on 10/12/00 and not yet considered complete.
Point DH-67abv has not been influenced by mining.

DH-67B
Hubbard Creek - B Seam Monitoring Well
Elevation - 6451
Depth - 594'

Initiated								6/29/2004	6/29/2004
Activated									
Date								6/4/2020	3/31/2020
		Summary Information							
Field		Baseline			Operation				
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max		
Static Water Level	Feet	146.9	264.8	498.4				251.8	252.8
Water Elevation	Feet	5952.6	6189.8	6451.0				6199.2	6198.2
FieldComment									
ph	su	6.5	7.7	8.8				7.67	7.78
Conductivity	umhos/cm	2570	6199.2	7500				6690	6700
Temperature	Celsius	13.4	18.7	26.5				17.6	17.5
Lab									
Parameters	UNITS								
Bicarbonate	mg/L	1486.3	2982	3838.0				3400	
Carbonate	mg/L	<MDL	161.95	725.4				<MDL	
Chloride	mg/L	3.92	340.04	509				483	
Conductivity	umhos/cm	497	5414	7810				6370	
Hardness	mg/L	3.59	42.86	198				37	
Nitrate-Nitrite	mg/L	<MDL	1.80	7.4				<MDL	
Ammonia	mg/L	0.102	4.23	9.48				6.26	
pH	su	7.35	8.09	9.37				8.3	
Phosphate	mg/L	<MDL	0.58	5.96				0.15	
ResidueFilterable-TDS	mg/L	2186	4023.4	8131				4260	
Sulfate	mg/L	<MDL	17.22	91.58				<MDL	
Arsenic (Dissolved)	mg/L	<MDL	0.114	0.545				0.002	
Cadmium (Dissolved)	mg/L	<MDL	0.029	0.07				<MDL	
Calcium (Dissolved)	mg/L	0.24	9.34	53.7				11.4	
Iron (Dissolved)	mg/L	0.01	0.25	0.903				0.5	
Iron (TREC)	mg/L	0.011	2.73	31.8				1	
Magnesium (Dissolved)	mg/L	0.73	4.75	29.9				2	
Manganese (Dissolved)	mg/L	<MDL	0.023	0.102				<MDL	
Manganese (TREC)	mg/L	0.009	0.103	1.129				<MDL	
Mercury (Dissolved)	mg/L	<MDL	0.00009	0.00044				<MDL	
Selenium (Dissolved)	mg/L	0.003	0.152	1.595				<MDL	
Sodium (Dissolved)	mg/L	3.885	1410.6	2291.2				1630	
Zinc (Dissolved)	mg/L	<MDL	0.06	0.4				<MDL	

The area of concern for monitoring point DH-67B has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

Note 1: Sample taken in field apparently lost by laboratory.
Note 2: Special bailer for this well broke, could not get sample.

Baseline Information Collection initiated on 6/29/04 and not yet considered complete.
Point DH-67B has not been influenced by mining.

Bowie Resources, LLC
Bowie No. 2 Mine
2020 Baseline

Ground Water

DH-67blw
Hubbard Creek - Monitoring Well
Elevation - 6466
Depth - 357'
Replacement Well 9/26/14

					9/26/2014	9/26/2014
					10/23/2019	5/7/2019
		Summary Information				
Field Parameters	UNITS	Baseline Min	Ave	Max		
Static Water Level	Feet	244	260.355	318.55	250.7	250.9
Water Elevation	Feet	6147.5	6205.6	6222.0	6215.3	6215.1
FieldComment						
ph	su	7.9	8.4	8.5	8.39	8.3
Conductivity	umhos/cm	4800	6340	6920	6920	6900
Temperature	Celsius	16.1	17.685	21.1	17.5	19.2
Lab Parameters	UNITS					
Bicarbonate	mg/L	1460	3503	4150		4080
Carbonate	mg/L	<MDL	<MDL	<MDL		<MDL
Chloride	mg/L	0.414	304	435		403
Conductivity	umhos/cm	2020	5312.73	6470		6460
Hardness	mg/L	20.4	36.5625	55.1		
Nitrate-Nitrite	mg/L	<MDL	<MDL	<MDL		<MDL
Ammonia	mg/L	0.39	2.3	7.1		2.5
pH	su	7.92	8.39	9.35		8.32
Phosphate	mg/L	0.12	0.19818	0.36		0.16
Residue Filterable-TDS	mg/L	1380	3820.91	4840		4490
Sulfate	mg/L	<MDL	18.2	26.9		<MDL
Arsenic	mg/L	<MDL	<MDL	<MDL		<MDL
Cadmium	mg/L	<MDL	<MDL	<MDL		<MDL
Calcium	mg/L	2.1	8.83	15.60		7.27
Iron (Dissolved)	mg/L	0.0358	0.08838	0.167		0.167
Iron (Total)	mg/L	0.104	0.76255	1.37		0.681
Magnesium	mg/L	0.009	2.44311	3.920		2.42
Manganese (Dissolved)	mg/L	0.0089	0.02998	0.0899		0.0106
Manganese (Total)	mg/L	0.0014	61.3079	674		0.0125
Mercury	mg/L	<MDL	<MDL	<MDL		<MDL
Selenium	mg/L	<MDL	<MDL	<MDL		<MDL
Sodium (Dissolved)	mg/L	514	1564	1830		1810
Zinc	mg/L	<MDL	0.0826	0.0826		<MDL

The area of concern for monitoring point DH-67blw has not been affected by the mining operation. monitoring events are considered Baseline.

Replacement well constructed September 2014

Baseline Information collection re-initiated on 9/26/2014 and not yet considered complete.
Point DH-67blw has not been influenced by mining.

Revised 11/17

DH-67D (Reb)
Hubbard Creek - D - Seam Monitoring Well
Elevation - 6450'
Depth - 324.8'

Initiated	11/30/2000	11/30/2000
Activated		
Date	6/4/2020	3/31/2020

Field Parameters	UNITS	Summary Information Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max		
Static Water Level	Feet	123.4	221.679	253.85				250.2	250.8
Water Elevation	Feet	6196.2	6228.3	6326.6				6199.8	6199.2
FieldComment									
ph	su	7.9	9.3	10.6				8.19	8.39
Conductivity	umhos/cm	6.96	6156	7200				6870	6.96
Temperature	Celsius	11.2	16.3	19.3				17.1	17.9
Lab Parameters	**UNITS**								
Bicarbonate	mg/L	<MDL	2790.5	4320				4320	
Carbonate	mg/L	<MDL	372.19	1160				<MDL	
Chloride	mg/L	6.76	394.942	610				425	
Conductivity	umhos/cm	2908	5803.13	13132				6590	
Hardness	mg/L	<MDL	18.96	51.55				25	
Nitrate-Nitrite	mg/L	<MDL	5.449	60.03				<MDL	
Ammonia	mg/L	0.188	4.949	30.5				2.38	
pH	su	7.61	8.93	9.63				8.5	
Phosphate	mg/L	<MDL	2.232	48.2				0.47	
ResidueFilterable-TDS	mg/L	0.15	3898	5188				0.15	
Sulfate	mg/L	<MDL	31.19	300				<MDL	
Arsenic (Dissolved)	mg/L	<MDL	0.16702	0.915				0.005	
Cadmium (Dissolved)	mg/L	<MDL	0.779	16.6				<MDL	
Calcium (Dissolved)	mg/L	<MDL	4.57	36.7				6.7	
Iron (Dissolved)	mg/L	0.01	0.39	7.27				0.4	
Iron (TREC)	mg/L	0.0251	3.41	99.3				0.7	
Magnesium (Dissolved)	mg/L	<MDL	2.39	10.2				2	
Manganese (Dissolved)	mg/L	<MDL	0.035	0.417				<MDL	
Manganese (TREC)	mg/L	<MDL	0.866	22.7				<MDL	
Mercury (Dissolved)	mg/L	<MDL	0.00009	0.00042				<MDL	
Selenium (Dissolved)	mg/L	<MDL	0.15096	1.064				<MDL	
Sodium (Dissolved)	mg/L	784	1614.33	3576.25				1700	
Zinc (Dissolved)	mg/L	0.006	0.043	0.206				<MDL	

The area of concern for monitoring point DH-67D has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

Note 1: Unable to retrieve sample

Baseline Information Collection initiated on 11/30/00 and not yet considered complete.
Point DH-67D has not been influenced by mining.

Bowie Resources, LLC
Bowie No. 2 Mine
2020 Baseline

Ground Water

CWI-DH-58A
Upper B Seam
Elevation -7442.2
Depth - 575'

					3/17/2015
					6/16/2020
		Summary Information			
Field		Baseline			
Parameters	UNITS	Min	Ave	Max	
Static Water Level	Feet	512.6	533.2	536.1	534.1
Water Elevation	Feet	6906.1	6909.0	6929.6	6908.1
FieldComment					
ph	su	7.6	8.5	17.7	7.6
Conductivity	umhos/cm	2	1533	2050	2.17
Temperature	Celsius	17.7	19.9	26.2	19.4
Lab					
Parameters	UNITS				
Bicarbonate	mg/L	635	936	1320	1270
Carbonate	mg/L	<MDL	19.6	29.9	<MDL
Chloride	mg/L	16.4	19.8	22.7	22.1
Conductivity	umhos/cm	866	1372	2110	2110
Hardness	mg/L	8.2	26.9	65.7	33.0
Nitrate-Nitrite	mg/L	<MDL	0.08	0.08	<MDL
Ammonia	mg/L	0.03	1.01	1.75	1.75
pH	su	7.59	8.23	9.03	8.3
Phosphate	mg/L	1.70	2.80	5.00	3.8
ResidueFilterable-TDS	mg/L	744	1026	1340	1340
Sulfate	mg/L	<MDL	1.9	3.5	1.7
Arsenic	mg/L	<MDL	0.00670	0.00670	<MDL
Cadmium	mg/L	<MDL	<MDL	<MDL	0.0013
Calcium	mg/L	<MDL	8.6	14.0	14
Iron (Dissolved)	mg/L	0.012	0.168	1.750	0.4
Iron (Total)	mg/L	0.573	2.472	9.270	1.9
Magnesium (Dissolved)	mg/L	0.052	1.123	6.000	6
Manganese (Dissolved)	mg/L	<MDL	0.2684	2.3300	<MDL
Manganese (Total)	mg/L	<MDL	0.2448	0.6240	<MDL
Mercury	mg/L	<MDL	<MDL	<MDL	<MDL
Selenium	mg/L	<MDL	<MDL	<MDL	<MDL
Sodium	mg/L	141	510	3050	3050
Zinc	mg/L	<MDL	0.0219	0.0219	<MDL

The area of concern for monitoring point CWI-DH-58A has not been affected by the m
monitoring events are considered Baseline.

New Well beginning in December 2014.

Baseline information collection initiated on March 17, 2015.
Point CWI-DH-58A has not and will not be influenced by mining.

Bowie Resources, LLC
Bowie No. 2 Mine
2020 Baseline

Ground Water

CWI-DH-60
Upper B Seam
Elevation - 7921
Depth - 1085'

					10/20/2014
					6/16/2020
		Summary Information			
Field Parameters	UNITS	Baseline Min	Ave	Max	
Static Water Level	Feet	943.6	946.9	952.1	943.6
Water Elevation	Feet	6968.9	6974.1	6977.4	6977.4
FieldComment					
ph	su	8.0	8.2	8.4	8.02
Conductivity	umhos/cm	1062	5323	10980	1125
Temperature	Celsius	18.5	21.2	22.7	21.5
Lab Parameters	UNITS				
Bicarbonate	mg/L	5620	7392	8330	7180
Carbonate	mg/L	<MDL	<MDL	<MDL	58.6
Chloride	mg/L	240	297	337	315
Conductivity	umhos/cm	7820	9427	10800	10800
Hardness	mg/L	60.0	75.0	86.2	60
Nitrate-Nitrite	mg/L	<MDL	<MDL	<MDL	<MDL
Ammonia	mg/L	0.84	1.54	2.40	2.35
pH	su	7.96	8.14	8.50	8.5
Phosphate	mg/L	0.05	0.18	0.37	0.37
ResidueFilterable-TDS	mg/L	6070	7473	8110	7820
Sulfate	mg/L	<MDL	20.7	23.2	<MDL
Arsenic	mg/L	<MDL	0.00045	0.00045	<MDL
Cadmium	mg/L	<MDL	0.0016	0.0018	0.0013
Calcium	mg/L	14.0	16.8	21.2	14.0
Iron (Dissolved)	mg/L	0.216	31.720	532.000	0.4
Iron (Total)	mg/L	0.83	2.06	3.73	1.9
Magnesium (Dissolved)	mg/L	6.00	8.06	9.57	6
Manganese (Dissolved)	mg/L	0.0103	0.0145	0.0186	<MDL
Manganese (Total)	mg/L	0.0131	0.0275	0.0548	<MDL
Mercury	mg/L	<MDL	<MDL	<MDL	<MDL
Selenium	mg/L	<MDL	<MDL	<MDL	<MDL
Sodium	mg/L	315	2866	3760	3050
Zinc	mg/L	<MDL	<MDL	<MDL	<MDL

The area of concern for monitoring point CWI-DH-60 has not been affected by the mi
monitoring events are considered Baseline.

CWI-DH-60 is located southwest of projected mining. It will not be impacted by Bowie

CWI-DH-60 was cemented to the bottom of the upper B-Seam during September 201

CWI-DH-60 was worked over and cleaned during August 2014.

Baseline Information collection re-initiated on 03/18/15.
Point CWI-DH-60 has not and will not be influenced by mining.

Bowie Resources, LLC
Bowie No. 2 Mine
2020 Baseline

Ground Water

DH-2010-1SS
Sanstone Above B-Seam
Elevation - 7544.4
Depth - 1140'

						3/18/2015
						6/16/2020
		Summary Information				
Field		Baseline				
Parameters	UNITS	Min	Ave	Max		
Static Water Level	Feet	1088.3	1095.9	1103.3		1103.3
Water Elevation	Feet	6443.7	6451.1	6458.7		6443.7
FieldComment						
ph	su	7.0	7.8	11.5		7.4
Conductivity	umhos/cm	1330	1660	2520		1863
Temperature	Celsius	7.3	25.1	26.9		26.8
Lab						
Parameters	UNITS					
Bicarbonate	mg/L	536	678	809		796
Carbonate	mg/L	<MDL	<MDL	<MDL		<MDL
Chloride	mg/L	110	149	416		153
Conductivity	umhos/cm	1110	1355	1830		1830
Hardness	mg/L	34.0	41.0	49.6		44
Nitrate-Nitrite	mg/L	<MDL	<MDL	<MDL		10
Ammonia	mg/L	5.0	6.5	7.7		7.7
pH	su	7.10	7.32	8.00		8
Phosphate	mg/L	0.5	1.5	1.8		0.53
ResidueFilterable-TDS	mg/L	780	968	1120		1120
Sulfate	mg/L	<MDL	4.05	5.40		<MDL
Arsenic (Dissolved)	mg/L	0.17	0.22	0.29		0.172
Cadmium (Dissolved)	mg/L	<MDL	<MDL	<MDL		<MDL
Calcium (Dissolved)	mg/L	0.1	13.4	17.2		15.6
Iron (Dissolved)	mg/L	0.096	0.149	0.323		0.21
Iron (Total)	mg/L	0.75	2.92	4.94		2.93
Magnesium (Dissolved)	mg/L	0.971	1.293	1.610		1.3
Manganese (Dissolved)	mg/L	0.0832	0.1025	0.1300		0.11
Manganese (Total)	mg/L	0.095	0.124	0.145		0.13
Mercury (Dissolved)	mg/L	<MDL	0.001	0.001		<MDL
Selenium (Dissolved)	mg/L	<MDL	0.0042	0.0044		0.004
Sodium (Dissolved)	mg/L	274	313	395		395
Zinc (Dissolved)	mg/L	<MDL	0.0466	0.0631		0.03

The area of concern for monitoring point DH-2010-1SS has not been affected by the r
monitoring events are considered Baseline.

DH-2010-1SS is located in Section 5. It will be impacted by future Bowie No. 2 Mine

Lab analysis is required semi-annually

Baseline Information collection re-initiated on 03/18/15 and not yet considered complete.
Point DH-2010-1B has not been influenced by mining.

Bowie Resources, LLC
Bowie No. 2 Mine
2020 Baseline

Ground Water

DH-2010-1B
B Seam
Elevation - 7544.6
Depth - 1220'

					10/16/2014
					6/16/2020
		Summary Information			
Field		Baseline			
Parameters	UNITS	Min	Ave	Max	
Static Water Level	Feet	1092.4	1170.9	1998.1	1100.8
Water Elevation	Feet	5549	6376	6455	6446.2
FieldComment					
ph	su	7.4	11.1	23.3	11.2
Conductivity	umhos/cm	378	1718	2666	2666
Temperature	Celsius	11.6	24.4	26.8	26.4
Lab					
Parameters	UNITS				
Bicarbonate	mg/L	<MDL	162.9	1040.0	<MDL
Carbonate	mg/L	45	248	500	500
Chloride	mg/L	6.30	98.16	187.00	187
Conductivity	umhos/cm	336	1386	2440	2440
Hardness	mg/L	0.0	7.6	15.4	7
Nitrate-Nitrite	mg/L	<MDL	0.48	1.60	0.05
Ammonia	mg/L	0.5	16.5	28.8	28.8
pH	su	9.48	10.61	11.58	11.4
Phosphate	mg/L	0.05	0.16	0.47	0.47
ResidueFilterable-TDS	mg/L	253	987	1460	1460
Sulfate	mg/L	10.0	82.5	166.0	166
Arsenic (Dissolved)	mg/L	<MDL	0.0096	0.0139	0.0139
Cadmium (Dissolved)	mg/L	<MDL	<MDL	<MDL	0.00005
Calcium (Dissolved)	mg/L	1.54	3.04	6.00	2.8
Iron (Dissolved)	mg/L	0.0570	0.1149	0.1940	0.11
Iron (Total)	mg/L	0.20	1.42	4.31	0.42
Magnesium (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL
Manganese (Dissolved)	mg/L	<MDL	0.0055	0.0071	<MDL
Manganese (Total)	mg/L	0.0068	0.0293	0.0766	<MDL
Mercury (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL
Selenium (Dissolved)	mg/L	<MDL	<MDL	<MDL	0.0079
Sodium (Dissolved)	mg/L	74	299	501	483
Zinc (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL

The area of concern for monitoring point DH-2010-1B has not been affected by the m
monitoring events are considered Baseline.

DH-2010-1B is located in Section 5 It will be impacted by future Bowie No. 2 Mine w
DH-2010-1B was rehabilitated in 2014. Baseline inforamtion is collected beginning C

Baseline Information collection re-initiated on 10/16/14 and not yet considered complete.
Point DH-2010-1B has not been influenced by mining.

Figure 106

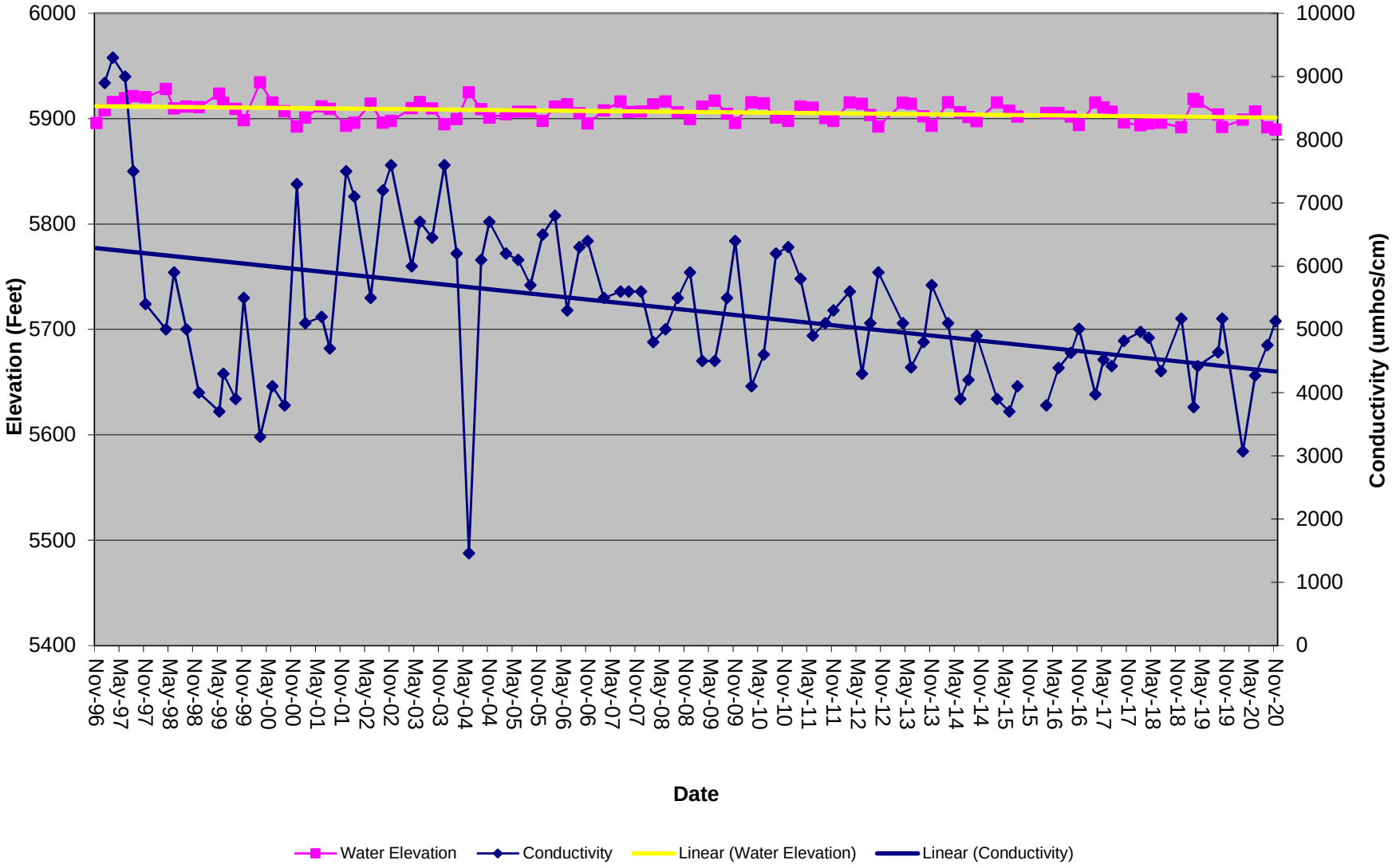
AW-1
Alluvial Well
Top of Pipe Elevation - 5977.76'
Depth - 120'
Pipe 1.06' Above Ground

Initiated								11/23/1996	11/23/1996	11/23/1996	11/23/1996
Activated								3/27/1997	3/27/1997	3/27/1997	3/27/1997
Date								11/30/2020	9/29/2020	6/9/2020	3/4/2020
		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Static Water Level	Feet	61.92	71.25	82.01	43.44	71.22	88.10	88.1	86	70.9	78.7
Water Elevation	Feet	5895.7	5906.5	5915.8	5889.7	5906.5	5934.3	5889.66	5891.76	5906.86	5899.06
FieldComment											
ph	su	7.1	7.2	7.3	7.0	7.4	12.9	7.69	7.43	7.53	7.47
Conductivity	umhos/cm	8900	9100	9300	1460	5230	9000	5130	4750	4270	3070
Temperature	Celsius	10.2	11.3	12.4	8.7	12.9	15.5	11.5	15	12.1	14
Lab											
Parameters	UNITS										
Bicarbonate	mg/L	641	649	657	214.0	608.6	1165.2			746	
Carbonate	mg/L	<MDL	<MDL	<MDL	<MDL	0.83	10.76			<MDL	
Chloride	mg/L	77	78	79	8.5	154.9	318.5			172	
Conductivity	umhos/cm	6480	7230	7980	894	5136	8610			4190	
Hardness	mg/L	2750	2895	3040	<MDL	1449	4511			1180	
Nitrate-Nitrite	mg/L	5.7	6.5	7.3	<MDL	3.74	11.20				
Ammonia	mg/L	0.07	0.11	0.14	<MDL	0.51	8.10			8.1	
pH	su	7.4	7.6	7.8	0.0	7.4	8.5			0.03	
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	0.03	0.22				
ResidueFilterable-TDS	mg/L	7990	8200	8410	787	4494	8710				
Sulfate	mg/L	5140	5220	5300	135	2425	8330				
Arsenic (Dissolved)	mg/L	<MDL	0.001	0.001	<MDL	0.090	0.553			<MDL	
Cadmium (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	4.877	141.000			141	
Calcium (Dissolved)	mg/L	316	327	338	23.4	173.8	360.0				
Iron (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.12	1.75			0.9	
Iron (TREC)	mg/L	0.13	0.41	0.70	0.01	0.58	2.37				
Magnesium (Dissolved)	mg/L	476	505	533	53.8	285.5	961.5			<MDL	
Manganese (Dissolved)	mg/L	<MDL	0.03	0.05	<MDL	0.034	0.490			0.07	
Manganese (TREC)	mg/L	0.01	0.03	0.06	<MDL	1.524	7.440			<MDL	
Mercury (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.00005	0.00024				
Selenium (Dissolved)	mg/L	0.026	0.031	0.035	0.001	0.230	7.400			0.0067	
Sodium (Dissolved)	mg/L	1550	1625	1700	253.0	902.8	1867.5			618	
Zinc (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.02	0.11				

Alluvial Wells AW-1 through AW-6 are located north of Old State Highway 133, near the entrance to the mine.

There is no Baseline Collection possible for points initiated after the influence of mining.

Plot of Conductivity and Water Level



AW-1 - Alluvial Well

Figure 108

AW-2
Alluvial Well
Top of Pipe Elevation - 5966.2'
Depth - 50.4'
Pipe 1.32' Above Ground

Initiated	11/23/1996	11/23/1996	11/23/1996	11/23/1996
Activated	3/27/1997	3/27/1997	3/27/1997	3/27/1997
Date	11/30/2020	9/29/2020	6/9/2020	3/4/2020

		Summary Information									
		Baseline			Operation						
Field Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Static Water Level	Feet	50.35	50.65	50.81	35.55	47.42	54.90	47.4	46.5	46.3	46.6
Water Elevation	Feet	5915.8	5916.0	5916.3	5911.7	5919.2	5931.1	5919.22	5920.12	5920.32	5920.02
FieldComment			Damp								
ph	su				6.8	7.1	7.5	7.41	7.03	7.36	6.91
Conductivity	umhos/cm				1020	6775	10200	1060	1054	1031	1066
Temperature	Celsius				10.5	14.6	18.4	10.5	16	13.33	14
Lab Parameters	UNITS										
Bicarbonate	mg/L				345.18	791.04	1080.00			908	
Carbonate	mg/L				<MDL	235.47	908.00			908	
Chloride	mg/L				54.50	173.68	370.63			215	
Conductivity	umhos/cm				3770	7933	12510			10400	
Hardness	mg/L				241.87	2792.44	4540.00			4020	
Nitrate-Nitrite	mg/L				<MDL	3.12	9.65			0.7	
Ammonia	mg/L				<MDL	1.47	4.60			<MDL	
pH	su				6.7	7.5	8.4			8.0	
Phosphate	mg/L				<MDL	0.07	0.25			0.06	
ResidueFilterable-TDS	mg/L				319	7379	11100			11100	
Sulfate	mg/L				235	3811	6540			6160	
Arsenic (Dissolved)	mg/L				<MDL	0.179	1.795			<MDL	
Cadmium (Dissolved)	mg/L				<MDL	0.0345	0.1100			<MDL	
Calcium (Dissolved)	mg/L				33	324	518			431	
Iron (Dissolved)	mg/L				0.02	0.09	0.26			<MDL	
Iron (TREC)	mg/L				0.04	1.26	13.60			13.6	
Magnesium (Dissolved)	mg/L				170	539	970			715	
Manganese (Dissolved)	mg/L				<MDL	0.15	0.89			<MDL	
Manganese (TREC)	mg/L				0.01	0.40	3.90			0.8	
Mercury (Dissolved)	mg/L				<MDL	0.04060	0.77000			<MDL	
Selenium (Dissolved)	mg/L				0.00	0.06	0.54			<MDL	
Sodium (Dissolved)	mg/L				21.0	1146.6	2212.5			1540	
Zinc (Dissolved)	mg/L				<MDL	0.04	0.08			<MDL	

Alluvial Wells AW-1 through AW-6 are located north of Old State Highway 133, near the entrance to the mine.

There is no Baseline Collection possible for points initiated after the influence of mining.

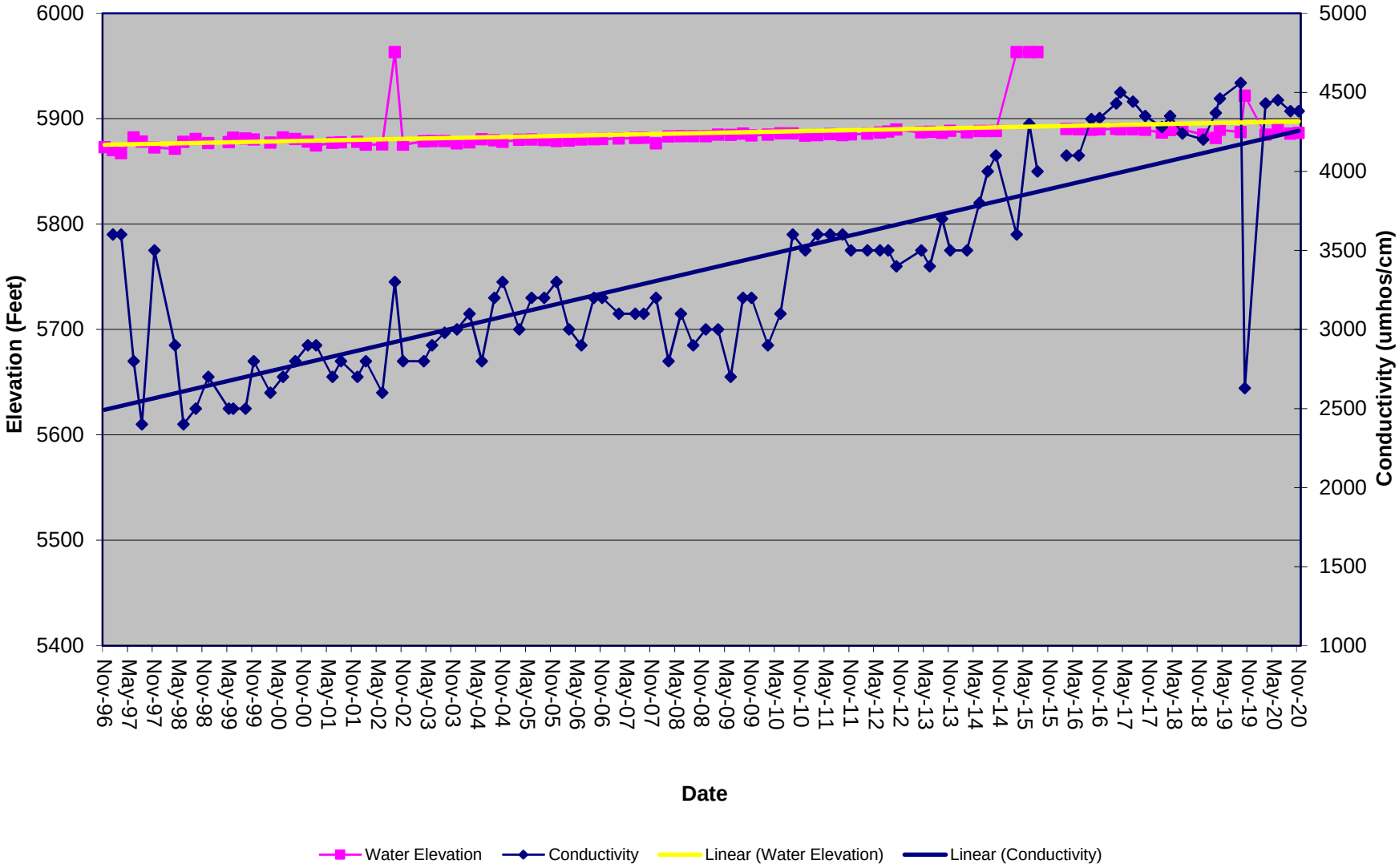
AW-3
Alluvial Well
Top of Pipe Elevation - 5962.96'
Depth - 150'
Pipe 1.16' Above Ground

Initiated								11/23/1996	11/23/1996	11/23/1996	11/23/1996
Activated								3/27/1997	3/27/1997	3/27/1997	3/27/1997
Date								11/30/2020	9/29/2020	6/9/2020	3/4/2020
		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Static Water Level	Feet	90.23	92.97	95.82	0.00	78.72	91.54	76.6	77.8	73	78.2
Water Elevation	Feet	5867.1	5870.0	5872.7	5871.4	5884.2	5963.0	5886.36	5885.16	5889.96	5884.76
FieldComment											
ph	su	6.9	7.0	7.1	6.8	8.0	77.1	9.8	7.19	7.35	7.73
Conductivity	umhos/cm	3600	3600	3600	2400	3368	4560	4380	4380	4450	4430
Temperature	Celsius	11.2	12.8	14.4	7.6	13.6	15.8	7.6	12.9	12.8	11.2
Lab											
Parameters	UNITS										
Bicarbonate	mg/L	851	976	1100	40	605	1080			700	
Carbonate	mg/L	<MDL	<MDL	<MDL	<MDL	0.83	10.76			<MDL	
Chloride	mg/L	119	128	136	33.77	144.33	367.00			367	
Conductivity	umhos/cm	2800	2975	3150	1817	3248	4580			4330	
Hardness	mg/L	1280	1325	1370	<MDL	1673	3354			2220	
Nitrate-Nitrite	mg/L	<MDL	<MDL	<MDL	0.03	2.92	10.20			8.6	
Ammonia	mg/L	1.66	1.90	2.13	<MDL	0.37	2.00			<MDL	
pH	su	7.2	7.3	7.5	6.9	7.5	8.5			8.0	
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	0.89	21.80			21.8	
ResidueFilterable-TDS	mg/L	2390	2415	2440	1750	2759	4130			3700	
Sulfate	mg/L	870	875	880	760	1295	2030			1640	
Arsenic (Dissolved)	mg/L	<MDL	0.001	0.001	<MDL	0.976	28.900			<MDL	
Cadmium (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.009	0.040			0.0002	
Calcium (Dissolved)	mg/L	201	206	210	90.5	254.7	505.0			337	
Iron (Dissolved)	mg/L	0.19	0.33	0.46	<MDL	0.53	8.22			<MDL	
Iron (TREC)	mg/L	8.00	8.23	8.46	0.03	2.62	27.50			0.1	
Magnesium (Dissolved)	mg/L	189	197	205	136	269	661			334	
Manganese (Dissolved)	mg/L	0.10	0.11	0.13	<MDL	0.113	0.855			<MDL	
Manganese (TREC)	mg/L	0.12	0.12	0.12	0.008	3.750	111.000			12.3	
Mercury (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.00007	0.00035			<MDL	
Selenium (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.017	0.134			0.0212	
Sodium (Dissolved)	mg/L	421	433	445	105	234	682			285	
Zinc (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.02	0.10			<MDL	

Alluvial Wells AW-1 through AW-6 are located north of Old State Highway 133, near the entrance to the mine.

There is no Baseline Collection possible for points initiated after the influence of mining.

Plot of Conductivity and Water Level



AW-3 - Alluvial Well

Figure 111

AW-4
Alluvial Well
Top of Pipe Elevation - 5977.2'
Depth - 60'
Pipe 1.12' Above Ground

Initiated	11/23/1996	11/23/1996	11/23/1996	11/23/1996
Activated	3/27/1997	3/27/1997	3/27/1997	3/27/1997
Date	11/30/2020	9/29/2020	6/4/2020	3/5/2020

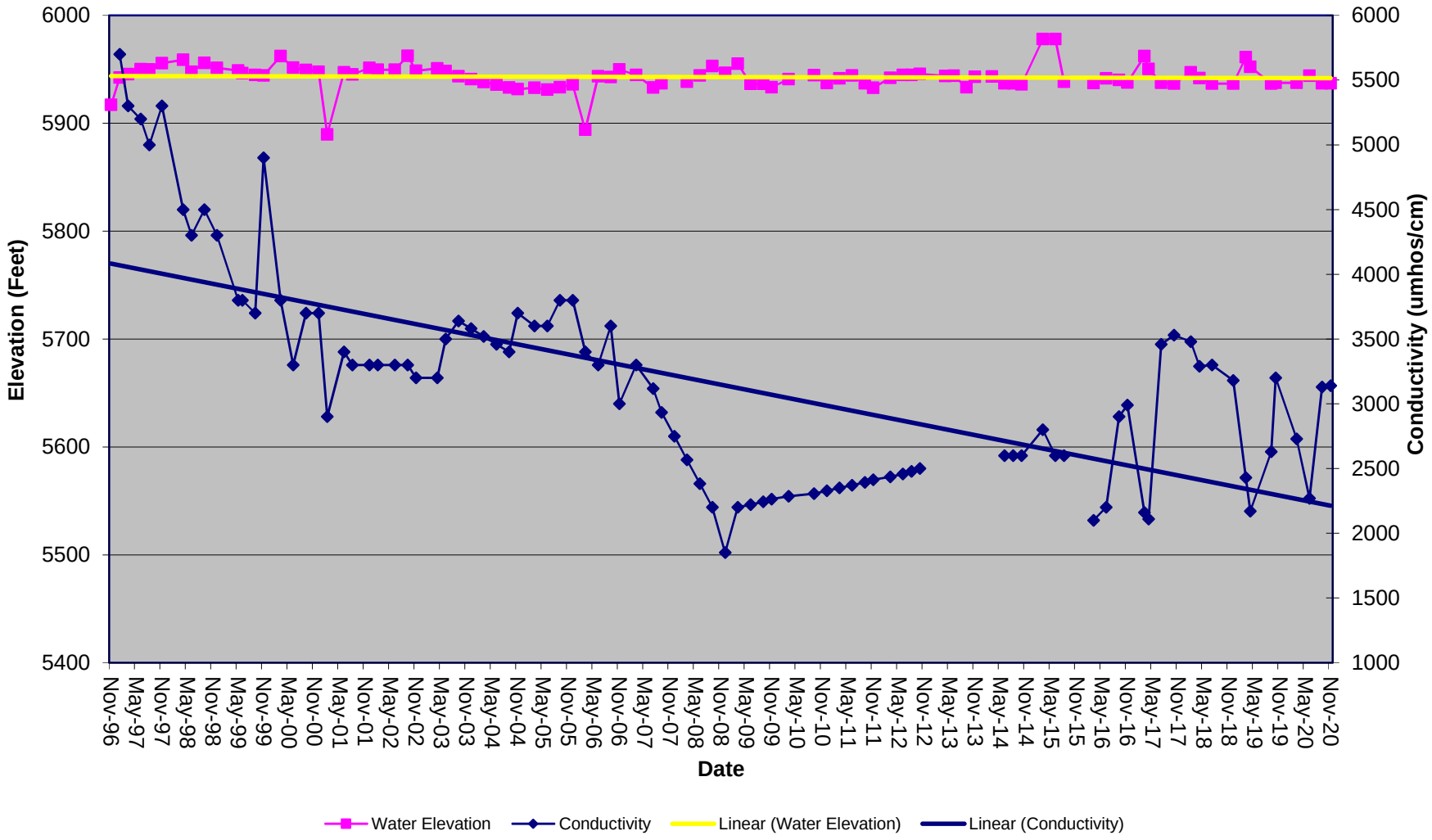
		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Static Water Level	Feet	32.42	42.94	60.78	15.54	35.37	88.38	41.1	40.9	33.9	40.6
Water Elevation	Feet	5917.1	5935.0	5945.5	5889.5	5942.6	5962.4	5936.82	5937.02	5944.02	5937.32
FieldComment											
ph	su	6.8	6.9	7.0	6.7	7.3	8.0	7.73	7.63	8.01	7.61
Conductivity	umhos/cm	5300	5500	5700	1850	3263	5300	3140	3130	2270	2730
Temperature	Celsius	11.2	11.9	12.6	8.0	12.3	15.5	12.9	11.8	11.9	10
Lab											
Parameters	UNITS										
Bicarbonate	mg/L	624	707	790	316.1	541.6	758.0			422	
Carbonate	mg/L	<MDL	<MDL	<MDL	<MDL	0.37	4.49			<MDL	
Chloride	mg/L	57	60	63	31	137	227			82.8	
Conductivity	umhos/cm	3880	4495	5110	1723	3372	9490			2230	
Hardness	mg/L	2650	2670	2690	<MDL	1042	2730			799	
Nitrate-Nitrite	mg/L	0.10	0.21	0.32	<MDL	0.58	6.75			<MDL	
Ammonia	mg/L	0.09	0.22	0.34	<MDL	0.65	6.60			<MDL	
pH	su	7.1	7.3	7.5	7.1	7.6	8.3			8.1	
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	1.05	21.30			21.3	
ResidueFilterable-TDS	mg/L	4830	5080	5330	1372	2732	4990			1780	
Sulfate	mg/L	2620	2920	3220	448	1299	2760			785	
Arsenic	mg/L	<MDL	<MDL	<MDL	<MDL	0.006	0.042			0.0003	
Cadmium	mg/L	<MDL	<MDL	<MDL	<MDL	0.00469	0.03000			<MDL	
Calcium	mg/L	465	481	496	19.8	213.3	496.0			150	
Iron (Dissolved)	mg/L	<MDL	0.04	0.07	<MDL	0.10	0.73			<MDL	
Iron (TREC)	mg/L	0.10	0.14	0.17	0.07	2.88	69.20			0.32	
Magnesium (Dissolved)	mg/L	353	357	361	71	161	362			103	
Manganese (Dissolved)	mg/L	0.22	0.43	0.64	<MDL	0.61	1.52			0.71	
Manganese (TREC)	mg/L	0.18	0.40	0.62	0.15	64.36	1270.00			0.73	
Mercury	mg/L	<MDL	<MDL	<MDL	<MDL	0.00006	0.00030			<MDL	
Selenium	mg/L	<MDL	0.0005	0.0010	<MDL	0.0019	0.0100			<MDL	
Sodium	mg/L	590	646	702	199	369	684			244	
Zinc	mg/L	<MDL	<MDL	<MDL	<MDL	0.02	0.07			<MDL	

**Small bailer won't reach water, casing pinched*

Alluvial Wells AW-1 through AW-6 are located north of Old State Highway 133, near the entrance to the mine.

There is no Baseline Collection possible for points initiated after the influence of mining.

Plot of Conductivity and Water Level



AW-4 - Alluvial Well

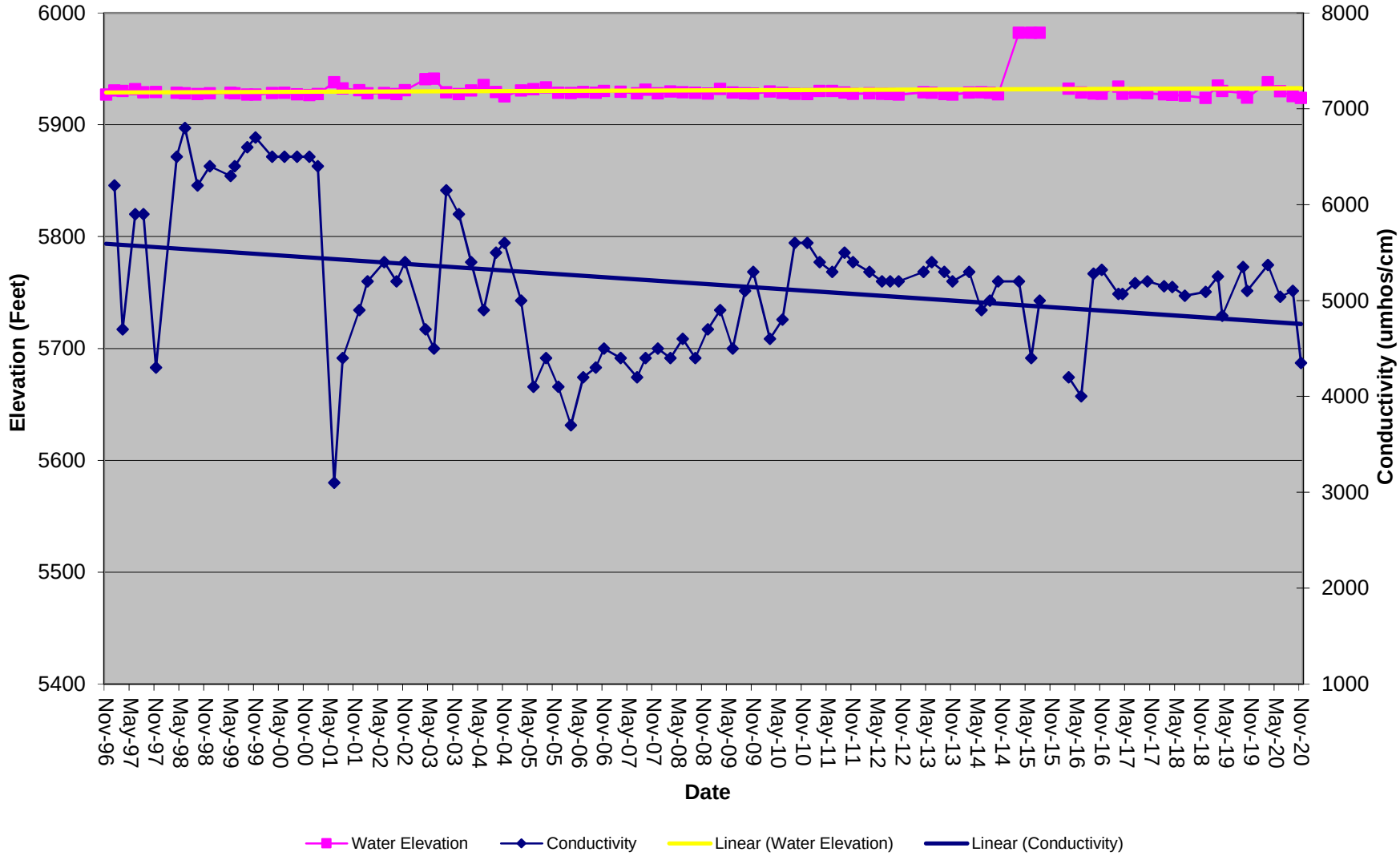
AW-5 Alluvial Well
Top of Pipe Elevation - 5982.14'
Depth - 100'
Pipe 1.14' Above Ground

Initiated								11/23/1996	11/23/1996	11/23/1996	11/23/1996
Activated								3/27/1997	3/27/1997	3/27/1997	3/27/1997
Date								11/30/2020	9/29/2020	6/9/2020	3/5/2020
		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Static Water Level	Feet	51.65	52.95	55.26	41.03	52.91	58.20	58.2	56.5	52.3	44.3
Water Elevation	Feet	5926.9	5929.2	5930.5	5923.9	5929.2	5941.1	5923.94	5925.64	5929.84	5937.84
FieldComment											
ph	su	7.1	7.2	7.3	6.6	7.5	51.8	7.3	7.1	7.1	7.2
Conductivity	umhos/cm	4700	5450	6200	3100	5168	6800	4350	5100	5040	5370
Temperature	Celsius	12.8	13.7	14.6	7.1	14.2	16.9	13.9	13.6	7.08	10.5
Lab											
Parameters	UNITS										
Bicarbonate	mg/L	566	658	750	99.05	740.42	1100.00			934	
Carbonate	mg/L	<MDL	<MDL	<MDL	<MDL	0.98	10.76			<MDL	
Chloride	mg/L	49	51	52	29.0	249.5	636.5			460	
Conductivity	umhos/cm	4270	4890	5510	378	5011	6650			4880	
Hardness	mg/L	3330	3380	3430	<MDL	2538	5318			2280	
Nitrate-Nitrite	mg/L	34.4	35.2	36.0	<MDL	14.78	46.70			7.71	
Ammonia	mg/L	0.10	0.11	0.13	<MDL	0.57	2.03			<MDL	
pH	su	7.2	7.4	7.6	6.7	7.4	8.4			8.0	
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	0.142	3.240			0.06	
ResidueFilterable-TDS	mg/L	5390	5580	5770	3270	4754	6760			3980	
Sulfate	mg/L	3140	3385	3630	977	2345	4550			1680	
Arsenic (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.067	0.552			<MDL	
Cadmium (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.01470	0.0690			0.0001	
Calcium (Dissolved)	mg/L	291	298	305	27.6	253.1	451.0			236	
Iron (Dissolved)	mg/L	<MDL	0.03	0.06	<MDL	0.038	0.106			<MDL	
Iron (TREC)	mg/L	0.10	0.11	0.12	<MDL	9.52	385.00			2.8	
Magnesium (Dissolved)	mg/L	633	642	650	253	520	1158			411	
Manganese (Dissolved)	mg/L	<MDL	0.01	0.02	<MDL	0.011	0.044			<MDL	
Manganese (TREC)	mg/L	0.01	0.01	0.02	<MDL	0.024	0.220			0.09	
Mercury (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.00005	0.00035			<MDL	
Selenium (Dissolved)	mg/L	0.03	0.03	0.03	0.002	0.031	0.250			0.0177	
Sodium (Dissolved)	mg/L	523	531	539	204	424	825			406	
Zinc (Dissolved)	mg/L	<MDL	0.01	0.03	<MDL	0.025	0.070			<MDL	

Alluvial Wells AW-1 through AW-6 are located north of Old State Highway 133, near the entrance to the mine.

There is no Baseline Collection possible for points initiated after the influence of mining.

Plot of Conductivity and Water Level



AW-5 - Alluvial Well

Figure 115

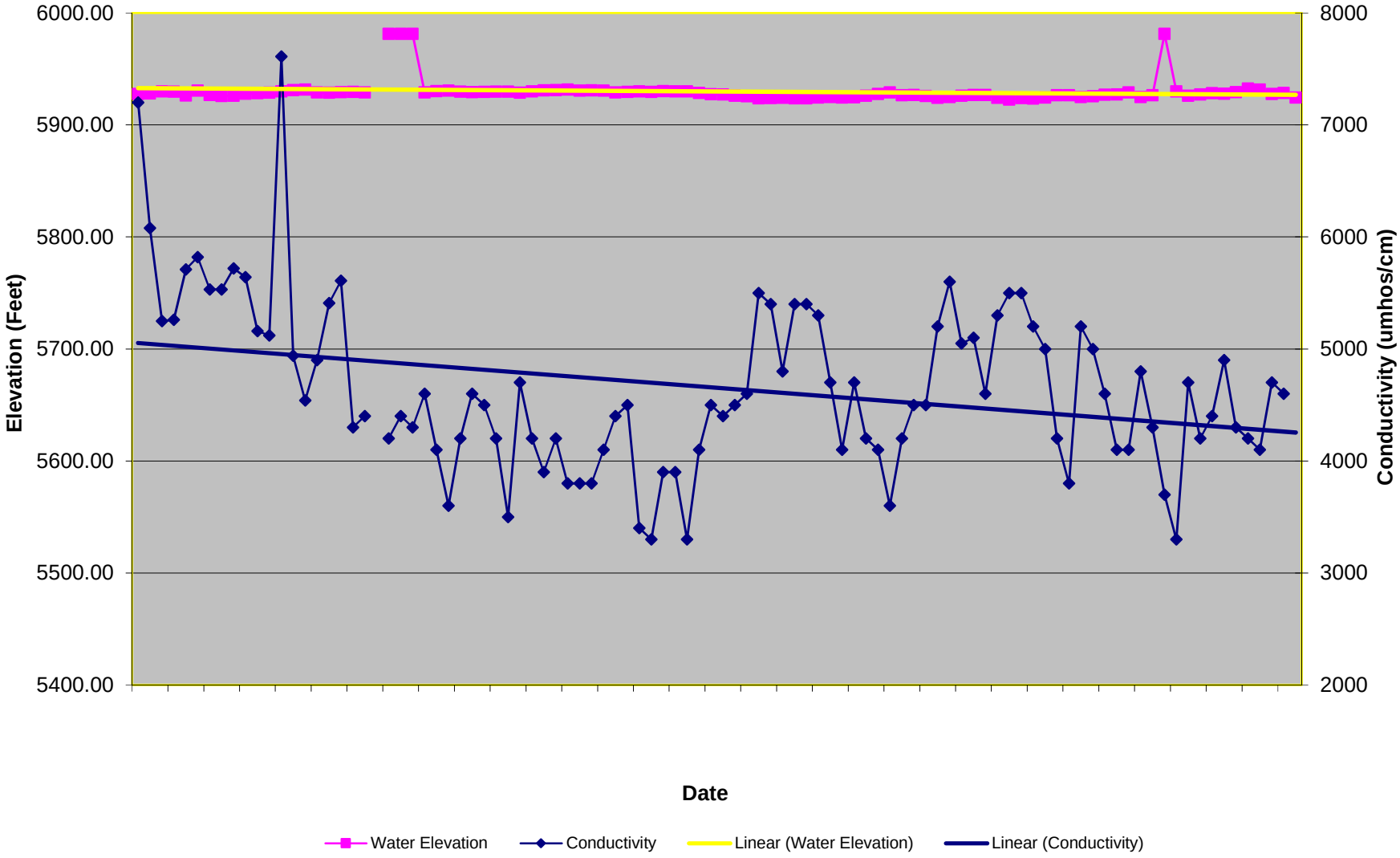
AW-6
Alluvial Well
Top of Pipe Elevation - 5981.18'
Depth - 112'
Pipe 1.38' Above Ground

Initiated								11/23/1996	11/23/1996	11/23/1996	11/23/1996
Activated								3/27/1997	3/27/1997	3/27/1997	3/27/1997
Date								11/30/2020	9/29/2020	6/9/2020	3/5/2020
		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Static Water Level	Feet	52.62	54.37	56.82	0.00	52.89	58.61	53.7	53.1	51.2	51.9
Water Elevation	Feet	5924.4	5926.8	5928.6	5922.6	5928.3	5981.2	5927.48	5928.08	5929.98	5929.28
FieldComment											
ph	su	7.3	7.4	7.4	7.0	7.3	8.5	8.45	7.36	7.46	7.38
Conductivity	umhos/cm	4600	4650	4700	3300	4655	7610	7200	6080	5250	5260
Temperature	Celsius	12.4	13.5	14.6	11.6	14.1	17.8	14.8	13.4	14.5	11.6
Lab											
Parameters	UNITS										
Bicarbonate	mg/L	278	317	355	217.4	392.1	521.0			431	
Carbonate	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL			<MDL	
Chloride	mg/L	107	114	120	54.5	138.2	577.8			164	
Conductivity	umhos/cm	2580	3305	4030	3125	4493	7450			5110	
Hardness	mg/L	1880	1925	1970	<MDL	1780	4787			2130	
Nitrate-Nitrite	mg/L	7.3	8.1	8.8	0.0	5.1	9.0			3.7	
Ammonia	mg/L	0.07	0.07	0.07	<MDL	0.37	1.56			<MDL	
pH	su	7.5	7.6	7.7	7.0	7.6	8.3			8.1	
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	0.83	21.80			21.8	
ResidueFilterable-TDS	mg/L	3910	3995	4080	2440	4160	5770			4990	
Sulfate	mg/L	2300	2300	2300	968	2229	3150			2760	
Arsenic (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.093	0.650			<MDL	
Cadmium (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.011	0.040			<MDL	
Calcium (Dissolved)	mg/L	248	254	260	37	232	327			280	
Iron (Dissolved)	mg/L	<MDL	0.14	0.27	<MDL	0.06	0.26			<MDL	
Iron (TREC)	mg/L	0.26	0.31	0.37	0.06	0.50	4.74			0.7	
Magnesium (Dissolved)	mg/L	307	315	322	0.0	312.6	1015.6			347	
Manganese (Dissolved)	mg/L	0.07	0.18	0.29	<MDL	0.514	15.500			<MDL	
Manganese (TREC)	mg/L	0.11	0.20	0.29	<MDL	0.103	0.350			0.11	
Mercury (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.00008	0.00070			<MDL	
Selenium (Dissolved)	mg/L	0.05	0.06	0.06	0.001	0.068	0.380			0.318	
Sodium (Dissolved)	mg/L	501	514	526	306.9	536.4	965.0			552	
Zinc (Dissolved)	mg/L	<MDL	0.05	0.11	<MDL	0.02	0.07			<MDL	

Alluvial Wells AW-1 through AW-6 are located north of Old State Highway 133, near the entrance to the mine.

There is no Baseline Collection possible for points initiated after the influence of mining.

Plot of Conductivity and Water Level



AW-6 - Alluvial Well

Figure 117

AW-7
Alluvial Well
Top of Pipe Elevation - 5950'
Depth - 188'
Pipe 2.17' Above Ground

Initiated	9/9/1999	9/9/1999	9/9/1999	9/9/1999		
Activated	9/9/1999	9/9/1999	9/9/1999	9/9/1999		
Date	11/30/2020	9/29/2020	6/4/2020	3/4/2020		

		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Static Water Level	Feet				50.59	75.97	103.40	103.4	91.1	68.7	102.7
Water Elevation	Feet				5846.6	5874.0	5899.4	5846.6	5858.9	5881.3	5847.3
FieldComment											
ph	su				7.1	7.8	8.4	8.24	7.82	8.01	7.81
Conductivity	umhos/cm				300	1944	3100	2290	2320	2270	2260
Temperature	Celsius				10.3	12.3	14.5	11	14.2	11.9	13
Lab											
Parameters	UNITS										
Bicarbonate	mg/L				<MDL	346.0	511.2			399	
Carbonate	mg/L				<MDL	41.6	341.5			<MDL	
Chloride	mg/L				13.0	133.4	539.0			145	
Conductivity	umhos/cm				359	1954	3645			2180	
Hardness	mg/L				<MDL	458.06	1093.20			385	
Nitrate-Nitrite	mg/L				<MDL	1.53	7.92			1.02	
Ammonia	mg/L				<MDL	0.199	1.200			<MDL	
pH	su				7.1	7.8	8.6			8.4	
Phosphate	mg/L				<MDL	0.05	0.31			0.06	
ResidueFilterable-TDS	mg/L				200	1418	2254			1460	
Sulfate	mg/L				40.00	589.53	1110.00			640	
Arsenic (Dissolved)	mg/L				<MDL	0.033	0.255			<MDL	
Cadmium (Dissolved)	mg/L				<MDL	0.007	0.023			0.0001	
Calcium (Dissolved)	mg/L				12.8	97.2	687.0			60	
Iron (Dissolved)	mg/L				<MDL	0.04	0.28			<MDL	
Iron (TREC)	mg/L				<MDL	0.27	1.01			0.44	
Magnesium (Dissolved)	mg/L				6.3	84.3	619.0			57.2	
Manganese (Dissolved)	mg/L				<MDL	0.013	0.060			<MDL	
Manganese (TREC)	mg/L				<MDL	0.375	4.740			0.09	
Mercury (Dissolved)	mg/L				<MDL	0.00006	0.00031			<MDL	
Selenium (Dissolved)	mg/L				<MDL	0.070	1.500			0.0034	
Sodium (Dissolved)	mg/L				46.7	351.3	1705.0			340	
Zinc (Dissolved)	mg/L				<MDL	0.020	0.040			<MDL	

The area of concern for monitoring point AW-7 was affected by the mining operation before its establishment. Therefore, all recorded monitoring events are considered Operational.

Alluvial Wells AW-7 through AW-9 are located south of Old State Highway 133, near the entrance to the mine. They were installed in 1999 as the result of PR-03.

*** Lab. data not provided*

There is no Baseline Collection possible for points initiated after the influence of mining.

AW-8
Alluvial Well
Top of Pipe Elevation - 5950'
Depth - 60'
Pipe 1.97' Above Ground

Initiated								9/9/1999	9/9/1999	9/9/1999	9/9/1999
Activated								9/9/1999	9/9/1999	9/9/1999	9/9/1999
Date								11/30/2020	9/29/2020	6/4/2020	3/4/2020
		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Static Water Level	Feet				11.84	20.47	73.23	19.8	20.8	19.6	19.8
Water Elevation	Feet				5876.8	5929.5	5938.2	5930.2	5929.2	5930.4	5930.2
FieldComment								Dry	Dry	Dry	Dry
ph	su				8.2	9.0	9.8				
Conductivity	umhos/cm				260	360	460				
Temperature	Celsius				13.2	13.9	14.7				
Lab Parameters	UNITS										
Bicarbonate	mg/L				<MDL	444.0	444.0				
Carbonate	mg/L				<MDL	0.0	0.0				
Chloride	mg/L				<MDL	213.0	213.0				
Conductivity	umhos/cm				<MDL	2020.0	2020.0				
Hardness	mg/L				<MDL	448.0	448.0				
Nitrate-Nitrite	mg/L				<MDL	0.0	0.0				
Ammonia	mg/L				<MDL	0.0	0.0				
pH	su				<MDL	7.9	7.9				
Phosphate	mg/L				<MDL	0.0	0.0				
ResidueFilterable (TDS)	mg/L				<MDL	1580.0	1580.0				
Sulfate	mg/L				<MDL	638.0	638.0				
Arsenic	mg/L				<MDL	0.0	0.0				
Cadmium	mg/L				<MDL	0.0	0.0				
Calcium	mg/L				<MDL	710.0	710.0				
Iron (Dissolved)	mg/L				<MDL	0.0	0.0				
Iron (TREC)	mg/L				<MDL	0.1	0.1				
Magnesium	mg/L				<MDL	65.8	65.8				
Manganese (Dissolved)	mg/L				<MDL	0.0	0.0				
Manganese (Total)	mg/L				<MDL	0.0	0.0				
Mercury	mg/L				<MDL	0.0	0.0				
Selenium	mg/L				<MDL	0.0	0.0				
Sodium	mg/L				<MDL	367.0	367.0				
Zinc	mg/L				<MDL	0.0	0.0				

The area of concern for monitoring point AW-8 was affected by the mining operation before its establishment. Therefore, all recorded monitoring events are considered Operational.

Alluvial Wells AW-7 through AW-9 are located south of Old State Highway 133, near the entrance to the mine. They were installed in 1999 as the result of PR-03.

** Lab. data not provided*

There is no Baseline Collection possible for points initiated after the influence of mining.

AW-9
Alluvial Well
Top of Pipe Elevation - 5946
Depth - 80'
Pipe 1.15' Above Ground

Initiated	10/1/1999	10/2/1999	10/3/1999	10/4/1999
Activated	10/1/1999	10/1/1999	10/1/1999	10/1/1999
Date	11/30/2020	9/29/2020	6/4/2020	3/4/2020

		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Static Water Level	Feet				32.42	54.94	80.29	79.8	73.5	42.4	43.4
Water Elevation	Feet				51.1	5821.7	5913.6	5866.2	5872.5	5903.6	5902.6
FieldComment								Dry			
ph	su				7.0	7.8	8.3		7.7	8.06	7.01
Conductivity	umhos/cm				260	1690	4400		1367	809	1646
Temperature	Celsius				7.6	11.6	14.9		13.2	11.5	13.2
Lab											
Parameters	UNITS										
Bicarbonate	mg/L				39.6	299.2	479.0			275	
Carbonate	mg/L				<MDL	5.90	12.20			12.2	
Chloride	mg/L				3.0	127.6	544.5			14.3	
Conductivity	umhos/cm				519	1718	4350			758	
Hardness	mg/L				<MDL	482.9	1530.0			158	
Nitrate-Nitrite	mg/L				<MDL	2.00	7.92			0.026	
Ammonia	mg/L				<MDL	0.16	1.10			<MDL	
pH	su				7.4	7.9	8.5			8.4	
Phosphate	mg/L				<MDL	1.60	21.60			21.6	
ResidueFilterable-TDS	mg/L				330	1231	3800			470	
Sulfate	mg/L				21.8	465.6	2100.0			118	
Arsenic (Dissolved)	mg/L				<MDL	0.0419	0.2880			<MDL	
Cadmium (Dissolved)	mg/L				<MDL	0.00640	0.0220			0.00008	
Calcium (Dissolved)	mg/L				26.0	69.0	230.0			26	
Iron (Dissolved)	mg/L				<MDL	0.19	3.59			<MDL	
Iron (TREC)	mg/L				<MDL	4.51	122.00			1.32	
Magnesium (Dissolved)	mg/L				22.6	78.7	280.0			22.6	
Manganese (Dissolved)	mg/L				<MDL	0.018	0.155			<MDL	
Manganese (TREC)	mg/L				<MDL	0.468	11.400			0.05	
Mercury (Dissolved)	mg/L				<MDL	0.00007	0.00036			<MDL	
Selenium (Dissolved)	mg/L				<MDL	0.124	3.100			0.0015	
Sodium (Dissolved)	mg/L				22.1	308.0	1998.0			101	
Zinc (Dissolved)	mg/L				<MDL	0.02	0.11			<MDL	

The area of concern for monitoring point AW-9 was affected by the mining operation before its establishment. Therefore, all recorded monitoring events are considered Operational.

Alluvial Wells AW-7 through AW-9 are located south of Old State Highway 133, near the entrance to the mine. They were installed in 1999 as the result of PR-03.

*** Lab. data not provided*

There is no Baseline Collection possible for points initiated after the influence of mining.

AW-11
Alluvial Well
Elevation - 5884
Depth - 60.86'

Initiated	12/20/2000	12/20/2000	12/20/2000	12/20/2000
Activated	2/28/2002	2/28/2002	2/28/2002	2/28/2002
Date	11/30/2020	9/29/2020	6/10/2020	3/4/2020

		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Static Water Level	Feet	11.92	38.20	50.31	19.13	43.77	57.60	52.7	46.2	35.1	52.2
Water Elevation	Feet	5833.7	5845.8	5872.1	5826.4	5840.2	5864.9	5831.3	5837.8	5848.9	5831.8
FieldComment										*No field*	
ph	su	6.7	7.3	7.5	6.9	7.6	8.0	7.58	7.59	*parameters*	7.48
Conductivity	umhos/cm	390	760	1060	480	1058	1719	1562	1246	*provided*	1713
Temperature	Celsius	11.2	13.4	15.7	7.5	12.8	15.3	13.1	13.6		7.48
Lab											
Parameters	UNITS										
Bicarbonate	mg/L	350	367	384	177.3	312.6	536.0			288	
Carbonate	mg/L	<MDL	<MDL	<MDL	<MDL	4.59	6.88			<MDL	
Chloride	mg/L	2	3	3	<MDL	39.0	255.2			25.3	
Conductivity	umhos/cm	671	850	1030	661	1100	2870			942	
Hardness	mg/L	587	587	587	265.0	538.9	911.7			389	
Nitrate-Nitrite	mg/L	0.10	0.28	0.56	<MDL	0.65	2.70			0.59	
Ammonia	mg/L	<MDL	0.05	0.08	<MDL	0.13	0.43			<MDL	
pH	su	7.2	7.5	7.8	7.1	7.8	8.5			8.2	
Phosphate	mg/L	<MDL	0.14	0.39	<MDL	1.22	20.60			20.6	
ResidueFilterable-TDS	mg/L	360	553	690	350	757	2150			636	
Sulfate	mg/L	20	150	250	4.94	213.13	510.00			207	
Arsenic (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.022	0.280			<MDL	
Cadmium (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.010	0.030			<MDL	
Calcium (Dissolved)	mg/L	70.6	92.9	110.0	30.8	130.3	765.0			69.5	
Iron (Dissolved)	mg/L	0.02	0.04	0.05	<MDL	0.19	2.46			<MDL	
Iron (TREC)	mg/L	0.07	4.93	9.97	<MDL	2.52	24.30			<MDL	
Magnesium (Dissolved)	mg/L	46.2	64.6	75.8	37.5	112.3	748.0			52.4	
Manganese (Dissolved)	mg/L	<MDL	0.02	0.03	<MDL	0.403	5.400			<MDL	
Manganese (TREC)	mg/L	<MDL	0.34	0.57	<MDL	0.397	2.540			<MDL	
Mercury (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.00158	0.03000			0.03	
Selenium (Dissolved)	mg/L	<MDL	0.001	0.002	<MDL	0.011	0.116			0.0025	
Sodium (Dissolved)	mg/L	12.70	19.37	22.9	11.0	44.1	125.0			58.6	
Zinc (Dissolved)	mg/L	<MDL	0.01	0.02	<MDL	0.02	0.07			<MDL	

** Could not access site*

Alluvial Wells AW-11 through AW-13 are located north of the Union Pacific Railroad. They were installed in 2000 to develop baseline data for a new train loadout.

Baseline Information for AW-11 is derived from events beginning on 12/20/00 through 2/28/02.
Point influenced by mining on 2/28/02.

AW-12
Alluvial Well
Elevation - 5878
Depth - 45.38'

Initiated	12/20/2000	12/20/2000	12/20/2000	12/20/2000
Activated	2/28/2002	2/28/2002	2/28/2002	2/28/2002
Date	11/30/2020	9/29/2020	6/10/2020	3/4/2020

		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Static Water Level	Feet	6.49	26.72	37.03	5.31	25.70	62.10	33.6	24.7	10.7	62.1
Water Elevation	Feet	5841.0	5851.3	5871.5	5815.9	5852.3	5872.7	5844.4	5853.3	5867.3	5815.9
FieldComment											
ph	su	7.1	7.5	7.7	6.7	7.5	7.9	7.8	7.6	7.6	7.9
Conductivity	umhos/cm	490	567	610	485	688	1640	657.0	696.0	725.0	657.0
Temperature	Celsius	10.4	13.0	16.1	10.7	13.0	16.3	12.5	14.2	11.7	14.4
Lab											
Parameters	UNITS										
Bicarbonate	mg/L	297	336.3	371	265.95	370.44	471.43			398	
Carbonate	mg/L	<MDL	<MDL	<MDL	<MDL	5.69	8.99			<MDL	
Chloride	mg/L	2	2	2	<MDL	13.5	119.0			2	
Conductivity	umhos/cm	548	571	609	473	763	3170			670	
Hardness	mg/L	318	318	318	237.0	359.1	674.3			332	
Nitrate-Nitrite	mg/L	0.45	0.473	0.51	<MDL	0.70	2.15			0.98	
Ammonia	mg/L	<MDL	0.09	0.27	<MDL	0.12	0.52			<MDL	
pH	su	7.4	7.633	7.9	7.1	7.7	8.5			8.1	
Phosphate	mg/L	<MDL	0.017	0.05	<MDL	0.17	1.04			0.03	
ResidueFilterable-TDS	mg/L	310	330	340	221	476	2450			396	
Sulfate	mg/L	10	13.33	20	<MDL	20.3	42.4			12.6	
Arsenic (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.011	0.140			<MDL	
Cadmium (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.011	0.040			<MDL	
Calcium (Dissolved)	mg/L	51.9	54.8	57.4	3.8	168.6	677.0			76.4	
Iron (Dissolved)	mg/L	0.02	8.317	24.9	<MDL	0.63	10.28			<MDL	
Iron (TREC)	mg/L	0.05	42.55	83.7	<MDL	29.01	806.00			<MDL	
Magnesium (Dissolved)	mg/L	<MDL	25.43	42.4	<MDL	80.7	368.0			34.4	
Manganese (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.075	0.621			<MDL	
Manganese (TREC)	mg/L	<MDL	0.864	2.050	<MDL	4.495	119.000			<MDL	
Mercury (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.00008	0.00028			<MDL	
Selenium (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.006	0.060			0.0006	
Sodium (Dissolved)	mg/L	19.5	20.63	21.2	13.8	45.2	202.0			16.8	
Zinc (Dissolved)	mg/L	<MDL	0.003	0.01	<MDL	0.02	0.08			<MDL	

** Could not access site*

*** Not enough water for sample/parameters*

Alluvial Wells AW-11 through AW-13 are located north of the Union Pacific Railroad. They were installed in 2000 to develop baseline data for a new train loadout.

Baseline Information for AW-12 is derived from events beginning on 12/20/00 through 2/28/02.
Point influenced by mining on 2/28/02.

AW-14
Alluvial Well
Depth - 30'
Elevation - 5822
Pipe 0.78' Above Ground

Initiated	7/24/2003	7/24/2003	7/24/2003	7/24/2003		
Activated	7/24/2003	7/24/2003	7/24/2003	7/24/2003		
Date	11/30/2020	9/29/2020	6/10/2020	3/4/2020		

		Summary Information									
		Baseline			Operation						
Field Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Static Water Level	Feet				4.98	7.64	12.10	8.8	8.6	8.8	9.2
Water Elevation	Feet				5809.9	5814.4	5817.0	5813.2	5813.4	5813.2	5812.8
FieldComment											
ph	su				7.0	7.5	8.0	7.54	7.29	7.35	7.67
Conductivity	umhos/cm				2	1647	2400	1755	2.41	2190	1773
Temperature	Celsius				7.6	12.1	15.7	14	14.7	11.8	10.9
Lab Parameters	UNITS										
Bicarbonate	mg/L				238.2	373.5	552.3			481	
Carbonate	mg/L				<MDL	12.4	20.0			<MDL	
Chloride	mg/L				2.0	136.1	397.0			200	
Conductivity	umhos/cm				650	1592	2860			2080	
Hardness	mg/L				237.0	798.3	1770.2			929	
Nitrate-Nitrite	mg/L				<MDL	0.8	2.7			0.08	
Ammonia	mg/L				<MDL	0.66	7.61			<MDL	
pH	su				6.9	7.6	8.5			8	
Phosphate	mg/L				<MDL	1.29	20.40			20.4	
ResidueFilterable-TDS	mg/L				610	1205	1910			1520	
Sulfate	mg/L				67.6	396.6	661.0			493	
Arsenic (Dissolved)	mg/L				0.0002	0.044	0.922			0.0002	
Cadmium (Dissolved)	mg/L				<MDL	0.011	0.030			0.0001	
Calcium (Dissolved)	mg/L				41.6	127.5	241.0			166	
Iron (Dissolved)	mg/L				0.01	0.88	7.80			0.21	
Iron (TREC)	mg/L				0.27	9.51	28.10			11.6	
Magnesium-Dissolved	mg/L				7.7	144.1	914.0			125	
Manganese-Dissolved	mg/L				0.004	0.548	2.160			0.1	
Manganese (TREC)	mg/L				0.004	1.696	6.780			2.43	
Mercury (Dissolved)	mg/L				<MDL	0.00010	0.00052			<MDL	
Selenium (Dissolved)	mg/L				<MDL	0.020	0.116			0.002	
Sodium (Dissolved)	mg/L				40.7	134.5	991.0			132	
Zinc (Dissolved)	mg/L				<MDL	0.07	0.99			<MDL	

The area of concern for monitoring point AW-14 was affected by the mining operation before its establishment. Therefore all recorded monitoring events are considered operational.

** Dry*

Alluvial Well AW-14 is located southwest of Pond K.

There is no baseline collection possible for points initiated after the influence of mining.

AW-15
Alluvial Well
Top of Pipe Elevation - 5972.52
Depth - 86
Pipe 0.3' Above Ground

Initiated	12/29/2003	12/29/2003	12/29/2003	12/29/2003
Activated	9/27/2004	9/27/2004	9/27/2004	9/27/2004
Date	11/30/2020	9/29/2020	6/9/2020	3/5/2020

		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Static Water Level	Feet	84.86	85.27	86.00	75.10	84.22	93.70	80			79.5
Water Elevation	Feet	5886.5	5887.3	5887.7	5878.8	5888.3	5897.4	5892.52			5893.02
FieldComment		Dry & Damp							Dry	Dry	
ph	su				7.0	7.3	7.9	7.38			7.9
Conductivity	umhos/cm				3800	4674	5300	5160			5220
Temperature	Celsius				8.4	14.1	19.1	13.4			10.6
Lab											
Parameters	UNITS										
Bicarbonate	mg/L				507.3	595.5	750.0				
Carbonate	mg/L				<MDL	5.61	6.88				
Chloride	mg/L				119.91	223.90	418.00				
Conductivity	umhos/cm				4416	4776	5412				
Hardness	mg/L				292.0	1037.0	1486.4				
Nitrate-Nitrite	mg/L				<MDL	6.26	11.30				
Ammonia	mg/L				0.269	0.458	0.647				
pH	su				7.11	7.82	8.36				
Phosphate	mg/L				0.08	0.11	0.14				
ResidueFilterable-TDS	mg/L				3388.0	3990.4	4793.3				
Sulfate	mg/L				1563.7	2050.03	2786.42				
Arsenic	mg/L				<MDL	0.019	0.019				
Cadmium	mg/L				<MDL	0.030	0.030				
Calcium	mg/L				46.50	160.27	231.80				
Iron (Dissolved)	mg/L				0.07	1.20	2.84				
Iron (TREC)	mg/L				1.56	2.20	3.12				
Magnesium (Dissolved)	mg/L				42.7	154.7	220.4				
Manganese (Dissolved)	mg/L				0.007	0.237	0.664				
Manganese (TREC)	mg/L				0.060	0.294	0.701				
Mercury	mg/L				0.00003	0.00006	0.00010				
Selenium	mg/L				0.039	0.058	0.077				
Sodium	mg/L				428.25	853.75	1510.00				
Zinc	mg/L				0.018	0.048	0.070				

**Not enough water for field or lab parameters*
*** Not enough water for lab sample*

Alluvial Wells AW-15 through AW-17 are located north of Old State Highway 133, below the GOB Pile.

Baseline Information for AW-15 is derived from events beginning on 12/29/03 through 9/27/04.
Point influenced by mining on 9/27/04.

AW-16
Alluvial Well
Top of Pipe Elevation - 5964.67
Depth - 75
Pipe 0.8' Above Ground

Initiated								12/29/2003	12/29/2003	12/29/2003	12/29/2003
Activated								9/27/2004	9/27/2004	9/27/2004	9/27/2004
Date								11/30/2020	9/30/2020	6/9/2020	3/5/2020
		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Static Water Level	Feet	68.00	69.23	70.48	61.65	72.07	83.40	80	73.2	71.5	71.4
Water Elevation	Feet	5894.2	5895.4	5896.7	5881.3	5892.6	5903.0	5884.67	5891.47	5893.17	5893.27
FieldComment								Dry	Dry	Dry	Smells
ph	su	7.9	7.9	7.9	7.0	7.5	8.6				7.85
Conductivity	umhos/cm	740	740	740	8	3961	8510				8.38
Temperature	Celsius	13.7	13.7	13.7	9.9	13.6	16.9				9.9
Lab											
Parameters	UNITS										
Bicarbonate	mg/L				558.0	610.0	661.9				
Carbonate	mg/L				<MDL	<MDL	<MDL				
Chloride	mg/L				43.6	49.1	54.5				
Conductivity	umhos/cm				5313.4	5876.3	6439.2				
Hardness	mg/L				2304.4	2531.6	2758.8				
Nitrate-Nitrite	mg/L				<MDL	1.49	1.49				
Ammonia	mg/L				<MDL	4.0	4.0				
pH	su				7.7	7.8	8.0				
Phosphate	mg/L				0.60	1.72	2.84				
ResidueFilterable-TDS	mg/L				5604	5770	5935				
Sulfate	mg/L				2903.8	2949.7	2995.6				
Arsenic	mg/L				0.021	0.084	0.146				
Cadmium	mg/L				0.034	0.042	0.050				
Calcium	mg/L				328.8	343.9	359.0				
Iron (Dissolved)	mg/L				0.08	0.08	0.08				
Iron (TREC)	mg/L				0.12	10.08	20.04				
Magnesium (Dissolved)	mg/L				380.3	416.3	452.3				
Manganese (Dissolved)	mg/L				0.0	0.258	0.510				
Manganese (Total)	mg/L				0.0	1.126	2.240				
Mercury	mg/L				0.00005	0.00006	0.00007				
Selenium	mg/L				0.009	0.025	0.040				
Sodium	mg/L				181.8	769.1	1356.5				
Zinc	mg/L				0.02	0.30	0.57				

Alluvial Wells AW-15 through AW-17 are located north of Old State Highway 133, below the GOB Pile.

**Just enough water for field parameters*
***Not enough water for parameters*

Baseline Information for AW-16 is derived from events beginning on 12/29/03 through 9/27/04.
Point influenced by mining on 9/27/04.

Bowie Resources, LLC
Bowie No. 2 Mine
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Ground Water

AW-17
Alluvial Well
Top of Pipe Elevation - 5950.81
Depth - 62
Pipe Flush with Ground

Initiated	12/29/2003	12/29/2003	12/29/2003	12/29/2003
Activated	9/27/2004	9/27/2004	9/27/2004	9/27/2004
Date	11/30/2020	9/29/2020	6/9/2020	3/4/2020

		Summary Information									
Field		Baseline			Operation						
Parameters	UNITS	Min	Ave	Max	Min	Ave	Max				
Static Water Level	Feet	38.40	46.51	59.00	26.40	55.89	61.74	61.1	61.1	49.4	44.9
Water Elevation	Feet	5891.8	5904.3	5912.4	5889.1	5894.9	5924.4	5889.71	5889.71	5901.41	5905.91
FieldComment								*Dry*	*Dry*		
ph	su	8.5	8.9	9.7	7.1	7.6	8.1			7.8	7.8
Conductivity	umhos/cm	200	264	320	870	3319	5000			2460	2470
Temperature	Celsius	1.9	7.1	12.2	9.2	12.1	19.8			11.3	12.7
Lab											
Parameters	UNITS										
Bicarbonate	mg/L	114.6	114.6	114.6	162.54	355.69	641.70				
Carbonate	mg/L	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL				
Chloride	mg/L	2.57	2.57	2.57	43.6	145.8	224.7				
Conductivity	umhos/cm	271.7	271.7	271.7	827	3347	5230				
Hardness	mg/L	76	76	76	462	1158	1836				
Nitrate-Nitrite	mg/L	3.05	3.05	3.05	<MDL	1.94	4.07				
Ammonia	mg/L	2.78	2.78	2.78	<MDL	0.45	0.83				
pH	su	8.5	8.5	8.5	6.9	7.5	8.2				
Phosphate	mg/L	<MDL	<MDL	<MDL	<MDL	0.044	0.100				
ResidueFilterable-TDS	mg/L	185	185	185	503	2730	4046				
Sulfate	mg/L	2.1	2.1	2.1	126.36	1390.66	2230.00				
Arsenic (Dissovled)	mg/L	0.016	0.016	0.016	<MDL	0.014	0.032				
Cadmium (Dissolved)	mg/L	0.0003	0.0003	0.0003	<MDL	0.023	0.060				
Calcium (Dissolved)	mg/L	17.26	17.26	17.26	91.1	224.0	358.8				
Iron (Dissolved)	mg/L	0.029	0.029	0.029	0.016	0.160	0.832				
Iron (TREC)	mg/L	0.117	0.117	0.117	0.090	1.184	10.350				
Magnesium (Dissolved)	mg/L	8.09	8.09	8.09	56.90	144.21	228.25				
Manganese (Dissolved)	mg/L	<MDL	<MDL	<MDL	<MDL	0.011	0.023				
Manganese (TREC)	mg/L	0.041	0.041	0.041	0.007	21.524	236.000				
Mercury (Dissolved)	mg/L	<MDL	<MDL	<MDL	0.00002	0.00006	0.00013				
Selenium (Dissolved)	mg/L	0.014	0.014	0.014	0.004	0.016	0.046				
Sodium (Dissolved)	mg/L	12	12	12	40.60	304.40	565.00				
Zinc (Dissolved)	mg/L	0.005	0.005	0.005	0.010	0.020	0.036				

Alluvial Wells AW-15 through AW-17 are located north of Old State Highway 133, below the GOB Pile.

** Not enough water for field or lab parameters*
***Not enough water for lab sample*

Baseline Information for AW-17 is derived from events beginning on 12/29/03 through 9/27/04.
Point influenced by mining on 9/27/04.

P-1
Stevens Draw - Pond 1
Depth - 5'
Elevation - 7080

	Date	12/2/2020	8/31/2020	5/21/2020	3/31/2020
Field Parameters	UNITS				
Pond Inflow	GPM	0	0	0	0
Pond Outflow	GPM	0	0	0	0
Freeboard	FT	0	0	0	0
Water Depth	FT	0	0	0	0
Water Level	%	0	0	0	0
Field Comments		Dry	Dry	Dry	Dry

Pond 1 (P-1) results from the discharge of Spring 14 (S-14) and is located in Stevens Draw location of DH-15, DH-39 and the Lower Stevens Draw monitoring point.

Point P-1 has not been influenced by mining.

P-2
Freeman Gulch - Pond 2
Depth - 3'
Elevation - 7600

	Date	12/2/2020	9/2/2020	5/21/2020
Field Parameters	UNITS			
Pond Inflow	GPM	0	0	0
Pond Outflow	GPM	0	0	0
Freeboard	FT	3	3	3
Water Depth	FT	0	0	0
Water Level	%	0	0	0
Field Comments		No discharge	Dry-breached	No discharge

Pond 2 (P-2) is located in Freeman Gulch, near the Upper Freeman Gulch monitoring point and is fed by the discharge of Spring 3 (S-3).

Baseline Information for Point P-2 is derived from events beginning on 11/14/95 through 9/19/99.
Point influenced by mining on 9/19/99.

P-3
Terror Creek - Pond 3
Depth - 6.5'
Elevation - 7730

	Date	12/2/2020	9/2/2020	5/21/2020
Field Parameters	UNITS			
Pond Inflow	GPM	0	0	0
Pond Outflow	GPM	0	0	0
Freeboard	FT	6.5	6.5	5.5
Water Depth	FT	0	0	1
Water Level	%	0	0	14
Field Comments		Dry	Dry	No outflow

Pond 3 (P-3) is located in an un-named gulch which leads to Terror Creek. This pond is fed by Spring 16 (S-16) and is accessible by a road that passes Pond 4 (P-4). This road is not shown on the map.

Point influenced by mining on 1/15/01.

P-4
Terror Creek - Pond 4
Depth - 3.5'
Elevation - 7880

Date		12/2/2020	9/2/2020	5/21/2020
Field Parameters	UNITS			
Pond Inflow	GPM	0	0	0
Pond Outflow	GPM	0	0	0
Freeboard	FT	0.1	0.1	0.1
Water Depth	FT	3.4	3.4	3.4
Water Level	%	97	97	97
Field Comments				

Pond 4 (P-4) is located in an un-named gulch which leads to Terror Creek. This pond receives water from Springs 4 (S-4) and 4a (S-4a). It is accessible by an old exploration road.

Baseline Information for Point P-4 is derived from events beginning on 9/27/95 through 1/15/01.
Point influenced by mining on 1/15/01.

P-5
Sheep Corral - Pond 5
Depth - 8'
Elevation - 7800

	Date	12/4/2020	9/15/2020	5/21/2020
Field Parameters	UNITS			
Pond Inflow	GPM	0	0	0
Pond Outflow	GPM	0	0	0
Freeboard	FT	6	6	4
Water Depth	FT	2	2	4
Water Level	%	25	25	50
Field Comments		Ice	No flow	No flow

Pond 5 (P-5) is located in an un-named gulch which feeds into Sheep Corral Gulch. This pond is fed by Springs 5 (S-5), 5a (S-5a) and 5b (S-5b) and is accessible by an old coal exploration road.

Point influenced by mining on 11/15/01.

P-6
Terror Creek - Pond 6
Depth - 3'
Elevation - 7880

	Date	10/6/2020	9/15/2020	5/28/2020
Field Parameters	UNITS			
Pond Inflow	GPM	0	0	0
Pond Outflow	GPM	0.0	0.0	0.0
Freeboard	FT	3.0	3.0	3.0
Water Depth	FT	0	0	0
Water Level	%	0.00	0.00	0.00
Field Comments		Dry	Dry	Dry

Pond 6 (P-6) is located in an un-named gulch which leads to Terror Creek. This pond rece water from Spring 18 (S-18).

Point P-6 was influenced by mining in 2007.

P6-5
W. Fork of Terror Creek - Pond 6-5
Elevation - 8020

Initiated	7/19/1985	7/19/1985	7/19/1985
Activated			
Date	12/3/2020	8/31/2020	5/20/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation					
Outflow	GPM	0.00	0.12	2.56				0.0	0.0	0.0
Inflow	GPM	0.00	0.00	0.00				0.0	0.0	0.0
Freeboard	Feet									2.2
Temperature	Celsius	12.7	15.6	24.7						
Conductivity	umhos/cm	280	452	791						
pH	su	6.2	7.8	8.5						
Field Comments								Dry	Dry	Dry
Lab Parameters	**UNITS**									
Bicarbonate	mg/L	164.7	290.7	420.9						
Carbonate	mg/L									
Chloride	mg/L	1	6	11						
Conductivity	umhos/cm	285	446	629						
Hardness	mg/L	127	199	320						
pH	su	7.3	7.5	7.9						
ResidueFilterable-TDS	mg/L	22	240	432						
ResidueNonFilterable-TSS	mg/L	10	185	830						
SAR		0.43	0.56	0.9						
Sulfate	mg/L	<MDL	7.7	14.0						
Calcium (Dissolved)	mg/L	31	50	74						
Magnesium (Total)	mg/L	12	22	33						
Sodium (Dissolved)	mg/L	13	19	29						
Potassium	mg/L									
TDS Ratio (grav./calc.)										

The area of concern for monitoring point P6-5 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

Baseline Information Collection initiated on 7/19/85 and not yet considered complete.
Point P6-5 has not been influenced by mining.

P7-7
Steven's Gulch - Pond 7-7
Elevation - 8380

Initiated	7/25/1985	7/25/1985	7/25/1985
Activated			
Date	12/3/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max				Operation		
Inflow	GPM	0.0	0.0	0.0						
Outflow	GPM	0.0	0.0	0.4				0	0	0
Freeboard	Feet	0.00	1.77	4.80					4	4
Temperature	Celsius	3.1	14.6	27.1						
Conductivity	umhos/cm	227.0	381.2	829.0						
pH	su	6.4	7.6	8.1						
Field Comments								Dry		
Lab Parameters	UNITS									
Bicarbonate	mg/L	126.9	190.5	244.0						
Carbonate	mg/L									
Chloride	mg/L	<MDL	1.6	3.0						
Conductivity	umhos/cm	219.0	303.1	460.0						
Hardness	mg/L	117.0	151.2	183.0						
pH	su	6.4	7.3	7.9						
ResidueFilterable-TDS	mg/L	142.0	204.8	276.0						
ResidueNonFilterable-TSS	mg/L	2.0	65.1	252.0						
SAR		0.2	0.4	1.0						
Sulfate	mg/L	<MDL	6.8	10.0						
Calcium (Dissolved)	mg/L	24.0	34.8	42.0						
Magnesium (Total)	mg/L	11.0	15.6	19.0						
Sodium (Dissolved)	mg/L	4.0	10.8	29.0						
TDS Ratio (grav./calc.)										

The area of concern for monitoring point P7-7 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

**Dam Gone*
*** Data not provided in field notes*

Baseline Information Collection initiated on 7/25/85 and not yet considered complete.
Point P7-7 has not been influenced by mining.

P7-7
Steven's Gulch - Pond 7-7
Elevation - 8380

Initiated	7/25/1985	7/25/1985	7/25/1985
Activated			
Date	12/3/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max				Operation		
Inflow	GPM	0.0	0.0	0.0						
Outflow	GPM	0.0	0.0	0.4				0	0	0
Freeboard	Feet	0.00	1.77	4.80					4	4
Temperature	Celsius	3.1	14.6	27.1						
Conductivity	umhos/cm	227.0	381.2	829.0						
pH	su	6.4	7.6	8.1						
Field Comments								Dry		
Lab Parameters	UNITS									
Bicarbonate	mg/L	126.9	190.5	244.0						
Carbonate	mg/L									
Chloride	mg/L	<MDL	1.6	3.0						
Conductivity	umhos/cm	219.0	303.1	460.0						
Hardness	mg/L	117.0	151.2	183.0						
pH	su	6.4	7.3	7.9						
ResidueFilterable-TDS	mg/L	142.0	204.8	276.0						
ResidueNonFilterable-TSS	mg/L	2.0	65.1	252.0						
SAR		0.2	0.4	1.0						
Sulfate	mg/L	<MDL	6.8	10.0						
Calcium (Dissolved)	mg/L	24.0	34.8	42.0						
Magnesium (Total)	mg/L	11.0	15.6	19.0						
Sodium (Dissolved)	mg/L	4.0	10.8	29.0						
TDS Ratio (grav./calc.)										

The area of concern for monitoring point P7-7 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

**Dam Gone*
*** Data not provided in field notes*

Baseline Information Collection initiated on 7/25/85 and not yet considered complete.
Point P7-7 has not been influenced by mining.

P7-11
Steven's Gulch - Pond 7-11
Elevation - 8400

Initiated	7/25/1985	7/25/1985	7/25/1985
Activated			
Date	12/3/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max				Operation		
Outflow	GPM	0.00	0.18	7.99				0	0	0
Inflow	GPM	0.00	0.23	7.99				0	0	0
Freeboard	Feet	0.00	1.32	2.61						
Temperature	Celsius	3.6	15.9	29.9						
Conductivity	umhos/cm	138	288	495						
pH	su	6.4	7.6	9.2						
Field Comments								Dry	Dry	Dry
Lab Parameters	UNITS									
Bicarbonate	mg/L	105	320	2116						
Carbonate	mg/L	<MDL	<MDL	<MDL						
Chloride	mg/L	<MDL	3	4						
Conductivity	umhos/cm	202	262	346						
Hardness	mg/L	79	122	172						
pH	su	6.3	7.4	8.3						
ResidueFilterable-TDS	mg/L	144	190	260						
ResidueNonFilterable-TSS	mg/L	2	277	3033						
SAR		0.34	0.54	1.78						
Sulfate	mg/L	<MDL	18	121						
Calcium (Dissolved)	mg/L	3.66	26.50	41.00						
Magnesium (Total)	mg/L	7.0	12.4	19.7						
Sodium (Dissolved)	mg/L	8	13	42						
TDS Ratio (grav./calc.)		1.01	1.04	1.07						

The area of concern for monitoring point P7-11 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

Baseline Information Collection initiated on 7/25/85 and not yet considered complete.
Point P7-11 has not been influenced by mining.

P8-4
Terror Creek - Pond 8-4
Elevation - 6980

Initiated	1987	1988	1989
Activated			
Date	12/3/2020	8/31/2020	5/28/2020

Field Parameters	UNITS	Summary Information Baseline Min	Ave	Max						
Outflow	GPM	0.0	0.0	0.0				0	0	0
Inflow	GPM	0.0	0.11	0.94				0	0	0
Freeboard	Feet	0.35	0.38	0.41						
Temperature	Celsius	6.8	10.8	18.3						
Conductivity	umhos/cm	1140	1188	1220						
pH	su	8.4	8.5	8.6						
Field Comments								Dry	Dry	Dry
Lab Parameters	UNITS									
Bicarbonate	mg/L									
Chloride	mg/L									
Conductivity	umhos/cm									
Hardness	mg/L									
pH	su									
ResidueFilterable-TDS	mg/L									
ResidueNonFilterable-TSS	mg/L									
SAR										
Sulfate	mg/L									
Calcium (Dissolved)	mg/L									
Magnesium (Total)	mg/L									
Sodium (Dissolved)	mg/L									
Potassium	mg/L									
TDS Ratio (grav./calc.)										

The area of concern for monitoring point P8-4 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

Baseline Information Collection initiated in 1987 and not yet considered complete.
Point P8-4 has not been influenced by mining.

P12-10
Steven's Gulch - Pond 12-10
Elevation - 7820

Initiated	7/30/1985	7/30/1985	7/30/1985
Activated			
Date	12/4/2020	9/30/2020	6/14/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Outflow	GPM	0.0	2.0	48.07				0	0	0
Inflow	GPM	0.0	0.4	15.00				0	0	0
Freeboard	Feet									3
Temperature	Celsius	4.4	16.8	25.5						
Conductivity	umhos/cm	270	347	466						
pH	su	6.7	8.2	10.4						
Field Comments								Dry	Dry	Dry
Lab Parameters	UNITS									
Bicarbonate	mg/L	122	188.8	309						
Carbonate	mg/L	6	9	12						
Chloride	mg/L	<MDL	6.3	17						
Conductivity	umhos/cm	217	333	463						
Hardness	mg/L	98	146	209						
pH	su	7.6	8.2	9.8						
ResidueFilterable-TDS	mg/L	146	208	288						
ResidueNonFilterable-TSS	mg/L	<MDL	26.6	120						
SAR		<MDL	0.73	1.07						
Sulfate	mg/L	4	19	41						
Calcium (Dissolved)	mg/L	28	37	48						
Magnesium (Total)	mg/L	6	13	29						
Sodium (Dissolved)	mg/L	9	20	32						
TDS Ratio (grav./calc.)										

The area of concern for monitoring point P12-10 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

Corrected monitoring information from 4/28/10 to 11/29/11.
Contractor has been monitoring Pond 12-9 as 12-10, but realized his error during 4/10/12 monitoring.
Found remnants of Pond 12-10 on 4/10/12 - has been washed out for a long time. No evidence of flow.

Baseline Information Collection initiated on 7/30/85 and not yet considered complete.
Point P12-10 has not been influenced by mining.

P12-1
Steven's Gulch - Pond 12-1
Elevation -7950

Initiated	7/30/1985	7/30/1985	7/30/1985
Activated	4/1/2014	4/1/2014	4/1/2014
Date	12/4/2020	9/30/2020	6/3/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation					
Outflow	GPM	0.00	0.29	3.75	9.375	0.521	9.375	0	0	0
Inflow	GPM	0.00	0.00	0.00	3.75	0.221	3.75	0	0	0
Freeboard	Feet	0.00	1.58	3.35	6.00	2.22	6.00	4		4
Temperature	Celsius	5.9	17.7	28.8	15.2		15.2			
Conductivity	umhos/cm	283	360	493	260		260			
pH	su	6.6	8.2	10.8	7.9		7.9			
Field Comments								No discharge	Dry	No discharge
Lab Parameters	**UNITS**									
Bicarbonate	mg/L	88.0	168.4	269.6						
Carbonate	mg/L	12.4	12.4	12.4						
Chloride	mg/L	<MDL	4.5	7.0						
Conductivity	umhos/cm	256	341	487						
Hardness	mg/L	86.0	122.9	159.0						
pH	su	7.1	7.8	8.9						
ResidueFilterable-TDS	mg/L	154	215	288						
ResidueNonFilterable-TSS	mg/L	<MDL	38	160						
SAR		0.600	0.943	1.550						
Sulfate	mg/L	4.0	36.5	109.0						
Calcium (Dissolved)	mg/L	28.0	35.8	49.0						
Magnesium (Total)	mg/L	4.0	10.3	14.0						
Sodium (Dissolved)	mg/L	16.0	24.8	41.0						
TDS Ratio (grav./calc.)										

Activated 4/1/14

Baseline Information Collection initiated on 7/30/85.
Point P12-1 was influenced by mining 4/1/14.

P12-2
Steven's Gulch - Pond 12-2
Elevation - 8030

Initiated	7/6/1983	7/6/1983	7/6/1983
Activated	5/15/2014	5/15/2014	5/15/2014
Date	10/6/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Outflow	GPM	0	0.31	4.94	1.25		1.25			0
Inflow	GPM	0	0.19	0.38	0.00		0.00			0
Freeboard	Feet	0	0.10	0.56	7.00		7.00	7	1.7	1
Temperature	Celsius	5.4	16.33	26.30	17.20		17.20			
Conductivity	umhos/cm	239	380.35	520.00	350.00		350.00			
pH	su	6.4	8.03	9.40	7.7		7.7			
Field Comments								Dry	No Discharge	No Discharge
Lab Parameters	UNITS									
Bicarbonate	mg/L	200.0	253.6	336.0						
Carbonate	mg/L	5.9	8.85	11.80						
Chloride	mg/L	2.0	4.1	9.0						
Conductivity	umhos/cm	317	395	456						
Hardness	mg/L	144.00	192.08	238.00						
Acidity	mg/L	16.0	16.0	16.0						
pH	su	7.3	7.9	8.6						
ResidueFilterable-TDS	mg/L	168	244	292						
ResidueNonFilterable-TSS	mg/L	2	330	3332						
SAR		0.330	0.613	1.260						
Sulfate	mg/L	<MDL	19.57	113.00						
Calcium (Dissolved)	mg/L	20.0	41.7	54.0						
Iron (Total)	mg/L	1.42	1.42	1.42						
Iron (Dissolved)	mg/L	0.04	0.04	0.04						
Magnesium (Total)	mg/L	16.0	21.4	29.0						
Manganese (Total)	mg/L	0.320	0.320	0.320						
Sodium (Dissolved)	mg/L	10	19.17	36.00						
TDS Ratio (grav./calc.)	%									

Activated May 15, 2014

**Large Seep Area - Unmeasurable*

Baseline Information Collection initiated on 7/6/83.
Point P12-2 was influenced by mining 05/15/2014.

P17-1
Coal Gulch - Pond 17-1
Elevation - 7340

Initiated	12/22/2004	12/22/2004	12/22/2004
Activated			
Dated	10/6/2020	8/31/2020	6/16/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation					
Outflow	GPM	0.0	1.9	30				0	0	0
Inflow	GPM	0.0	0.0	0.0				0	0	0
Freeboard	Feet	0.0	0.7	5.5						
Temperature	Celsius	0.5	9.0	17.5						
Conductivity	umhos/cm	40.0	151.7	570						
pH	su	7.6	8.0	8.4						
Field Comments								Dry	Dry	Dry
Lab Parameters	UNITS									
Bicarbonate	mg/L	40.5	56	84						
Carbonate	mg/L	<MDL	<MDL	<MDL						
Chloride	mg/L	1	3	4						
Conductivity	umhos/cm	77.8	104	146						
Hardness	mg/L	26.8	47	75						
pH	su	7.5	7.7	7.9						
ResidueFilterable-TDS	mg/L	61	80	100						
ResidueNonFilterable-TSS	mg/L	16	25	36						
SAR		0.16	0.17	0.19						
Sulfate	mg/L	<MDL	5.35	5.35						
Calcium (Dissolved)	mg/L	5.83	11.98	19.80						
Magnesium (Total)	mg/L	2.98	4.26	6.30						
Sodium (Dissolved)	mg/L	2.21	2.64	3.40						
TDS Ratio (grav./calc.)		1.07	1.36	1.82						

The area of concern for monitoring point P17-1 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

Baseline Information Collection initiated on 12/22/04 and not yet considered complete.
Point P17-1 has not been influenced by mining.

P18-1
Coal Gulch - Pond 18-1
Elevation - 7760

Initiated	7/19/1985	7/19/1985	7/19/1985
Activated	6/6/2012	6/6/2012	6/6/2012
Date	12/4/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation Min	Operation Ave	Operation Max			
Outflow	GPM	0.00	0.20	2.11	0.00	0.06	0.94	0	0	0
Inflow	GPM	0.00	0.31	1.88	0.00	0.31	4.10	0	0	0
Freeboard	Feet	0.00	2.07	2.91	0.00	0.87	3.50			3.5
Temperature	Celsius	9.8	16.2	26.7	11.20	17.85	23.10			
Conductivity	umhos/cm	115	211	378	557.00	600.00	620.00			
pH	su	6.3	7.8	9.2	8.10	8.43	8.68			
Field Comments								Dry	Dry	No flow
Lab Parameters	**UNITS**									
Bicarbonate	mg/L	49.0	125.4	201.3						
Carbonate	mg/L	0.6	0.6	0.6						
Chloride	mg/L	<MDL	7	11						
Conductivity	umhos/cm	120	244	398						
Hardness	mg/L	54	94	153						
pH	su	6.2	7.0	7.6						
ResidueFilterable-TDS	mg/L	86	169	280						
ResidueNonFilterable-TSS	mg/L	12	178	552						
SAR		<MDL	0.21	0.47						
Sulfate	mg/L	<MDL	15	39						
Calcium (Dissolved)	mg/L	15	25	40						
Magnesium (Total)	mg/L	4	7	13						
Sodium (Dissolved)	mg/L	<MDL	5	10						
TDS Ratio (grav./calc.)										

The monitoring point for Pond 18-1 is located on a south facing slope that drains down toward the North Fork of the Gunnison River.

Baseline Information is derived from monitoring events beginning on 7/19/85 through 6/6/2012.
Point P18-1 influenced by mining 6/6/12.

Initiate	7/6/1983	7/6/1983	7/6/1983
Activate			
Date	10/6/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max				Operation		
Inflow	GPM	0.00	0.30	15.71				0	0	0
Outflow	GPM	0.00	0.00	0.00				0	0	0
Freeboard	Feet	0.48	2.19	5.4						3.50
Temperature	Celsius	2.2	16.0	29						
Conductivity	umhos/cm	206	329	500						
pH	su	5.9	7.4	8.8						
Field Comments								Dry	Dry	
Lab Parameters	UNITS									
Bicarbonate	mg/L	109.8	187.5	268						
Carbonate	mg/L	<MDL	<MDL	<MDL						
Chloride	mg/L	<MDL	6.45	30						
Conductivity	umhos/cm	197	324	581						
Hardness	mg/L	11	128	210						
pH	su	6.8	7.3	8.3						
ResidueFilterable-TDS	mg/L	126	211	402						
ResidueNonFilterable-TSS	mg/L	6	59	158						
SAR		0.34	0.65	1.58						
Sulfate	mg/L	<MDL	18.12	119						
Calcium (Dissolved)	mg/L	23	35	56						
Magnesium (Total)	mg/L	8	12	17						
Sodium (Dissolved)	mg/L	8	18	39						
TDS Ratio (grav./calc.)		1.05	1.05	1.05						

The area of concern for monitoring point P18-4 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

Baseline Information Collection initiated on 7/6/83 and not yet considered complete.
Point P18-4 has not been influenced by mining.

P33-3
Sheep Corral - Pond 33-3
Depth - 5.5'
Elevation - 7760

	Date	12/2/2020	9/2/2020	5/21/2020
Field Parameters	UNITS			
Pond Inflow	GPM	0		
Freeboard	FT	6.5		
Water Depth	FT	0		
Water Level	%	0		
Field Comments		Dry		

Pond 33-3 (P33-3) is located in an un-named drainage which discharges into Sheep Corra
This pond apparently has no spring, and catches only run-off water in the early spring.

Baseline Information for Point P33-3 is derived from events beginning on 10/30/97 through 12/1/01.
Point influenced by mining on 12/1/01.

Initiated	6/14/1983	6/14/1983	6/14/1983
Activated			
Date	10/6/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation					
Inflow	GPM	0.0	0.0	0				0	0	0
Outflow	GPM	0.0	0.1	4.488				0	0	0
Freeboard	Feet	0.18	1.06	2.55						
Temperature	Celsius	4.2	16.9	29						
Conductivity	umhos/cm	62.0	247.1	968						
pH	su	7.0	8.3	9.8						
Field Comments								Empty/Dry	Empty/Dry	No Flow
Lab Parameters	**UNITS**									
Bicarbonate	mg/L	53.7	140.7	478.2						
Carbonate	mg/L									
Chloride	mg/L	<MDL	20.0	120						
Conductivity	umhos/cm	95.0	271.8	885						
Hardness	mg/L	44.0	103.3	331						
pH	su	6.3	7.2	8						
ResidueFilterable-TDS	mg/L	90.0	200.5	372						
ResidueNonFilterable-TSS	mg/L	14.0	125.0	624						
SAR		0.1	0.4	1.74						
Sulfate	mg/L	<MDL	19.6	62						
Calcium (Dissolved)	mg/L	11.0	25.3	83						
Magnesium (Total)	mg/L	3.0	9.7	30						
Sodium (Dissolved)	mg/L	1.0	10.8	50						
Potassium	mg/L									
TDS Ratio (grav./calc.)										

The area of concern for monitoring point P81 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

** Data not provided in field notes*

Baseline Information Collection initiated on 6/14/83 and not yet considered complete.
Point P81 has not been influenced by mining.

P82
Steven's Gulch - Pond 82
Elevation - 7580

Initiated	7/18/1990	7/18/1990	7/18/1990
Activated			
Date	10/6/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max				Operation		
Outflow	GPM	0.00	0.11	4.90				0	0	0
Inflow	GPM	0.00	0.00	0.00				0	0	0
Freeboard	Feet	0.00	1.48	5.50						
Temperature	Celsius	7.8	17.9	28.0						
Conductivity	umhos/cm	91	237	569						
pH	su	6.4	8.5	10.0						
Field Comments								Dry	Dry	Dry
Lab Parameters	UNITS									
Bicarbonate	mg/L	51.2	134	290						
Carbonate	mg/L	1	1	1						
Chloride	mg/L	<MDL	8	25						
Conductivity	umhos/cm	104	258	623						
Hardness	mg/L	36	89	158						
pH	su	6.4	7.1	8.4						
ResidueFilterable-TDS	mg/L	75	225	566						
ResidueNonFilterable-TSS	mg/L	28	155	450						
SAR		<MDL	0.22	0.49						
Sulfate	mg/L	4	22	78						
Calcium (Dissolved)	mg/L	11	24	45						
Magnesium (Total)	mg/L	2	7	13						
Sodium (Dissolved)	mg/L	<MDL	5	14						
Potassium	mg/L									
TDS Ratio (grav./calc.)										

The area of concern for monitoring point P82 has not been affected by the mining operation. Therefore, all recorded monitoring events are considered Baseline.

** Data not provided in field notes*

Baseline Information Collection initiated on 7/18/90 and not yet considered complete.
Point P82 has not been influenced by mining.

P83
Coal Gulch - Pond 83
Depth - 2.5'
Elevation -7820

Initiated	7/18/1983	7/18/1983	7/18/1983
Activated	7/15/2013	7/15/2013	7/15/2013
Date	10/6/2020	8/31/2020	5/28/2020

Summary Information

Field Parameters	UNITS	Baseline Min	Baseline Ave	Baseline Max	Operation					
Outflow	GPM	0.00	0.21	6.24	0.00	0.00	0.00	0	0	0
Inflow	GPM	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Freeboard	Feet	0.57	2.30	2.54	1.25	2.32	2.54			
Temperature	Celsius	9.4	18.6	27.8						
Conductivity	umhos/cm	148	354	485						
pH	su	6.9	74.7	803.0						
Field Comments								Dry	Dry	Dry
Lab Parameters	UNITS									
Bicarbonate	mg/L	75.6	203.8	280.6						
Carbonate	mg/L	39.5	39.5	39.5						
Chloride	mg/L	<MDL	7	14						
Conductivity	umhos/cm	160	357	499						
Hardness	mg/L	70	162	234						
pH	su	6.9	7.8	9.4						
ResidueFilterable-TDS	mg/L	95	202	270						
ResidueNonFilterable-TSS	mg/L	4	77	536						
SAR		0.21	0.42	0.71						
Sulfate	mg/L	<MDL	14	29						
Calcium (Dissolved)	mg/L	13	30	54						
Magnesium (Total)	mg/L	6	21	29						
Sodium (Dissolved)	mg/L	4	13	21						
Potassium	mg/L									
TDS Ratio (grav./calc.)										

** No data provided in field notes*

Baseline Information Collection initiated on 7/18/83 .
Point P83 was influenced by mining on or about July 15, 2013.

2020
MAPS

BOWIE RESOURCES, LLC

BOWIE RESOURCES, LLC
BOWIE NO. 2 MINE
P.O. BOX 483
PAONIA, COLORADO 81428
PERMIT C-1996-083

PREPARED BY:

DRILL HOLE ROAD DISTURBANCE

ACTION/ SEGMENT	ROAD NAME	DIST TYPE	YEAR	ACRES	MILES
TR-17					
015	EAST RIDGE - NORTH EXT.	NEW	2000	0.1	0.1
019	FREEMAN GULCH - SOUTH EXT	NEW	2000	0.1	0
020	FREEMAN GULCH - SOUTH EXT	NEW	2000	0.3	0.2
025 & 026	FREEMAN GULCH	REFURBISHED	2000	0.9	0.6
027	FREEMAN GULCH - SOUTHEAST	NEW	2000	0.6	0.4
029 & 073	FREEMAN GULCH	REFURBISHED	2000	1.0	0.7
030	FREEMAN GULCH	NEW	2000	0.1	0.7
056	EAST RIDGE - NORTH EXT.	NEW	2000	0.3	0.2
		TOTAL		3.4	2.9
TR-20					
001,003	STEVEN'S DRAW	UPGRADED	2001	0.9	0.7
002,004	NORTH RIDGE	UPGRADED	2001	0.6	0.4
005,008	STEVEN'S DRAW	UPGRADED	2001	0.8	0.4
06,07,09	NORTH RIDGE	UPGRADED	2001	0.8	0.3
009	NORTH RIDGE	UPGRADED	2001	0.4	0.3
010	WEST RIDGE	NEW	2001	0.7	0.5
011	EAST RIDGE	UPGRADED	1999	1.1	0.7
012	EAST RIDGE - SOUTH EXT	UPGRADED	1999	0.1	0.0
013	EAST RIDGE - NORTH EXT	UPGRADED	1999	0.1	0.1
014	EAST RIDGE - NORTH EXT	UPGRADED	2000	0.3	0.2
016	NORTH RIDGE	UPGRADED	2001	0.4	0.2
017,018	FREEMAN GULCH	UPGRADED	2000	0.2	0.4
021	FREEMAN GULCH - EAST EXT	NEW	2001	0.1	0.1
022	FREEMAN GULCH - EAST EXT	NEW	2001	0.4	0.2
023	FREEMAN GULCH - NORTH EXT	NEW	2001	0.2	0.2
024	FREEMAN GULCH - NORTH EXT	NEW	2001	0.2	0.1
028	FREEMAN GULCH - NORTHEAST	REFURBISHED	2001	0.4	0.3
031	FREEMAN GULCH	UPGRADED	2000	0.5	0.4
033&034	SHEEP CORRAL	REFURBISHED	2001	0.6	0.4
035&036	SHEEP CORRAL	New	2001	0.7	0.5
037&038	SHEEP CORRAL	REFURBISHED	2001	1.1	0.7
039	SHEEP CORRAL	REFURBISHED	2001	0.0	0.0
040	SHEEP CORRAL - SOUTH EXT	NEW	2001	1.0	0.7
067&069	NORTH RIDGE	UPGRADED	2001	0.4	0.3
074	POND FIVE	REFURBISHED	2001	0.3	0.2
		TOTAL		12.3	8.3

DRILL HOLE ROAD DISTURBANCE-CONTINUED

ACTION/ SEGMENT	ROAD NAME	DIST TYPE	YEAR	ACRES	MILES
TR-21					
076	FREEMAN GULCH - NORTHEAST	NEW	2001	0.7	0.3
079	WEST RIDGE - SOUTH EXT	NEW	2001	1.6	0.6
		TOTAL		2.3	0.9
PR-05					
TR-23					
081,082	WEST RIDGE	NEW	2003	0.9	0.4
086,088	SHEEP CORRAL	UPGRADED	2003	1.0	0.7
089	PLANTATION	UPGRADED	2002	0.6	0.4
091,93	PLANTATION - EAST EXT	NEW	2002	0.8	1.2
095	BULL RUB	NEW	2003	0.0	0.0
099	DOVE GULCH - DELETED	UPGRADED	2003	0.0	0.0
100	NORTH RIDGE	UPGRADED	2002	0.5	0.4
101	TERROR CREEK DESCENT	UPGRADED	2002	0.2	0.1
		TOTAL		3.1	2.8
MR-23					
104	STORAGE ROAD	NEW	2002	0.2	0.1
118	B EXPLORATION MAIN	UPGRADED	2002	0.2	0.3
119	B EXPLORATION NORTH EXT	NEW	2002	0.1	0.1
120,121	B EXPLORATION SOUTH A,B	NEW	2002	0.6	0.5
		TOTAL		1.1	1.0
MR-24/125	EAST RIDGE SOUTH EXT	UPGRADED	2002	0.6	0.6
126,128	TERROR CRK EAST PARALLEL	UPGRADED	2003	0.0	0.5
127	TERROR CRK EAST PARALLEL	NEW	2003	1.5	0.5
		TOTAL		1.5	1.0
MR-29/140	GOB PILE GEOTECH	NEW	2003	1.3	0.9
MR-58/146	WEST RIDGE - NO EXT	NEW	2005	1.4	0.5
TR-41/150	WEST RIDGE - NO EXT-1	NEW	2005	0.9	0.3
MR-65/154	VENT SPUR	NEW	2006	0.1	0.1
MR-67					
156	EAST RIDGE NORTHWEST EXT.	NEW	2006	0.5	0.2
157	FG SP	NEW	2006	0.1	0.1
		Total		0.6	0.3
MR-75,160	HUBBARD CREEK STUB	NEW	2006	0.1	0.1

DRILL HOLE ROAD DISTURBANCE - CONTINUED

ACTION/ SEGMENT	ROAD NAME	DIST TYPE	YEAR	ACRES	MILES
MR-78,79					
168	NR E BRANCH (MR-79)	NEW	2006	0.2	0.1
169	NR W EXT	DELETED	2007	0.0	0.0
170	FG E EXT	NEW	2006	0.3	0.2
171	FG N EXT	NEW	2006	0.1	0.1
172	NR VW EXT	NEW	2006	0.3	0.2
		TOTAL		0.9	0.6
TR-52					
182	NORTH DOVE GULCH	NEW	2008	14.0	2.7
183	PLANTATION EXTENSIONS	NEW	2008	0.9	0.3
184	DOVE GULCH EAST	UPGRADED	2008	0.9	0.6
		TOTAL		15.8	3.6
TR-53					
185	DOVE GULCH -1 - DELETED	DELETED	2008	0.0	0.0
MR-88					
188	WEST GOB PILE GEOTECH	NEW	2014	2.7	1.1
MR-104					
192	DG POINT	NEW	2009	0.5	0.2
TR-41					
200	Terror Creek Sec 8 Road	UPGRADED	2003	2.1	2.1
TR-49					
201	Pond 7-1 Road	UPGRADED	2008	0.21	0.12
202	DH-69 Road	UPGRADED	2008	0.49	0.34
		TOTAL		0.70	0.46
MR-116					
203	Terror Creek Access	NEW	2010	6.0	1.0
MR-125 B-1					
207	GVB-10A Road	NEW	2010	0.40	0.14
208	GVB-10B Road	NEW	2010	0.62	0.22
		TOTAL		1.02	0.36
MR-123 B-2					
215	TC Ridge Road	UPGRADED	2011	1.3	0.88
216	12D Road	UPGRADED	2011	0.35	0.12
217	13A Road	UPGRADED	2011	0.08	0.10
217	13A Road	NEW	2011	0.22	0.15
		TOTAL		1.95	1.25

DRILL HOLE ROAD DISTURBANCE - CONTINUED

ACTION/ SEGMENT	ROAD NAME	DIST TYPE	YEAR	ACRES	MILES
TR-73					
232	12E RD	NEW	2012	0.59	0.30
233	13B RD	NEW	2012	0.14	0.11
133A	13C RD	NEW	2012	0.13	0.05
234	14A RD	NEW	2012	0.75	0.30
235	14B RD	NEW	2013	0.14	0.15
236	14C RD	NEW	2013	0.39	0.13
236	14C RD	UPGRADED	2013	0.66	0.48
237	14D RD	NEW	2013	0.27	0.13
238	14E RD	NEW	2013	0.22	0.13
239	SS-7RD	NEW	2012	1.47	0.64
240	SS-6 RD	NEW	2013	0.25	0.59
241	12-1 RD	NEW	2012	0.29	0.19
		TOTAL		5.30	3.20
MR-133					
244	13F Road	New	2012	0.15	0.05
MR-135					
247	GVB-B13C-1 Road	New	2013	0.45	0.16
TR-78 & MR-152					
248	14F RD	NEW	2013	0.51	0.17
249	16A Road (MR-152)	New	2014	0.37	0.13
250	15 B,C,D	Upgraded	2014	0.96	0.65
251	15B RD	New	2014	0.36	0.12
252	15D RD	New	2014	0.43	0.15
253	SS-8 RD	New	2013	1.00	0.08
		TOTAL		3.63	1.30
MR-146					
261	Pitken Mesa Pipeline	New	2014	4.0	0.81
TR-86 & MR-152					
262	16B RD (MR-152)	New	2014	0.42	0.15
263	16C RD (MR-152)	New	2014	0.37	0.13
264	16D RD (Deleted MR-152)	New	2014	0.08	0.03
265	17A RD (MR-152)	New	2014	0.63	0.22
265	17A RD	Upgrade	2014	0.53	0.37
266	17F RD (TR-89)	New	2014	0.51	0.18
267	17C RD (MR-152)	New	2014	0.33	0.12
268	17D RD (MR-152)	New	2014	0.79	0.28
269	17E RD (MR-152)	New	2014	0.29	0.10
270	19A RD (MR-152)	New	2015	0.19	0.07
270	19A RD	Upgraded	2015	0.30	0.20
271	19B RD (MR-152)	New	2015	0.25	0.09
		TOTAL		4.69	1.94
TR-90					
287	15A RD		2014	0.30	0.10
267	19C RD	New	2015	0.45	0.15
		Total		0.75	0.25
MR-164					
290	58A Road	New	2014	0.46	0.16
MR-165					
291	Section 5 Road	New		1.20	0.34

DRILL HOLE PAD DISTURBANCE

ACTION/ SEGMENT	DRILL PAD NAME	DIST. TYPE	YEAR	ACRES
TR-17				
043	GVB-D-4A	NEW	2000	0.4
045,46	GVB-D-3B,2C	NEW	1999	0.4
47,48,49	GOB-1,2,3	NEW	1999	0.6
057,58	GVB-D-3C,3A	NEW	2000	0.4
		TOTAL		1.8
TR-20				
063,41	GVB-D-2B,7A	NEW	2000	0.8
042,044	GVB-D-5A,4B	NEW	2001	1.0
051	GVB-WD-3C	NEW	2001	0.5
053,052	GVB-WD-2B,3B	NEW	2001	1.0
054,055	GVB-WD-2A,3A	NEW	2001	1.0
059,060	GVB-D-4C-5B	NEW	2001	1.0
061,062	GVB-D-5C,6C	NEW	2001	1.0
064,065	GVB-D-6A,6B	NEW	2001	1.0
066,75	GVB-D-7B,7C	NEW	2001	1.0
068,070	DH-57,58	NEW	1999	1.0
		TOTAL		9.3
TR-21				
077,078	GVB-D-5D,WD-1A	NEW	2001	1.0
MR-19				
83,84,85	GEO-TECH-01,02,03	NEW	2001	0.0
PR-05				
050,80	GVB-WD-2C-1B	NEW	2003	1.0
TR-23				
87,90,92	GVB-D-8C & 8B & 9B	NEW	2003	1.5
094	GVB-D-8A; GVB-D-9A	NEW	2002	0.5
096	IP99-16	NEW	2003	0.5
097,98	IP99-14,17-DELETED	DELETED	2002	0.0
102	IP99-11	NEW	2002	0.5
		TOTAL		3.0
MR-23				
105-117	B-BURN-DH-8-20	NEW	2002	0.0
103	B-BURN-DH-21	NEW	2002	0.0
		TOTAL		0.0
MR-24				
120	KM-3	NEW	2002	0.5
		TOTAL		0.5
TR-25				
129,130	P-B-BURN-22 & 23	NEW	2003	1.0
131,33,33	P-TC-03-01 & 02 & 3	NEW	2003	1.5
		TOTAL		2.5

DRILL HOLE PAD DISTURBANCE

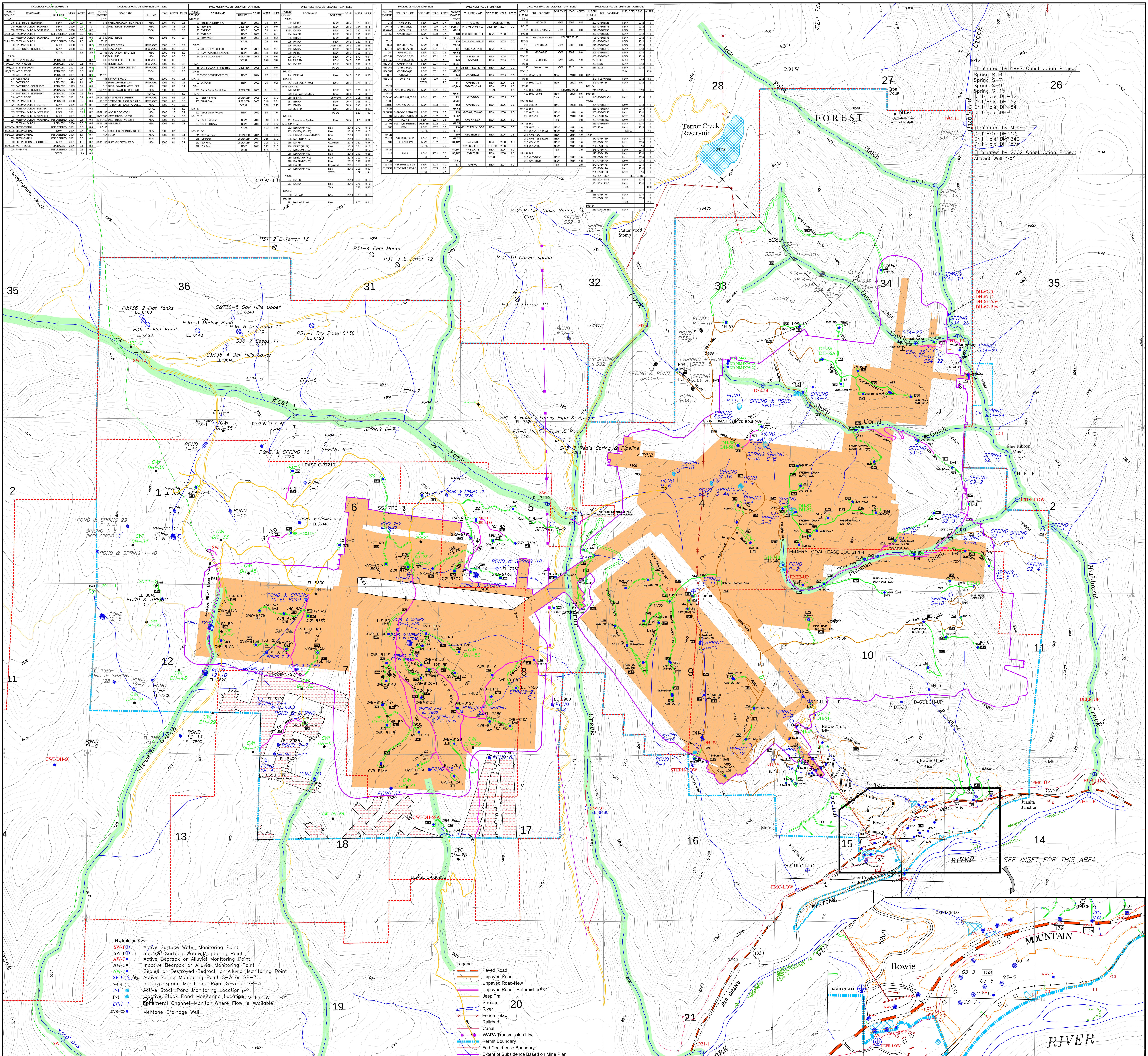
ACTION/ SEGMENT	DRILL PAD NAME	DIST. TYPE	YEAR	ACRES
TR-28				
136	P-TC-03-06	DELETED TR-96		
134,35,37	P-TC-03-04,05 & 07	DELETED	2003	0.0
MR-29				
138	14 GEOTECH HOLES	NEW	2003	0.0
MR-30				
139	3 ALLUVIAL WELLS	NEW	2003	0.0
TR-32				
141	GVB-B1-A,B & C	NEW	2004	0.0
MR-53				
142	B-BURN-24	NEW	2005	0.0
143	TC-05-04	NEW	2005	0.0
MR-55				
144	GVB-B2-A, B&C, B3- A&	NEW	2005	0.0
MR-58				
145	GVB-B1-A1	NEW	2005	0.5
TR-41				
147	GVB-B2-A1	NEW	2005	0.5
148,149	GVB-B3-A2,A1	NEW	2005	1.0
		TOTAL		1.5
MR-61				
151	GVB-B2-B	NEW	2005	0.5
MR-62				
152	GVB-B2-A2	NEW	2005	0.5
MR-65				
153	GVB-6A, 6B & 6C	NEW	2006	1.5
MR-67				
155	GVB-4A & 5A	NEW	2006	1.0
MR-72				
158	G3-1 THROUGH G3-6	NEW	2006	0.0
MR-75				
159	GEO-TECH-04	NEW	2006	0.5
MR-78				
161,162	GVB-6D,6E	NEW	2006	1.0
	GVB-6F-DELETED	DELETED	2006	0.0
164,165	GVB-7A, 7B	NEW	2006	1.0
166,167	GVB-7C,7D	NEW	2006	1.0
		TOTAL		3.0
TR-52				
174	GVB-9C	NEW	2008	1.0

DRILL HOLE PAD DISTURBANCE - CONTINUED

ACTION/ SEGMENT	DRILL PAD NAME	DIST. TYPE	YEAR	ACRES
TR-53				
186	HC-08-01	NEW	2008	0.5
MR-86				
187	HC-08-02 (MW-82)	NEW	2008	0.0
MR-88				
189	11 GEOTECH HOLES	DELETED TR-96		
MR-92				
190	GVB-8A-A	NEW	2008	0.0
MR-100				
191	GVB-8A-B	NEW	2009	0.0
MR-105				
194	GVB-8-TG	NEW	2009	1.0
TR-65				
195	Geotech Hole	NEW	2010	1.0
MR-115				
196	Geo 1, 2, 3	New	2010	0.0
TR-41				
197	BRL-1-03-01	New	2003	0.5
TR-49				
198	BRL1-08-03	DELETED TR-96		
199	BRL1-08-04	New	2008	0.5
		Total		0.5
MR-124 B-1				
204	2010-2	New	2008	0.5
MR-125 B-1				
205	GVB-10A	NEW	2010	1.0
206	GVB-10B	NEW	2010	1.0
		Total		2.0
MR-123 B-2				
209	GVB-11A	NEW	2011	1.0
210	GVB-11B & Road	NEW	2011	1.3
211	GVB-12A	NEW	2011	1.0
212	GVB-12B & Road	NEW	2011	1.7
213	GBV-12C	NEW	2011	1.0
214	GVB-13A	NEW	2011	1.0
		Total		7.0
MR-124 B-2				
218	GVB-B11C	NEW	2011	1.0
219	GVB-B12D	NEW	2011	1.0
		Total		2.0

DRILL HOLE PAD DISTURBANCE - CONTINUED

ACTION/ SEGMENT	DRILL PAD NAME	DIST. TYPE	YEAR	ACRES
TR-73				
220	GVB-B12E	NEW	2012	1.0
221	GVB-B13B	NEW	2012	1.0
222	GVB-B13C	NEW	2012	1.0
223	GVB-B13D	NEW	2012	1.0
198	GVB-B13E	NEW	2012	1.0
224	GVB-B14A	NEW	2012	1.0
225	GVB-B14B	NEW	2013	1.0
226	GVB-B14C	NEW	2013	1.0
227	GVB-B14D	NEW	2013	1.0
228	GVB-B14E	NEW	2013	1.0
229	SS-7	NEW	2012	1.0
230	SS-6	NEW	2013	1.0
231	2012-1	NEW	2012	1.0
		Total		13.0
MR-133				
242	4 Utility Holes	New	2012	0.0
243	GVB-13F	New	2012	1.0
MR-134				
245	B13 Vent	New	2013	1.0
MR-135				
246	GVB-B13C-1	New	2013	1.0
TR-78				
254	GVB-B14F	New	2013	1.0
255	GVB-B15A	New	2013	1.0
256	GVB-B15B	New	2014	1.0
257	GVB-B15C	New	2014	1.0
258	GVB-B15D	New	2014	1.0
259	GVB-B16A	New	2014	1.0
260	SS-8	New	2013	1.0
		TOTAL		7.0
TR-86				
272	GVB-16B	New	2014	1.0
273	GVB-16C	New	2014	1.0
274	GVB-16D	New	2014	1.0
275	GVB-17A	New	2014	1.0
276	GVB-17B	New	2014	1.0
277	GVB-17C	New	2014	1.0
278	GVB-17D	New	2014	1.0
279	GVB-17E	New	2014	1.0
280	GVB-19A	New	2014	1.0
281	GVB-19B	New	2014	1.0
282	2014-SS-A	DELETED TR-96		
283	2014-SS-B	New	2014	1.0
284	2014-SS-C	New	2014	1.0
		TOTAL		12.0
TR-90				
285	GVB-17F	New	2014	1.0
286	GVB-19C	New	2015	1.0
		TOTAL		2.0
MR-164				
289	CWI-DH-58A	New	2014	1.0



No.	Description	BY	DATE
82	TR-107 Suspend Monitoring at Some Sites, Show outline of mining to date and new extent of subsidence.	J.E.S.	04/15/16
81	TR-103 Suspend Monitoring at Some Sites	J.E.S.	08/18/15
80	TR-100 Mine Plan Update and Sequence	J.E.S.	05/06/15
79	TR-99 Delete 2015-1B and 2015-1SS	J.E.S.	02/18/15
78	MR-174 Update Drill Road Locations and Acreage	J.E.S.	01/30/15
77	TR-96 Delete Drill Holes P-TC-03-06, BRL-1-08-03, 2014-SS-A and 11 Geotech Holes	J.E.S.	11/21/14
76	MR-165 Section 5 Road	J.E.S.	11/04/14
75	MR-164 Replace CWI-DH-58 with new DH-58A	J.E.S.	10/02/14
74	PR-14 Federal Coal Lease COC-75916, Point of compliance wells, Stream buffer zones.	J.E.S.	10/03/14
73	TR-90 Two New GVBs	J.E.S.	06/13/14
72	MR-152 Move 11 Gob Vent Holes	J.E.S.	06/18/14

REVISIONS

REFERENCES

ENGINEER'S CERTIFICATION

I hereby certify that this drawing was done by me or under my direct supervision and that all of the information presented on this drawing is true and correct to the best of my knowledge and belief.

James E. Stover — Date
Colorado P.E. 19230

PREPARED FOR: BOWIE RESOURCES, LLC
BOWIE NO. 2 MINE
P.O. BOX 483
PAONIA, COLORADO 81428

PREPARED BY: J. E. STOVER & ASSOCIATES
2352 N. 7th Street, Unit B
Grand Jct., CO 81501

ONE INCH

PROJECT: BOWIE NO. 2 MINE

TITLE: HYDROLOGICAL MONITORING LOCATION MAP

DESIGNED: T.K.B. 11/09
DRAWN:
CHECKED:

DRMS I.D. No. C - 1996 - 083

SCALE: 1" = 1000'

DWG. NAME: Map 09