

STATE OF
COLORADO

Eschberger - DNR, Amy <amy.eschberger@state.co.us>

FW: First Quarter 2022 Sampling Results, Schwartzwalder Mine, Golden, Colorado

1 message

Elizabeth Busby <ebusby@ensero.com>

Thu, Jul 28, 2022 at 2:45 PM

To: "Amy Eschberger - CDRMS (amy.eschberger@state.co.us)" <amy.eschberger@state.co.us>

Hi Amy, I am resending this to you because I got an automated message saying the first one wasn't delivered. My apologies there, Liz Busby

From: Elizabeth Busby**Sent:** Wednesday, July 27, 2022 1:42 PM**To:** amy.eschberger@state.co**Cc:** jim@coloradolegacy.land; Paul Newman <paul@coloradolegacy.land>; Eric Williams <eric@coloradolegacy.land>; daniel.arnold@denverwater.org; eric.mink@state.co.us; bwyant@arvada.org; michaela.cunningham@state.co.us**Subject:** RE: First Quarter 2022 Sampling Results, Schwartzwalder Mine, Golden, Colorado

Hi Amy, I am resubmitting the Q1 2022 to correct three formatting errors in the previous submission, specifically the surface water data summary table.

Corrections -

1. Silver was actually non-detect for SW-BPL, SW-WEIR, and SW-ARH. For some reason the formatting in the table was incorrect and the "<" sign was not included.
2. Cyanide was non-detect at SW-ARH. For some reason the formatting in the table was incorrect and the "<" sign was not included.
3. Cyanide at SW-BPL shown in the table is incorrect, it is actually 0.0133 mg/L.

If you have any questions please don't hesitate to ask, Liz Busby

Elizabeth Busby, PE, PMP**Senior Project Manager**

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From: Celeste Bethea <cbethea@ensero.com>
Sent: Monday, June 13, 2022 4:04 PM
To: amy.eschberger@state.co
Cc: jim@coloradolegacy.land; Paul Newman <paul@coloradolegacy.land>; Eric Williams <eric@coloradolegacy.land>; Elizabeth Busby <ebusby@ensero.com>; daniel.arnold@denverwater.org; eric.mink@state.co.us; bwyant@arvada.org
Subject: First Quarter 2022 Sampling Results, Schwartzwalder Mine, Golden, Colorado

Good Afternoon Ms. Eschberger,

On behalf of Colorado Legacy Land, please find attached the 1Q 2022 Sampling Results for the Schwartzwalder Mine in Golden, Colorado.

Respectfully,

Celeste Bethea

Quality Assurance Analyst



1700 County Rd. 143

Cañon City, CO 81212

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Schwartzwalder1Q_2022_Sampling_Memo_Revised.pdf
4936K

July 27, 2022

Ms. Amy Eschberger
Colorado Division of Reclamation, Mining, and Safety
Department of Natural Resources
1313 Sherman Street, Room 215
Denver, CO 80203

Subject: First Quarter 2022 Sampling Results,
Schwartzwalder Mine, Golden Colorado,
Mine Land Reclamation Permit No. M-1977-300.

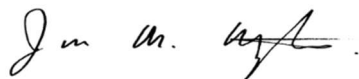
Dear Ms. Eschberger:

The first quarter sampling event at the Schwartzwalder Mine was conducted by Ensero Solutions US, Inc. (Ensero) field staff on February 15th and March 2nd. CLL is including the Schwartzwalder Mine Schematic – Q1 2022 to illustrate the groundwater divide between the mine pool and Ralston Creek. During the first quarter sampling event, all samples of Ralston Creek taken within the permit boundary were below the Colorado drinking water standard for uranium:30 µg/L.

- **Surface Water Data:** There are 13 quarterly surface water (SW) sampling locations. Figure 1 shows the location of each surface water sample locations along Ralston Creek. Table 2A summarizes surface water field parameters. Table 2B summarizes the analytical data results. The analytical laboratory data report and the chain of custody are attached to this report. A copy of the electronic data deliverable (EDD) excel file for these samples are included in this submittal.
- **Groundwater Data:** There are 13 quarterly groundwater monitoring well (MW) locations. Table 1 shows the monitoring well elevations. Figure 2 shows the location of each MW. Table 3A summarizes groundwater field parameters. Table 3B summarizes the analytical data results. The analytical laboratory data report and the chain of custody are attached to this report. A copy of the EDD excel file for these samples are included in this submittal.
- **Mine Pool Elevations:** Table 4 summarizes the mine pool elevations for the quarter. Pumping of the mine pool has consistently maintained the mine pool elevation below the regulatory limit of 150 feet (ft) below the Steve Level even during months of no pumping. Maintaining the mine pool below the regulatory limit has established a hydraulic gradient away from Ralston Creek, preventing mine water from entering the creek in the permit area.

If you have any questions regarding this letter, please do not hesitate to contact me.

Sincerely,



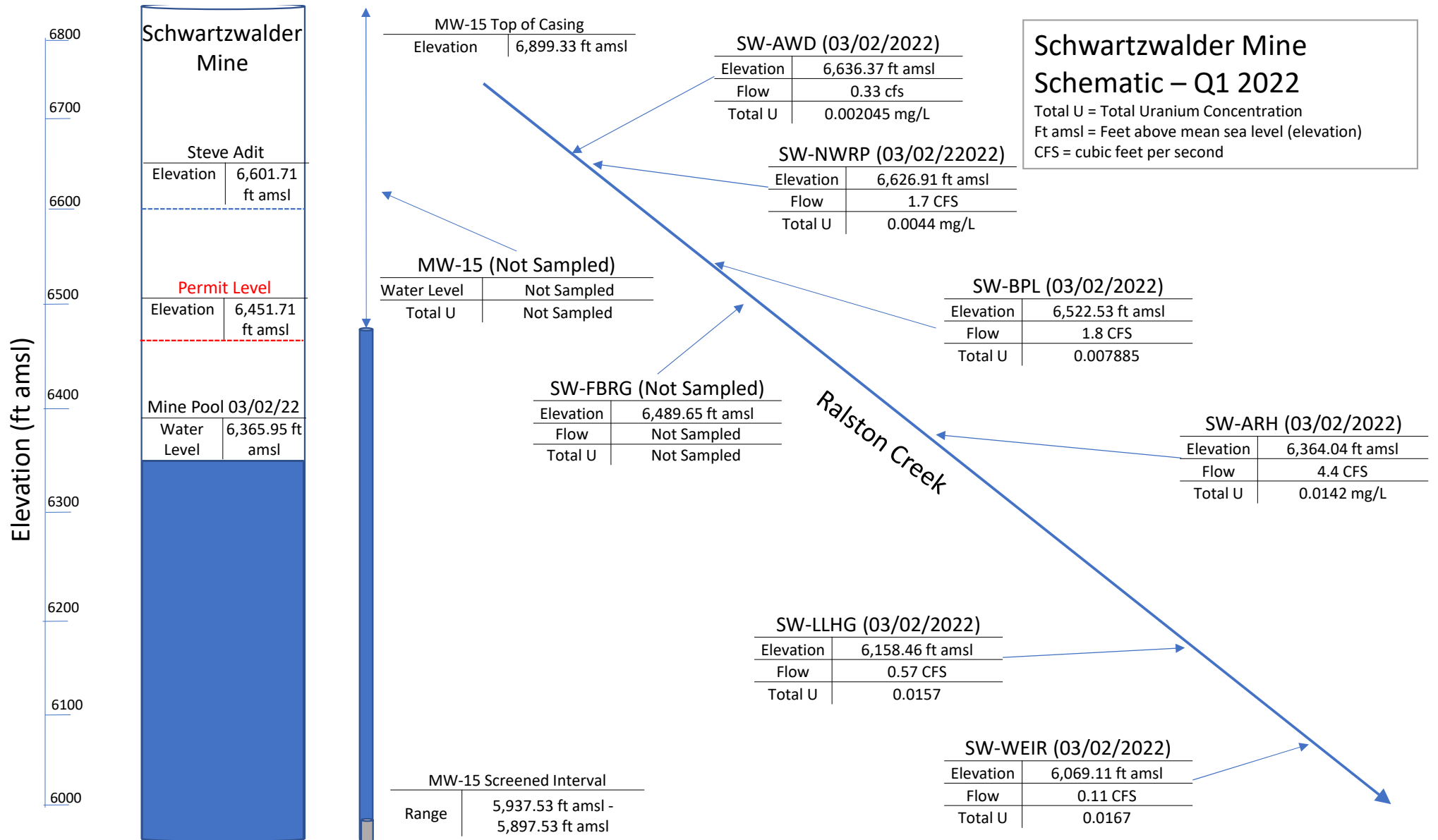
Jim Harrington, Managing Director

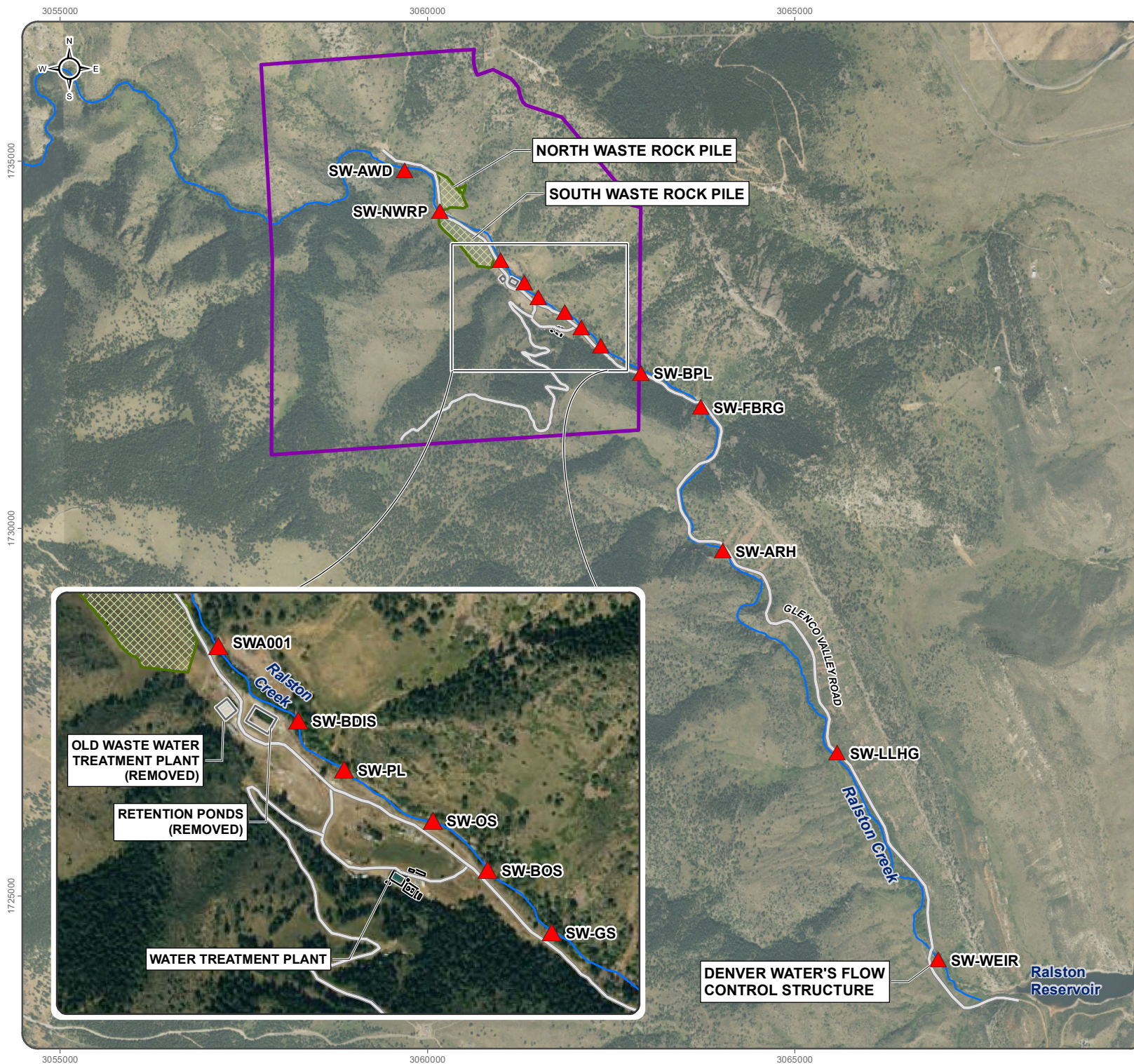
COLORADO LEGACY LAND

jim@ColoradoLegacy.Land

cc: Paul Newman – CLL, Managing Director, paul@coloradolegacy.land
Eric Williams – CLL, Managing Director, eric@coloradolegacy.land

Elizabeth Busby – Ensero, Project Manager, ebusby@ensero.com
Dan Arnold – Denver Water, Attorney, daniel.arnold@denverwater.org
Eric Mink – CDPHE, WQCD, eric.mink@state.co.us
Evelyn Rhodes – City of Arvada, Water Quality Administrator, erhodes@arvada.org
Brad Wyant – City of Arvada, Water Treatment Manager, bwyant@arvada.org





COLORADO LEGACY LAND SCHWARTZWALDER MINE

FIGURE 1

SURFACE WATER QUALITY MONITORING LOCATIONS

SEPTEMBER 2020



- ▲ Surface Water Quality Monitoring Station
- CLL Property Boundary
- Building, Existing
- Reclaimed Mine Feature
- Waste Rock Dump
- Road
- Watercourse

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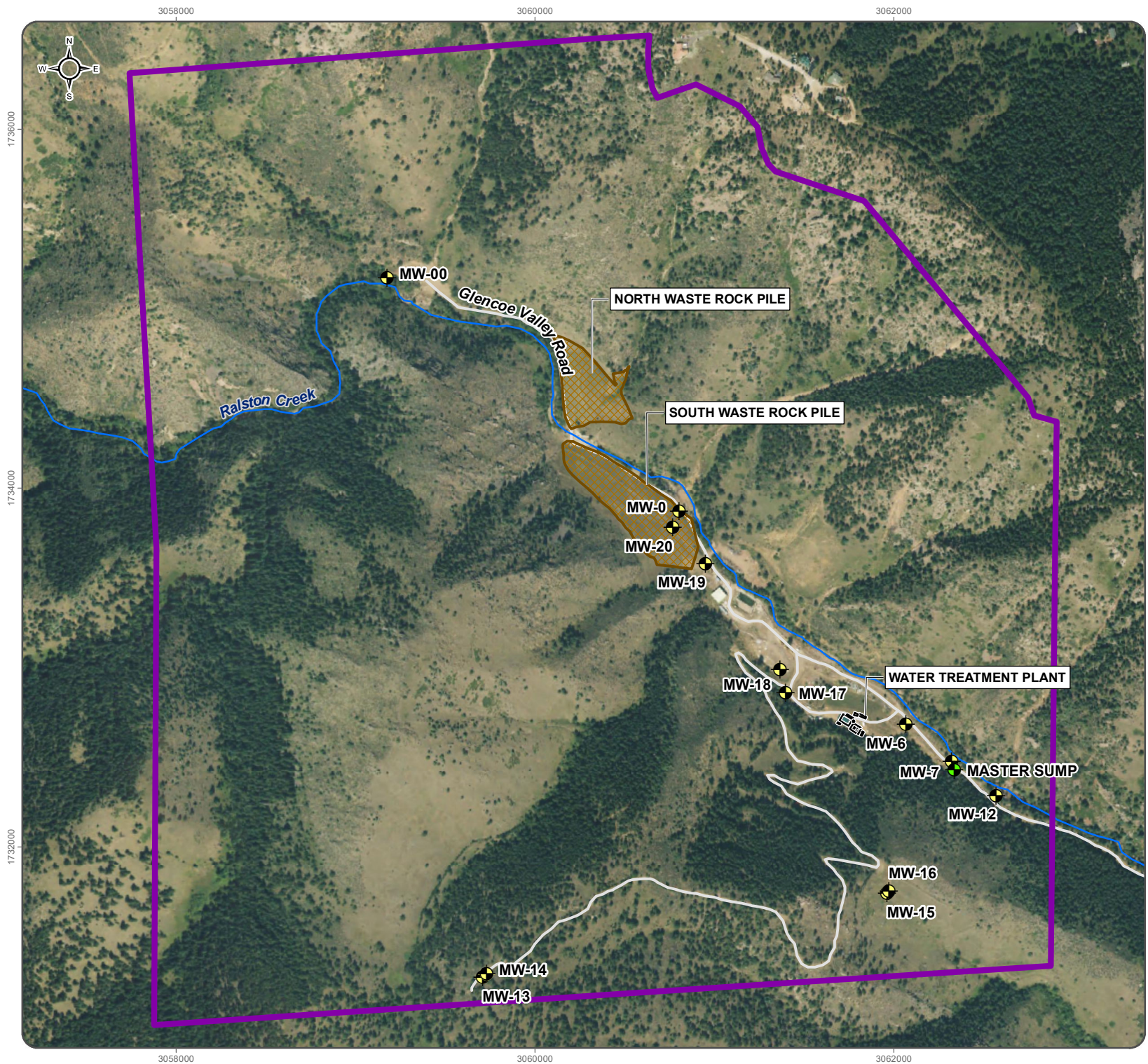
0 500 1,000 1,500 2,000 Feet



Satellite imagery obtained from ArcGIS on services.arcgis.com on September 2020

Datum: NAD 1983 (CORS96) StatePlane Colorado Central FIPS 0502 (US Feet)

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COLORADO LEGACY LAND SCHWARTZWALDER MINE

FIGURE 2
**GROUNDWATER MONITORING
LOCATIONS**

OCTOBER 2020



- GW Monitoring Well
- Pumpback Sump
- CLL Property Boundary
- Waste Rock Dump
- Existing Mine Feature Footprint
- Glencoe Valley Road
- Ralston Creek

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0502 (US Feet)

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TABLE 1: GROUNDWATER SAMPLE LOCATIONS									
Location ID / Sample ID	Installation Date	Northing (feet) ^{1,2}	Easting (feet) ^{1,2}	Ground Surface Elevation ¹ (ft amsl)	Casing Elevation ¹ (ft amsl)	Total Depth (ft bgs)	Well Construction Details	Screened Interval (ft bgs)	Notes
MW-00	10/29/1998	1,733,874.25	3,060,802.43	6,608.26	6,610.26	27.5	4-inch PVC, 0.03-in slot.	16.9-26.9	Screened interval interpreted from field boring log.
MW-0	Unknown, construction paper filed on 11/20/1992	1,735,174.35	3,059,175.16	6,666.64	6,667.64	23.0	2.5-inch PVC	15.0-20.0	No information exists for this boring log. Screened interval is taken from MW permit application. 15.0-20.0 is listed as the proposed screened interval.
MW-6	06/20/1989	1,732,682.94	3,062,066.36	6,556.52	6,557.67	15.0	2-in Sch 40 PVC, 0.03-in slot	5.0-15.0	
MW-7	06/20/1989	1,732,478.75	3,062,321.26	6,546.02	6,547.62	11.0	2-in Sch 40 PVC	5.0-10.0	
MW-12	November 2008 (According to EPP)	1,732,287.92	3,062,569.09	6,545.46	6,547.58	17.0	2-in PVC	12.0-17.0	Missing boring log and construction form. Was drilled to the be “downgradient alluvium compliance well”.
MW-13	09/06/2012	1,731,272.17	3,059,706.76	7,401.87	7,403.32	500.8	2-in Sch 40 PVC, 0.04-in slot	459.76-499.76	Nitrogen. Bladder pump in well.
MW-14	09/04/2012	1,731,293.55	3,059,730.06	7,401.32	7,402.39	154.3	2.375-in Sch 80 PVC, 0.02-in slot	134.34-154.34	Nitrogen. Bladder pump in well. Installed Dry.
MW-15	11/03/2012	1,731,742.41	3,061,962.60	6,897.53	6,899.33	1,007.13	3-in Sch 40 PVC, 0.04-in slot	960.0-1,000.0	Nitrogen. Bladder pump in well.
MW-16	10/19/2012	1,731,756.51	3,061,972.30	6,898.42	6,900.32	324.7	2.375-in Sch 80 PVC, 0.02-in slot	300.0-320.0	No pump in well. Installed dry.
MW-17	09/22/2012	1,732,861.21	3,061,398.57	6,600.86	6,602.57	119.0	2.375-in Sch 80 PVC, 0.02-in slot	95.0-115.0	Nitrogen.
MW-18	10/11/2012	1,732,989.50	3,061,365.66	6,575.34	6,576.88	239.9	2.375-in Sch 80 PVC, 0.02-in slot	215.0-235.0	
MW-19	09/28/2012	1,733,579.59	3,060,949.50	6,603.93	6,606.07	21.6	2.375-in Sch 80 PVC, 0.02-in slot	10.0-20.0	
MW-20	11/06/2012	1,733,782.66	3,060,767.07	6,645.28	6,647.37	50.0	2.375-in Sch 80 PVC, 0.02-in slot	40.0-50.0	Installed dry.
Raw Feed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Spigot – inside water treatment plant. Mine pool water influent pumped from 400 ft below Steve to Water Treatment Plant. Raw Feed use to be called “Mine Refill”.
Sumps (Master Sump)	10/08/2010	1,732,431.06	3,062,337.59	6,544.66	6,547.21	6.0	N/A	N/A	Sample collected from Master Sump, commissioned 10/2020, previously Sump 1.

Citation:

¹ Locations surveyed by Lambert Land Consulting on 7/23/2020.

Notes:

² Coordinates: NAD 1983. Colorado State Plane Colorado Central (Feet).

N/A = Not Applicable

amsl = Above mean sea level

bgs = Below ground surface

ft = Feet

in= Inch

TABLE 2A: SURFACE WATER SAMPLE FIELD PARAMETERS									
Location ID / Sample ID	Elevation ¹ (ft above mean sea level)	Sample Date	Field Parameters						Notes / Location Description
			Flowrate (ft ³ /s)	pH (unitless)	Temperature (°C)	Conductivity (µS/cm)	ORP (mV)	Dissolved Oxygen (mg/L)	
SW-AWD	6,636.37	03/02/2022	0.33	8.61	1.2	207.8	75.1	11.93	Upstream sample location. Above waste dump (AWD). Onsite.
SW-NWRP	6,626.91	03/02/2022	1.7	8.20	2.5	218.3	54.0	11.85	Downstream of the North Waster Rock Pile (NWRP).
SW-A001	6,603.98	Not Sampled ²	--	--	--	--	--	--	Above former discharge point. Onsite. Directly below the west waste rock pile.
SW-BDIS	6,592.67	Not Sampled ²	--	--	--	--	--	--	Below former discharge (BDIS). Onsite. Below former concrete containment structure.
SW-PL	6,583.53	Not Sampled ²	--	--	--	--	--	--	Former parking lot (PL) location. Onsite.
SW-OS	6,562.51	Not Sampled ²	--	--	--	--	--	--	Former ore sorter (OS) location. Onsite.
SW-BOS	6,556.19	Not Sampled ²	--	--	--	--	--	--	Below former ore sorter (BOS) location. Onsite.
SW-GS	6,545.54	Not Sampled ²	--	--	--	--	--	--	Former guard shack (GS) location. Onsite.
SW-BPL	6,522.53	03/02/2022	1.8	8.29	3.3	222.0	80.04	11.39	Below property line (BPL). Downstream sample location, just below entrance gate. Offsite.
SW-FBRG	6,489.65	Not Sampled ²	--	--	--	--	--	--	First bridge (FBRG) after leaving site. Offsite.
SW-ARH	6,364.04	03/02/2022	4.4	8.53	3.2	242.1	127.0	11.71	Above red hill (ARH). Near the large red boulders in the creek bed. Offsite.
SW-LLHG	6,158.46	03/02/2022	0.57	8.27	3.1	244.2	162.6	11.71	Long lake head gate (LLHG). Just above head gate. Offsite.
SW-WEIR	6,069.11	03/02/2022	0.11	8.12	3.5	286.7	214.2	10.13	Weir structure before Ralston Reservoir Offsite.

Citation:

¹ Locations surveyed by Lambert Land Consulting on 7/23/2020.

Notes:

² Access was prohibited by snow during the March sampling attempt.

µS/cm = microSiemens per centimeter

°C = Degrees Celsius

ft³/s= Cubic feet per second

kg / day = Kilogram per day

mg/L = Milligrams per liter

mV =Millivolts

ORP = Oxidization Reduction Potential

TABLE 2B: SUMMARY OF SURFACE WATER ANALYTICAL DATA									
Parameter	Units	Surface Water Quality Standards Segment 17b, Ralston Creek (CDPHE 2021) ¹		Sample Location					
				SW-AWD	SW-NWRP	SW-BPL	SW-ARH	SW-LLHG	SW-Weir
		Acute	Chronic	03/02/2022	03/02/2022	03/02/2022	03/02/2022	03/02/2022	03/02/2022
Physical Properties									
TDS - Total Dissolved Solids	mg/L	—	—	204	206	201	222	224	262
TSS - Total Suspended Solids	mg/L	—	—	<5	<5	<5	<5	<5	<5
Major Ions									
Alkalinity as CaCO ₃	mg/L	—	—	56.4	55.3	58.3	67.3	72.3	84.6
Bicarbonate as CaCO ₃	mg/L	—	—	56.4	55.3	58.3	67.3	72.3	84.6
Calcium - Dissolved	mg/L	—	—	34.5	35.1	36.3	36	36.8	41.5
Carbonate as CaCO ₃	mg/L	—	—	<2	<2	<2	<2	<2	<2
Chloride	mg/L	—	250	65.6	65.6	66.1	64.2	63.2	63.6
Fluoride	mg/L	—	—	0.3	0.31	0.325	0.32	0.31	0.29
Hydroxide as CaCO ₃	mg/L	—	—	<2	<2	<2	<2	<2	<2
Magnesium - Dissolved	mg/L	—	—	9.37	9.68	10.2	10.5	10.8	12.3
Potassium - Dissolved	mg/L	—	—	1.42	1.4	1.53	1.67	1.75	2.59
Sodium - Dissolved	mg/L	—	—	19.9	19.7	20.1	24.2	25.1	32
Sulfate	mg/L	—	250	26.95	28.3	31.1	38	36	52.7
Nutrients									
Cyanide - Weak Acid Dissociable	mg/L	0.005	—	<0.003	<0.003	0.0133	<0.006	<0.003	<0.003
Nitrate+Nitrite as N	mg/L	NO ₃ =10	NO ₂ =0.05	0.028	<0.02	<0.02	<0.02	<0.02	<0.02
Phosphate - Total	mg/L	—	—	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Phosphorus - Total	mg/L	—	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Metals-Dissolved									
Aluminum	mg/L	—	—	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Antimony	mg/L	—	—	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Arsenic	mg/L	0.34	—	<0.0002	<0.0002	<0.0002	0.00023	<0.0002	<0.0002
Boron	mg/L	—	0.75	<0.03	<0.03	<0.03	<0.03	<0.03	0.042
Chromium	mg/L	—	Chromium III=0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		Chromium VI = 0.016	Chromium VI = 0.011						
Copper	mg/L	0.0213	0.0136	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Iron	mg/L	—	0.3	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Lead	mg/L	0.109	0.0043	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Manganese	mg/L	3.51	1.94	<0.01	<0.01	<0.01	<0.01	0.011	0.087
Mercury	mg/L	—	—	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	—	—	<0.0103	<0.00103	<0.01056	<0.00239	<0.00311	<0.00541
Silver	mg/L	0.0047	0.00017	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

TABLE 2B: SUMMARY OF SURFACE WATER ANALYTICAL DATA									
Parameter	Units	Surface Water Quality Standards Segment 17b, Ralston Creek (CDPHE 2021) ¹		Sample Location					
				SW-AWD	SW-NWRP	SW-BPL	SW-ARH	SW-LLHG	SW-Weir
		Acute	Chronic	03/02/2022	03/02/2022	03/02/2022	03/02/2022	03/02/2022	03/02/2022
Thallium	mg/L	—	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Uranium	mg/L	-	-	0.002235	0.00508	0.00821	0.0148	0.0167	0.0178
Zinc	mg/L	0.249	0.188	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Metals-Total									
Aluminum	mg/L	—	—	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Antimony	mg/L	—	—	<0.0004	<0.0004	<0.0012	<0.0008	<0.0004	<0.002
Arsenic	mg/L	—	0.00002	<0.0002	<0.0002	<0.0002	<0.00027	<0.00023	<0.0002
Boron	mg/L	—	0.75	0.045	<0.03	<0.03	<0.03	<0.03	0.043
Chromium	mg/L	Chromium III = 0.005	—	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
		Chromium VI = 0.016	Chromium VI = 0.011						
Copper	mg/L	0.0213	0.0136	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Iron	mg/L	—	1	<0.06	0.175	0.229	0.072	0.078	0.16
Lead	mg/L	0.05	—	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Manganese	mg/L	0.05	—	<0.01	<0.01	0.012	0.013	0.018	0.089
Mercury	mg/L	3.513	1.941	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum	mg/L	—	0.15	0.02028	<0.00087	<0.010585	<0.00246	<0.00318	<0.00564
Silver	mg/L	0.0047	0.00017	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Thallium	mg/L	—	—	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Uranium	mg/L	—	—	0.002045	0.0044	0.007885	0.0142	0.0157	0.0167
Zinc	mg/L	0.249	0.188	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Radionuclides									
Gross Alpha	pCi/L	—	—	3.8	6	14.1	9	13	9.6
Gross Beta	pCi/L	—	—	3.19	4.6	8.8	6.4	8.8	11
Radium 226 - Dissolved	pCi/L	—	—	0.25	0.1	0.13	0.23	0.24	0.47
Radium 226 - Total	pCi/L	—	—	0.1	0.2	0.28	0.22	0.23	0.32
Radium 228 - Total	pCi/L	—	—	-0.29	0.82	-0.51	0.73	-0.13	0.6
Radium 226 + Radium 228 - Total	pCi/L	—	—	0	0	0	0	0	0

Notes:

¹ Acute and chronic standards for cadmium, chromium III, copper, lead, manganese, nickel, silver, uranium, and zinc are calculated using an average hardness value of 163 mg/L as CaCO₃.

Bold and grey-shaded analytical results are detected above the criteria.

B = Estimated concentration

NO₃= Nitrate

NO₂= Nitrite

CaCO₃= Calcium Carbonate

mg/L= Milligrams per Liter

pCi/L= PicoCuries per Liter

Chromium III = Trivalent Chromium
Chromium IV = Tetravalent Chromium

Source: CDPHE. 2021. Regulation No. 38 Stream Classification and Water Quality Standards, Clear Creek Basin, Segment 17b. Mainstem of Ralston Creek Including all Tributaries and Wetlands from the Source to the Inlet of Arvada Reservoir. December.

TABLE 3A: GROUNDWATER SAMPLE FIELD PARAMETERS								
Location ID / Sample ID ²	Sample Date	Field Parameters						Notes / Location Description
		Static Depth to Water (ft btoc)	pH (unitless)	Temperature (°C)	Conductivity (µS/cm)	ORP (mV)	Dissolved Oxygen (mg/L)	
MW-00	Not Sampled ¹	--		--	--	--	--	Alluvial well. Above waste dumps, upstream of site.
MW-0	Not Sampled ¹	--		--	--	--	--	Alluvial well. Toe of south waste rock pile.
MW-6	Not Sampled ¹	--	--	--	--	--	--	Alluvial well. Near former Sump #2.
MW-7	02/15/2022	10.63	7.23	6.1	580	135.7	6.80	Alluvial well. Near Sump #1.
MW-12	Not Sampled ¹	--	--	--	--	--	--	Below Sump #1. Alluvial well.
MW-13	Not Sampled ¹	--	-	--	--	--	--	Nitrogen purge. Replaced MW-10. Previous Sample ID = L1. Background well.
MW-14	Not Sampled ¹	--	--	--	--	--	--	Nitrogen purge. Replaced MW-11. Previous Sample ID = L2. Background well.
MW-15	Not Sampled ¹	--	--	--	--	--	--	Nitrogen purge. Previous Sample ID = L3. Bedrock well.
MW-16	--	--	--	--	--	--	--	Previous Sample ID = L4. Bedrock well. No sample required.
MW-17	Not Sampled ¹	--	--	--	--	--	--	Nitrogen purge. Previous Sample ID = L5.
MW-18	Not Sampled ¹	--	--	--	--	--	--	Previous Sample ID = L6. Bedrock well, installation targeted Illinois fault zone in alluvial valley.
MW-19	02/15/2022	19.01	7.04	11.1	670	155.7	6.07	Toe of south waste rock pile. Previous Sample ID = L7.
MW-20	Not Sampled ¹	--	--	--	--	--	--	Usually, dry. Top of south waste rock pile.
Raw Feed	Not Sampled ¹	--	--	--	--	--	--	Sample collected from spigot inside water treatment plant. This is the water treatment plant intake from the mine pool. Previous Sample ID = Mine Refill.
Sumps	Not Sampled ¹	--	--	--	--	--	--	Sample collected from sump water from Sump #1 (Master Sump).

Notes:

- ¹ Snow and ice prevented the safe collection of a sample.
- ² MW-1, MW-2, MW-3A, and MW-8 were removed in 2019; MW-4 and MW-5 were removed in 2008. MW-8 was replaced with MW-12. MW-10 and MW-11 were fouled (bentonite in screened interval) and replaced with MW-13 and MW-14.
- µS/cm = microSemiens per centimeter
- °C = Degrees Celsius
- ft btoc = Feet below top of casing
- ID = Identifier
- mg/L = Milligrams per liter
- mV = Millivolts
- MW = Monitoring Well
- ORP = Oxidization Reduction Potential

Table 3B: Summary of Ground Water Analytical Data				
Parameter	Units	Domestic Water Supply - Drinking Water Standards (CDPHE 2018)	Sample Location	
			MW-7	MW-19
			02/15/2022	02/15/2022
Physical Properties				
TDS - Total Dissolved Solids	mg/L	-	648	602
TSS - Total Suspended Solids	mg/L	-	30	<5
Major Ions				
Alkalinity as CaCO ₃	mg/L	-	105	190
Bicarbonate as CaCO ₃	mg/L	-	105	190
Calcium - Dissolved	mg/L	-	95.3	73.9
Carbonate as CaCO ₃	mg/L	-	<3	<3
Chloride	mg/L	250	15.9	7.47
Fluoride	mg/L	4	0.41	0.38
Hydroxide as CaCO ₃	mg/L	-	<3	<3
Magnesium - Dissolved	mg/L	-	37.5	46.4
Potassium - Dissolved	mg/L	-	4.61	4.42
Sodium - Dissolved	mg/L	-	35.6	44.1
Sulfate	mg/L	250	357	269
Nutrients				
Cyanide - Weak Acid Dissociable	mg/L	0.2	<0.003	<0.003
Nitrate+Nitrite as N	mg/L	10	2.48	1.8
Phosphate - Total	mg/L	-	0.15	<0.03
Phosphorus - Total	mg/L	-	0.049	<0.01
Metals - Dissolved				
Aluminum	mg/L	5	<0.05	<0.05
Antimony	mg/L	0.006	0.00041	<0.0004
Arsenic	mg/L	0.01	<0.0002	0.00041
Boron	mg/L	0.75	<0.03	0.051
Chromium	mg/L	0.1	<0.02	<0.02
Copper	mg/L	1	<0.01	<0.01
Iron	mg/L	0.3	<0.06	<0.06
Lead	mg/L	0.1	0.00036	<0.0001
Manganese	mg/L	0.05	<0.01	<0.01
Mercury	mg/L	0.002	<0.0002	<0.0002
Molybdenum	mg/L	0.21	0.033	0.0294
Silver	mg/L	0.05	<0.0001	<0.0001
Thallium	mg/L	0.002	<0.0001	<0.0001

Table 3B: Summary of Ground Water Analytical Data				
Parameter	Units	Domestic Water Supply - Drinking Water Standards (CDPHE 2018)	Sample Location	
			MW-7	MW-19
			02/15/2022	02/15/2022
Uranium	mg/L	0.03	0.493	1.18
Zinc	mg/L	5	<0.02	<0.02
Metals - Total				
Aluminum	mg/L	5	2.52	<0.05
Antimony	mg/L	0.006	0.00043	<0.0004
Arsenic	mg/L	0.01	0.00121	<0.0002
Boron	mg/L	0.75	0.037	0.055
Chromium	mg/L	0.1	<0.02	<0.02
Copper	mg/L	1	<0.01	<0.01
Iron	mg/L	0.3	3.41	<0.06
Lead	mg/L	0.05	0.00289	<0.0001
Manganese	mg/L	0.05	0.16	<0.01
Mercury	mg/L	0.002	<0.0002	<0.0002
Molybdenum	mg/L	0.21	0.0351	0.0293
Silver	mg/L	0.05	<0.0001	<0.0001
Thallium	mg/L	0.002	<0.0001	<0.0001
Uranium	mg/L	0.03	0.489	1.17
Zinc	mg/L	5	<0.02	<0.02
Radionuclides				
Gross Alpha	pCi/L	15	310	510
Gross Beta	pCi/L	-	110	200
Radium 226 - Dissolved	pCi/L	-	0.32	0.54
Radium 226 - Total	pCi/L	-	0.51	0.52
Radium 228 - Total	pCi/L	-	0	0
Radium 226 + Radium 228 - Total	pCi/L	5	-0.23	0.92

Notes:

Bold and grey shaded analytical results are detected above the criteria.

B = Estimated concentration

CaCO₃= Calcium Carbonate

mg/L= Milligrams per Liter

pCi/L= PicoCuries per Liter

Chromium III = Trivalent Chromium

Chromium IV = Tetravalent Chromium

NO₂= Nitrite

NO₃= Nitrate

N/A= Standard not Defined

Source:

CDPHE. 2021. Regulation No. 41 – The Basic Standards for Ground Water (5 CCR 1002-41). Water Quality Control Commission. December.

TABLE 4: DAILY AVERAGE MINE POOL ELEVATIONS		
Date	Distance Below Steve Level (Feet)	Elevation of Water Level (Feet above mean sea level)
1/1/2022	Not recorded	Not Recorded
1/2/2022	Not recorded	Not Recorded
1/3/2022	273.73	6327.98
1/4/2022	273.09	6328.62
1/5/2022	272.30	6329.41
1/6/2022	271.59	6330.12
1/7/2022	271.12	6330.59
1/8/2022	270.16	6331.55
1/9/2022	268.70	6333.01
1/10/2022	267.86	6333.85
1/11/2022	267.07	6334.64
1/12/2022	266.39	6335.33
1/13/2022	265.74	6335.97
1/14/2022	264.74	6336.97
1/15/2022	263.72	6337.99
1/16/2022	263.16	6338.55
1/17/2022	262.42	6339.29
1/18/2022	261.39	6340.32
1/19/2022	260.14	6341.57
1/20/2022	259.15	6342.56
1/21/2022	258.43	6343.28
1/22/2022	257.52	6344.19
1/23/2022	256.52	6345.19
1/24/2022	255.50	6346.22
1/25/2022	254.38	6347.33
1/26/2022	253.46	6348.25
1/27/2022	252.49	6349.22
1/28/2022	251.73	6349.98
1/29/2022	251.31	6350.40
1/30/2022	250.76	6350.95
1/31/2022	250.36	6351.35
2/1/2022	249.84	6351.87
2/2/2022	249.19	6352.52
2/3/2022	248.65	6353.07
2/4/2022	248.10	6353.62
2/5/2022	247.82	6353.89
2/6/2022	247.26	6354.45
2/7/2022	247.00	6354.71
2/8/2022	246.78	6354.93
2/9/2022	246.48	6355.23

TABLE 4: DAILY AVERAGE MINE POOL ELEVATIONS		
Date	Distance Below Steve Level (Feet)	Elevation of Water Level (Feet above mean sea level)
2/10/2022	246.29	6355.42
2/11/2022	245.90	6355.82
2/12/2022	245.51	6356.20
2/13/2022	245.25	6356.46
2/14/2022	245.04	6356.67
2/15/2022	244.96	6356.75
2/16/2022	244.39	6357.32
2/17/2022	243.62	6358.09
2/18/2022	243.14	6358.57
2/19/2022	242.94	6358.77
2/20/2022	242.62	6359.09
2/21/2022	242.13	6359.58
2/22/2022	241.10	6360.61
2/23/2022	240.43	6361.28
2/24/2022	239.92	6361.79
2/25/2022	239.18	6362.53
2/26/2022	238.50	6363.21
2/27/2022	237.86	6363.85
2/28/2022	237.19	6364.52
3/1/2022	236.53	6365.18
3/2/2022	235.76	6365.95
3/3/2022	235.03	6366.68
3/4/2022	234.57	6367.14
3/5/2022	234.03	6367.68
3/6/2022	233.14	6368.57
3/7/2022	232.17	6369.54
3/8/2022	231.69	6370.02
3/9/2022	231.20	6370.51
3/10/2022	230.58	6371.13
3/11/2022	229.79	6371.92
3/12/2022	229.17	6372.54
3/13/2022	228.73	6372.98
3/14/2022	227.79	6373.92
3/15/2022	227.13	6374.58
3/16/2022	226.54	6375.17
3/17/2022	225.85	6375.87
3/18/2022	225.47	6376.24
3/19/2022	224.74	6376.97
3/20/2022	224.31	6377.40
3/21/2022	223.60	6378.11

TABLE 4: DAILY AVERAGE MINE POOL ELEVATIONS		
Date	Distance Below Steve Level (Feet)	Elevation of Water Level (Feet above mean sea level)
3/22/2022	222.86	6378.85
3/23/2022	222.40	6379.31
3/24/2022	221.84	6379.87
3/25/2022	221.07	6380.64
3/26/2022	220.57	6381.14
3/27/2022	219.99	6381.72
3/28/2022	219.60	6382.11
3/29/2022	219.20	6382.51
3/30/2022	218.26	6383.45
3/31/2022	217.63	6384.08

Notes:

The elevation of the Steve Adit is 6601.71 feet above mean sea level. This was surveyed by Lambert Land Consulting on 7/23/2020.