OURAY SILVER MINES

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Revenue-Virginius Mine
2021 Environmental Summary

DRMS Permit No. M-2012-032
February 5, 2022

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1 INTRODUCTION

This annual Environmental Summary provides a summary of activities associated with the Division of Reclamation, Mining, and Safety (DRMS) Permit No. M-2012-032, and Colorado Water Quality Control Division (WQCD) Colorado Discharge Permit System (CDPS) permits for Industrial Wastewater Discharge (CO-0000003) and Stormwater Discharge (COR-040289) for 2021. The summary also includes a discussion of relevant activities that occurred at the Mine throughout the past twelve months. Supporting documentation related to monitoring requirements required by Hardrock Rule 1.15 is provided in the attachments. This summary is being submitted as an attachment to OSMI's annual reclamation report, which is due February 5th of each year on the anniversary of OSMI's permit.

2 ACTIVITIES in 2021

The following sections provide an update of activities in 2021, including operations, permitting activities, and other site activities.

2.1 Operational Update

The Revenue-Virginius Mine (Mine) began ramping up for production during the 3rd and 4th quarters 2021. The Mine continued development of Alimak raises 1, 2 and 3 to access the 1800, 1500 and 1200 levels for stope development. Once Alimak raises were installed, work on the Raise #1 Shaft began, which will provide permanent access to the upper workings. Tons of ore mined during the 3rd and 4th quarters of 2021 were 2,042 and 2,414 tons, respectively.

Construction of the five-stage semi-passive mine water treatment system permitted in TR 10 was completed in January 2021 and the system began discharging treated water via Outfall 002A in May 2021.

Construction on the Reagent Room began during the summer of 2021 in accordance with TR-14.

The Mill became operational in September 2021 under conditional approval of TR-15 and has run intermittently since that time. In 2021, approximately 2,700 tons of ore were processed through the mill. Final recertification of the mill will occur through final approval of TR-15 once construction is complete.

2.2 Incidents

There were three loss of containment incidents in October 2021, two of which required reporting to DRMS.

- The first loss of containment occurred on October 6th when the tailings filter feed tank overflowed causing approximately 200 gallons of tailings to leave containment. Spilled tailings were cleaned up and placed in the temporary tailings storage facility and sampled for SPLP. DRMS was notified verbally within 24 hours followed by a written report.

- The second loss of containment occurred on October 8th when the process water tank overflowed in the same area as the tailings loss of containment two days prior. After investigating both incidents, it was discovered that the containment curb in the old reagent room was damaged, which allowed these materials to leave containment. DRMS was notified of this second loss of containment followed by a written report.

  Waste rock impacted by the spill was cleaned up and placed in the temporary atlaings storage area and sampled. The secondary containment was repaired, and automatic level controls were installed on the tanks to prevent recurrence. DRMS visited the site to inspect the area where the incidents occurred. Sample results from the process water were compared with groundwater standards and were below all regulatory limits with the exception of Total Dissolve Solids and sulfate.

- The third loss of containment occurred on October 18, 2021, which involved a small diesel spill (< 5 gallons) when a delivery truck overfilled one of the diesel tanks. The spill was cleaned up and contaminated materials disposed of and clean material was placed in the area. Verbal notification was provided to DRMS as a courtesy, but the incident did not require written reporting.

2.3 Permitting Activities

A summary of permitting activities that occurred in 2021 is provided in the following section.

2.3.1 Amendment 02 (AM-02)

Amendment 02 to OSMI's Permit M-2012-032 was submitted to DRMS on December 3, 2021 in response to a request by the Mined Land Reclamation Board to settle a notice of violation resulting from disturbance outside of the affected lands boundary. The scope of Amendment 02 is limited to expanding the affected lands boundary in Governor Basin to accommodate disturbance associated with construction of a refuge chamber and secondary escapeway. The amendment results in an additional 1.16 acres of land to OSMI's affected lands boundary.

In addition to the proposed affected lands boundary modification in Governor Basin, permit documents were updated, where applicable, to incorporate changes made through various Technical Revisions (TRs) that have been submitted and approved since the permit was last amended in 2015.

DRMS deemed the application complete on December 13, 2021. Notices were published in the Plaindealer on December 16th, 23rd, and 30th, 2021 and January 6th, 2022. The public notice period ended on January 26, 2022. DRMS has set a decision date of May 17, 2022.

2.3.2 Technical Revision 12 (TR-12)

TR-12 was submitted in March of 2021 and requested approval for the replacement of groundwater monitoring well GW-04 with a new well GW-04R. The well replacement was initiated in response to the discovery of historic organic residue in GW-04 after it was drilled

in August 2020. DRMS requested a TR be submitted, which included a Corrective Action and Revisions to address the contamination in the well. It was ultimately determined that the well had been drilled through the historic machine shop at the site and likely encountered residual product from historical operations. After investigating locations for a replacement well, it was determined there was no suitable location to drill GW-04R without encountering the same issue. During adequacy review, OSMI withdrew its proposal to drill replacement well GW-04R and committed to monthly visual monitoring for leaks along the out-slope of Mine Water Pond #3. Copies of the monthly out-slope inspection reports are included in Attachment D. TR-12 was approved in September 2021.

2.3.3 Technical Revision 13 (TR-13)

TR-13, initially submitted in March of 2021, was officially withdrawn. Building modifications and bond updates that were proposed under TR-13 were incorporated into Amendment 02 per DRMS's request.

2.3.4 Technical Revision 14 (TR-14)

TR-14 was submitted in April 2021. This TR provided updates to the Environmental Protection Facility (EPF) certification plan for the new Reagent Room portion of the mill filter building extension (permitted under TR-09). These updates included the construction, operation, and reclamation measures associated with the Reagent Room EPF. On July 2, 2021, DRMS conditionally approved TR-14, which allowed construction of the Reagent Room to begin. Construction of the Reagent Room is in progress and is expected to be completed during Q2 2022. Final certification of the new Reagent Room is contingent upon final inspections by DRMS.

2.3.5 Technical Revision 15 (TR-15)

TR-15 was submitted in June 2021. This revision sought recertification of the mill. Certification of the mill was originally granted by DRMS on January 11, 2016. Updates to the milling process as described in TR-09 were approved in March 2017. Supporting information for the mill recertification included mill design discussion; mill construction, modification, and test operations; water and slurry handling systems and environmental protections; chemical handling and containment systems; tailing chemistry; and water quality at the tailings embankment. TR-15 is currently in progress.

2.3.6 Technical Revision 16 (TR-16)

TR-16 was submitted in July 2021. This revision requested approval to construct two equipment storage warehouses and a security building at the mine entrance, place temporary lineout buildings on the surface, construct a vehicle washdown area near the mechanic shop, and place temporary generators and a 10,000-gallon fuel tank on the surface. TR-16 is approved, and the infrastructure permitted by TR-16 was partially constructed in 2021 and will be completed in 2022.

2.4 Other site activities included

- Atlas Tailings Storage Facility construction was completed in Q3 2021. Final survey

for as-builts will be performed in 2022.

- Ouray county visited the site and assisted OSMI with developing a weed management plan for the mine.
- OSMI appeared before the MLRB on August 21, 2021 to address the matter of disturbance outside of the affected lands boundary in Governor Basin. The result of that hearing was a stipulated agreement to submit a permit amendment by December 16, 2021. See Section 2.3.1 for more details regarding the scope of Amendment 02.
- DRMS completed quarterly inspections March 10th, July 6th, August 31, and October 19th, 2021. The March 10th inspection found barrels of hydrocarbons stored off secondary containment. The issue was resolved and documentation was sent to the DRMS. The October 19th inspection was prompted by loss of containment events. No issues were raised during other inspections.
- Modifications to the mine water treatment system were made in October and November to address sediment load in the discharge. Modifications included the introduction of ferric chloride on an as needed basis at the portal to precipitate out total suspended solids, the addition of a silt fence in Mine Water Pond #1 to capture sediment, and management of water within the mine to settle sediment before the water exits the mine.
- Monitoring well GW-4 was plugged and abandoned in November 2021 per TR-12. Documentation was sent to both DRMS and the State Engineer's Office.
- The SPCC plan was updated in November 2021 and submitted to DRMS as Attachment 1 to Amendment 02.
- The Storm Water Management Plan (SWMP) was updated in November 2021 and submitted to DRMS as Attachment 1 to Amendment 02.
- Treated mine water from the five-stage passive mine water treatment system began discharging through Outfall 002A in May 2021. All discharge limits were met beginning November 1, 2021.
- The Air Pollutant Emission Notice (APEN) for the mine site was updated to reflect operations in production and was submitted to the Air Pollution Control Division in November 2021.

3 WATER MONITORING and REPORTING

Water quality samples, field data, flow, and observations were collected by Purewater Systems of Ridgway, CO until August 2021 at which time OSMI switched contractors. For the balance of the year, OSMI's water samples were collected by Solid Solutions Geosciences out of Ridgway, Colorado.

Sample location maps are shown on Maps 2 and 3 and laboratory data reports are presented in Attachment A. Attachment B presents summary statistics for Groundwater and Surface Water for the past 5 quarters. Sampling notes and equipment calibration records are included in Attachment C.

3.1 Groundwater

Groundwater monitoring continued at six locations, GW-1A, GW-1B, GW-2A, GW-2B, GW-3R, and GW-3B. Groundwater was monitored on a quarterly basis throughout 2021.

3.1.1 Groundwater Quality

2021 groundwater results were within permit limits. Results from 2021 sampling reflect historical results. In general, zinc and cadmium concentrations are higher in shallow wells and concentrations are higher in well GW-2A and GW-2B than in GW-3A and GW- 3R (near the passive treatment system). The trend suggests an upgradient source of cadmium and zinc in groundwater with attenuation through sorption or dilution as groundwater moves downgradient.

3.2 Surface Water

Surface water is monitored voluntarily at various locations in the drainage upstream and downstream of the mine site. Surface water quality samples are collected at SW-1, SW-2, SW-3, SW-4, SW-15, SW-16, SW-17, SW-21. Map 2 shows the surface water sampling locations.

Discharge through Outfall 002A (OF002A) began on October 30, 2020 while the passive mine water treatment system was being constructed. Sampling commenced per CDPS permit CO-0000003 in November 2020 and continued through 2021 in accordance with permit requirements. However, the passive mine water treatment system was under construction for a majority of 2021, and therefore the discharge was not subject to the full treatment system until late May 2021. In addition, very low flows in the Revenue tunnel resulted in zero discharge during the first quarter of 2021.

The treatment system was commissioned between May and November 2021, which allowed the bioreactor to optimize. Additional improvements were made to the system during this time to improve treatment efficiencies. Discharge of treated water from Outfall 002A began in May 2021. The treated discharge met all permit limits beginning November 1, 2021. There was no discharge at Outfall 001A (OF001A) in 2021.

Discharge monitoring reports under CDPS permit CO-0000003 for Outfall-001A and Outfall-002A were submitted to the WQCD and are available on NetDMR through the EPA Central Data Exchange. Copies of laboratory data from Outfall 002A monitoring are provided in Attachment A. Stormwater DMRs, submitted quarterly under COR-040289, indicate no discharge for 2021. Field notes from outfall sampling may be found in Appendix C.

3.2.1 Surface Water Quality

Results at all surface water monitoring locations and the outfall were within historic norms during 2021, as shown in Summary statistics for sampled stations (Attachment B).

In general, surface water pH is neutral and stable, and hardness fluctuates seasonally, with lows during high flows and highs in the winter months. Likewise, pH, hardness and sulfate fluctuate seasonally. These seasonal fluctuations are the mark of low hardness snowmelt diluting surface water during spring runoff. Mine water, seeps, and groundwater contributions to surface water all have higher hardness and sulfate concentrations than surface water.

Results from surface water samples collected in Sneffels Creek both upstream and downstream of the mine discharge continue to show exceedances of ambient water quality standards for cadmium, lead and zinc.

As noted above, the five-stage passive mine water treatment system came online in May 2021. While the system was being commissioned, Outfall 002A had exceedances for potentially dissolved zinc and potentially dissolved lead for several months. Beginning in November 2021, the discharge at Outfall 022A has met all discharge permit limits including Whole Effluent Toxicity (WET) testing.

3.2.2 Surface Water Flow

OSMI continues to gather flow data in Sneffels creek during surface water sampling events. Although gathering flow in an ever-changing channel has its challenges. OSMI will continue to evaluate the benefits of installing a permanent flow gauge in Sneffels Creek near the main entrance to the mine.

3.3 Mine Water

Mine water is water that is found within the mine as well as the water exiting the mine at the portal that is treated in the five-stage passive mine water treatment system. Mine water is sampled at various locations within the mine (i.e., UG-2, UG-4, UG-5, UG-7, UG-8, UG-9, UG-10). Stations UG-2, UG-5, and UG-8 are sampled quarterly. UG-7, UG-10, UG-4, and UG-9 are optional sampling locations and, if sampled, are sampled annually.

3.3.1 Mine Water Quality

Mine water quality for key constituents is presented in the summary tables provided in Attachment B. Mine pH is consistently near neutral. Hardness and sulfate fluctuate seasonally with minimums occurring during the spring runoff and both generally occur at higher concentrations than surface water. Cadmium, lead, and zinc remained within historic norms despite increased activity underground in 2021.

3.3.2 Mine Water Flow

Underground mine water flow was comparatively low in 2021 during low flow conditions, likely related to drought conditions throughout the region. Flow at UG-5 (the portal) ranged

from 0.053 cubic feet per second (cfs) in March to 2.48 cfs in June. Peak flows occur in the summer months in response to snow melt with low flows occurring in the winter and early spring. Flow from the portal also fluctuates with the seasonal snow melt and is generally an order of magnitude lower than that observed in the creek.

4 INSPECTIONS

Routine inspections are performed in accordance with various operating procedures and plans as summarized below. Inspection notes are recorded in a Fulcrum software database, copies of which are provided in Attachment D.

4.1 Stormwater

Inspections of stormwater collection systems are required on a semi-annual basis under CDPHE permit COR-040289 and quarterly under the DRMS permit M-2012-032, as well as following major storm events. The Stormwater Management Plan (SWMP) was updated in November 2021 to reflect changes in stormwater management as a result of construction of the five-stage passive mine water treatment system. The annual stormwater report was submitted to the WQCD on February 15, 2021 as required by the permit.

4.2 SPCC

SPCC inspections were performed on a monthly basis with the exception of December 2021. SPCC inspections were initiated during December but could not be completed at all locations due to the road being closed for more than 10 days because of avalanche risk. The Dec 2021 SPCC inspections were completed in early January 2022 once the site was safe to access.

The SPCC Plan was updated in November 2021 to reflect changes made to fuel storage at the site..

4.3 DRMS Inspections

DRMS conducted the following inspections.

- March 10, 2021, which identified the boundary issue that was addressed in Amendment 02 and covered inspection of the mill and other buildings added to the site.
- July 6, 2021, which served to inspect the excavation of the new reagent room
- July 12, 2021, which served to observe the conditions of the reagent room excavation and compaction.
- August 31, 2021, which served as a quarterly inspection as part of DRM's normal monitoring program.
- September 27, 2021, which served to observe the concrete foundation, walls and secondary containment for the reagent room
- October 19, 2021, which served to observe the structural steel construction for the new reagent room.

5 WASTE ROCK and TAILINGS MANAGEMENT

A total of 58,000 tons of waste rock were removed from underground and placed on the surface of the mine within the permitted boundary as quantified below.

- Q1: 11,000 tons
- Q2: 19,000 tons
- Q3: 19,000 tons
- Q4: 9,000 tons

Waste Rock was subjected to synthetic precipitation leachate procedure (SPLP) with results within historic norms and below regulatory limits. SPLP data collected on waste rock and tailings are provided in Attachment A along with other laboratory data sheets.

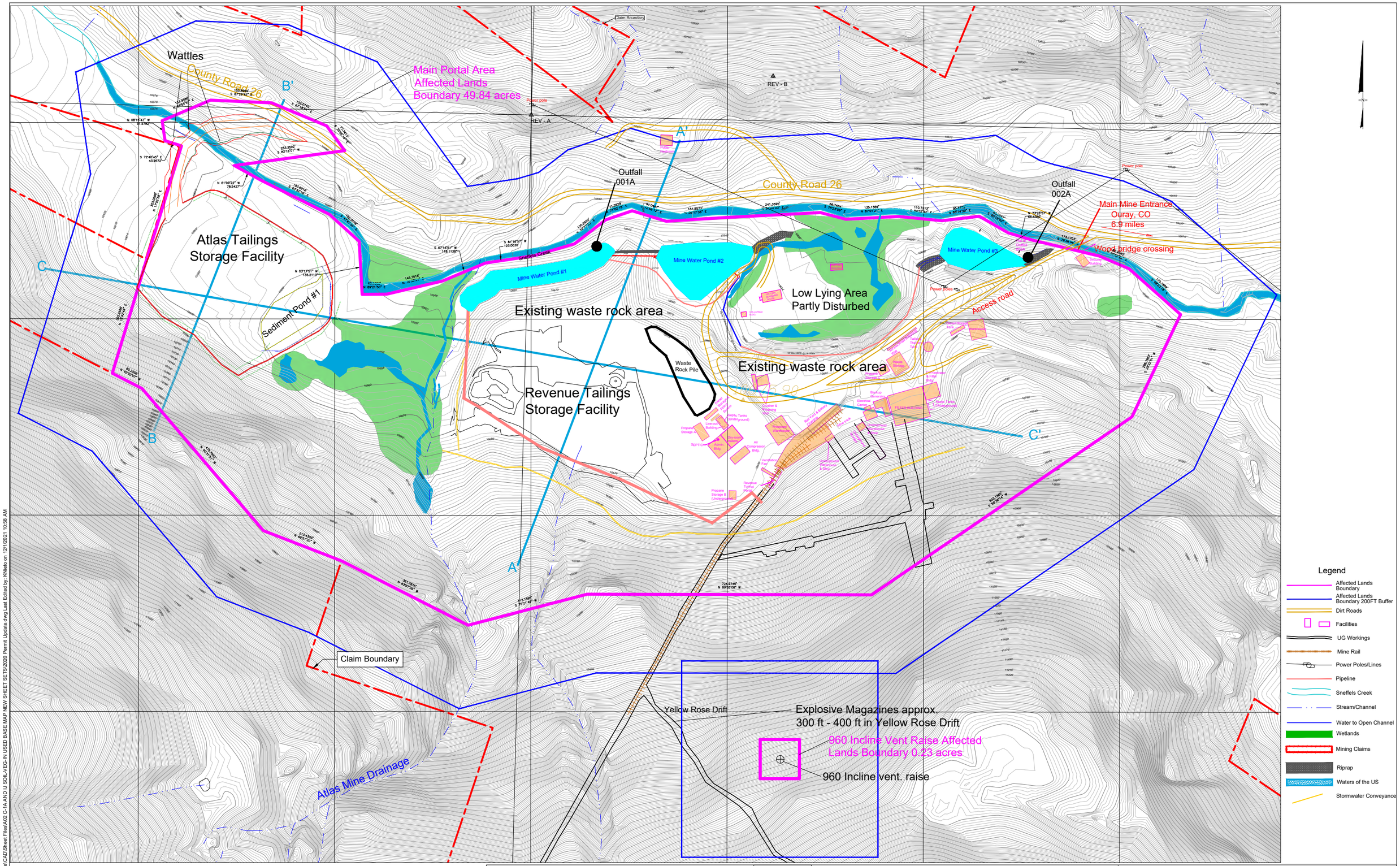
Approximately 2,054 tons of tailings were produced during milling operations in 2021. SPLP, TCLP and Acid Based Accounting (ABA) tests were performed on the tailings and all results came back below regulatory limits. Tailings were placed on temporary, lined storage areas in the Revenue and Atlas tailings storage areas and will remain there until approval from DRMS is received for final placement.

6 UPCOMING EFFORTS and RECOMMENDATIONS

As of January 31, 2022, the mine and mill have been placed in development status to prepare the mine and mill for production. It is anticipated that the mine and mill will resume production during the 3rd quarter 2022.

- Complete construction on second warehouse and equipment wash bay as authorized by TR-16.
- Complete certification of the mill and reagent room.
- Consider installation of continuous flow monitoring device at UG-5.
- Begin placing tailings in tailings storage facilities once as-builts are complete and OSMI receives approval from DRMS.
- Continue development of Raise #1.

Maps



R:\Ouray Silver Mine\CADSheet Files\A02 C-1A AND U SOIL-VEG-IN USED BASE MAP NEW SHEET SETS\2020 Permit Update.dwg Last Edited by: kNieto on 12/1/2021 10:58 AM

NOTE:
1. Topography from site specific survey in March 2014

REVISIONS				
NO.	DESCRIPTION	DATE	BY	APPROVED BY:
0	2021 Annual Report Site Map	1/31/2022	PS	Todd Jesse

January 2022

0 100 200
SCALE IN FEET

Ouray Silver Mines
P.O. BOX 564
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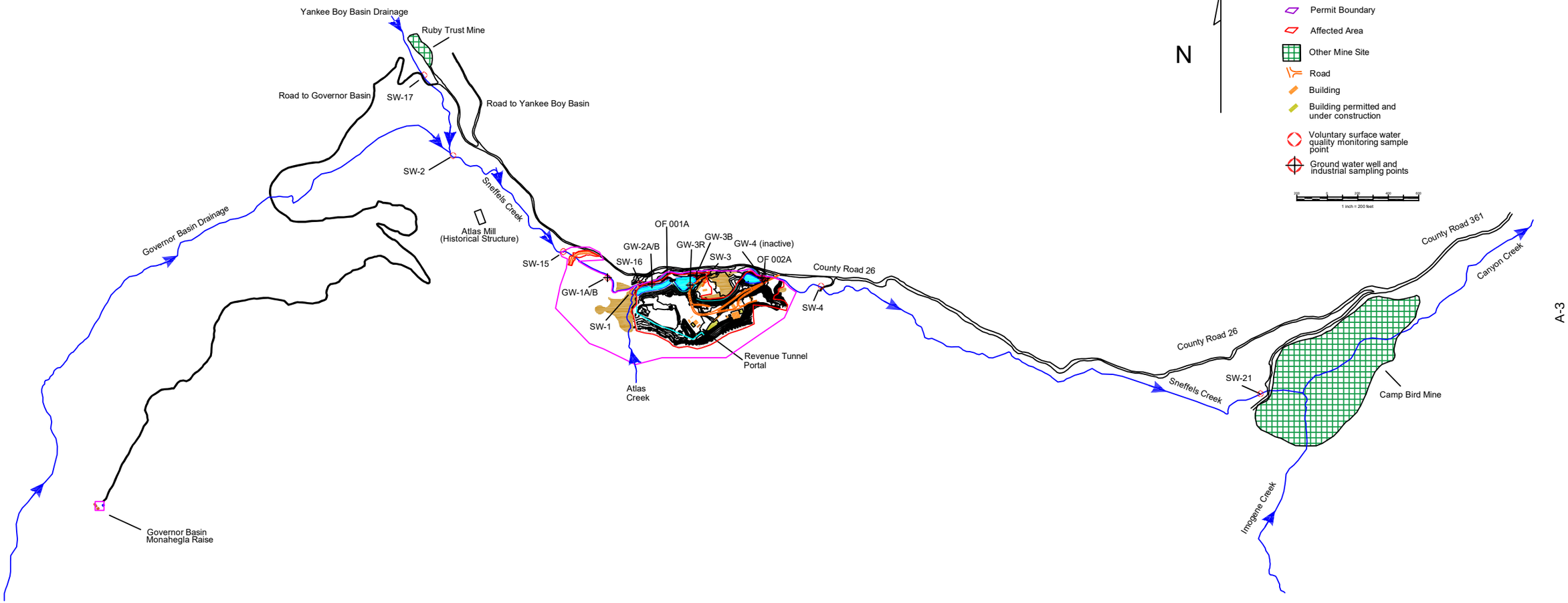
REVENUE - VIRGINIUS MINE

Map 1: 2021 DRMS Annual Report



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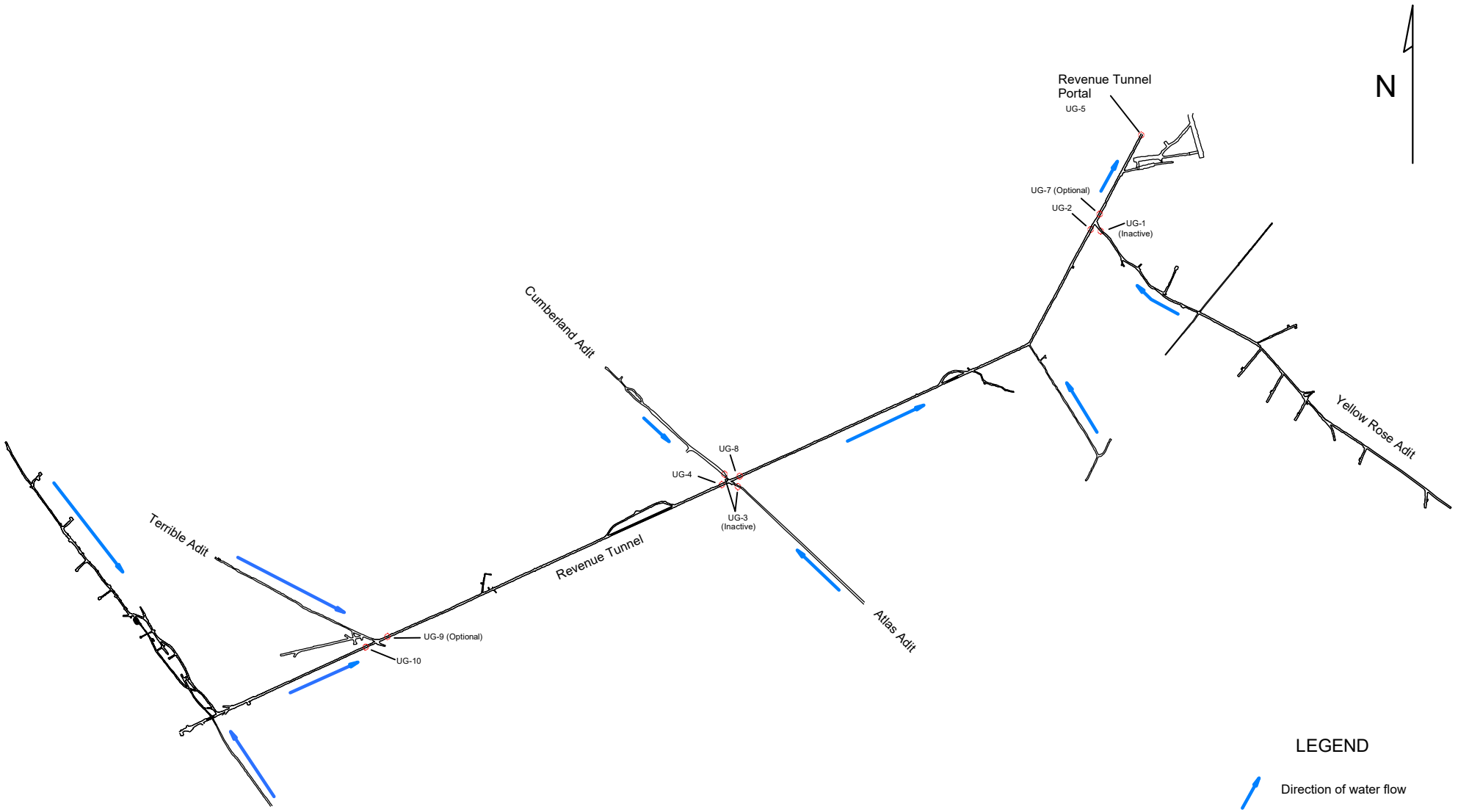
REVENUE - VIRGINIUS MINE

2021 DRMS Annul Report 112-D1 Surface Sampling Map 2

Locations of sampling stations for surface and ground water quality monitoring

January 2022

PO Box 564
Ouray CO 81427



500 0 1000 2000

1 inch = 600 feet

PO Box 564
Ouray CO 81427

January 2022

REVENUE - VIRGINIUS MINE

2021 DRMS Annual Report 112d-1 Underground Map 3

Locations of sampling stations for water quality monitoring underground