




## MINERALS PROGRAM INSPECTION REPORT

PHONE: (303) 866-3567

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

<b>MINE NAME:</b> Schwartzwalder Mine	<b>MINE/PROSPECTING ID#:</b> M-1977-300	<b>MINERAL:</b> Uranium	<b>COUNTY:</b> Jefferson
<b>INSPECTION TYPE:</b> Monitoring	<b>INSPECTOR(S):</b> Amy Eschberger, Tim Cazier	<b>INSP. DATE:</b> August 4, 2020	<b>INSP. TIME:</b> 09:30
<b>OPERATOR:</b> Colorado Legacy Land, LLC	<b>OPERATOR REPRESENTATIVE:</b> Billy Ray, Sam Lowe	<b>TYPE OF OPERATION:</b> 112d-2 - Designated Mining Operation	
<b>REASON FOR INSPECTION:</b> Normal I&E Program	<b>BOND CALCULATION TYPE:</b> None	<b>BOND AMOUNT:</b> \$8,900,000.00	
<b>DATE OF COMPLAINT:</b> NA	<b>POST INSP. CONTACTS:</b> None	<b>JOINT INSP. AGENCY:</b> None	
<b>WEATHER:</b> Clear	<b>INSPECTOR'S SIGNATURE:</b> 	<b>SIGNATURE DATE:</b> August 6, 2020	

### GENERAL INSPECTION TOPICS

This list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each. No problems or possible violations were noted during the inspection. The mine operation was found to be in full compliance with Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials and/or for Hard Rock, Metal and Designated Mining Operations. Any person engaged in any mining operation shall notify the office of any failure or imminent failure, as soon as reasonably practicable after such person has knowledge of such condition or of any impoundment, embankment, or slope that poses a reasonable potential for danger to any persons or property or to the environment; or any environmental protection facility designed to contain or control chemicals or waste which are acid or toxic-forming, as identified in the permit.

(AR) RECORDS----- <u>Y</u>	(FN) FINANCIAL WARRANTY----- <u>N</u>	(RD) ROADS----- <u>Y</u>
(HB) HYDROLOGIC BALANCE----- <u>N</u>	(BG) BACKFILL & GRADING----- <u>N</u>	(EX) EXPLOSIVES----- <u>N</u>
(PW) PROCESSING WASTE/TAILING---- <u>N</u>	(SF) PROCESSING FACILITIES----- <u>N</u>	(TS) TOPSOIL----- <u>N</u>
(MP) GENL MINE PLAN COMPLIANCE- <u>N</u>	(FW) FISH & WILDLIFE----- <u>N</u>	(RV) REVEGETATION---- <u>N</u>
(SM) SIGNS AND MARKERS----- <u>N</u>	(SP) STORM WATER MGT PLAN---- <u>Y</u>	(RS) RECL PLAN/COMP-- <u>Y</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>N</u>	(SC) EROSION/SEDIMENTATION--- <u>Y</u>	(ST) STIPULATIONS----- <u>N</u>
(AT) ACID OR TOXIC MATERIALS----- <u>Y</u>	(OD) OFF-SITE DAMAGE----- <u>N</u>	

Y = Inspected / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

## **OBSERVATIONS**

This inspection of the Schwartzwalder Mine (Permit No. M-1977-300) was conducted by Amy Eschberger and Tim Cazier of the Division of Reclamation, Mining and Safety (Division). The operator was represented by Billy Ray and Sam Lowe during the inspection. The site is located approximately 6 miles northwest from Golden, CO in Jefferson County. Access to the site is off Glencoe Valley Road. This site is on a quarterly inspection frequency. This inspection serves as the 3<sup>rd</sup> quarter inspection for 2020. However, the Division anticipates an additional inspection will be conducted this quarter in association with the North Waste Rock Pile (NWRP) diversion channel project (discussed below). **Photos 1-13** taken during the inspection are included with this report.

The primary purpose of this inspection was to review the Phase 1 construction work completed for the NWRP diversion channel project approved under Technical Revision No. 28 (TR-28; approved on March 27, 2020). Because the NWRP is considered an Environmental Protection Facility, per Rule 7.3.1(1), construction work shall be done in phases, and no construction work shall begin on any subsequent phases of the facility without first obtaining Division acceptance. Phase 1 of this project included constructing the water capture structure concrete seal trench into bedrock in the ephemeral drainage above the NWRP. Based on the test pit which was dug in this area back in August of 2019, it was thought that bedrock would be located approximately 4 feet below grade. However, what was initially thought to be bedrock was later found to be a large boulder. Additional excavation work that occurred after TR-28 approval determined the depth of bedrock to be approximately 4-5 feet deeper than the design depth. Therefore, the trench was dug approximately 8-9 feet below grade. The operator has significantly over-excavated the seal wall trench and has rebar tie-ins epoxied into the bedrock. Additional rebar will be installed higher up in the trench prior to placing the concrete. The sidewalls of the trench appeared to be composed of fairly competent bedrock overall with portions of weathered bedrock along the lateral (northwestern and southeastern) sidewalls. The Division believes the over-excavation of the trench will significantly limit the potential for seepage to occur through the weathered bedrock. It should be noted, the material excavated from the trench which was being temporarily stockpiled on top of the NWRP during the Division's last inspection (on June 26, 2020) has been placed in the CV Glory Hole.

Subsequent to the inspection, informal discussions with the operator (via email and telephone) clarified the intent to complete the seal wall in two separate concrete pours. Two pours were deemed necessary due to the larger volume of concrete required to fill the deeper excavation. The post-inspection discussions focused on the method to be selected to ensure a watertight seal between the two pours. Discussions were continuing when this report was completed. Any deviations from the approved design will be incorporated into the final as-built construction drawings to be submitted to the Division after the project is completed. The Division approves the Phase 1 construction work completed for the NWRP diversion channel project, and hereby authorizes the operator to proceed with the next construction phase. The next inspection must be scheduled after the channel subgrade is completed and during installation of the Geoweb components, preferably while the manufacturer representative is present on site.

The Division observed the "seep areas" near the toe of the NWRP (between Glencoe Valley Road and Ralston Creek), and found these areas to be dry. The creek was flowing above the upgradient cutoff wall and these flows were being routed through the bypass pipeline. The water treatment plant was online during the inspection. The mine pool was at 206 feet below the Steve Level, which is 56 feet below the required 150 foot depth. The operator has plans to dewater the mine pool further during the operating season in 2020 to enable a 6-month shutdown of the plant (anticipated for November 2020 to May 2021). The operator will monitor the recharge response from these seasonal pumping and shutdown periods. The last in-situ injection treatment of the mine pool was completed in the 1<sup>st</sup> quarter of 2020, which included two tracers. The operator is currently monitoring the effect of this in-situ treatment on the chemistry of the mine pool as they dewater and treat the

mine water during 2020.

Since the Division's last inspection of the site, the operator completed re-routing the sump lines from sumps # 4, 5, 8, 9, and 10 (per the operator's July 17, 2020 notice) to create a master sump at sump #1. This will allow the operation to safely excavate these sump areas while removing the surrounding contaminated soils down to bedrock. According to Mr. Ray, all sumps have been dry in recent months. Sump #1 is located downgradient of the mine site, near the southern extent of the anticipated excavation area. The Division observed a small amount of water present in Sump #1 during the inspection (measurements were not obtained), which appeared to be coming from the wetland study effluent line that was recently re-routed to this sump from sump #5. As of Technical Revision No. 27 (approved on January 17, 2019), any water collected in the sumps was being routed to the water treatment plant where an aggregate sample was collected for water quality analysis. Now, only water collected in sump #1 will be sampled and the results submitted with the quarterly water monitoring report.

The alluvial excavation project was underway during the inspection. Current excavation activities are in the stretch of the valley between the Black Forest Mine portal and the sump # 4 location (beneath the mesa with the water treatment plant). The operation is still on track to complete the excavation project by the end of this year. It should be noted, an Amendment application (AM-05) was submitted by the operator on July 24, 2020 to increase the permit area by 3.98 acres (to accommodate anticipated reclamation activities in the Black Forest Mine and NWRP) and to include disposal of contaminated alluvial soils into the Black Forest Mine. The AM-05 application was called incomplete. The Division will begin a technical review of AM-05 once all items required for the application to be considered complete for filing purposes have been submitted.

In its last inspection report, sent to the operator on July 7, 2020, the Division required the operator to provide an estimated timeline for submittal of the (conceptual site model) Amendment application required by SO-1 approval in 2018. The operator submitted this timeline on July 27, 2020, which estimates the required Amendment application will be submitted during the 3<sup>rd</sup> quarter of 2021. This will allow the operator time to analyze the results of the ongoing monitoring programs (i.e., quarterly surface water and groundwater monitoring, mine pool elevation and chemistry monitoring, in-situ treatment including a mine pool tracer test with two tracers, pilot-scale wetland and bioreactor study), and incorporate these analyses into the conceptual site model and final reclamation plan to be included in the Amendment application.

This concludes the report.

*Any questions or comments regarding this inspection report should be forwarded to Amy Eschberger at the Colorado Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, CO 80203, via telephone at 303-866-3567, ext. 8129, or via email at [amy.eschberger@state.co.us](mailto:amy.eschberger@state.co.us).*



## PHOTOGRAPHS



**Photo 1.** View looking northwest across area where excavation activities are currently underway (near Black Forest Mine portal).



**Photo 2.** View looking southeast across area where excavation activities are currently underway (near Black Forest Mine portal).





**Photo 3.** View looking southeast across excavation area near sump #4 (beneath mesa with water treatment plant).



**Photo 4.** View looking at upgradient cutoff wall/headgate in Ralston Creek, showing creek flowing (at low flows) upstream of cutoff wall during inspection.





**Photo 5.** View looking downstream from upgradient cutoff wall/headgate in Ralston Creek, showing creek channel dry downstream of cutoff wall during inspection.



**Photo 6.** View looking south across top of NWRP. Note temporary stockpiles of material excavated from trench have been removed from this area.





**Photo 7.** View looking northeast across excavation area at top of NWRP where concrete seal wall will be installed in accordance with TR-28.



**Photo 8.** Closer view of excavation area at top of NWRP where concrete seal wall will be installed in accordance with TR-28.





**Photo 9.** View looking down into excavated trench at top of NWRP. Note rebar tie-ins epoxied into bedrock.



**Photo 10.** View of southeastern (lateral) sidewall of excavated trench at top of NWRP.





**Photo 11.** View of northwestern (lateral) sidewall of excavated trench at top of NWRP.



**Photo 12.** View of sump #1 located downgradient of mine site, which will be the only sump to remain after excavation activities in the valley are completed.





**Photo 13.** Closer view of sump #1 located downgradient of mine site. Note smaller wetland study effluent line installed in sump and larger line in which water from sump is pumped to water treatment plant for sampling prior to being discharged to the mine pool.

### **Inspection Contact Address**

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