COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

# 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.**

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|---|---|---|---|
| **MINE NAME:** Schwartzwalder Mine | **MINE/PROSPECTING ID#:** M-1977-300 | **MINERAL:** Uranium | **COUNTY:** Jefferson |
| **INSPECTION TYPE:** Monitoring | **INSPECTOR(S):** Amy Eschberger, Michael Cunningham | **INSP. DATE:** October 29, 2020 | **INSP. TIME:** 13:00 |
| **OPERATOR:** Colorado Legacy Land, LLC | **OPERATOR REPRESENTATIVE:** Liz Busby, Billy Ray, Paul Newman | **TYPE OF OPERATION:** 112d-2 - Designated Mining Operation | |

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|---|---|---|
| **REASON FOR INSPECTION:** Normal I&E Program | **BOND CALCULATION TYPE:** None | **BOND AMOUNT:** $8,900,000.00 |
| **DATE OF COMPLAINT:** NA | **POST INSP. CONTACTS:** None | **JOINT INSP. AGENCY:** None |
| **WEATHER:** Clear | **INSPECTOR'S SIGNATURE:** Amy Eschberger | **SIGNATURE DATE:** November 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.**

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

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

## OBSERVATIONS

This was a pre-operation inspection of the Schwartzwalder Mine (Permit No. M-1977-300) conducted by Amy Eschberger and Michael Cunningham of the Division of Reclamation, Mining and Safety (Division) in response to the Amendment No. 5 application (AM-5) filed with our Office on September 10, 2020. The Division received three comment letters on AM-5 (from Division of Water Resources, History Colorado, and Denver Water) within the public comment period which closed on October 28, 2020. No objections were received. The operator was represented by Liz Busby, Billy Ray, and Paul Newman 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. The 4th quarter inspection was conducted on October 8, 2020. **Photos 1-26** taken during the inspection are included with this report.

The primary purpose of this inspection was to observe the two expansion areas proposed in AM-5 (see enclosed Figure C-1 - Affected Lands Map submitted with AM-5), including the North Waste Rock Pile (NWRP) upland area (3.60 acres) and the Black Forest Mine area (0.38 acre), for a total proposed permit area of 76.22 acres (an increase of 3.98 acres). AM-5 also proposes a revision to the approved reclamation plan to include disposal of radionuclide-impacted alluvial valley soils into the Black Forest Mine, which has an estimated capacity of 15,000 cy. At this time, the approved permit authorizes the operator to dispose of this material in the CV Glory Hole of the Minnesota Mine and also on top of the two existing waste rock piles. However, the remaining capacity of the CV Glory Hole (estimated to be 28,000 cy) is not adequate for completing the valley excavation project (estimated to require excavation of an additional 39,000 cy of impacted soils). Additionally, given the reclaimed state of the waste rock piles and the potential seep issue with the NWRP, it is not preferable at this time to continue placing the contaminated material onto these piles. Placement of this material underground rather than onto the open ground surface would most likely reduce the potential for this material to contaminate surface and groundwater systems. However, given the lower elevation of the Black Forest Mine relative to the current approved underground disposal area in the Minnesota Mine, the operator must adequately demonstrate in AM-5 that disposal of impacted material into the Black Forest Mine will not directly affect surface or groundwater systems.

At the time of the inspection, the mine pool was at 345 feet below the Steve Level, which is 195 feet below the required 150 foot depth. There were plans to shut down the water treatment plant later that afternoon, beginning the approximate 6-month winter shutdown period anticipated to continue to May 2021. The last in-situ injection treatment of the mine pool was completed in January 2020, which included two tracers. The operator is currently analyzing the results of the in-situ treatment and tracer study, and will incorporate these analyses into the conceptual site model and final reclamation plan to be proposed in an upcoming Amendment application (anticipated to be submitted in the 3rd quarter of 2021).

The Division observed the NWRP where the operator is currently installing the diversion channel approved in Technical Revision No. 28 (TR-28). During the Division's last inspection on October 16, 2020, the operator had finished filling a little more than half of the total channel length (approximately 600 feet), and expected to complete concrete placement in the channel that next week (of October 19-23). During the current inspection, the concrete placement was complete and all that remains is backfilling and grading the sides of the channel to create positive drainage, installing the energy dissipation basin and road crossing at the lower end of the channel, and seeding disturbed areas. <u>After the diversion channel project is completed, the operator must notify the Division so that a final inspection of the project can be conducted.</u> The operator currently estimates the project will be completed over the next few weeks.

The Division observed the borrow area located up the valley from the NWRP, where rock and fill material is derived for the diversion channel project. The material being excavated in this area was deposited at the base of

an ephemeral drainage during the September 2013 flood events. This borrow area is located outside of the approved mine permit area. During the inspection, material was being screened in this area to produce soil material for backfilling the sides of the channel. While the Division does not typically require a landowner to obtain a mine permit for excavating material from their land for use on their property (e.g., maintaining roads), the nature of this particular borrow area and the use of the material for reclamation of the affected lands associated with the mine permit creates a unique situation for which additional information is needed in order for the Division to determine whether the borrow area requires permitting through our agency. According to the operator, the borrow area is included in their 404 permit held with the U.S. Army Corps of Engineers, and reclamation of this area will be completed in accordance with this permit. **Within two weeks of the date of this inspection report, the operator must provide the Division with a copy of the 404 permit and/or any other agency permits which address reclamation of the borrow area.**

The Division observed the proposed 3.60 acre expansion area above the NWRP, which consists of a 100 foot buffer zone around the upgradient boundary of the pile. This expansion area covers the undisturbed hillside above the northern edge of the NWRP. A reclamation plan was not submitted for this area in AM-5. According to the operator, there are no plans to disturb this area. However, it will provide room within the permit area for maintenance of the diversion channel (e.g., removal of debris), if needed. The Division did not traverse the steep hillside within this proposed expansion area. However, the Division did observe PVC pipes which have been placed along the lower boundary of the proposed 100-foot buffer area. The only structures observed within 200 feet of this proposed expansion area include the NWRP diversion channel (owned by the operator), Glencoe Valley Road (owner not specified in AM-5), and an overhead power line which runs northwest-southeast across this area (owner not specified in AM-5). The operator should be sure to include these structures and their owner(s) in Exhibit S of the application. For any structures not owned by the operator, notarized structure agreements must be provided in accordance with Rule 6.4.19 (unless such agreements were already provided with the Succession of Operators application approved in 2018). Per Rule 6.4.19(c), where such structure is a utility, the operator may supply a notarized letter, on utility overhead, from the owner(s) of the utility that the mining and reclamation activities, as proposed, will have "no negative effect" on their utility.

The Division observed the proposed 0.38 acre expansion area at the Black Forest Mine, which includes two mine openings on the hillside along the western edge of the valley (the main portal and an escapeway). This area was included in the permit area of Permit No. M-2001-036 (Black Forest Mine), which was released in May of 2019. Under Permit No. M-2001-036, conventional drill and blast techniques were utilized to mine crystalline metamorphic rocks from the Black Forest Mine for aggregate use. The material was extracted using room and pillar mining methods. Mined material was processed on site adjacent to the mine portal. The rock mined from the Black Forest Mine consists of a lime-silicate hornblende gneiss which was shown to have a net neutralizing potential and thus a low risk of acid rock drainage. The operation did not expect to encounter a significant amount of groundwater inside the Black Forest Mine. Any water encountered in the mine was expected to come from pegmatite-filled fractures. The floor of the underground workings is said to be at or above the elevation of Ralston Creek. A review of the permit file indicates no mine drainage has ever been observed from the Black Forest mine openings. The Black Forest Mine has been described as a relatively dry mine, with only minor drippings having been observed from the ceiling of the workings (during spring runoff), and no ponding observed on the mine floor.

Closures have been installed on the Black Forest Mine portal and escapeway which meet the Division's Inactive Mine Reclamation Program's design specifications for underground openings. The main portal, which is approximately 11 feet x 12 feet in size, is covered by steel grating constructed of 4 inch x 4 inch angle iron with 6 inch spacing, and the gate is secured with a lock to prohibit unauthorized entry. The escapeway portal, which is approximately 7 feet in diameter and made of corrugated steel pipe, is covered by 1 inch x 4 inch steel grating, and the gate is also secured with a lock. In AM-5, the operator states that highly engineered water tight

bulkheads will be used to permanently seal all mine portals. In its October 16, 2020 adequacy review letter, the Division requested more details on the proposed closure plan for the Black Forest Mine openings, including the anticipated design for any proposed bulkheads. During the inspection, the operator clarified that an alternative closure plan will most likely be proposed, including backfilling the area of the mine openings, and grading and revegetating this area to conform to the surrounding hill slope. The reclamation plan proposed must include adequate information for the Division to calculate the required financial warranty. The operator's bond estimate for AM-5 must be broken down into the individual tasks required (e.g., hauling/dumping, grading, retopsoiling, revegetating), including details such as haul distances, approximate volumes, approximate depth of topsoil replacement, and the seed mixture to be used. Additionally, the operator must specify the approximate volume of material, if any, that will need to be imported to the site for reclamation.

The Division inspected the inside workings of the Black Forest Mine and found no evidence of significant inflows from the walls of the workings. A few saturated areas were observed along fractures exposed at the ceiling, with minor dripping from these areas. No ponding was observed on the mine floor. The Division's observations during this inspection correlate with its observations made during previous inspections of the mine. Various pieces of old equipment and materials related to the mining operations (e.g., empty cabinets, empty tanks, ventilation-related debris, emergency equipment, decommissioned plumbing, electrical panels, concrete blocks, hoists, explosives cart) remain in the Black Forest Mine per Permit No. M-2001-036.

The Division did not observe any markers delineating the proposed expansion area for the Black Forest Mine. However, this fairly small area (0.38 acre) appears to cover the northeastern face of the hill side including the two mine openings. In its October 16, 2020 adequacy letter, the Division requested revised mining and reclamation plan maps which better depict the proposed permit area. The only structures observed within 200 feet of this proposed expansion area include Glencoe Valley Road (owner not specified in AM-5), the bypass pipeline (owned by the operator), a bridge across Ralston Creek (owner not specified in AM-5), and an overhead power line located south/southeast of the area (owner not specified in AM-5). As mentioned above, these structures and their owner(s) must be included in Exhibit S of the application. Additionally, for any structures not owned by the operator, notarized structure agreements must be provided in accordance with Rule 6.4.19 (if they were not provided with the Succession of Operators application approved in 2018).

During the inspection, the operator discussed their plans to submit a surety reduction request in the coming months to account for reclamation tasks that have been completed. The Division agrees a surety reduction is in store given the amount of reclamation work that has been achieved at the site since the bond estimate was last updated through the Succession of Operators application approved in 2018. The surety reduction request must include an updated bond estimate for remaining reclamation of the site, including all information necessary for the Division to calculate the required financial warranty for completing reclamation of the site in accordance with the approved plan. The Division informed the operator that any proposal to remove reclamation tasks related to water treatment must be submitted through a Technical Revision (or the upcoming Amendment application).

During the inspection, the Division observed the disturbed area located north/northeast of Ralston Creek (across from the Black Forest Mine) which, according to the permit file, was utilized as a waste rock storage area during mining operations. The Division estimates this area to be approximately one acre in size. The operator is currently utilizing this area for storage of equipment, tanks, slash piles, and debris piles. The operator should be sure to include costs for reclaiming this area in any future request for a surety reduction.

No issues were identified with regard to AM-5 besides those already included in the Division's October 16, 2020 adequacy review letter.

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.*

## PHOTOGRAPHS

**Photo 1.** View looking northeast at upper end of NWRP diversion channel with concrete placement complete. Note pipeline (circled) from water intake structure daylights to discharge into ditch.

**Photo 2.** View looking northwest across lower section of NWRP diversion channel with concrete placement complete.

**Photo 3.** View looking east at lower end of NWRP diversion channel, showing location (area in foreground delineated with pink-flagged laths) where dissipation basin and road crossing will be constructed.

**Photo 4.** View looking west at slope above NWRP diversion channel where AM-5 proposed expansion area is located. Location of PVC pipe marking lower boundary of proposed 100-ft buffer zone circled in background.

**Photo 5.** View looking north at slope (and drainage) above NWRP diversion channel where AM-5 proposed expansion area is located. Boundary markers not visible in photo.

**Photo 6.** View looking northwest at slope above NWRP diversion channel where AM-5 proposed expansion area is located. Location of PVC pipe marking lower boundary of proposed 100-ft buffer zone circled in background.

**Photo 7.** View looking northwest at slope above NWRP diversion channel where AM-5 proposed expansion area is located. Location of PVC pipe marking lower boundary of proposed 100-ft buffer zone circled in background.

**Photo 8.** View looking northeast at slope above NWRP where AM-5 proposed expansion area is located. PVC pipe marking lower boundary of proposed 100-ft buffer zone visible in foreground.


**Photo 9.** View looking west across borrow area located up valley from NWRP where rock and fill material is derived for diversion channel project. Construction material is excavated from an alluvial fan deposit at base of ephemeral drainage from September 2013 flood events.

**Photo 10.** View looking south across borrow area located up valley from NWRP where rock and fill material is derived for diversion channel project. Excavated material was being screened during inspection.


**Photo 11.** View looking northwest at northern portion of proposed Black Forest Mine expansion area. Note main portal in background (indicated with arrow).

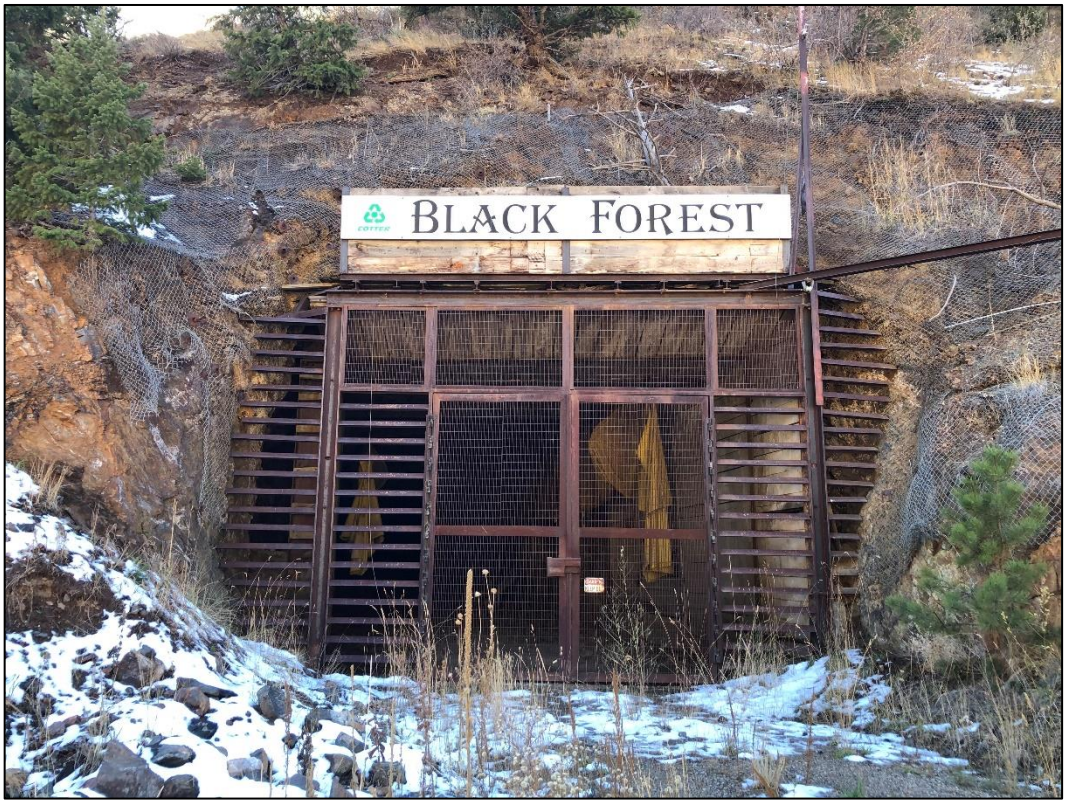


**Photo 12.** Closer view of main portal to Black Forest Mine, covered with steel grating and secured with a locked gate.

**Photo 13.** View looking northwest at southern portion of proposed Black Forest Mine expansion area. Note location of main portal (indicated with arrow) and escapeway (circled).

**Photo 14.** View looking inside Black Forest Mine from main portal. Note ventilation materials and various other pieces of equipment and materials from mining operations remain in mine per Permit No. M-2001-036.

**Photo 15.** View inside Black Forest Mine. No ponding was observed on mine floor. Only a few saturated areas were observed along fractures exposed at ceiling of workings, with minor dripping from these areas.

**Photo 16.** View inside Black Forest Mine. Note various pieces of equipment and materials from mining operations remain in mine per Permit No. M-2001-036.

**Photo 17.** View inside Black Forest Mine looking toward escapeway (in background). Note explosives cart from mine operations (at right) remains in mine per Permit No. M-2001-036.

**Photo 18.** View inside Black Forest Mine looking toward escapeway (in background). Note various pieces of equipment and materials from mine operations remain in mine per Permit No. M-2001-036.

**Photo 19.** View inside Black Forest Mine. Note various pieces of equipment and materials from mine operations remain in mine per Permit No. M-2001-036.

**Photo 20.** View inside Black Forest Mine looking at escapeway located southeast of main portal, covered with steel grating and secured with a locked gate.

**Photo 21.** View inside Black Forest Mine, showing tank from mine operations left in area adjacent to escapeway.

**Photo 22.** View inside Black Forest Mine. No ponding was observed on mine floor. Only a few saturated areas were observed along fractures exposed at ceiling of workings, with minor dripping from these areas.


**Photo 23.** View inside Black Forest Mine, showing steps (to escapeway adit) and emergency equipment from mine operations left in mine.

**Photo 24.** View inside Black Forest Mine. No ponding was observed on mine floor. Only a few saturated areas were observed along fractures exposed at ceiling of workings, with minor dripping from these areas.

**Photo 25.** View looking north across disturbance area located northeast of Ralston Creek currently utilized for storage of equipment, slash piles, and debris piles. Note bridge (in foreground) which should be included in list of structures in Exhibit S of application.

**Photo 26.** View looking southeast across disturbance area located northeast of Ralston Creek currently utilized for storage of equipment, slash piles, and debris piles.

**Inspection Contact Address**

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Encl: Figure C-1 - Affected Lands Map submitted with AM-5

EC: Billy Ray, Ensero Solutions at: bray@ensero.com
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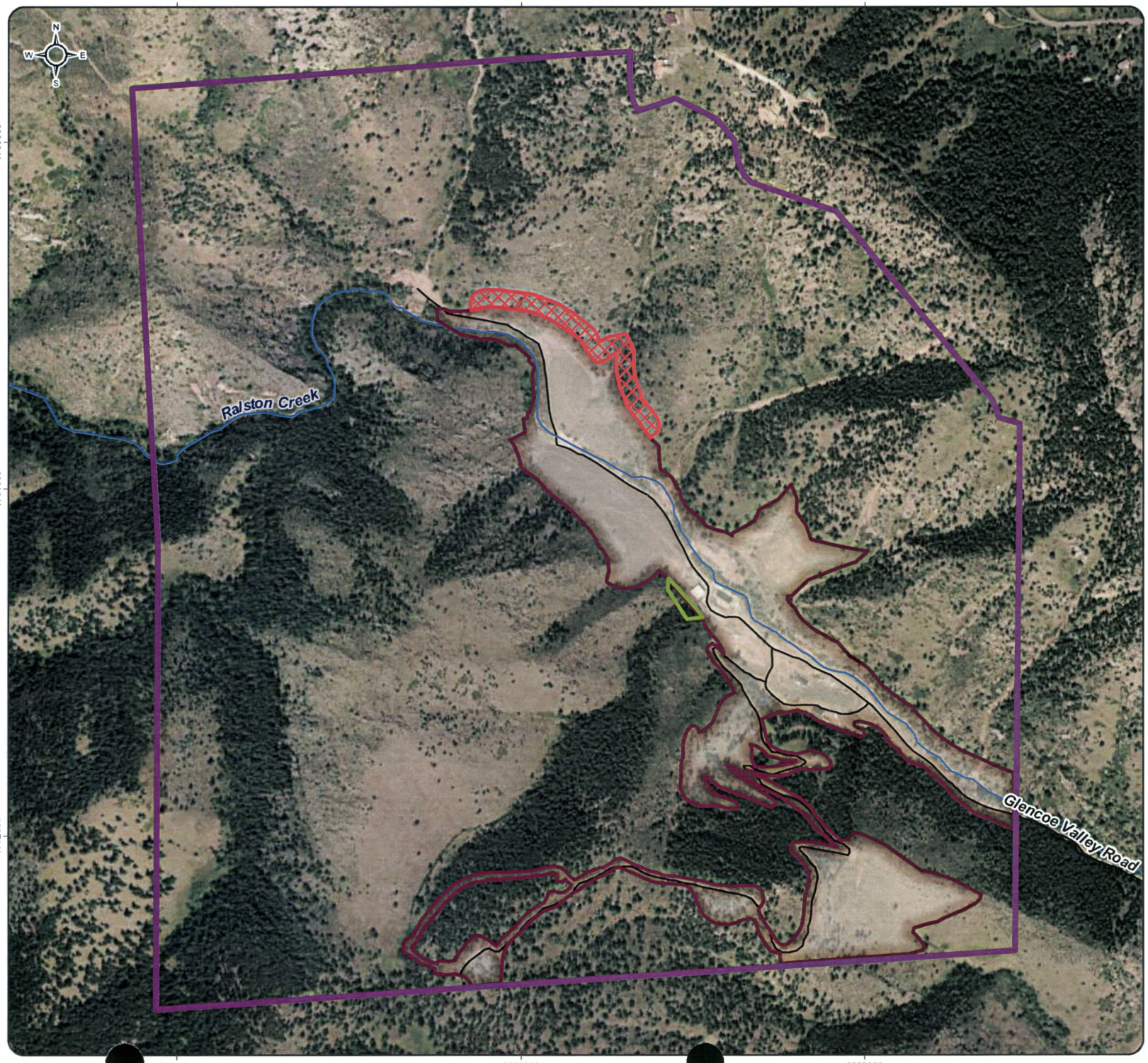


# COLORADO LEGACY LAND SCHWARTZWALDER MINE

## FIGURE C-1

## AFFECTED LANDS, SCHWARTZWALDER MINE

FEBRUARY 2020

COLORADO LEGACY LAND

- CLL Property Boundary (559.2 acres)
- Permitted Boundary, Schwartzwalder Mine M-1977-300 (72.24 acres)
- North Waste Rockpile Upland Area (3.6 acres)
- Former Black Forest Mine (0.38 acres)
- Glencoe Valley Road
- Ralston Creek

**1:9,500** ***when printed on 8x11 inch paper***

0 250 500 750 1,000 Feet

ENSERO solutions

Satellite imagery obtained from ArcGIS on services.arcgisonline.com on February 2020

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

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