




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.

MINE NAME: Quagmire Creek	MINE/PROSPECTING ID#: M-1990-047	MINERAL: Gravel	COUNTY: Fremont
INSPECTION TYPE: Surety Release Inspection	INSPECTOR(S): Timothy Cazier, P.E.	INSP. DATE: April 20, 2022	INSP. TIME: 11:10
OPERATOR: Fremont County	OPERATOR REPRESENTATIVE: Sterling Rife	TYPE OF OPERATION: 110c - Construction Limited Impact	
REASON FOR INSPECTION: Surety Release Requested	BOND CALCULATION TYPE: None	BOND AMOUNT: \$0.00	
DATE OF COMPLAINT: NA	POST INSP. CONTACTS: U.S.BLM	JOINT INSP. AGENCY: U.S.BLM	
WEATHER: Clear	INSPECTOR'S SIGNATURE: 	SIGNATURE DATE: May 9, 2022	

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

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

OBSERVATIONS

This inspection was conducted as part of the request for release from reclamation liability. The Permittee (Fremont County) was represented by Mr. Sterling Rife during the inspection. Mrs. Stephanie Carter (representing the Bureau of Land Management, BLM) was also present for the inspection. The Quagmire Pit is adjacent to Fremont County Rd 12 about 12 miles north of Cotopaxi. This is a 110c gravel mine undergoing final reclamation.

As this site was inspected on November 18th of 2021, the focus of this inspection was a collaboration with the BLM regarding whether the northern portion of the pit (see **Photo 1**) where re-establishing vegetation has been relatively unsuccessful could be deemed adequate for release. As stated in the previous inspection report, no erosion was observed on the regraded highwall. The area was contour furrowed (see **Photo 2**) where a small amount of grasses are slowly getting established (see **Photo 3**). The southwest corner of the highwall appears to have had the most success with the growth of volunteer ponderosa pines (see **Photo 4**). The east side of the highwall is essentially void of any vegetation (see **Photo 5**). Knapweed is also a problem at the site as noted in the aforementioned 2021 inspection report. New knapweed plants were observed to be emerging in the upper contour furrows (see **Photo 6**).

The approved post mine land use is wildlife habitat/rangeland. Despite the highwall appearing to be erosionally stable (due primarily to the coarse fraction of weathered bedrock), the lack of grasses does not meet the approved post mine land use. Therefore the DRMS cannot recommend approval of the release of this site.

It would appear the lack of organic matter in the highwall area is the primary impediment to establishing grasses. The DRMS is aware limited topsoil was available prior to mining and all that was salvaged has been used for reclamation on the pit floor and a small sloped area on the southwest.

The DRMS has consulted internally with our Inactive Mine Reclamation Program (IMRP) group for suggestions as to how to achieve successful reclamation at a challenging site such as this. They provided two suggestions:

- 1) For grasses: Import and place topsoil on the highwall, or import soil amendments (such as biosol, or compost or biosolids) to blend into the coarse material to help retain moisture and provide nutrients for the establishment of grasses.
- 2) For trees: Given the success of the aforementioned volunteer ponderosa pines and that much of the undisturbed surrounding area is a mixed ponderosa pine/grass community (see **Photo 7**), trying to establish ponderosa pines may be more successful. Ideas proposed by our IMRP group include:
 - Do live tree planting and obtain trees from the CSU nursery. Possibly have Colorado Youth Corp plant them,
 - Build a straw wattle "nest" for the trees. IRMP practice is to dig out a ~5ft diameter bowl in the ground with the tree planted in the middle. Then tightly curl the straw wattle around the bowl and then cover it with soil. The wattle then provides moisture retention and also organic matter as it breaks down,
 - Add some features like logs scattered around the slope. Trees could be planted on the north side of the log which would provide some shade and snow/moisture retention. Grouping the tree plantings rather than spacing them equally around the site can also help. As they grow a group of trees also creates its own microclimate shading each other and helping retain moisture.

If the County wishes to pursue the ponderosa pine approach, it will take longer to establish the trees and the

DRMS will require a technical revision be submitted and approved to change the reclamation plan.

The permit sign was posted at the site entrance (see **Photo 8**) and must remain there until the site is released from final reclamation liability.

Post Inspection Meeting: As reclamation at this site has been challenging, I told Mr. Rife the DRMS would need to have some internal discussions prior to making a decision as to the whether the site is releasable. Mrs. Carter indicated the same would need to occur with the BLM. Subsequent to the inspection, both the DRMS and the BLM have determined the site is not releasable at this time.

Please contact Tim Cazier (303)328-5229 or email at tim.cazier@state.co.us if you have any questions regarding this report.

PHOTOGRAPHS



Photo 1. Northern portion of pit (looking NE – minimal grasses [and mullein] in foreground/west side; no vegetation in background/east side).

PHOTOGRAPHS (cont.)



Photo 2. Contour furrows on regraded highwall – west side (foreground) includes some grasses (looking NE).



Photo 3. Typical bunch grass in furrow.

PHOTOGRAPHS (cont.)



Photo 4. Volunteer ponderosa pines on west side of highwall (looking SW).



Photo 5. Bare east side of regarded highwall (looking downhill to the south).

PHOTOGRAPHS (cont.)



Photo 6. Typical new knapweed growth.



Photo 7. Typical ponderosa pine/grass community in undisturbed area (looking west).

PHOTOGRAPHS (cont.)



Photo 8. Permit sign off CR12 (looking north).

Inspection Contact Address

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Cañon City, CO 81212

ec: DRMS file
Stephanie Carter, BLM