




MINERALS PROGRAM INSPECTION REPORT
PHONE: (303) 866-3567

The Division of Reclamation, Mining and Safety 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: Henderson Mine	MINE/PROSPECTING ID#: M-1977-342	MINERAL: Molybdenum	COUNTY: Clear Creek, Grand
INSPECTION TYPE: Monitoring	INSPECTOR(S): Peter Hays	INSP. DATE: October 8, 2020	INSP. TIME: 10:30
OPERATOR: Climax Molybdenum Company	OPERATOR REPRESENTATIVE: Aaron Hilshorst	TYPE OF OPERATION: 112d-3 - Designated Mining Operation	
REASON FOR INSPECTION: Normal I&E Program	BOND CALCULATION TYPE: None	BOND AMOUNT: \$49,690,538.00	
DATE OF COMPLAINT: NA	POST INSP. CONTACTS: None	JOINT INSP. AGENCY: None	
WEATHER: Clear	INSPECTOR'S SIGNATURE: 	SIGNATURE DATE: October 12, 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>Y</u>	(BG) BACKFILL & GRADING----- <u>N</u>	(EX) EXPLOSIVES----- <u>N</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>Y</u>	(FW) FISH & WILDLIFE----- <u>N</u>	(RV) REVEGETATION---- <u>N</u>
(SM) SIGNS AND MARKERS----- <u>Y</u>	(SP) STORM WATER MGT PLAN---- <u>N</u>	(RS) RECL PLAN/COMP-- <u>N</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>N</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

The Henderson Mill was inspected by Peter Hays with the Division of Reclamation, Mining and Safety (Division/DRMS) as part of the Division's monitoring inspection program. Mr. Aaron Hilshorst with Climax Molybdenum - Henderson Operations (Henderson) was present during the inspection.

The following aspects of the mill site were inspected and are discussed below:

3-Dam Buttress Project - Phase 2:

The 3-Dam Buttress Project - Phase 2 was approved by the Division under TR-32 on July 20, 2020. The second phase of the 3-Dam Buttress Project is scheduled to be constructed during the summers of 2020 and 2021. Phase 2 of the Buttress Project includes the placement of an estimated 75,520 cubic yards of buttress material, 1,000 cubic yards of rock fill and 900 cubic yards of filter material. The added buttress material will be compacted and graded to a 3H:1V slope. The buttress material will be taken from the excess tailings material on the benches of 1-Dam.

A geotechnical investigation was completed in June 2020 to verify some localized phreatic conditions at the toe of the original dam used in the original analyses. Minor modifications to the geometry of the buttress may be required based upon the findings and will be documented in the as-built drawings.

Phase 2 will not impact any existing horizontal or foundation drains. The existing piezometers impacted by Phase 2 will be extended to keep them functional through all phases of the buttress construction and will be available for monitoring during construction activities.

The placement and compaction of the buttress material was observed on the upper face of the south area of 3-Dam during the inspection. The buttress material was delivered by haul trucks and placed with a GPS controlled dozer. The tailings material was being placed and compacted from south to north in 1 foot lifts. Compaction was achieved by the haul trucks and a sheepsfoot compactor. The buttress material is required to be compacted to 95% maximum density with a moisture content within a range of the optimal moisture. The compaction and moisture content are verified by AECOM with nuclear density tests every lift.

Approximately, one (1) foot of buttress material remained to be placed on the lower bench of the upper face of the south area of 3-Dam at the time of the inspection. The placement and compaction of the buttress material will continue up the face of the south area and proceed to the upper face of the north area. The locations of the buttress for the upper face of the south and north areas were indicated by survey lathes.

The Phase 2 buttress construction is complete at the toe, lower and middle faces of the south area of 3-Dam. The areas were treated with coherex to prevent erosion.

Tailings Impoundment:

The 1-Dam and 3-Dam Tailings Impoundments were inspected with a Henderson staff engineer. The inspection followed the general guidelines of the Henderson Mill Tailings Storage Facilities Monthly Inspection Report form. Active tailings deposition was not occurring during the inspection. The change from spigot to lead-off deposition is schedule to occur in mid-November.

The following aspects of the 1-Dam and 3-Dam Tailings Impoundments were observed and discussed during the inspection; Dam Crests, Downstream Faces, Beaches and Dam Toe/Abutments. The dam crests were observed for crest condition, settlement, cracking, other signs of movement, tailings delivery line and instrumentation readings. The downstream faces were observed for dam condition, settlement, cracking, erosion, other signs of movements and vegetation growth. The beaches were observed for beach condition, estimated beach width, freeboard, signs of movement, deposition, and beach erosion. The dam toes and abutments were observed for toe condition, signs of movement, abutment condition, seepage condition and drain condition.

The Seepage Collection System was observed for amount of seepage flow, diversion of seepage, seepage water properties and seepage pond condition.

The impoundment water pool location is estimated by Henderson based on monuments located in the impoundment. A minimum 500 feet beach offset from the crest of the impoundment is required by AECOM. A minimum 1,000 feet offset is required by Henderson. The beach distance was reported at 1,600 feet during the inspection. Tailings deposition via spigot in the 1-Dam cells is progressing from south to north. Recent tailings deposition was observed in cells 8 and 9 during the inspection.

Henderson stated no additional horizontal drains were planned to be installed this year. The foundation drains under the impoundments were discussed and several of the active drains were observed during the inspection.

MLEX-1 and MLEX-4:

The rehabilitation of extraction wells MLEX-1 and MLEX-4 were observed during the September 2020 inspection. The Operator reported the rehabilitation work is complete and the wells are operating properly.

Fire Water Line Incident Repair:

On November 5, 2019, the Division received written follow-up notice of a release of process water from the fire water line from the Mill Process Water Storage Tanks to the fire water distribution and suppression systems. The repair of the fire water line near hydrant #7 was observed during the June inspection. During the repair the Operator discovered another possible leak near fire hydrant #6 located west of the first repair area. The Operator later determined two leaks were located near hydrant #6. The repair of one of the leaks located east of hydrant #6 is complete and the surface of the repair area was paved with asphalt. The second leak area located south of hydrant #6 is scheduled to be repaired soon.

Photographs taken during the inspection are attached. If you need additional information or have any questions, please contact me at Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, CO 80203, by telephone at 303.866.3567 x 8124, or by email at peter.hays@state.co.us.

Inspection Contact Address

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Ec: Jared Ebert, DRMS

PHOTOGRAPHS



View of the upper bench of the upper face of the 3-Dam south area buttress



View of the lower bench of the upper face of the 3-Dam south area buttress



View of the completed middle face of the 3-Dam south area buttress



View of the completed lower face of the 3-Dam south area buttress



View of the upper face on the north area of 3-Dam



View of the dam crest for cell 9 on 1-Dam looking south



View of Foundation Drain #6



View of the seep collection ditch at the toe of 1-Dam looking south



View of typical horizontal drains at the toe of 1-Dam



View of the seep collection canals at the Ute Park Pump station looking northwest