




**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> Climax Mine	<b>MINE/PROSPECTING ID#:</b> M-1977-493	<b>MINERAL:</b> Molybdenum	<b>COUNTY:</b> Summit
<b>INSPECTION TYPE:</b> Multi Person Inspection	<b>INSPECTOR(S):</b> Lucas J. West, Eric Scott	<b>INSP. DATE:</b> March 22, 2017	<b>INSP. TIME:</b> 09:30
<b>OPERATOR:</b> Climax Molybdenum Company	<b>OPERATOR REPRESENTATIVE:</b> Diana Kelts, Aaron Hilshorst	<b>TYPE OF OPERATION:</b> 112d-3 - Designated Mining Operation	
<b>REASON FOR INSPECTION:</b> Normal I&E Program	<b>BOND CALCULATION TYPE:</b> None	<b>BOND AMOUNT:</b> \$78,246,088.00	
<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> April 10, 2017	

**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>Y</u>	(SF) PROCESSING FACILITIES----- <u>Y</u>	(TS) TOPSOIL----- <u>N</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>	(CI) COMPLETE INSP---- <u>N</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>N</u>	(SC) EROSION/SEDIMENTATION--- <u>N</u>	(RS) RECL PLAN/COMP-- <u>N</u>
(AT) ACID OR TOXIC MATERIALS----- <u>N</u>	(OD) OFF-SITE DAMAGE----- <u>Y</u>	(ST) STIPULATIONS----- <u>Y</u>

Y = Inspected and found in compliance / 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 normal monitoring program established by the Colorado Division of Reclamation, Mining and Safety. Climax is a 112d-3 Molybdenum mining and milling operation located primarily in Summit County. The site consist of 14,000 permitted acres with approximately 8,000 acres of affected lands. The site is bisected by Colorado State Highway 91 and public access is controlled by a guard station at the main gates. The Division currently holds \$78,246,088.00 in Financial Warranty for the site. Along with Division Staff listed on page one of this report, Aaron Hilshorst and Diana Kelts of Climax Molybdenum were present during the inspection. Seven Photos accompany this report to illustrate the current site conditions.

The site was active during the inspection, and the main purpose of the inspection was to familiarize junior DRMS Staff with the operations on site. The inspection followed the flow of material, from the active open pit, through the milling facilities, to the tailings storage and water treatment facilities. As stated above public access is controlled by a guard station with check in / check out protocols in place. At the guard station visitors are briefed on safety protocols while on site, including proper personal protective equipment (PPE) that is required. Proper mine identification was observed at the entrance to the site. The inspection began with a site overview and discussions in the main offices. Discussions with the Operator indicated a new Technical Revision would be forthcoming addressing the expansion of the McNulty Gulch area among other things.

The first stop on the inspection was to the survey shacks that overlook the open pit excavation. Photos One and Two show the open pit from the shacks. The main purpose of the survey shacks is to continually survey the slopes of the pit for stability, and monitor any movement that may occur within the pit. The survey shacks also house a weather station for the site, allow for continuous mapping of the mining progress as ore is removed, as well as serve as a view area to oversee the operations. Once the ore is removed from the pit area, it is moved to the primary crusher, which crushes the material to approximately 8 inch minus and feeds it inside the mill facility. The interior of the mill facility was very clean and well organized from the various mills, flotation cells, thickeners and cleaners. Photo Three shows the Sag Mill, within the milling room, which is the first stop in the milling process. Also as seen in Photo Three, the mill room is neat and orderly, and all proper safety features appeared to be in working order. The entire room is built on a concrete apron that serves as a secondary containment facility. The secondary containment appears to of adequate volume to handle any potential spills that may happen. The various other equipment including screens, shakers, a ball mill and various conveyors all appeared to be in good condition and functioning properly.

Once the ore is processed, water is added to create a slurry, and sent to the flotation cell. Photo Four shows a view of the flotation cells. As the ore slurry moves through each of the eight flotation cells, the ore is floated away from the host material and is sent through a thickener and then a cleaner. The waste material, the tailings, is sent to a separate thickener, shown in Photo Five, and prepared for transport to the various tailings storage facilities. Once the ore is cleaned and dried, it is loaded into Super Sacks and prepared for transport as shown in Photo Six. All areas within the flotation cell room are in good condition. The areas are free from clutter, and all equipment within the area appears to be functioning properly. The floor of the flotation cell room also serves as secondary containment for the facility and appears to be in good working order and of adequate volume to handle any potential spills.

The tailings, once ready for transport and deposition are moved to from the mill facility to one of the Tailings Storage Facilities (TSF) on the North side of Highway 91. The tailings are transported via pressurized HDPE pipes with concrete structures to handle drastic changes in elevation and built in secondary containment. Due to the snow cover the entirety of the Tailings Deposition Line (TDL) was not visible. Similarly, the entire Robinson TSF, Tenmile TSF and most of the Mayflower TSF were not visible due to snow cover. Photo Seven shows the Tenmile TSF as seen from the Sludge Densification Plant (SDP). The interior of the SDP is in good condition, the facility was functioning at the time of the inspection. All safety features, and equipment appeared to be functioning properly. The 3 Dam as well as the 5 Dam were observed, appeared to be in good condition and were functioning as designed. The operator explained that future plans include the expansion of the Mayflower TSF and 5 Dam to accommodate ongoing production.

Once deposited in the TSF the water is decanted off to a central collection point, and either recycled back to the mill facility for use in the milling process or sent to the Property Discharge Water Treatment Plant for final treatment, monitoring and eventual discharge into Tenmile Creek. The interior of the Property Discharge Water Treatment Facility was in good condition, clean and free from trash and debris. The plant was operating during the inspection, and all equipment appeared to be functioning properly. The entire facility is very clean, orderly and well organized. Throughout the facility, various stages of secondary containment were observed and all appeared to be in good condition and of sufficient size to handle any leaks or spills that may happen in their respective areas.

Other auxiliary facilities that were inspected included the hazardous materials storage building, the laboratory, the hazardous materials receiving bay and Robinson. The hazardous materials storage building was clean, organized, and in good condition. All materials were separated and prepared for transport to a disposal facility that was scheduled to happen the day after the inspection. The laboratory was also very clean and organized, various activities were being conducted during the inspection. The hazardous materials receiving bay was active during the inspection and all proper safety features and protocols were being exercised. The tour included the areas of 1 dam, Robinson Lake, Eagle Park Reservoir as well as the bio-solids processing area however the visibility of these portions of the site was limited due to snow cover.

As stated above several areas and features of the site were not inspected due to excessive snow cover. Those features include but are not limited to the several interceptor ditches that convey surface runoff around the site to prevent contamination, the pumping stations scattered around the site, some of the ground water monitoring locations and various other facilities.

The entire site as a whole is in good condition and no problems or possible violations were observed during this inspection. All responses to this report should be directed to Lucas West at the Colorado Division of Reclamation, Mining and Safety at 1313 Sherman Street, Room 215, Denver, CO 80203, by phone at (970)-243-6368 or by email at [lucas.west@state.co.us](mailto:lucas.west@state.co.us).

## PHOTOGRAPHS





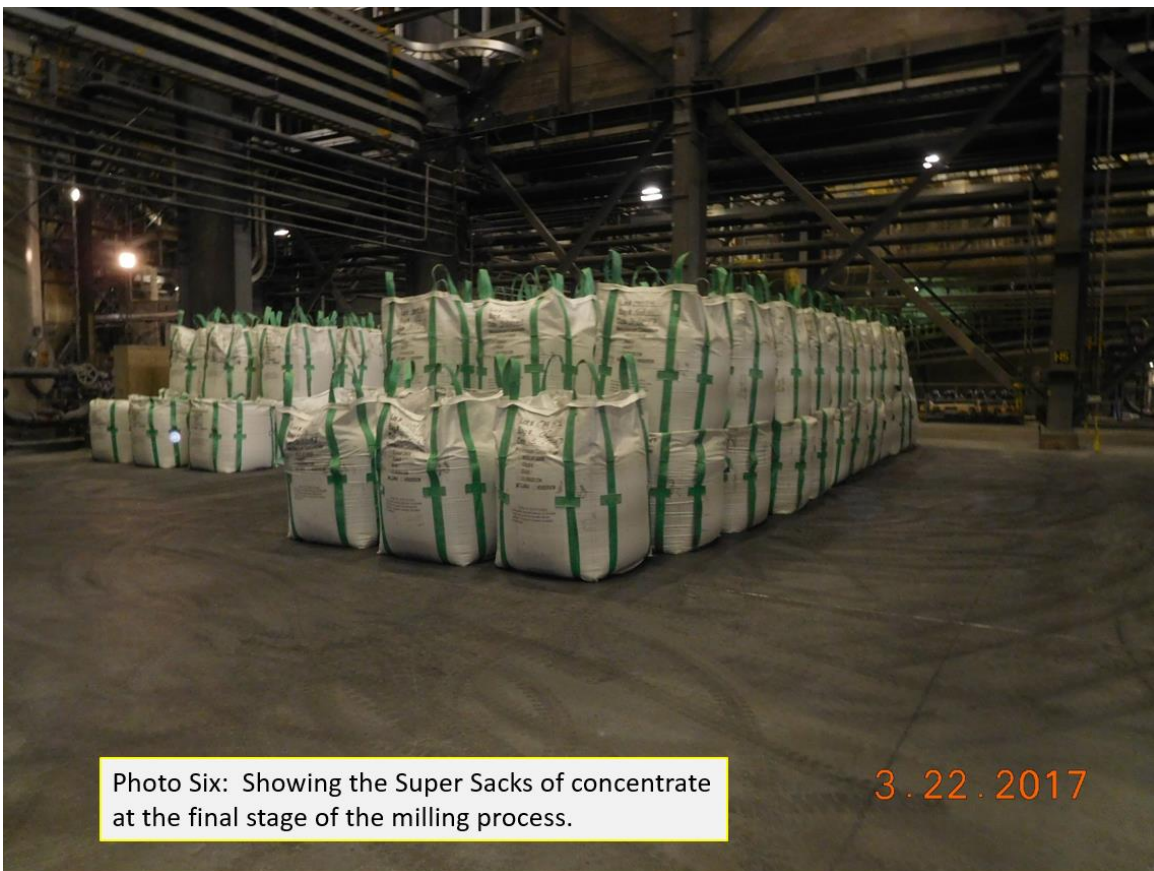
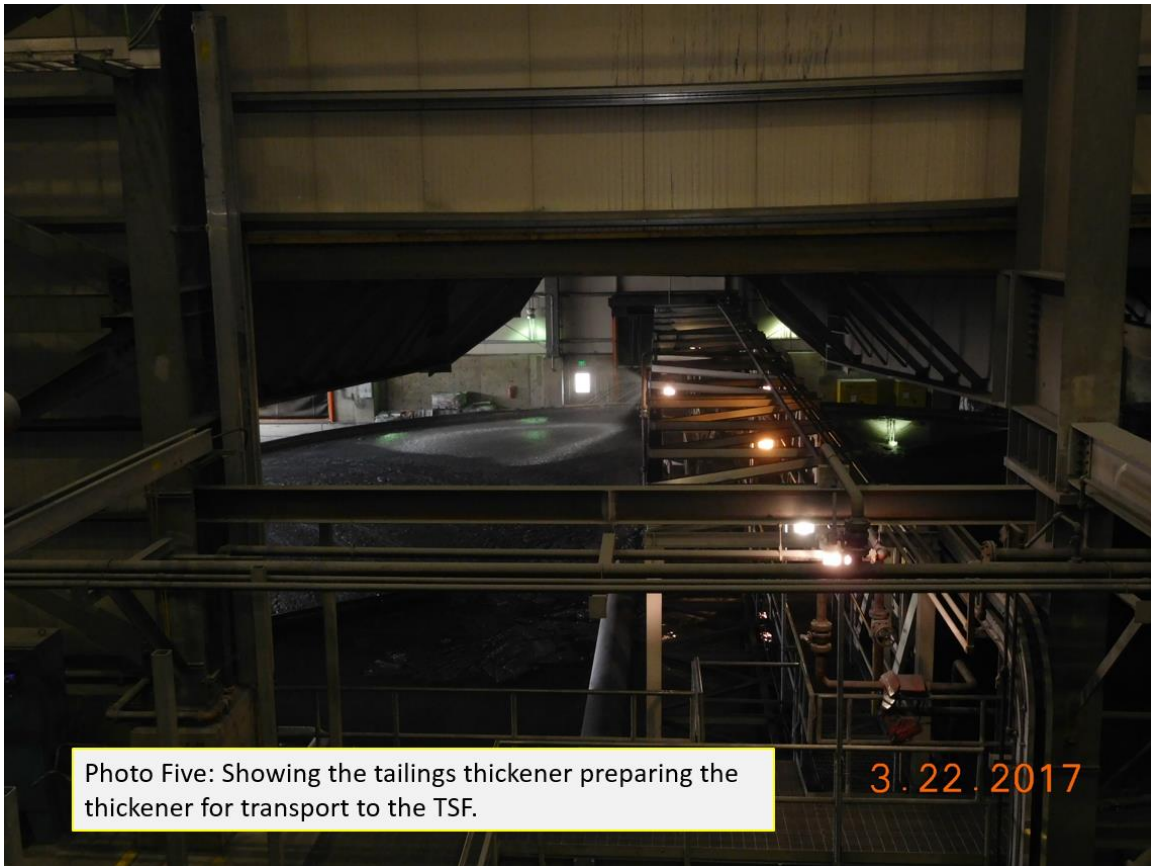




Photo Seven: View west, showing the Tenmile TSF as seen from the SDP.

**Inspection Contact Address**

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Enclosure

CC: Russ Means, Senior Environmental Protection Specialist  
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