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.

MINE NAME: Climax Mine	**MINE/PROSPECTING ID#:** M-1977-493	**MINERAL:** Molybdenum	**COUNTY:** Lake, Summit
INSPECTION TYPE: Monitoring	**WEATHER:** Snowing	**INSP. DATE:** March 21, 2023	**INSP. TIME:** 13:00
OPERATOR: Climax Molybdenum Company	**OPERATOR REPRESENTATIVE:** Eric Detmer	**TYPE OF OPERATION:** 112d-3 - Designated Mining Operation	
REASON FOR INSPECTION: Normal I&E Program	**BOND CALCULATION TYPE:** None	**BOND AMOUNT:** $63,246,088.00	
DATE OF COMPLAINT: NA	**POST INSP. CONTACTS:** None	**JOINT INSP. AGENCY:** None	
INSPECTOR(S): Amy Yeldell	**INSPECTOR'S SIGNATURE:** Amy Yeldell	**SIGNATURE DATE:** March 27, 2023	

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

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 Colorado Division of Reclamation, Mining and Safety (Division) normal monitoring program. Climax Mine is a 112d-3 Molybdenum mine and milling operation located in Summit, Eagle and Lake County and is accessed from Colorado State Highway 91. The site consists of 14,000 permitted acres, of which approximately 8,000 acres have been affected. The Division currently holds $91,011,850.00 in Financial Warranty for the site. Eric Detmer represented Climax Molybdenum Company and accompanied Amy Yeldell of the Division on the inspection.

Division staff first checked in at the guard station at the main gates located on the east side of HWY 91. The weather was clear during the inspection, nearly all of the snow on site has melted. Roads were well maintained and the site was completely accessible.

The following areas were inspected: Lime Slacker for SDP, Sludge Densification Plant (SDP), Property Discharge Water Treatment Plant (PDWTP), Metals Filter Building and Sludge Cell.

Lime Slacker for SDP:
First we inspected the Lime Slacker which provides slacked lime to the SDP. Three lime silos contain the dry pebble lime (photo one). The dry pebbled lime is mixed with fresh water in the lime slacker, which creates the slacked lime slurry. This slacked lime slurry is then pumped to the SDP.

Residual dried lime is present throughout the building as everything was covered in a white layer. All floors within the buildings were dry indicating no recent spills or loss of containments. Floor drains and sumps were also dry.

Sludge Densification Plant (SDP):
Next the SDP building was inspected. The SDP was originally permitted under AM-05. It uses lime neutralizing, precipitation/settling and sludge thickening to reduce the water content of solids sludges. The SDP provides stage 1 metals removal for up to 6,900 gpm.

Slacked lime from the lime slacker is pumped into a large holding tank called the Lime Slurry Tank which is located within the SDP building. Slacked lime is also used at a few other locations as needed. A water truck is parked next to the Slacked lime tank to transport the lime slurry to these locations on an as needed basis (photo two).

Two polymer tanks were also located within the SDP building. One tank is for mixing the other is the batch feed tank (photo three). The dry polymer sacks are neatly stacked on pallets in the back of the building. Near the dry polymer storage is a fresh water storage tank, which is used to mix with the dry polymer. The polymer is used to facilitate solids settling out.

Impacted water is delivered via the ETDL. Additionally collected seepwater from Tim's Pond and Warrens Pump Station is delivered to the SDP via the 2 Dam Pipeline. There are two reactor tanks at the SDP. The reactor (neutralizer) tanks mixes the impacted water with the slacked lime. Sludge is recirculated to maximize neutralization with lime and to increase coagulation and settling (photo four). Once thoroughly mixed the sludge mixture goes into the clarifier which is located outside. In the clarifier (thickener) sludges are recirculated so that the treated water overflows out the top and the sludges are consolidated and drop out the bottom. The consolidated sludges go to the sludge cell (photo five). Stage 1 treated water goes to Tenmile TSF where natural evaporation and freeze/thaw cycles increase the sludge density.

Recently the clarifier was down due to mechanical issues. The water at the top had begun to freeze. Shortly before beginning our inspection it was made operational again and water treatment had recommenced.

Contained within the SDP building is a small spill pallet for storage of hazardous materials (photo six). Used oil and other hydrocarbons were stored on this pallet. No other materials were observed outside of containment within the SDP. Located throughout the SDP are floor drains. Spills go into floor drains and overall are contained within the drainage area of the Tenmile TSF. All containments within the SDP appeared to be dry at the time of inspection.

Property Discharge Water Treatment Plant (PDWTP):
The new molybdenum building (TR-34) is under construction (photo seven). This is a supplementary process to Climax's existing Property Discharge Water Treatment Plant (PDWTP). Currently the foundations and sumps are being constructed. Rebar forms were observed as well as some areas where concrete has been poured. A crane and several crews were on site actively working on this new EPF. Once online the raw water will first go into the Moly building, then water will go to the existing PDWTP building and finally the existing Metals Filter Building before discharge. The PDWTP provides stage 2 metals removal and treats up to 14,000 gpm. The primary contaminants in the water targeted for treatments are manganese, iron, copper and zinc (and soon molybdenum).

A lime silo is located outside of the PDWTP to feed pebbled lime into the Lime slacker within the PDWTP (photo eight). Raw water from the Mayflower Pond and the slacked lime are fed into the Metals Reactor tank where it's mixed. There are two Metals Reactor (neutralizer) tanks in series within the PDWTP (photo nine). The sludge is re-circulated to maximize the neutralization potential of the added lime (pH of about 10) and to enhance coagulation and settling.

The resulting slurry/precipitate then goes into the one of two Metals Thickeners (clarifiers) that are in parallel. The clarifiers are located outside of the PDWTP under an enclosed dome that is connected via walkways (photo ten). Within the clarifiers the sludges are further thickened/precipitated and then the overflow water will proceed to the Metals Filter building.

Also located within the PDWTP building are a Metals Sludge Tanks, Metals Filtrate Tank, a Metal Flocculent Storage Tank, Metals Mixed Flocculent Tank and a Fresh Water Tank. There is a large sump built into the foundation of the PDWTP. All floor drains discharge into the cellar which was dry at the time of the inspection. Floor drains in some areas were wet but with ample storage capacity. The floor between the slacked lime tank and reactor was wet, but no apparent leak source was identified. Miscellaneous hydrocarbons are stored on spill pallets located throughout the building (photo eleven).

Solids from the PDWTP are transported via a cement truck to the Sludge cells. There are two un-use filter presses that the Operator is working on making operational to help combat the volume of sludges that will require off-site disposal per the new T-Norm Rules (photo twelve).

Metals Filter Building:
The Metals Filter Building is located next to the thickeners of the PDWTP. Located within the metals filter building are three Metal Sand Filters which remove any remaining precipitate solids (photo thirteen). Additional polymer is added in the square tanks to settle out solids. When treated water is in the sand filter it has a pH of about 10. The sand filters are regularly backwashed.

Sulfuric acid is used to adjust the pH of treated water at the PDWTP to within the permit stipulated range of pH

6.5-9 prior to being discharged into Tenmile Creek. The filtrate (clean water) is discharged at CDPS Outfall 002A to the channel above CDPS Outfall 001A in Tenmile Creek. If for any reason water is not of sufficient quality for discharge it can be re-routed back to the Mayflower.

Currently a temporary Sulfuric Acid delivery line was in place, as there was issues with the line caking up. The temporary line is in double walled pipe for secondary containment. Within the Metals Filter Building is a separate enclosed room for the sulfuric acid (Photo fourteen). It is stored in a carbon steel tank which sets over an epoxy coated concrete built in floor sump. The sump within the sulfuric acid room was free of any spills.

The metal filter building has a dedicated sump to catch overflows or spills and return the water to the treatment system. If need be water can also be routed to Mayflower return pump station which then carries water back to Mayflower TSF. No spills were observed within the Metal filter building.

Sludge cell:
Lastly the sludge cells were observed (photo fifteen). Currently one cell has been completely cleaned out for new dry material that would pass the paint filter test and be accepted for off-site disposal per the new T-Norm Rules. The other cell has all of the consolidated existing sludge material.

No Problems or Possible Violations were identified during this inspection.

Responses to this inspection report should be directed to: Amy Yeldell at the Division of Reclamation, Mining and Safety, Rm 215, 1001 E 62nd Ave, Denver CO 80216. Direct contact can be made by phone at 303-866-3567 Ext 8183 or via email at amy.yeldell@state.co.us

Inspection Contact Address
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Enclosure: 15 photos

EC:
Travis Marshall, Senior EPS, Grand Junction DRMS
Lucas West, DRMS
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PHOTOGRAPHS

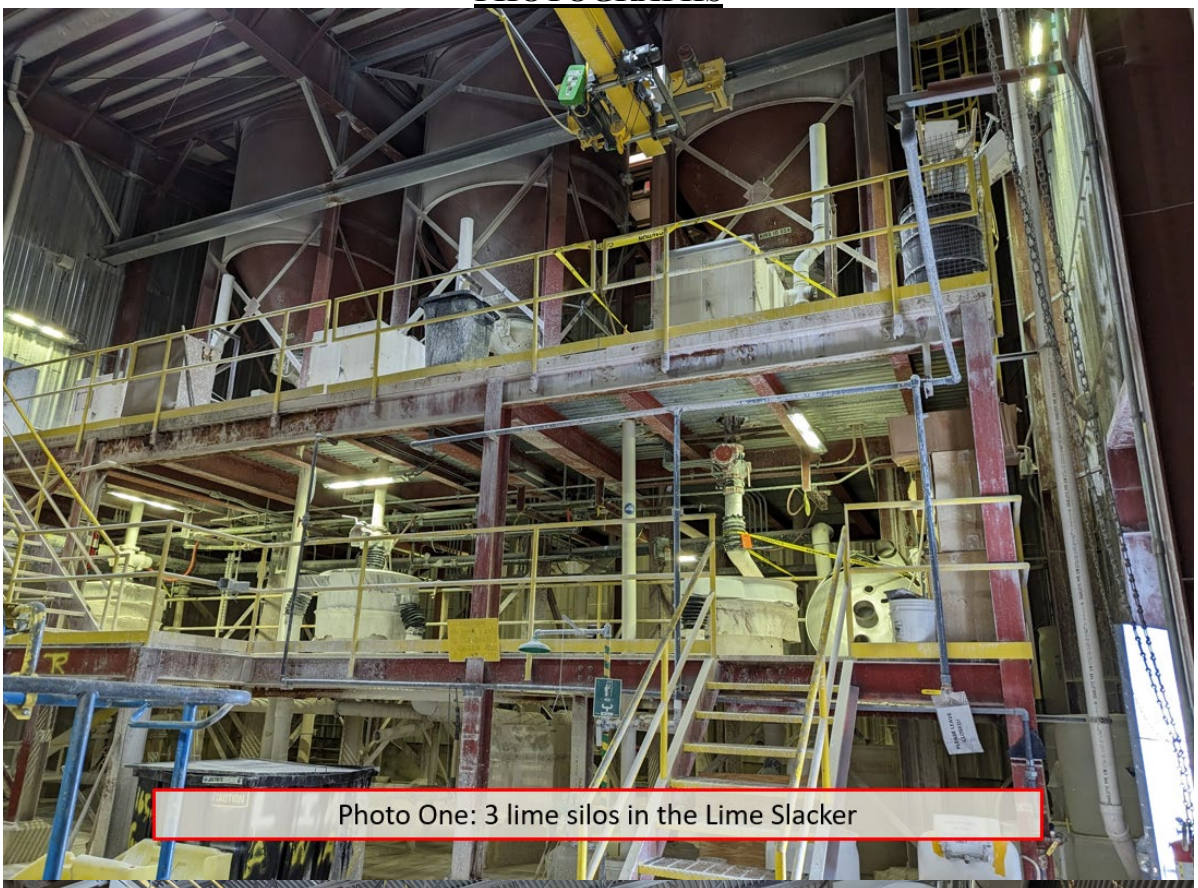

Photo One: 3 lime silos in the Lime Slacker

Photo Two: Lime Slurry Tank and truck to deliver lime to remote areas as needed

Photo Three: Polymer mixing area of the SDP, floors are dry

Photo Four: Reactor Tank within the SDP

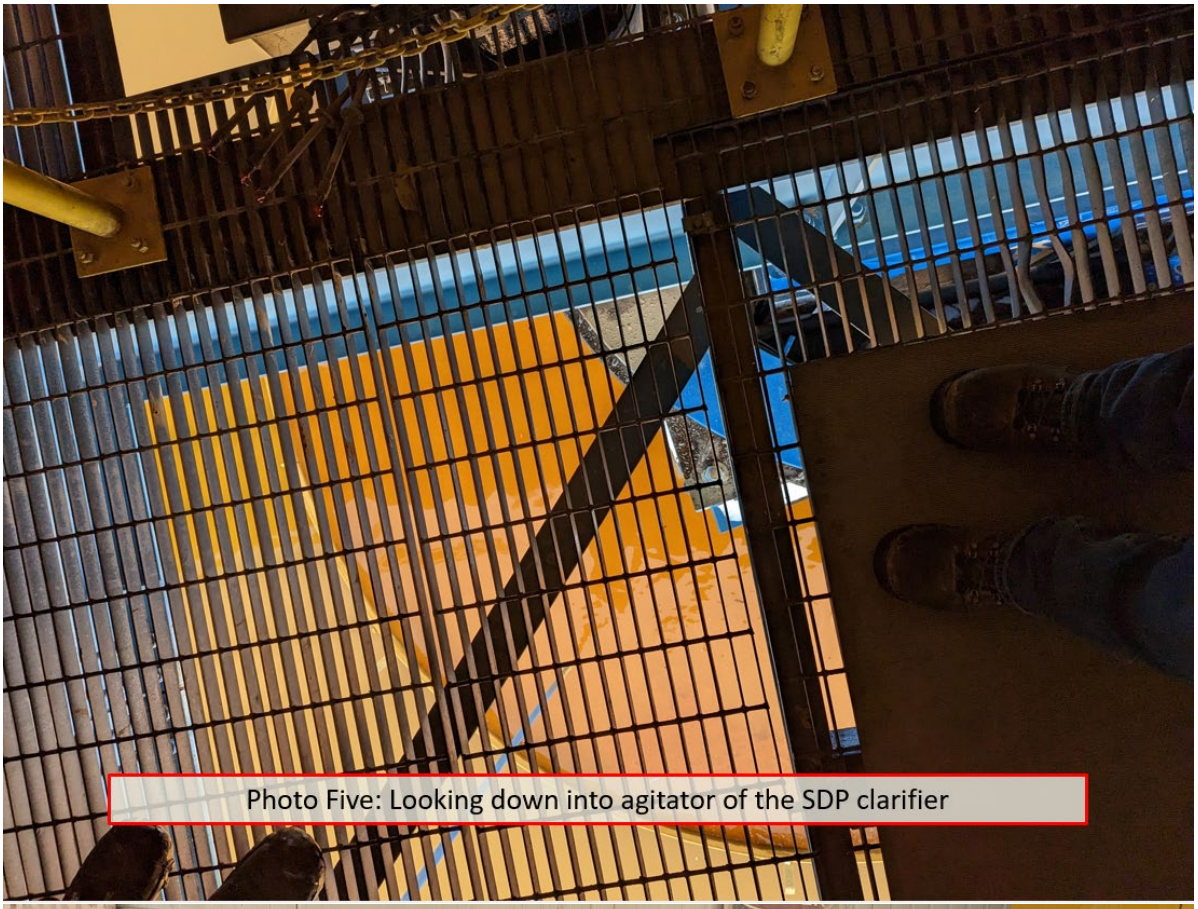

Photo Five: Looking down into agitator of the SDP clarifier

Photo Six: Hazardous materials stored within secondary containment in the SDP

Photo Seven: Construction of new EPF, Moly Rom TR-34

Photo Eight: Lime silo for the PDWTP

Photo Nine: Metals Reactors

Photo Ten: Metals Thickeners operating in parallel

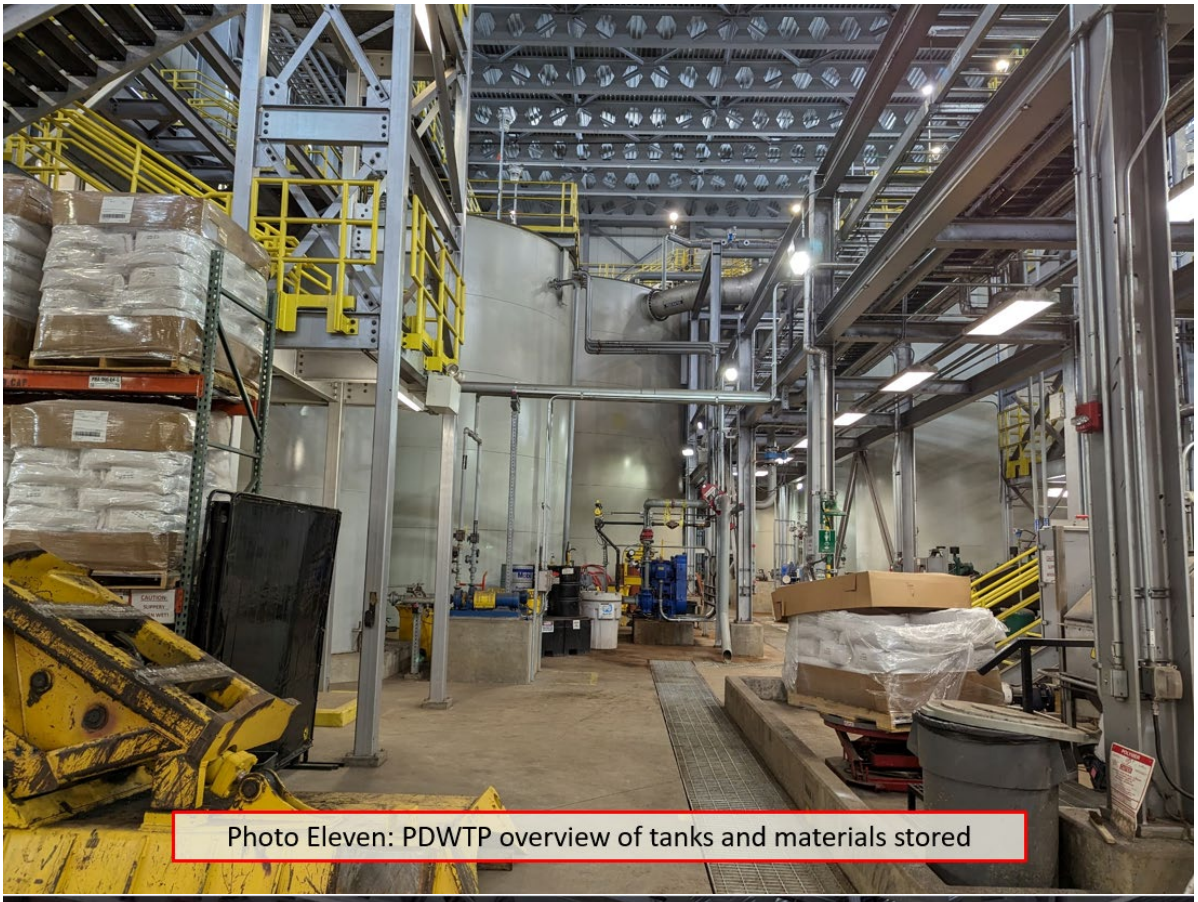

Photo Eleven: PDWTP overview of tanks and materials stored

Photo Twelve: Un-used filter presses located above the sludges catch bay. Currently cement truck used for transport

Photo Thirteen: Gravity metal sand filter

Photo Fourteen: Sulfuric acid containment room

Photo Fifteen: Sludge cells, left empty, right consolidated