COLORADO DIVISION OF RECLAMATION, MINING AND SAFETY
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: Revenue Mine	**MINE/PROSPECTING ID#:** M-2012-032	**MINERAL:** Lead, silver and gold	**COUNTY:** Ouray
INSPECTION TYPE: Multi Person Inspection	**INSPECTOR(S):** Bob Oswald	**INSP. DATE:** October 1, 2012	**INSP. TIME:** 13:00
OPERATOR: Star Mine Operations, LLC	**OPERATOR REPRESENTATIVE:** Rory Williams, John Trujillo, John Bettridge	**TYPE OF OPERATION:** 112d-1 - Designated Mining Operation	

REASON FOR INSPECTION: Pre-operation Inspection	**BOND CALCULATION TYPE:** None	**BOND AMOUNT:** NA
DATE OF COMPLAINT: NA	**POST INSP. CONTACTS:** None	**JOINT INSP. AGENCY:** None
WEATHER: Clear	**INSPECTOR'S SIGNATURE:** Bob Oswald	**SIGNATURE DATE:** October 26, 2012

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

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

OBSERVATIONS

This was a pre-operation inspection performed by a group of staff of the Division, as part of the technical review of the Hard Rock 112d-1 permit application. Division staff participating in the inspection also included Travis Marshall, Kate Pickford, and Jeff Litteral. The operator's representatives named on page one were present throughout the inspection. Also present was the operator's consultant, Greg Lewicki of Greg Lewicki and Associates. Staff of the Army Corps of Engineers, including Susan Nall and Carrie Sheata, were also onsite but were concluding their inspection and meeting with the operator, they were not present for the Division's inspection.

The purpose of this inspection were to assess the geotechnical stability of the general setting of the Revenue Mine permitted area, including possibility of impacts to pre-existing (Atlas) tailings upstream of the site, potential avalanche impacts to facilities complex and tailings area, potential impacts to Sneffels Creek from tailings and the proposed bridge, and changes to the current wetland as the new ponds are created. Onsite discussion also involved water quality sampling program for establishing baseline.

The applicant has posted visible survey markers at a few points near the county road, indicating claim boundaries and corners. These were helpful in determining proposed permit boundaries and planned onsite structures. It appeared from the marker locations that all pre-existing Atlas tailings along the south side of Sneffels Creek lie upstream of the permit boundary, and that no onsite structures or activities will re-disturb the old tailings. This is a preliminary assessment based on observations made on this date.

The location of the proposed bridge over Sneffels Creek at upstream (western) end of the proposed permit area was observed from the county road. There is no disturbance yet at this location. The bridge location was identified, and it appeared suitable since it was below all discernable (surface) tailings, and the stream banks potentially afford good locations for footings. This is also a preliminary assessment based on today's observations. The application did not provide specific bridge designs, but the application does not require them at this point. A technical revision to the permit could be submitted at a later time, to include all required bridge details.

Engineering staff in the Division is requesting the design and construction specifications for the existing bridge, which was recently built across Sneffels Creek. Since its design would require that it adequately support heavy equipment, similar specs will likely be needed for the future bridge at the west end. The operator will please provide the current bridge design to the Division.

The avalanche chute that is located on the slopes above the Revenue Mine complex and waste dump was observed clearly from the county road. It is well defined by the abrupt lack of large spruce trees. The lower slopes do contain stands of younger spruces and shrub/willow thickets throughout. The slopes do not contain barren areas nor are there masses of woody debris at the toe of the slope or across the valley floor. It is interesting that the existing wetlands area not far from the base of the avalanche slope (where the proposed mine ponds are planned) presently contains two 100-year-old buildings that exhibit no avalanche damage at all. The eastern tailings/waste dump will begin on the footprint of the existing mine pond, and extend southward slightly up the slope. The western lobe of the proposed tailings/waste dump will be completely west of the "Atlas" creek, and will extend southward up the toe of the slope to a height of more than 150 feet, covering the lower cliff band. The two dumps will extend out toward Sneffels Creek to a point where the

northern slope will be established at 3:1, with benches and a setback from the creek. The Division feels the applicant's dump slope design is appropriate for this setting. Further comment regarding the avalanche mitigation issues may be forthcoming from the Division.

The Army Corps of Engineers (ACOE) may issue to the applicant a set of allowances or restictions concerning the existing wetlands on the permit area. If the applicant receives such a document from ACOE a copy of it should be forwarded to the Division as it may impact the 112d-1 permit or application. At this time the Divisioon is not aware of any wetland issues affecting the application.

Discussion onsite involved water quality issues, as they might be affected by (1) the proposed placement of waste rock and tailings, (2) the proposed mine ponds, and (3) the sampling program as currently defined in the application. Several quarters of sampling have already occurred, of the surface water (from creeks) and the groundwater (in the underground workings). There are several underground sampling points, which define the mineralogical contributions of specific drifts of the mine, but a composite sample of the full discharge from the portal is not being taken. The Division stated that this would be important to begin collecting, but the applicant responded that since the flow rates were known, a "weighted average" could be derived from the four separate samples that comprise the entire amount of discharge. The Division will determine if this is satisfactory for characterizing the discharge.

The proposed mine pond and sediment pond to be constructed where the onsite wetland is located is suspected to contain only a thin layer of alluvium or historic fill above the bedrock. To prepare the site for a pond, the footprint of the dam will be excavated down to either reach bedrock or to a sufficient depth to key in the dam's earthen fill. Percolation through or under the dam is not part of the plan: the design contains a spillway structure. The Division will review the dam construction details and respond if further information is needed.

No further items were inspected or discussed in the context of this 112d-1 application.

For questions related to this report, please contact this inspector at the Division's Durango Field Office:
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PHOTOGRAPHS