

STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY

Department of Natural Resources

1313 Sherman St., Room 215
Denver, Colorado 80203
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June 26, 2013

Shannon P. Murphy
Providence Mining, LLC
100 W. Bennett Ave.
P.O. Box 661
Cripple Creek, CO 80813

John W. Hickenlooper
Governor

Mike King
Executive Director

Loretta E. Pineda
Director

**Re: Providence Mine, Permit No. M-2012-052,
Preliminary Adequacy Review – Environmental Protection Plan**

Mr. Murphy:

The Division of Reclamation, Mining and Safety (DRMS) engineering staff has reviewed the Exhibit T, Environmental Protection Plan (EPP) included in the Designated Mining Limited Impact (110d) Operation Reclamation Permit Application received on June 5, 2013 for the Providence Mine.

The following comments are posed to ensure adequate engineering analyses and design practices are implemented to eliminate or reduce to the extent practical the disturbance to the hydrologic balance expected by the mining operation with respect to water quality and quantity in accordance with Rules 3.1.6(1), 6.4.21(10) and 7.3.1. Please note, as this site is a designated mining operation (DMO), compliance with Rule 7.3.1 is applicable, thus requiring certified designs and specifications for engineered elements associated with the environmental protection plan (EPP).

General Comments:

1. The EPP discusses “unoxidized vein material that may contain up to possibly 5 percent” iron sulfide. The DRMS is concerned about the surface stockpiling of this material and its potential effect on water quality. The DRMS requires an ore stockpile pad to separate potentially impacted stormwater and/or snow melt from non-impacted water. This pad will be an environmental protection facility (EPF). The pad shall be designed to contain direct precipitation and any run-on resulting from the 100-year, 24-hour storm and reduce to the extent practical, infiltration into the subsurface soil. The potentially impacted water will need to be treated to meet appropriate discharge standards or disposed of properly. Please provide the following:
 - a. A discussion on potentially impacted water treatment and/or disposal.
 - b. Ore pad design drawings showing area; stormwater and ore capacity; and liner detail(s).
2. Proposed permit boundary and existing stormwater pond. The existing stormwater pond at the toe of the historic mine waste (reference Exhibit Map E-1A, Permit and Adjacent Area) is not entirely included within the proposed permit boundary. Please expand the proposed permit boundary to include this pond.

3. The DRMS could not find stormwater runoff estimates or analyses; or a stormwater management plan. A stormwater management plan is required to demonstrate adequate runoff/run-on control in the vicinity of the higher sulfide material stockpile(s). Please provide the following:
 - a. Maps delineating contributing subbasins, diversion and/or collection channels, and sediment pond.
 - b. Rationale for runoff estimation parameters (typically SCS/NRCS curve numbers, Hydrologic Soil Groups, and land use). This should include ground cover rationale, and weighted area calculations as well.
 - c. Peak flow calculations/analyses for each diversion and/or collection channel and/or pond spillway. Note: the design storm for this site is the 100-year, 24-hour event.
 - d. Sediment pond sizing (volume) calculations/analyses. Note: the design storm for this site is the 10-year, 24-hour runoff for the area(s) contributing to the sediment pond(s).
4. The DRMS could not find stormwater hydraulic analyses or design drawings for channels, ponds or spillways. In order for the DRMS to fully evaluate the engineering designs for diversion channels and sediment ponds, please provide the following:
 - a. Sediment Pond:
 - i. Stage-storage table to compare with estimated runoff volume.
 - ii. Drawing(s) (to scale) with contours demonstrating pond capacity, spillway location, and spillway erosion protection.
 - iii. Design drawing(s) and specifications showing embankment and spillway designs.
 - b. Diversion Channels:
 - i. Drawing(s) (to scale) showing diversion channel locations, cross-section geometry for construction (minimum design depth included).
 - ii. Hydraulic analyses evaluating the design capacity and stability of each diversion and/or collection ditch to pass the 100-year, 24-hour design storm peak discharge. This should consider rationale for the selected roughness coefficients. Because channel roughness is seldom uniform, the DRMS requires channels be evaluated for both stability and capacity, i.e., minimum and maximum expected roughness. For example, an excavated earth channel, after weathering would be expected to have a minimum $n = 0.018$ (use to evaluate stability or maximum expected velocity); and a maximum $n = 0.025$ (use to evaluate capacity). In addition, the DRMS requires channel freeboard be evaluated for all engineered channels: channels shall be designed with a minimum of 0.5 feet of freeboard unless the velocity head ($v^2/2g$) is significant, then the minimum required freeboard is half the velocity head, or $v^2/4g$.

iii. Erosion protection details and analyses if needed.

The DRMS recommends the Operator submit a drainage design plan, to include the required analyses, certified designs and specifications for the engineered elements associated with the environmental protection plan (EPP). The cover page, all drawings and specifications should be stamped and signed by the responsible engineer.

The DRMS is continuing to review the submitted application and exhibits. You will be notified of any other inadequacies related to these other portions of the application under separate cover.

Please be advised the Providence Mine Application may be deemed inadequate and the application may be denied on **July 8, 2013** unless the abovementioned adequacy review items are addressed to the satisfaction of the Division. If you feel more time is needed to complete your reply, the Division can grant an extension to the decision date. This will be done upon receipt of a written waiver of your right to a decision by July 8, 2013 and request for additional time. This must be received no later than the deadline date.

If you have any questions, please contact me at (303) 866-3567, ext. 8169.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Tim Cazier', with a stylized flourish at the end.

Timothy A. Cazier, P.E.
Environmental Protection Specialist

cc: Tony Waldron, DRMS
Tom Kaldenbach, DRMS
DRMS file
Art Braun, Braun Environmental, Inc.