

STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY Department of Natural Resources

1313 Sherman St., Room 215
Denver, Colorado 80203
Phone: (303) 866-3567
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December 17, 2012

Glenn Williams
Cotter Corp.
P.O. Box 700
Nucla, CO
81424

John W. Hickenlooper
Governor

Mike King
Executive Director

Loretta Piñeda
Director

RE: JD-6 Mine, File No. M-1977-310, Amendment (AM1) Application Adequacy Review

Dear Mr. Williams:

The Division of Reclamation, Mining and Safety (Division) is in the process of reviewing the above referenced application in order to ensure that it satisfies the requirements of the *Colorado Mined Land Reclamation Act* (Act) and the associated *Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for Hard Rock, Metal, and Designated Mining Operations* (Rules). During review of the material submitted, the Division determined that the following issue(s) shall be adequately addressed before the application can be considered for approval.

Mining Plan

1. Addressing Rule 6.3.3 (1) (f) – On page C-1, the exhibit states that waste rock will be stacked to a height that will not impede grading to 2H:1V during reclamation. Please provide the Division with the maximum anticipated thickness that waste rock will be placed.
2. Addressing Rule 6.3.3 (1) (f) - On page C-1, the exhibit states that ore will be piled up to a workable stockpile. Please provide the Division with a maximum anticipated amount of ore to be stockpiled at any given time.

Permanent Man-Made Structures

3. Addressing Rule 6.3.12 – The mine plan proposes to utilize power supplied by a San Miguel Power Association. Please submit to the Division, either a notarized agreement between Cotter Corp. and SMPA, that Cotter Corp. is to provide compensation for any damage to the power line caused by the mining operation, or a notarized letter, from SMPA on their letterhead, that the proposed mining and reclamation activities will have “no negative effect” on their power line.

Environmental Protection Plan

4. Addressing Rule 6.4.21 (7) – The EPP states that a radiometric survey will be completed prior to mining in order to document baseline conditions at the site. Baseline conditions shall be established as part of this amendment process. Please conduct a radiometric survey of the affected area and submit the results to the Division along with an evaluation of the expected effectiveness of the proposed EPP, which specifically addresses the risks, from uranium, uranium byproducts, and any other radionuclides expected to be encountered during this operation, to human health, property and the environment.
5. Addressing Rule 6.4.12 – On page 41, the EPP states that no water is anticipated to be encountered during mining. If groundwater is encountered during mining, more than one (1)

gallon per minute or more sustained for ten (10) days. The Operator shall notify Division of encounter. The Operator in consultation with the Division shall work together in addressing steps to evaluate prevailing hydrological balance which may include a well and a monitoring plan. Please commit to this.

6. Addressing Rule 6.4.21 (14) – On Page 42-43 of the EPP, SPLP tests were conducted in order to characterize the waste rock generated at this site. According to this rule, the ore must also be characterized. Please submit to the Division, a geochemical evaluation of the ore to be mined. Alternatively, if ore samples are not available at this time, commit to submitting this information to the Division, for review and approval, prior to any stockpiling on the surface.
7. Addressing Rule 6.4.21 (16) – On page 42, the EPP states that Cotter Corp. will conduct regular inspections of all structures. Please inform the Division of the anticipated minimum inspection frequency interval.
8. Addressing Rule 6.4.21 (18)(b) – Please describe the measures Cotter Corp. intends to take to prevent wildlife from coming into contact with uranium, uranium by-products or any other radionuclides.

Geotechnical Stability Exhibit Rule 6.5

9. This exhibit states that the waste rock will be added, but does not state a method. Please explain how the waste rock will be added and the thickness of the methods to be used.
10. Please inform the Division of the necessary amount of compaction for the waste rock pile, and the operators plan for insuring that necessary compaction of the waste rock is achieved.
11. Please inform the Division of the maximum anticipated total thickness of the waste rock pile.

Storm Water Management Plan

12. Please see the Division's Engineer comments in an attach memo dated December 5, 2012.

Please submit your response(s) to the above listed issue(s) by Friday, January 04, 2013, in order to allow the Division sufficient time for review.

The Division will continue to review your application and will contact you if additional information is needed.

If you require additional information or have questions or concerns, please contact me at the DRMS Grand Junction Field Office.

Sincerely,



Stephanie Reigh
Environmental Protection Specialist
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Division of Reclamation, Mining and Safety
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Cc: Ed Cotter, DOE

Ec: Russ Means, DRMS GJFO

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MEMORANDUM

John W. Hickenlooper
Governor

Mike King
Executive Director

Loretta Piñeda
Director

To: Stephanie Reigh

From: Tim Cazier, P.E. 

Date: December 5, 2012

Re: JD-6 Mine Drainage Design – General Stormwater Comments, Permit No. M-1977-310 / AM-01

The Division of Reclamation, Mining and Safety (DRMS) engineering staff has reviewed the September 12, 2012 Stormwater Management Plan (SWMP) and the September 2012 Environmental Protection Plan (EPP) for the Mineral Joe Mine prepared by Whetstone Associates, Inc. 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 DRMS could not find stormwater runoff estimates or analyses. The EPP provides 24-hour precipitation depths for the 10- and 100-year, 24-hour design storms (paragraph 7.3 Storm Frequency); and the hydrologic soil groups (Table 30 – Soil Types in Vicinity) for the required analyses, but nor analyses. In order for the DRMS to fully evaluate the diversion channels and sediment ponds, please provide the following:
 - a. Maps delineating contributing subbasins to each diversion and sediment pond.
 - b. Rationale for runoff estimation parameters (presumably SCS/NRCS curve numbers, as the HSG are presented in Table 30). This should include ground cover rationale, and weighted area calculations as well.
 - c. 100-year, 24-hour peak flow calculations/analyses for each diversion channel and/or pond spillway.
 - d. 10-year, 24-hour runoff volume for the area(s) contributing to the sediment pond(s).

December 5, 2012

2. The DRMS could not find stormwater hydraulic analyses or design drawings. The SWMP states the sediment pond is designed to store the 10-year, 24-hour runoff volume (paragraph 5.4.2 Stormwater Retention), but no analyses or drawings were included. 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.

If either you or the applicants have any questions regarding the comments above, please call me at (303) 866-3567, extension 8169.