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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COLORADO DIVISION OF RECLAMATION MINING & SAFETY

February 27, 2013

Glen Williams
Cotter Corporation
P.O. Box 700
Nucla, CO
81424

RE: JD-7 Pit Mine, File No. M-1979-094-HR , 112d Amendment (AM1) Application Adequacy Review (2)

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 adequately 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). The attached memorandum from Division staff member, Tim Cazier, includes comments regarding stormwater management at the site. In order to allow the Division sufficient time for review, please submit response(s) to the issue(s) presented in Mr. Cazier's memo by Friday, March 15, 2013.

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,

Dustin Czapla
Environmental Protection Specialist
Department of Natural Resources
Division of Reclamation, Mining and Safety
101 South 3rd, Suite 301
Grand Junction, CO 81501
Phone: (970) 243-6299
Fax: (970) 241-1516

Cc: Ed Cotter, DOE

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COLORADO DIVISION OF RECLAMATION MINING & SAFETY

MEMORANDUM

To: Dustin Czapla

From: Tim Cazier, P.E.

Date: February 26, 2013

Re: JD-7 Mine Drainage Design – General Stormwater Comments, Permit No. M-1979-094HR / AM-01

The Division of Reclamation, Mining and Safety (DRMS) engineering staff has reviewed the September 2012 Stormwater Management Plan (SWMP) and the September 2012 Environmental Protection Plan (EPP) for the JD-7 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 38 – Soil Types in Vicinity) for the required analyses, but not the 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 38). 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).

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 5.3.2 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.