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
FAX: (303) 832-8106

COLORADO DIVISION OF RECLAMATION MINING & SAFETY

December 3, 2012

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

RE: SR-13A Mine, File No. M-1977-311, 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 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 the Drainage Design Plan submitted with the AM1 application. Please submit response(s) to the issue(s) presented in Mr. Cazier's memo 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,

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

Ec: Russ Means, DRMS GJFO

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COLORADO DIVISION OF RECLAMATION MINING & SAFETY

MEMORANDUM

To: Dustin Czapla

From: Tim Cazier, P.E.

Date: November 30, 2012

Re: SR-13A Mine Drainage Design Plan – General Stormwater Comments, Permit No. M-1977-311 / AM-01

The Division of Reclamation, Mining and Safety (DRMS) engineering staff has reviewed the September 5, 2012 Drainage Design Plan (Engineered Stormwater Management Plan) for the SR-13A Mine prepared by O'Connor Design Group, 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).

1. Page ESWMP-3, first paragraph. This paragraph suggests the primary vegetative cover is Pinon-Juniper. Site photos in Exhibit B (Photos B1 and B2) suggest the vegetative cover is primarily herbaceous (with respect to runoff curve numbers (CN)). Please discuss why Pinon-Juniper cover was selected for the vegetation cover.
2. Page ESWMP-3, third paragraph. This paragraph states the surface soils at the site are Soil Map Unit (SMU) 23 (Bodot) and 76 (Pinon-Bowdish-Rock outcrop). The soil group on Figure T3 indicates the natural soils in the area defined by subasins Onsite 30 and Offsite 10 analyzed are SMU 57 (Minchey fine sandy loam) and SMU 88 (Rock outcrop-Orthents complex), respectively. According to the Soil Survey of San Miguel Area, Colorado Parts of Dolores, Montrose, and San Miguel Counties, Table 19 lists the Minchey series as Hydrologic Soil Group (HSG) B, and the Rock outcrop-Orthents complex as HSG D. Please revise the selected curve numbers (CN) to reflect the appropriate HSG and vegetative cover as discussed in Comment 1 (i.e., Offsite 10 CN = 93 – poor herbaceous cover/HSG D, Onsite 30 CN = 80 – poor herbaceous cover/HSG B).
3. Page ESWMP-5, section7.2. Please state the specific design storm depths used for runoff analyses for both the 10-year and 100-year, 24-hour events.

4. Page ESWMP-5, section7.3, second paragraph. Please correct this paragraph based on Comments 1 and 2 above.

5. Page ESWMP-6, second paragraph and FlowMaster output pages. It is stated the channels are "capable of transporting the 100-year flows". A Manning's n = 0.038 is existing channels and 0.045 for the OFF10 diversion channel. However, no rationale is provided 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 $v^2/4g$.

    a. Please provide a rationale for the selected roughness coefficients, and evaluate each designated channel/ditch design slope for both capacity and stability.

    b. Please design all engineered ditches with the appropriate freeboard and provide channel design depths for construction.

6. Page ESWMP-6, section 7.4 paragraph and Retention Pond Drainage Design Plan (Sheet 5 of 5). The 100-year, 24-hour runoff volume criteria used for sizing storage in the pond is acceptable. However, a spillway is necessary to pass runoff from successive storms as there is no way presented in the Retention Pond design plan to drain the pond via gravity. As such, the emergency spillway for the pond needs to be designed to convey 100-year peak flow, assuming the ponds are full (to the spillway invert elevation) at the onset of the design storm. Please provide analyses and designs to demonstrate the spillway has the capacity to pass the peak flow resulting from the 100-year, 24-hour design storm. (*NOTE – The DRMS checked with the Colorado Division of Water Resources (DOWR) District 63 water commissioner (Tom Brigham) regarding the status of the Dolores River appropriations. Mr. Brigham stated that the Dolores River is not currently over appropriated and as such, DWR has no current requirement to release retained stormwater within 72 hours. He emphasized this condition is seasonal and is subject to change.*) The DRMS suggests the Operator consider a low level outlet be designed into the pond in case a call is put on the Dolores River, the Operator can comply with the DOWR requirements.

7. Page ESWMP-7, last paragraph. This paragraph references the Environmental Protection Plan for details related to the reclamation of stormwater features. The DRMS could find no discussion of stormwater feature reclamation in Exhibit T, nor any discussion of the retention pond in the Exhibit D Reclamation Plan. Please indicate whether the retention pond will be left in place, breached, filled in, etc.

8. Pages ESWMP-8 – 10, hydrographs. Peak flow computer software generated tables were not provided as was the case for M-1977-307, CM-25 mine. Please provide similar tabular input/output information.

9. Pages ESWMP-11 – 13, weighted CNs. Please provide revised analysis worksheets based on Comment 2 above.

10. Page ESWMP-18, pond volume, Drawing E-6 and ESWMP Drawings 2 and 3. The drawings in Exhibit E and ESWMP Drawings 2 and 3 show very different retention pond configurations (triangular vs. square bottoms).
    a. Which retention pond configuration is correct?
    b. Which retention pond configuration is reflected in the "Elev-Area" table on page ESWMP-18?

Drawings:

11. Sheet 2. Please label engineered design channel reaches on the drawing consistent with the labels used for the FlowMaster analyses to enable the DRMS to evaluate the channel slopes.
12. Sheet 3. Please provide spillway location, designs (sections and profile), and specifications sufficient to convey the design flow to the toe of the embankment.
13. Sheet 5. Please provide some material and compaction specifications for the berm and the retention pond embankment.

General Comments:

14. Page ESWMP-5, second paragraph. The NRCS is referenced as the "National Resource Conservation Service". The "N" stands for "Natural", not "National".

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