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TO: File #2

THRU: Daron Haddock, Permit Supervisor

FROM: Steven M. Johnson, Reclamation Specialist 

RE: Renewal Changes, Star Point Mine, Cyprus Plateau Mining Corp., ACT/007/006-96C, File #2, Carbon County, Utah

SUMMARY:

As part of the five-year renewal for the Star Point Mine, Cyprus Plateau Mining Company (CPMC) has made several changes in their mining and reclamation plan (MRP). These changes include elimination of water monitoring locations and a new reclamation plan for the refuse pile. The actual renewal will be pursued independent of the review of these changes. This review is an analysis of the hydrology for the water monitoring and the hydrology of the refuse pile reclamation.

TECHNICAL ANALYSIS:

OPERATIONAL PLAN

OPERATIONAL HYDROLOGY

Ground-Water Monitoring

Analysis:

The groundwater monitoring program is addressed beginning on page 700-101 in section 731.210. In this section beginning on page 700-102, CPMC proposes to cease monitoring of several springs. The reason for each spring's removal from the monitoring plan is provided in this section. Predominantly the reason given for removing monitoring sites is redundancy, insignificance of past data collected, and extremely poor production rates. Redundancy means that there are one or more springs within a short distance from the deleted spring that samples the same water supply. Some sites produced only one or two samples over years of attempting to make collection.

In total there are nine sites proposed for discontinuation. Despite the large number of sampling locations that will no longer produce data, there will still be enough data to analyze water quantity and water quality. The number of stations needed for a triangulation was taken into account for each discontinued station.

Findings:

All springs proposed for discontinuation from the groundwater monitoring plan are not critical for detecting mining effects on the hydrologic balance; therefore, removing them is reasonable. The new plan is complete and adequate.

RECLAMATION PLAN
RECLAMATIONAL HYDROLOGY
Sediment Control Measures

Analysis:

CPMC has requested some reclamation design changes for the refuse pile, and road cuts and pad outslopes in this package. These changes are in Chapter 5, Exhibit 522.322d. Two maps from this exhibit have been included at the end of the Engineering map volumes in large scale copies.

Page 11 of this report lists five items that will be used for sediment control in reclamation of the refuse pile. They are listed below:

- Existing sedimentation structures;
- 3 to 1, terraced side slopes;
- Hay mulch;
- Extremely roughened (pocked) slopes; and
- Revegetation.

This five-step method of sediment is best technology currently available for preventing additional contributions of sediment to streamflow or to runoff outside the permit area during reclamation. However, CPMC has not clearly shown which existing sediment control measures will be used before establishment of vegetation, nor any criteria for removing the existing sediment control measure.

Page 11 and 12 of the report discuss five measures to be used on road cuts and outslope pads. They are listed below:

- Shaping, ripping and scarifying of the outslopes;

- Placement of suitable cover material;
- Addition of soil amendments;
- Application of mulch at a rate of 1 ton/acre; and
- Revegetation.

Reclamation of this area will not include the extreme surface roughing that is included in the refuse pile reclamation. These outsoles are extremely steep in places and will be highly erodible. Mulch alone will not be sufficient to control sediment until vegetation is satisfactorily reestablished. Additional sediment control measures must be designed for these areas.

Findings:

The reclamation plan for the refuse pile and road outslope is not complete. CPMC has not adequately designed for sediment control on the road outsoles. The following deficiency is maintained.

R645-301-742.110: CPMC must show which sediment controls will be used meanwhile between initial reclamation activities and establishment of vegetation for the refuse pile, road cuts, and pad outsoles.

R645-301-742.110: CPMC must design using the best technology currently available a sediment control measure for the road outslope that prevents to the extent possible additional contributions of sediment to stream flow or to runoff outside the permit area.

R645-301-764: CPMC must show the timetable for removal of sediment control structures that treat the refuse pile, road cuts and pad outsoles.

RECOMMENDATION:

The plan has incomplete sediment control designs for road outsoles and should not be approved.