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March 31, 1998

TO: File

THRU: Joe Helfrich, Permit Supervisor *JH*

FROM: Sharon Falvey, Senior Reclamation Specialist *SF*

RE: Barn Canyon Ventilation Facility, Permit Amendment, Cyprus Plateau Mining Corporation, Willow Creek Mine, ACT/007/038-98B, Folder #2, Carbon County, Utah

SYNOPSIS:

Cyprus Plateau Mining Corporation (CPMC) has submitted an amendment for the Barn Canyon Ventilation Facility. The ventilation facility will consist of a vertical ventilation shaft in a 0.91 acre area. Provisions are included to install a ventilation fan later if necessary.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-720.

Analysis:

Surface-water information.

The Barn Canyon contains an ephemeral drainage. The proposed fan pad is to be built up so runoff will bypass the pad area.

Probable hydrologic consequences determination.

This amendment should not result in a change in the current PHC; however, findings for this section can not be made until the response to deficiencies identified in this technical analyses are reviewed. The potential for intercepting flow with the proposed post mining configuration was not adequately assessed. The application needs to describe the ventilation portal location in relation to the drainage and the post-mining configuration.

Findings:

This amendment does not meet the minimum requirements of this section. The amendment must include the following:

R645-301-731. Discuss the potential for surface water interception from the adjacent ephemeral channel into the vertical ventilation fan for the proposed reclamation configuration. Include a cross section through the shaft to the channel (worst case scenario) and include the sealed shaft elevation to illustrate how the post mining configuration minimizes the potential for surface water interception. It is recommended that vertical and horizontal distance from the postmining channel are included in the text discussion.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Discharges into an underground mine.

No discharge into an underground mine was applied for or granted with this design.

Diversions.

Diversions around the fan portal were provided and sized to convey runoff from a 10 year - 6 hour event. The main undisturbed by pass area ditch is located on the edge of the pad along the concrete retaining wall. It appears that this ditch would collect flow that spills over the retaining wall. Some flow will be directed around the retaining wall and be collected in the south ditch above the siltation structure. The north end of the disturbed area appears to be directed off the site without sediment control. The ditches are not shown to drain to any existing drainage features. No drainage designs were associated with the ventilation shaft access road. No design was presented for the ditch that controls flow along the east side of the pad area.

Stream buffer zones.

The road and construction for this site is within an ephemeral drainage, therefore, Stream Buffer zone regulations are not applicable.

Sediment control measures.

The sediment control plan is presented on the Barn Canyon Fan Pad Site Plan (Map 31). Design calculations are provided in exhibit 13. An Alternate Sediment Control measure (ASCA) is used to treat the sediment coming from the Barn Canyon ventilation site. The volume of water required to be

treated for a 10 year- 24 hour event is equal to 685 ft³. The proposed sediment control measure consists of a sediment trap designed to store 3 years of runoff sediment estimated to equal 6.12 ft³ leaving 18.36 ft³ capacity to attenuate flow passing through the structure. This structure does not contain the 10 year-24 hr design event.

In order for the Division to determine the measure appropriate for the proposed use, the plan needs to demonstrate that the ASC measure is the Best Technology Currently available. The operator may use the following suggestions to make this demonstration:

- Compare the erosion rate prior to disturbance, with the erosion from the disturbance without treatment, and with the erosion from the treated area. Various treatments should be compared showing the proposed treatment is Best Technology Available. (Note: Gravel may increase the overall effectiveness of sediment control at this site).
- Provide a calculation showing the siltation device provides adequate settling rates specific to the soils at the site.
- Provide an estimate of the sediment rates that would accompany a 10 -year 24 hour design event.
- Provide a reference or other information to verify the siltation structure design is an accepted method based on the sizing criteria used (4 times the 3 year average sediment load).
- Provide maintenance and clean-out requirements.

Exemptions for siltation structures.

No exemption from siltation structures was requested or granted associated with the Barn Canyon ventilation portal amendment; however, there was mention of an access ramp area without sediment control. These two pieces of information conflict and need to be clarified.

Findings:

This amendment does not meet the minimum requirements of this section. The amendment must include the following:

R645-301-742-300. Minimum design criteria for the berm that controls flow along the north east portion of the fan pad area.

R645-301-742-400. Designs for the drainage control along the road should be provided if this road is determined to meet criteria for a primary road.

R645-301-742-240. Clarification as to whether an exemption or the berm shown on map 3:1 will control runoff in the access ramp area. Provide the pertinent regulatory information, designs and text where appropriate.

R645-301-742-110. Demonstrate that the ASC measure is the Best Technology Currently available or, show that this design technology is accepted under the general non-point source permit and, provide maintenance and clean out requirements. See suggestions in the T.A.

RECLAMATION PLAN

Water quality standards and effluent limitations.

Diversions.

The postmining topography is presented on Map 32. Reclaimed slopes at the Barn Canyon Fan Site will exceed 2H:1V in order to transition the slopes from the disturbed to the natural topography. The CPMC committed to establish a post mining configuration compatible with the natural drainage pattern of the surrounding terrain. No diversions are proposed during reclamation however some re-configuration of the ephemeral drainage will occur. The configuration shown blends with the existing configuration.

Sediment control measures.

The use of sediment control measures used during reclamation were not presented. The application should at a minimum cross-reference the reclamation measures to be applied at this site which provide sediment control.

Findings:

This amendment does not meet the minimum requirements of this section. The amendment must include the following:

R645-301-742-240. Sediment control measures during the reclamation period.

RECOMMENDATION:

It is recommended that this submittal be returned to the permittee so, the necessary changes can be incorporated, and a complete document can be re-submitted for ease of review, approval and incorporation into the permit by the Division. It is recommended the permittee be appraised of the reason for return of the document.