

# TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

---

July 26, 2004

OK

TO: Internal File

THRU:  Priscilla Burton, Team Lead

FROM:  Dana Dean, P.E., Senior Reclamation Hydrologist

RE: Gravel Canyon Topsoil Stockpile Reclamation, Plateau Mining Corporation, Willow Creek Mine, C/007/0038, Task ID #1962

## SUMMARY:

Plateau Mining Corporation submitted an amendment on June 17, 2004 to provide a second and third option for reclamation of the Gravel Canyon Topsoil Stockpile. The Permittee will decide which option to use for final reclamation once they know how much topsoil they will need to use to complete reclamation in other areas of the mine. Up to now they have removed 37,000 cubic yards from the topsoil pile (option "B").

This memo addresses the proposed changes to the Hydrologic Reclamation Plan.

Information found in the proposal meets the minimum requirements of the regulations.

The Division should approve the amendment and incorporate it into the current MRP.

TECHNICAL MEMO

---

**TECHNICAL ANALYSIS:**

**RECLAMATION PLAN**

**HYDROLOGIC INFORMATION**

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

**Analysis:**

**Hydrologic Reclamation Plan**

There will be one reclamation channel for the Gravel Canyon Topsoil Pile (CGRD-1). The Permittee does not propose any changes to the channel design if final reclamation results in option "B" or "C." Since the channel in Gravel Canyon is ephemeral, the Permittee designed the reclamation channel to safely pass a 10-year 6-hour storm with a minimum freeboard of 1 foot. The 10-year 6-hour storm for this area is 1.4 inches. The channel will be 3-feet wide at the bottom and 1.5-feet deep with 3:1 side slopes. The  $D_{50}$  riprap size is 4 inches. If the Permittee does not remove any further material from the pile, and therefore implements option "C," the channel will end in an appropriately sized pre-SMCRA undisturbed diversion channel.

The amendment presents a detailed filter blanket and riprap design in appendix 3.6B. The filter blanket will be a 6-inch thick layer of UDOT 1" base mix; the Permittee will not use a synthetic fabric at all.

The Permittee plans several measures to control sediment during reclamation, including:

- Placement/redistribution of topsoil,
- Mulching,
- Deep gouging,
- Seeding, and
- Tackifying.

The Permittee performed Modified Universal Soil Loss Equation (MUSLE) calculations, which show that pre-mining conditions would have yielded 24.2 tons/acre/yr of sediment, while the site will yield just 0.14 tons/acre/yr immediately post-reclamation and 20.7 tons/acre/yr long-term post-reclamation.

**Findings:**

Information provided in the application is adequate to meet the minimum Hydrologic Reclamation Plan requirements of the regulations.

**MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS**

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

**Analysis:**

**Reclamation Treatments Maps**

The Permittee shows reclamation scenarios "B" and "C" on Exhibit 3.6-4. Mr. Layne Jensen, a P.E. registered in the State of Utah prepared the map and certified it properly.

**Findings:**

Information provided in the application is adequate to meet the minimum Maps, Plans, And Cross Sections of Reclamation Operations requirements of the regulations.

**RECOMMENDATIONS:**

The Division should approve the amendment and incorporate it into the current MRP.