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State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

007/604 #2

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December 1, 1994

TO: Daron Haddock, Permit Supervisor
FROM: Wayne H. Western, Reclamation Engineer *WHW*
RE: Cover Exposed Coal Seam Hardscrabble #4 Mine, Castle Gate

Synopsis of Proposal

Reclamation work on the side canyon that leads to the No. 4 mine portal was done in 1993. The primary coal seam was not covered then because the contract called for all readily available native soil. Unfortunately, there was insufficient readily available material to backfill the exposed coal seams completely. Since R645-301-553.300 requires that exposed coal seams be adequately covered or treated to control the impact on surface water and groundwater, to prevent sustained combustion, and to minimize adverse effects on plant growth and the postmining land use, additional efforts will be made to cover the exposed coal seams.

The proposed plan calls for covering both the exposed primary coal seam and the rider seams near the existing plunge pool. Blasting the pre-SMCRA road that reaches the safety ledge above the No. 4 Mine portal will be done to create the fill material. The volume of the material is approximately 2,000 cubic yards.

All blasting will be done according to the requirements of R645-301-524. Specifically, a blasting plan and a blast design will be submitted to the Division no less than 14 days prior to the start of blasting.

All slopes have a static safety factor of at least 1.3. The stability analysis is contained in Appendix 3.4H.

Although the slopes will be seeded and mulched along with the adjacent reclaimed areas, establishment of the vegetation may not meet the standards delineated in Chapter 9.

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Although the entire primary coal seam will be covered where it is exposed, several rider coal seams along the north-facing slope between station 4+60 and 6+00 will remain exposed. They will not sustain combustion; since, by definition, they are not contiguous with the primary coal seam.

A second concern associated with exposed coal seam is that water coming in contact with the coal will form an acidic leachate detrimental to water quality and plant life. However, groundwater is well below the bottom of the exposed rider seams, and there are no known seeps up gradient of the exposed coal. In addition, the near-vertical face of the coal offers very little exposure to precipitation. Therefore, the potential for acid leachate being generated from the face of the exposed rider seams is insignificant.

Analysis

Exhibit 3.3-4A shows the cross-section profile and topographic map of the site. The map does not have a north arrow to show direction. The exposed coal seam on the topographic map does not correspond to the primary coal seam on the cross-sections. The cross-section show primary coal seam to be flat while the topographic map show the seam dipping to the north.

The profile does not show the location of any coal seams. The information on the topographic map suggests that the cut slope above the pond will expose a rider seam.

The Operator does not state how much material will be placed over the primary coal seam. In a telephone conversation with Bill Hendrickson, a consultant, he states they wanted a minimum of four feet of cover over the primary seam and enough material over the rider seams to prevent air contact. To avoid confusion and help determine performance standards cover requirements should be stated.

According to R645-301-524.230, the Division may allow the Operator to submit the blasting plan at any time. The Operator requested that they be allowed to submit the blasting plan not less than 14 days before blasting. There is no reason for the Division to deny the Operator request. An inadequate blasting plan would require the Division suspend the operation until the deficiencies have been corrected.

The Operator stated on page 3.3-25 that vegetation is not required to meet the revegetation standards. **A biologist should review the plan concerning the revegetation issues.**

Recommendations

1. The cross-sections, profile and topographic map must be revised to show the correct location of the coal seams. The profile does not show the location of any coal seam. The elevation of the coal seam on the cross-section is not consistent with elevation on the topographic map. This information is important because the Division is concerned that the rider seam may be exposed in some cut areas.
2. The Operator must commit to not exposing any additional coal seams. The exact location of the coal seams may not be known until the cuts are made. If the Operator discovers that the current plans would require that additional coal be exposed then the plans must be modified. Any modifications to the plans will be shown on the as-built drawings.
3. The Operator submits a blasting plan to the Division not later than 14 days before blasting. The Division must approve the plan before blasting can begin. The Operator has already agreed to this stipulation.
4. The Operator must state how much cover they plan to place over the exposed coal. If they cannot meet the cover requirements then they must demonstrate that the performance standards have been met.
5. Have a Division biologist review the plan concerning vegetation requirements.