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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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September 28, 1988

TO: File

FROM: Mike DeWeese, Reclamation Hydrologist *MJD*

RE: South Fork Eccles Creek Breakout, Utah Fuel Company,
Skyline Mine #1, ACT/007/005-88(B), Folder 2, Carbon
County, Utah

SYNOPSIS

The response to the Division's deficiency document dated September 16, 1988 has been reviewed. Although most of the deficiencies have been mitigated, the following items still must be addressed or corrected.

ANALYSIS

UMC 817.44 Hydrologic Balance: Stream Channel Diversions - MMD

The Operator has submitted riprap calculations demonstrating that the reclaimed stream channel design is adequate to convey the predicted runoff from the 100 year-24 hour storm at non-erosive velocities. However, the submitted riprap filter design is incorrect. Page 14 of the engineering calculations presents a size distribution for the base material. This distribution shows a D_{85} smaller than the D_{15} of the base material, which is physically impossible. This appears to be an inadvertent error in transposing values as the operator's procedure is correct. The riprap filter must be redesigned using the correct base material size distribution. The depth of the filter blanket layer, which should be at least 6 inches, must also be included in the submitted design.

Details of the reclamation plan must be submitted including a survey of the existing stream channel demonstrating that the restored channel will have a capacity at least equal to the upstream and downstream sections (i.e., channel cross-sections). The channel cross section presented on page 18 of the engineering calculations lacks sufficient detail to accurately determine the channel capacity. The operator must also submit plans to meet the requirements of UMC 817.44 (d).

Calculations for the submitted culvert riprap apron design are stated to be for minimum tailwater conditions (page 16, engineering calculations). The submitted apron riprap design is acceptable as the Division believes a filter layer is unnecessary for a riprap D_{50} of 4 inches. However, the riprap apron dimensions are incorrect. The apron must be 13 feet wide for minimum tailwater conditions. The operator submitted a design width of 7 feet calculated using the formula for maximum tailwater conditions.

Stipulations 817.44-(1-4) - MMD are necessary for approval.

Stipulations 817.44-(1-4) - MMD

1. The operator must submit a revision of the proposed amendment to the MRP within 30 days of approval containing a correctly designed filter blanket size distribution and depth of the filter blanket layer.
2. An accurate cross-section of the existing upstream and downstream channel configuration, and, a cross-section of the existing channel configuration at the midpoint of the culvert location must be submitted to the Division within 30 days of approval. These cross-sections must be of scale 1"=2' or less.
3. Plans to meet the requirements of UMC 817.44 (d) must be submitted to the Division within 30 days of approval.
4. A corrected riprap apron design for the spillway culvert energy dissipator must be submitted to the Division within 30 days of approval. The design dimensions and riprap size must be determined using one tailwater depth criteria.

RECOMMENDATIONS

The Division recommends that the proposed South Fork Eccles Creek breakout amendment be conditionally approved with the aforementioned stipulations.

cc: B Team
WPOB47/23-24