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

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May 2, 1995

TO: Daron Haddock, Permit Supervisor

FROM: Wayne H. Western, Reclamation Engineer

RE: Midterm Review Response, Southern Utah Fuel Company, Convulsion Canyon Mine, ACT/041/002, Folder #2, Sevier County, Utah

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107

Previously Mined Areas.

Remining operations on previously mined areas that contain a preexisting highwall shall comply with all other reclamation requirements except as provided herein. The requirement that elimination of highwalls shall not apply to remining operations where the volume of all reasonably available spoil is demonstrated in writing to the Division to be insufficient to completely backfill the reaffected or enlarged highwall. The highwall shall be eliminated to the maximum extent technically practical in accordance with the following criteria:

(1) All spoil generated by the remining operation, and any other reasonably available spoil, shall be used to backfill the area. Reasonably available spoil in the immediate vicinity of the remining operation shall be included within the permit area.

(2) The backfill shall be graded to a slope which is compatible with the approved postmining land use and which provides adequate drainage and long-term stability.

(3) Any highwall remnant shall be stable and not pose a hazard to the public health and safety or to the environment. The operator shall demonstrate, to the satisfaction of the Division, that the highwall remnant is stable.

(4) Spoil placed on the outslope during previous mining operations shall not be disturbed if such disturbances will cause instability of the remaining spoil or otherwise increase the hazard to the public health and safety or to the environment.

Analysis:

The Operator states in the mid-term response that:

> *Both natural cliffs/ledges and mining highwalls at the SUFCO Mine have been measured and described to determine if the highwalls satisfy DOGM mining regulations governing highwall retention (R645-301-553.650). The highwalls have been found to comply with mining regulations governing highwall retention. The SUFCO highwalls are found to not be significantly greater in height or length than the dimensions of existing natural cliffs and ledges in the surrounding area (R645-301-553.651). In fact, the SUFCO highwalls are smaller than many of the similar in structural composition to the preexisting cliffs in the surrounding area, are compatible with the visual attributes of the area (R645-301-553.652), and are compatible with the geomorphic processes of the area (R645-301-553.653) (Section 4).*
>
> *Highwalls on the west side of East Spring Canyon, created by mining prior to 1977, will be retained. These highwalls are shown on Plate 1 of Appendix 5-2 as A-A', B-B', C-C' and D-D'. The retention of these highwalls is considered to be in harmony with approximate original contour requirements and does not require a variance.*

Before the Division can approve the retention of highwalls the Operator must demonstrate that all the requirements of R645-301-553.520 to R645-301-553.524 have been meet. Those regulations require that:

The requirements of R645-301-553.110 and R645-301-553.120 requiring that elimination of highwalls will not apply to remining operations where the volume of all reasonably available spoil is demonstrated in writing to the Division to be insufficient to completely backfill the reaffected or enlarged highwall. The highwall will be eliminated to the maximum extent technically practical in accordance with the following criteria:

553.521. All spoil generated by the remining operation and any other reasonably available spoil will be used to backfill the area. Reasonably available spoil in the immediate vicinity of the remining operation will be included within the permit area;

553.522. The backfill will be graded to a slope which is compatible with the approved postmining land use and which provides adequate drainage and long-term stability;

553.523. Any highwall remnant will be stable and not pose a hazard to the public health and safety or to the environment. The operator will demonstrate, to the satisfaction of the Division, that the highwall remnant is stable, and;

553.524. Spoil placed on the outslope during previous mining operations will not be disturbed if such disturbances will cause instability of the remaining spoil or otherwise increase the hazard to the public health and safety or to the environment.

In the MRP the Operator states that no spoil piles exist. Spoil means overburden that has been removed during coal mining and reclamation operations. Overburden means material of any nature, consolidated or unconsolidated, that overlies a coal deposit, excluding topsoil. The Operator must show that there is no material in the permit area that meets the definition of spoil.

The Operator has not yet demonstrated in writing to the Division that reasonably available spoil to eliminate all highwalls is insufficient. Until that determination has been made the Division cannot permit the highwalls to be retained.

Findings:

The Division is not able at this time to approve the Operator's request to allow highwall retention. Before the Division can approve the request the Operator must first demonstrate in writing that there is insufficient reasonably available spoil material to reclaim the highwalls.

BONDING AND INSURANCE REQUIREMENTS

Determination of Bond Amount.

> *The amount of the bond required for each bonded area shall be determined by the Division; depending upon the requirements of the approved permit and reclamation plan; reflect the probable difficulty of reclamation, giving consideration to such factors as topography, geology, hydrology, and revegetation potential; and, be based on, but not limited to, the estimated cost submitted by the permit applicant.*

Analysis:

As part of the mid-term response the Operator submitted a revised reclamation cost estimate. Unit costs were based on Means with the exception of pre-split blasting of rock and placement of filter fabric. Those two cost estimates are based on quotes from contractors. The Division allows quoted prices only when such information is not available from published sources. Since Means publishes blasting costs the Division used that information instead of the contractor's quotes.

The subtotal call remove bin walls listed the cost for the demolition of the ROM

stockpile bin wall and the substation pad and bin wall. The Operator lists the cost of reclaiming those two items as $606,864 but only itemizes $194,144 worth of costs.

The Division determined that the demolition and removal cost for the metal buildings and foundations were $702,945 while the Operator estimate was $489,722. Pavement removal and disposal costs calculated by the Division were $142,025 while the Operator's estimate was $72,926. The Division's and the Operator's cost estimates for the other demolition work was much closer.

Earthwork costs were calculated by the Division to be $347,261 while the Operator's estimate was $180,304. The main reason for the Division's estimate being higher is that support equipment and personnel were included.

The Operator escalated the 1988 cost estimates to 1995 for the waste rock disposal site and the sediment pond reclamation.

The 1988 calculations did not include information on how equipment productivity was calculated. Specifically the front end loader productivity calculations were not included in the calculations.

The Operator did not include indirect costs that are usually calculated for a reclamation bond. Those items are:

(a) mobilization and demobilization @ 5% of direct costs
(b) engineering redesign and project management fee @ 5% of direct costs
(c) contractors profit and overhead @ 10% of direct costs
(d) reclamation and management fee @ 5% of direct costs

The reclamation and management fee is similar in nature to the monitoring and maintenance cost included by the Operator. The Operator estimates that monitoring and maintenance will cost $85,000 while the Division estimate of 5% of direct costs would equate to over $150,000.

Attached is a disk with the Division's reclamation cost estimates. The Operator is encouraged to examine the calculations and make comments to the Division.

Findings:

The Operator needs to supply the Division with additional information about equipment productivity and clarify how some costs were determined. See the analysis section for details.