

0008



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

Michael O. Leavitt  
Governor  
Ted Stewart  
Executive Director  
James W. Carter  
Division Director

355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
801-538-5340  
801-359-3940 (Fax)  
801-538-5319 (TDD)

May 8, 1995

Mr. Ken May  
Southern Utah Fuel Company  
397 South 800 West  
Salina, Utah 84654

Re: Midterm Review Round 2, Southern Utah Fuel Company, Convulsion Canyon Mine, ACT/041/002, Folder #3 Sevier County, Utah

Dear Mr. May:

The Division has completed a review of SufCo's response to the Mid Term Review of the Convulsion Canyon Mine. At this time there are two items that need additional response (using reasonably available spoil & cost estimation). They are discussed in the enclosed review document. Please examine the document carefully. You will need to respond to the two requirements by no later than June 8, 1995. A computer disk is enclosed to help in reviewing the reclamation cost estimate.

Please call if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Daron R. Haddock".

Daron R. Haddock  
Permit Supervisor

enclosure

cc: P. Grubaugh-Littig  
W. Western  
S. Johnson  
P. Hess

mid2let.suf



# MIDTERM REVIEW 2nd Round CONVULSION CANYON MINE

SOUTHERN UTAH FUEL COMPANY  
ACT/041/002

May 8, 1995

## 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 met. 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.

The Division's reclamation cost estimates are available on computer disk.

#### **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.

## **RECLAMATION PLAN**

### **HYDROLOGIC INFORMATION**

Regulatory Reference: R645-301-760

#### **Analysis:**

A generalized description of the hydrologic reclamation plan is provided in the SUFCO mining and reclamation plan (MRP), section 7.60. A detailed reclamation plan for all disciplines is found in Section 5.40.

Section 7.60 says that all culverts will be removed in reclamation and permanent diversions will be maintained. Siltation structures will be removed according to the approved time table. The East Spring Canyon sediment pond will be removed prior to regrading of the area. Interim sediment control will be established as discussed in section 5.40. The structure removal time table is found in Figure 5-2. Wells will be capped, sealed and backfilled when no longer needed.

Figure 5-2 shows that the sediment ponds will be removed after interim sediment control measures have been established. The land will then be regraded and, while grading and compacting is proceeding, the diversions will be constructed. Beginning on page 5-57 there is a section on sediment pond removal and interim sediment control. This section says that the sediment pond must be removed first to make room for the main reclamation channel. Straw-bale dikes will be installed as interim sediment control in field determined locations that reduce runoff sediment.

Plate 5-2 and Plate 5-3, Table 5-5 and Appendix 2-4 have the location and the designs for the reclamation channels. The main channel which runs from East Spring Canyon and Mud Springs Hollow above the mine site to East Spring Canyon below the site. The inlet is designed to collect sediment due to an abrupt slope change at that point. East and west collector channels are also proposed. The main channel will be placed on bedrock and then grouted to avoid erosion of the channel bed. The main channel will discharge into a stilling basin downstream from the sedimentation pond. The collector channels will be constructed mostly on bedrock, although the west channel will cross some fill material. The reach based on fill will be protected with riprap and filter fabric. Two intercept channels (designs found in Appendix 2-4) will be constructed on the regraded southern slope to act as a slope break, decreasing the potential for erosion on that slope.

#### **Findings:**

The reclamation plan is complete and accurate. The time schedule for reclamation is clearly listed in Table 5-5 and in Section 5.40. Plans and designs for the final reclamation

drainage are complete in section 5.40 and in appendix 2-4. The text of the plan says that straw-bale dikes may be used as sediment control during the period that vegetation is establishing. Text on page 5-58 has been changed to clarify the interim sediment control measure.

**REQUIREMENTS:**

1. The Operator must demonstrate in writing that there is insufficient reasonably available spoil material to reclaim the highwalls.
2. 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.

midterm2.suf