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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

1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

March 24, 1998

TO: File

THRU: Daron Haddock, Permit Supervisor

THRU: Joe Helfrick, Permit Supervisor

FROM: Wayne H. Western, Senior Reclamation Specialist WHW

RE: Barn Canyon Fan, Cyprus Plateau Mining, Willow Creek Mine, ACT/007/038-98B, File #2, Carbon County, Utah

OPERATION PLAN

MINING OPERATIONS AND FACILITIES

Regulatory Reference: 30 CFR Sec. 784.2, 784.11; R645-301-231, -301-526, -301-528.

Type and Method of Mining Operations

Analysis:

On page 4.5-27 of Amendment 98B the Operator states:

A modification to the mine ventilation plan was necessitated in the later part of 1997 wherein it was discovered that subsurface geologic conditions were interfering with original mine layouts and ventilation plans. To adequately control ventilation within the mine, a vertical shaft and ventilation fan was proposed for immediate construction within Barn Canyon.

The Operator needs to modify the mine plan because they encountered old stream channels in the coal. The modifications include constructing a ventilation shaft in Barn Canyon and changing the mine layout.

The purpose of R645-301-526 is to ensure that the Division has reliable information on the underground mining activities. The Division uses that information to ensure that all mining activities comply with the regulatory program.

R645-301-528 deals with the handling and disposal of coal, overburden, excess spoil and coal mine waste. In the MRP the Operator states " *that mine development waste placed in the existing Schoolhouse Canyon refuse stockpile for permanent disposal.*" The coal mine waste will be disposed of by

the approved method.

Findings:

The Operator met the requirements of R645-301-526 and R645-301-528 regarding describing the modifications to the mine plan and how the waste rock from the Barn Canyon shaft will be disposed.

Facilities and Structures

Analysis:

The Operator proposes to construction a ventilation fan shaft in Barn Canyon. The shaft is needed as part of the new ventilation plan. The Division will include the Barn Canyon shaft facilities into the reclamation bond calculations and include that site in future inspections.

Findings:

The Operator met the requirements of R645-301-526 regarding describing the Barn Canyon shaft.

RELOCATION OR USE OF PUBLIC ROADS

Regulatory Reference: 30 CFR Sec. 784.18; R645-301-521, -301-526.

Analysis:

The Division needs to know if the access road to the Barn Canyon shaft is public or private. If the road is public then the Operator needs to address this section.

Findings:

The Operator did not meet the requirements of R645-301-121.100 by failing to state if the access road is public or private.

If the access road is public then the Operator did not meet the requirements of R645-301-526.116. The Operator needs to get the Division's approval for conducting mining operations within 100 feet of a public road and/or to relocate a public road.

SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR Sec. 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

Subsidence control plan.

Analysis:

Map 20 shows the location of the projected subsidence areas. Barn Canyon is in the projected subsidence zone.

The Operator did not address how subsidence would affect the Barn Canyon shaft and the access road. The Operator needs to address the requirements of R645-301-525 by describing the anticipated subsidence effects on the Barn Canyon shaft and the access road, and any subsidence protection plan.

Findings:

The Operator failed to meet the requirements of R645-301-525. The Operator must address how subsidence will affect the Barn Canyon shaft and the access road.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

Road Systems

Analysis:

The Operator did not address the road issues. The Division is not sure if the access road to the Barn Canyon fan shaft is public or private. If the road is private then the Operator must classify the road and include it in the disturbed area. If the road is public then the Operator must address this issue.

Findings:

The Operator did not address the requirements of sections R645-301-521, R645-301-527 and R645-301-534 regarding the access road to the Barn Canyon ventilation shaft. If the road is private then the Operator needs to classify the road and supply the Division with designs.

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Coal mine waste.

The Operator is approved to dispose of all mine development waste in the Schoolhouse Canyon refuse site. The Operator did not specifically address where the development waste would be place. The Division assumes that the development waste will be placed at the Schoolhouse Canyon refuse site.

The Division needs the Operator to clarify how the mine waste will be disposed. The Division needs this information to clarify where the mine waste will be disposed.

Refuse piles.

The Schoolhouse Canyon refuse pile is an approved site for the disposal of the underground development waste that will be produced from the Barn Canyon shaft. The Division assumes that all development waste will be placed at the Schoolhouse Canyon refuse pile.

Findings:

The Operator did not the requirements of R645-301-121.200. The Operator needs to state how they intend to dispose of the mine waste material.

The Operator met the requirements of R645 -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, regarding disposal of mine development waste from the Barn Canyon shaft.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Affected area maps.

Map 31, Willow Creek Mine Barn Canyon Fan Pad Site Plan & Map, was certified by David Hansen a registered professional engineer. The Operator complied with the certifications requirements of R645-301-512.

Map 31 has several deficiencies:

- The Operator shows the permitted disturbed area boundary and the maximum disturbed area boundary on Map 31. The distinction between the permitted disturbed area boundary Division does not understand the difference between the two disturbed area boundaries. The Operator must clarify the meaning of the two disturbed area boundaries. See R645-301-121.200.

- The Operator may not have shown all affected areas (disturbed areas) associated with the Barn Canyon shaft. If the access road is private then the Operator must include that road in the disturbed area boundaries. See R645-301-521.141
- The Operator did not provide a map of the proposed site that shows the slope extending 100 linear feet outside the disturbed area. See R645-301-521.152

- The Operator did not provide a map and cross section of the access road. That information is only needed if the road is not a public road. See R645-301-521.170

- Map 32, Willow Creek Mine Barn Canyon Surface Facilities Post Mining Topography, shows the contours and cross sections of the reclaimed Barn Canyon shaft area. Map 32 has contours on 5 foot intervals inside the disturbed area and 20 foot intervals outside the disturbed area. The contours in some areas extend for less than 10 feet from the disturbed area boundary. R645-301-542.300 allows the Division to set the specifications for all reclamation maps. The Division wants the reclamation maps to have the same specifications as the operation maps. The contour intervals inside and outside the disturbed area should be on at least 5 foot intervals and the contours should extend a minimum of 100 linear feet from the permit boundary.

- The Division needs cross section suitable for calculating volumes of soils to be moved during reclamation. The cross sections supplied by the Operator are not suitable to volume calculations. See R645-301-542.300.

Findings:

The Operator failed to meet the minimum requirements of R645-301-521 and 301-542 by not giving the Division:

- R645-301-121.200. State clearly where the disturbed area boundary is on Map 31.

- R645-301-521.141. Include the access road to the Barn Canyon shaft in the disturbed area. The Operator does not have to place the access road in the disturbed area boundary if the access road is a public road.

- See R645-301-521.152. Provide a map of the proposed site that shows the slope extending 100 linear feet outside the disturbed area.

- See R645-301-521.170. Provide a map and cross section of the access road. That information is only needed if the road is not a public road.

- R645-301-542.300. On Map 32 the contour intervals inside and outside the disturbed area should be on at least 5 foot intervals and the contours should extend a minimum of 100 linear feet from the permit boundary.

- R645-301-542.300. The Operator must supply the Division with cross section suitable for calculating volumes of soils to be moved during reclamation.

Mine workings maps.

Analysis:

The Operator did not submit revised mine maps showing the location of the Barn Canyon shaft and other changes. One way to meet the requirement of R645-301-521.142 is to supply the Division with a copy of the MSHA maps.

Findings:

The Operator failed to meet the minimum requirements of R645-301-521.142 by not supplying the Division with updated copies of the mine maps.

RECLAMATION PLAN

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Analysis:

The pad area was previously disturbed. The Operator did not request that reclamation standards for previously mined areas be applied to the Barn Canyon shaft area. The Division will require the Operator to reclaim the site to the approximate original contours.

The Operator states in the Backfilling and Grading to Establish Final Configuration section of the MRP:

> *As can be seen form pre and post contours shown on the Barn Canyon Fan Pad Site Plan Map (Map 31) and the Barn Canyon Surface Facilities Area Postmining Topography Map (Map 32), reclamation contours will have the effect of eliminating pre pad disturbance and returning the contours to a more approximate natural configuration.*
>
> *For the most part, backfilled areas at the Barn Canyon fan site will be placed at a 2H:1V slope since 1) the site has been previously disturbed and currently has slopes exceeding 3H:1V, 2) the site is located in a narrow canyon and slopes steeper than 2H:1V exceed available limits, and 3) natural local topography exceeds 3H:1H slopes. A small area located near the northern end of the pad will have reclaimed slopes exceeding 2H:1V. As can be seen on the Barn Canyon Surface Facilities Area - Postmining Topography Map, (Map 32) steeper slopes are required as a transition is made between the reclaimed surface and the adjacent natural topography.*

Map 31 shows the reclaimed contours. That map does not adequately describe the reclaimed contours. The deficiencies for Map 32 are discussed in detail in the MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS section of this TA. The Division cannot approve the backfilling and regrading plan until we have adequate maps and cross sections.

The Division agrees with the general backfilling and reclamation plan. The general reclamation plan calls for 2H:1V slopes. Since the site is in a narrow canyon, the reclaimed slopes will be similar to the surrounding area that has slopes between 3H:1V and 2H:1V.

The Division usually considers 2H:1V slopes to be stable. Slopes steeper than 2H:1V are considered suspect for failure. The Division needs to have a cross section of that slope. The Operator must also show that the slopes will have a safety factor greeter than 1.3.

Findings:

The Operator did not meet the requirements of R645-301-553. The backfilling and grading plan is not adequately shown on Map 32.

- R645-301-542.300. On Map 32 the contour intervals inside and outside the disturbed area should be on at least 5 foot intervals and the contours should extend a minimum of 100 linear feet from the permit boundary.

- R645-301-542.300. The Operator must supply the Division with cross section suitable for calculating volumes of soils to be moved during reclamation. The Operator must supply the Division with cross sections that show the slopes that are steeper than 2H:1V.

The Operator did not meet the minimum requirements of R645-301-553.130. The Operator must show that the slopes steeper than 2H:1V have a safety factor of at least 1.3.

MINE OPENINGS

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

Analysis:

In section Stabilization and Sealing of Mine Openings the Operator states:

The Barn Canyon ventilation shaft will be sealed using a permanent reinforced upward expanding concrete plug, or if more effective shaft sealing methods are available at the time of mine closure they may be utilized subject to UDOGM approval.

Concrete plugs is an effective method for shaft sealing. The main problem with concrete plugs is that they deteriorate over time. If more effective shaft sealing technology is developed, the Division will suggest that the Operator use the improved methods.

Findings:

The Operator met the minimum requirements of this section.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

Analysis:

The Operator did not address the road reclamation. If the access road to the Barn Canyon shaft is private then the Operator needs to include the road in the disturbed area.

Findings:

The Operator did not meet the requirements of R645-301-121.100. The Operator must state if the access road to the Barn Canyon fan shaft is a public or private road. If the road is private then the Operator must include the road in the disturbed area and provide a reclamation plan for the road.

BONDING AND INSURANCE REQUIREMENTS

Determination of bond amount.

Analysis:

Since the reclamation plan has not been approved, the Division has not reviewed the reclamation cost estimates.

Findings:

The Division will not make a finding about the reclamation bond until the reclamation plan is approved.