



State of Utah

Department of
Natural Resources

ROBERT L. MORGAN
Executive Director

Division of
Oil, Gas & Mining

LOWELL P. BRAXTON
Division Director

OLENE S. WALKER
Governor

GAYLE F. McKEACHNIE
Lieutenant Governor

August 4, 2004

Mr. Ken May, General Manager
Canyon Fuel Company, LLC
397 South 800 West
Salina, Utah 84654

Re: Sealing of Two South Portal Intake Entries, Canyon Fuel Company, LLC,
SUFCO Mine, C/041/002, Task ID #1965, Outgoing File

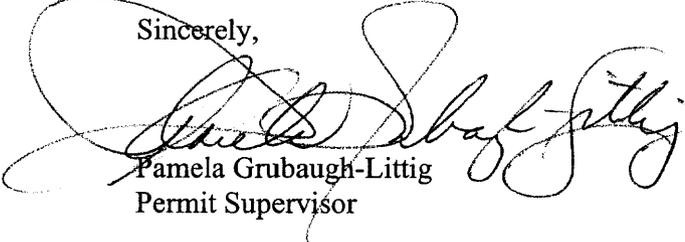
Dear Mr. May:

The above-referenced amendment is approved effective August 3, 2004. A stamped incorporated copy is enclosed for your copy of the Mining and Reclamation Plan.

There were no deficiencies with the original submittal. That being the case, those federal agencies that received the amendment can simply incorporate the initial submittal it into their existing copy of the Mining and Reclamation Plan.

If you have any questions, please feel free to call me at (801) 538-5268 or Peter Hess at (435) 613-1146, Extension 203.

Sincerely,

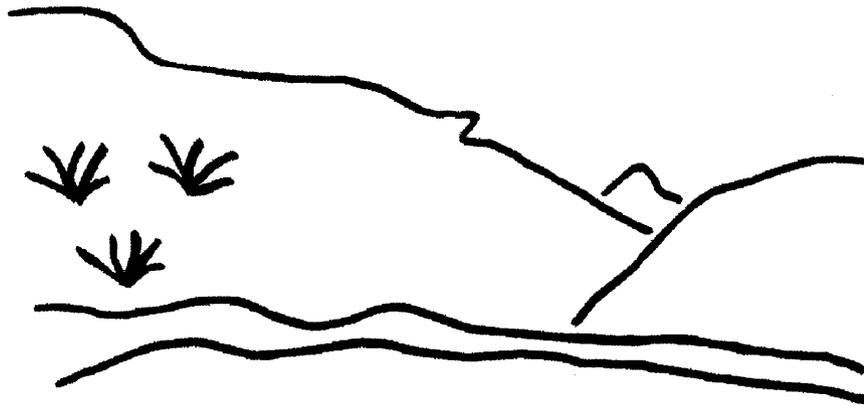

Pamela Grubaugh-Littig
Permit Supervisor

PHH/sd
Enclosure

cc: Ranvir Singh, OSM
Jim Kohler, BLM
Alice Carlton, USFS (2)
Mark Page, Water Rights w/o
Dave Ariotti, DEQ w/o
Derris Jones, DWR w/o
Price Field Office

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State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

SUFCO Mine
Sealing South Portals
C/041/002
Task ID #1965
Technical Analysis
August 3, 2004

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TECHNICAL ANALYSIS

TECHNICAL ANALYSIS

The Division regulates the Surface Mining Control and Reclamation Act of 1977 (SMCRA). When mines submit a Permit Application Package or an amendment to their Mining and Reclamation Plan, the Division reviews the proposal for conformance to the R645-Coal Mining Rules. This Technical Analysis is such a review. Regardless of these analyses, the permittee must comply with the minimum regulatory requirements as established by SMCRA.

Readers of this document must be aware that the regulatory requirements are included by reference. A complete and current copy of these regulations and a copy of the Technical Analysis and Findings Review Guide can be found at <http://ogm.utah.gov/coal>

This Technical Analysis (TA) is written as part of the permit review process. It documents the Findings that the Division has made to date regarding the application for a permit and is the basis for permitting decisions with regard to the application. The TA is broken down into logical section headings which comprise the necessary components of an application. Each section is analyzed and specific findings are then provided which indicate whether or not the application is in compliance with the requirements.

Often the first technical review of an application finds that the application contains some deficiencies. The deficiencies are discussed in the body of the TA and are identified by a regulatory reference which describes the minimum requirements. In this Technical Analysis we have summarized the deficiencies at the beginning of the document to aid in responding to them. Once all of the deficiencies have been adequately addressed, the TA will be considered final for the permitting action.

It may be that not every topic or regulatory requirement is discussed in this version of the TA. Generally only those sections are analyzed that pertain to a particular permitting action. TA's may have been completed previously and the revised information has not altered the original findings. Those sections that are not discussed in this document are generally considered to be in compliance.



INTRODUCTION

INTRODUCTION

The permittee submitted an application to the Division on June 21, 2004 to permit the sealing of the two intake portals known as the South Portals. The U. S. Department of Labor, Mine Safety and Health Administration is recommending to the permittee that the entries be reclaimed and sealed due to the deterioration of that facility from a safety perspective. The submitted amendment modifies the plan approved in Section 5.4.2.7 (discusses backfilling of mine openings from the outside) and Section 5.5.1 of the SUFCO mining and reclamation plan.

Prior to the interception of a sand channel in the north end of the longwall panels located in the Pines Tract, a portal breakout in Muddy Creek had been planned. The encountered geologic condition has required a revision to the mine planning in this area of the permit. Thus, a break out in Muddy Creek will not occur. The submitted revisions to the text merely delete any reference to the previously proposed Muddy Creek breakout.

Prior to initiation of this Division review, comments from the USFS were received relative to the reclamation of the South Portals. Those comments aired concerns relative to the placement / location of fill, the restoration of approximate original contour, sediment control measures, and stabilization of the backfill. All of these have been addressed within this document.

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August 3, 2004

INTRODUCTION

ENVIRONMENTAL RESOURCES INFORMATION

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Analysis:

Soils are located at 7500' on slopes of 1:1 (Plate 5-2C) in Sec 12, T 22 S, R 4 E (Plate 5-6), about a mile distant from the main mine entries at the same elevation. Soil survey maps Plates 2-1 and 2-2 does not include the south portal area. However, the disturbed area soil map generally classifies soils at this elevation on the east facing slope as Soil Type T = loamy skeletal, mixed, frigid, calcixerollic xerochrept's.

Soil sample 24 (Vol 4, Appendix 2-2) provides some information on the soil type. Soil Type T is composed 50% of a sandy clay loam soil that is vegetated by pinyon and juniper on 60% slopes, having a litter layer 2-4 inches thick over a surface layer 10 – 12 inches thick with 35 – 60% rock fragments by volume. There is 50 – 65% rock fragments in the subsoils. Bedrock is found at 55 – 60 inches in depth. Thirty percent of the soil type is rock outcrop.

Findings

The information provided indicates that deep rocky soils are the norm for east facing slopes in the vicinity of the breakout.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Permit Area Boundary Maps

Surface and Subsurface Ownership Maps

The application to reclaim the South Portals contains two plates that have been revised. PLATE 5-6, LAND OWNERSHIP AND PERMIT AREA MAP has been submitted to remove all reference to the portals in Muddy Creek. These had been anticipated as having a need for development. As noted elsewhere within this document, the interception of a sand channel in the northern end of the longwall panels located in the Pines Tract has eliminated the need for this portal area. There are no other changes in the Plate. Surface ownership remains unchanged and continues to be the United States of America, under management of the Manti LaSal and Fish Lake National Forests.

Revised PLATE 5-6 has been P.E. certified by Mr. Wes Sorensen, Utah registered professional engineer.

PLATE 5-2C, DETAIL OF PORTAL SURFACE FACILITIES will be discussed elsewhere in this document.

Findings:

The revision necessary to PLATE 5-6 meets the minimum regulatory requirements of this section.

OPERATION PLAN

OPERATION PLAN

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Analysis:

Topsoil Removal and Storage

There was no topsoil salvaged from the south portals probably due to the steep slope above a drainage. R645-301-232.700 allows for an exception to topsoil salvage under adverse conditions.

Findings:

The information provided meets the requirements of R645-301-232.700.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Acid- and Toxic-Forming Materials and Underground Development Waste

According to Section 5.5.1 of the existing permit, Casing and Sealing of Underground Openings, the south portal closure is designed to keep water from flowing from the mine workings to prevent acid or other toxic drainage from entering ground and surface water.

Gravity Discharges From Underground Mines

The south portal closures are to be designed to keep water from flowing from the mine workings.

Sediment Control Measures

Prior to seeding, surface soils are to be roughened and deep gouged using hand rakes and shovels. Because of the small surface disturbance area at the South Portals (0.017 acre), this should be an adequate method to control erosion before the vegetation becomes established. If, however, it is observed that material is rolling down slope from the portal area during construction or the roughening and gouging of the surface soils is not adequate to control erosion, then sediment control measures using the best technology currently available should be applied to prevent sediment from reaching the stream channel below.

Findings:

The permittee has submitted sufficient information to address this section.

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:

Mining Facilities Maps

Certification Requirements

The submittal received on June 24, 2004 (Task ID #1965) includes a revised PLATE 5-2C, DETAIL OF PORTAL SURFACE FACILITIES. The proposed revision includes: 1) the removal of the 1" = 100' plan view of the Muddy Creek portals area; and 2) the addition of two mine seals and backfill material to the 1" = 100' plan view of the South Portals area. The revised PLATE 5-2C is P.E. certified by Mr. Wes Sorensen, Utah registered professional engineer.

As noted elsewhere in this document, a change in geology in the northern end of the Pines Tract negated the need to develop the Muddy Creek portals. Also, the reclamation and permanent sealing of the South Portals is to commence upon Division approval of this submittal.

The proposed PLATE revision is necessary to keep the mining and reclamation plan for this permit area current.

Findings:

The minimum regulatory requirements of this section have been met.

RECLAMATION PLAN

RECLAMATION PLAN

POSTMINING LAND USES

Regulatory Reference: 30 CFR Sec. 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

Analysis:

The approved mining and reclamation plan contains a commitment in Volume 1, Chapter 5, page 5-79 relative to preservation of the approved post mining land use; **“The disturbed area will be backfilled and regraded in a manner that supports the approved post mining land use.”** This commitment is adequate to ensure that the South Portals will be reclaimed in a manner meeting the minimum requirements of the R645 coal rules.

Findings:

The approved mining and reclamation plan meets the minimum regulatory requirements of this section.

PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES

Regulatory Reference: 30 CFR Sec. 817.97; R645-301-333, -301-342, -301-358.

Analysis:

The Division received an amendment in June 2004 that addresses sealing the south portals and eliminating a plan for a breakout into Muddy Creek. The Division did not conduct a biological or cultural technical review of the MRP. The review only included determining if the amendment will alter the intent of the remaining biological or archeological content in the MRP.

The change in the MRP will result in the removal of a paragraph concerning the work schedule near a falcon scrap during construction of the Muddy Canyon breakout. It will also include the removal of a summary paragraph of the Hauck (1999) cultural/historic survey results near the Muddy Creek breakout. These changes will not affect or alter the intent of the remaining biological or archeological content in the MRP. Revegetation of the portal closure will follow the material and methods text discussed in the Operation Plan (section 3.4.1).

Findings:

The minimum regulatory requirements of this section have been met.

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

Analysis:

Approximate original contour is discussed in the approved mining and reclamation plan in Volume 1, Chapter 5, page 5-79, section 5.5.3.1, **Disturbed Area Backfilling and Grading**. "The pre-SMCRA cut slopes are shown as part of the pre-1977 disturbance on Plate 5-2B." Although the South Portals are pre-SMCRA, the breakout area is not a cut slope. Plate 5-2B depicts cut slopes in the East Spring Canyon area (extended facilities) where the main mine facilities are located. However, although the South Portals are not specifically addressed relative to approximate original contour restoration, the permittee's attitude toward compliance with the State program is felt to be adequate to ensure that the requirements of this section will be met.

Findings:

The minimum regulatory requirements of this section have been met.

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:

Backfilling and Grading On Steep Slopes

In order to reclaim the area, it will be necessary to haul the necessary fill volume through the mine, and place it as close as possible to the opening, such that laborers can place it utilizing wheel barrows and hand tools. Topsoil material will also have to be placed in this manner. Thus both subsoil and topsoil will have to be hauled and alternately placed, starting at the extremes of the South Portal's disturbance and working the fill toward the openings until one employee can pull the material toward the final opening creating closure. Analysis of Plate 5-2B reveals that

RECLAMATION PLAN

the entire disturbed area associated with the South Portals encompasses approximately 0.298 acres. However, most of this is down slope of the two portals that will be reclaimed, and same will not require backfilling or grading to achieve the minimum regulatory requirements.

Section 5.5.3.3 Exposed Coal Seams, Acid- and Toxic-Forming Materials, and Combustible Materials, Chapter 5, Volume 1, page 5-80 of the approved SUFCO Mine plan under **Exposed Coal Seams** states that "coal seams that were exposed during mining will be covered with a minimum of four feet of nontoxic and noncombustible materials during final backfilling and grading. This cover material may consist of material removed during grading of the site (see Section 5.4.2.2), subsoil, and/or topsoil." Thus, at a very minimum, four feet of material must be placed to cover the opening for each of the two entries developed as well as the coal seam between the two entries.

Analysis of Plate 5-2C, Detail of Portal Surface Facilities, South Portals reveals that the two entries were developed leaving a coal pillar approximately twenty-five feet in width between the two entries. Thus, the exposed coal seam in that area is at least sixty feet in width.

The compaction of placed material is addressed in Volume 1 Chapter 5, page 5-69, of the SUFCO MRP, of the section labeled **Backfilling and Compaction**. "Side hill embankments, where the width (including bench cuts) is too narrow to allow access by compaction equipment, will be initially constructed by end-dumping, but only to a width to allow compaction equipment access. After this is achieved, the fill will be placed in lifts and compacted (this is where laborers and wheelbarrows may be necessary) to at least 85 percent of maximum proctor density. Lifts will be placed with a thickness when compacted of no more than eight inches. Care will be taken to ensure that fill materials are not frozen during placement or compaction. Any areas that are damaged by freezing will be reconditioned, reshaped, and recompacted to at least 85 percent of maximum Proctor density. All fill placement and compaction activities will be overseen by an experienced engineer."

The use of wheeled or tracked equipment is not possible in this area, due to the fact that no machinery access is available from the lower Canyon. The construction of a road to access the South Portals would require a huge amount of disturbance at a prohibitive cost. Thus, **any compaction of the placed soils will be achieved by the weight of the placed material itself, from laborers walking or pushing wheelbarrows about the area, or by handheld gasoline powered compaction equipment.** The portals exist in a very steep (approximately a 1:1 slope). In order to stabilize the area, it will be necessary to hand entrench rocks into the backfilled material. Hand roughening in the topsoil material would also be necessary to provide sediment control and enhance moisture retention for revegetation potential.

RECLAMATION PLAN

Upon the completion of the placement of the noncombustible material and the topsoil, other noncombustible material will be placed and compacted in the entries to a distance that is at least twenty-five feet into the mine from the outcrop. This is mandated by 30 CFR, 75.1711-2, and is correspondingly mandated by the State of Utah Coal mining rule R645-301-551. Upon the completion of the back stowing and compacting of the twenty-five feet of incombustible fill material, an MSHA / Division approved mine seal will be constructed.

Findings:

The approved mining and reclamation plan, in correlation with the Task ID #1965 submittal meets the minimum regulatory requirements of this section.

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:

Due to a concern aired by the U. S. Department of Labor, Mine Safety and Health Administration regarding the condition of the South Portals at the SUFCO Mine, the permittee is proposing to reclaim the two intake portals. Page 5-76, Chapter 5, Section 5.4.2.7 discusses **Final Abandonment of Mine Openings and Disposal Areas**. The South Portals were broken out from inside the mine, and thus, there is no machinery access from the lower Canyon (Convulsion) to the elevation of the Hiawatha coal seam, which is the elevation at which the South Portals exist. Thus, all backfilling of the portals must occur from within the mine.

The South Portals were developed by driving entries in the Hiawatha coal seam to the outcrop, until daylight was encountered. This was done prior to the passage of SMCRA in August of 1977 (the mine was initially developed in 1941). As such, no topsoil was salvaged during the development of the area.

Analysis of Plate 5-2C, Detail of Portal Surface Facilities, South Portals reveals that the two entries were developed leaving a coal pillar approximately twenty-five feet in width between the two entries. Thus, the exposed coal seam in that area is at least sixty feet in width.

Upon the completion of the placement of the noncombustible material and the topsoil, other noncombustible material will be placed and compacted in the entries to a distance that is at least twenty-five feet into the mine from the outcrop. This is mandated by 30 CFR, 75.1711-2, and is correspondingly mandated by the State of Utah Coal mining rule R645-301-551. Upon

RECLAMATION PLAN

the completion of the back stowing and compacting of the twenty-five feet of incombustible fill material, an MSHA / Division approved mine seal will be constructed.

Section 5.4.2.7 Final Abandonment of Mine Openings and Disposal Areas, Abandonment of Openings in Chapter 5, Volume 1, page 5-76 of the approved mining and reclamation plan provides a description of the procedure to be followed to seal the entries. "All mine openings will be sealed at least 25 feet inside the mine opening. Prior to installation of the seal, all loose material will be removed from the roof, floor, and rib of the mine within three feet of the seal area." In order to prepare for the placement of soil volume in the two mine openings, it will be necessary to carefully remove extensive wood lagging which was used to support the openings over the years. It is believed that the condition of this support structure is what prompted MSHA to require the reclamation of the two portals.

"The seal will then be constructed using solid concrete blocks (average minimum compressive strength of 1,800 psi) with nominal dimensions of six inches high, eight inches wide, and sixteen inches long. Mortar will consist of one part cement, three parts sand, and no more than seven gallons of water per sack of cement. The seal will be recessed at least 16 inches deep into each rib and 12 inches deep into the floor. No recess will be made into the roof. In the bottom course, each block will be laid with its long axis parallel to the rib. The long axis in succeeding higher courses will be perpendicular to the to the long axis of the blocks in the preceding course. An interlaced pilaster will be constructed in the center. The seals will have a thickness of approximately sixteen inches."

"Alternatively, a cast in place MSHA approved seal will be installed with a minimum thickness of three feet and with a minimum compressive strength of 200 psi."

The previous description of the method to be used for the seal construction is approved by the Division.

The decision to remove all references to a portal breakout(s) in Muddy Creek was necessary due to the interception of adverse geologic conditions in the northern end of the longwall panels in the Pines Tract. No portals will occur in the Muddy Creek area; thus no references to same are necessary within the mining and reclamation plan.

Findings:

The approved seal design meets the minimum regulatory requirements of this section. The removal of text from the mining and reclamation plan referencing any topic relative to breakouts in the Muddy Creek area is necessary to update the approved plan.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

Redistribution

Plate 5-2C shows the location of the south portals. A detail of the site is also provided on Plate 5-2C. The narrative in Section 2.4.2.1 describes the redistribution of soil using hand labor for the Muddy Canyon Breakout. It is assumed that the same procedures will be used for the south portals.

Findings:

The information provided meets the requirements of the Regulations.

CHIA

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-730.

Analysis:

No update to the Quitchupah-Muddy Creek CHIA is necessary due to the amendment.

Findings:

The permittee has submitted sufficient information to address this section.

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