

April 14, 2004

Rick Olsen, General Manager  
Canyon Fuel Company, LLC  
P.O. Box 1029  
Wellington, Utah 84542

Re: Conditional Approval of Chapters 2 & 3, C/007/0018, Task ID #1784 and Chapter 5, C/007/0018, Task ID #1829, Canyon Fuel Company, LLC, Soldier Canyon Mine, Outgoing File

Dear Mr. Olsen

The above-referenced amendments are conditionally approved upon receipt of five clean copies prepared for incorporation. Please submit these copies by May 14, 2004. Once we receive these copies, final approval will be granted, at which time you may proceed with your plans.

A stamped incorporated copy of the approved plans will also be returned to you at that time, for insertion into your copy of the Mining and Reclamation Plan. A copy of our Technical Analysis for each amendment is enclosed.

If you have any questions, please call me at (801) 538-5268 or Wayne Western at (801) 538-5263.

Sincerely,

Pamela Grubaugh-Littig  
Permit Supervisor

an  
Enclosure  
cc: Price Field Office  
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# State of Utah



## Utah Oil Gas and Mining

### Coal Regulatory Program

Soldier Canyon Mine  
Canyon Fuel Company, LLC  
C/007/0018, Task ID #1829  
Technical Analysis  
April 12, 2004



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## TECHNICAL ANALYSIS

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# TECHNICAL ANALYSIS

The Division ensures compliance with 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.

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**TECHNICAL ANALYSIS**

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## INTRODUCTION

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# INTRODUCTION

On September 5, 2003, the Division received an amendment for the removal of the preparation plant and the refuse pile from the Soldier Creek Mine's mining and reclamation plan. On December 15, 2003 and March 19, 2004, the Division received additional information. The Division allowed the Canyon Fuel Company (CFC) to revise the amendment because the changes were small and prevented another round in the permit process.

CFC wanted a bond adjustment by removing structures approved in the mining and reclamation plan for the Soldier Canyon Mine but never constructed. CFC placed the mine on standby status. When the mine is reactivated, the Canyon Fuel Company not use a preparation plant since most coal produced in Utah is sold run-of-mine and the waste rock disposal facility at Dugout Canyon (a sister mine) is a potential disposal site for the coal mine waste.

Amendment 1829 dealt with the removal of references for a preparation plant and a refuse pile from Chapter 5, a bond adjustment and a slight modification to the reclamation plan. Amendment 1784 dealt with the removal of references for the refuse pile and preparation plant from Chapters 2 and 3 of the MRP.

The Division and CFC agreed to handle that the bond reduction in a separate amendment. The Division will give CFC revised calculations based on the removal of the structures. CFC will submit those calculation and a request for bond reduction in another amendment.

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## **INTRODUCTION**

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## OPERATION PLAN

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# OPERATION PLAN

## MINING OPERATIONS AND FACILITIES

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

### Analysis:

CFC wanted to reduce the bond amount for the Soldier Canyon Mine by removing approved but never constructed facilities from the mining and reclamation plan. The approved but never constructed facilities were the preparation plant and the refuse pile.

At the request of CFC, the Division changed the status of the Soldier Canyon Mine on March 25, 1999 from active to being in temporary cessation. CFC changed the status of the Soldier Canyon Mine due to poor market condition. CFC's market studies later concluded that they would sell all future coal as run-of-mine. Therefore, CFC would not need a preparation plant.

Without a preparation plant, the amount of coal mine waste generated at the Soldier Canyon Mine would be much smaller than CFC originally anticipated. CFC determined that the refuse pile for the Dugout Mine (a sister mine) could handle the coal mine waste from the Soldier Canyon Mine. Therefore, CFC no longer needed a refuse pile at the Soldier Canyon Mine.

CFC could not simply remove all references for the preparation plant and the refuse pile from Chapter 5 because:

- The reclamation plan called for shipping approximately 20,000 CY of material from the main mine site to the refuse pile during final reclamation. Therefore, CFC modified the reclamation plan by having that material stay at the mine site.
- CFC modified the maps by removing the preparation plant and the refuse pile. The maps are all hand drawn. Removing the preparation plant and refuse pile from the maps would require a new set of maps. Instead of submitting new maps, CFC updated the maps with stickers.

**Findings:**

The information provided in the application met the minimum requirements of the regulations.

**TOPSOIL AND SUBSOIL**

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

**Analysis:**

**Topsoil Removal and Storage**

The Division found discrepancies about the topsoil in Chapter 5 of the MRP. The discrepancies did not relate to the removal of the preparation plant and the refuse pile. When the Division showed the discrepancies to CFC they agreed to correct the problem.

**Findings:**

The information in the amendment met the minimum requirements of this section of the regulations.

**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, -300-147, -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**

Some of the material at the Soldier Canyon Mine contains toxic forming material. While the reclamation plan was adequate to meet the requirements for toxic forming materials the additional 20,000 CY of material that will remain at the main mine site will provide additional protection from toxic forming material.

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## OPERATION PLAN

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### **Findings:**

The information in the amendment met the minimum requirements of this section of the regulations.

## **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:**

As mentioned earlier CFC updated the maps with stickers to show the removal of the preparation plant and refuse pile from the mining and reclamation plan. CFC used stickers because the maps were hand drawn and CFC did not want to spend the time and money to redraw the maps.

### **Certification Requirements**

All maps updated with stickers and required certifications by a professional engineer were re-certified.

### **Findings:**

The information provided in the application met the minimum requirements of the regulations.



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## RECLAMATION PLAN

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# RECLAMATION PLAN

## GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

### Analysis:

Removal of the refuse pile required a reclamation plan modification. The original reclamation plan called for hauling 20,000 CY of fill and topsoil from the main mine site to the refuse pile. Since the refuse pile no longer exists, CFC modified the reclamation plan by having the 20,000 CY remain at the main mine site. Neither CFC nor the Division considered the changes significant enough to warrant changing the contours on the reclamation maps.

### Findings:

The information provided in the application met the minimum requirements of the regulations.

## 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:

#### General

Because the refuse pile was not constructed, the 20,000 CY of material originally scheduled to be shipped from the main mine site to the refuse pile will not occur. CFC will spread the 20,000 CY of excess material over the main mine site. The reclamation contours did not change enough for CFC to submit revised reclamation maps. CFC changed the information in the MRP to show the revised reclamation plan.

**Findings:**

The information provided met the minimum requirements of this section of the regulations.

**MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS**

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

**Analysis:**

As mention earlier, CFC did not replace the maps that showed the preparation plant and refuse pile because the maps were hand drawn. Modifying the maps would require redrawing them, which is something CFC did not want to do. CFC proposed to place stickers on the maps that stated the preparation plant and refuse pile were removed from the MRP. When needed the maps were re-certified.

The change at the reclamation of the main mine area involved the placement of an additional 20,000 CY of material. CFC will spread the extra material over the main mine site. The reclamation elevation increased by six inches. The change was too small to effect the contours on the reclamation maps.

**Findings:**

The information provided met the minimum requirements of the regulations.

**BONDING AND INSURANCE REQUIREMENTS**

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

**Analysis:**

**General**

The Division removed the reclamation of the preparation plant and refuse pile from the bond calculations. In addition, the Division made changes to bond not directly related to the removal of the preparation plant and refuse pile. Those changes include vegetation costs based

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## RECLAMATION PLAN

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on new seed mixes and current reclamation techniques such as pocking. The Division approved the changes to the vegetation plan with amendment 1784.

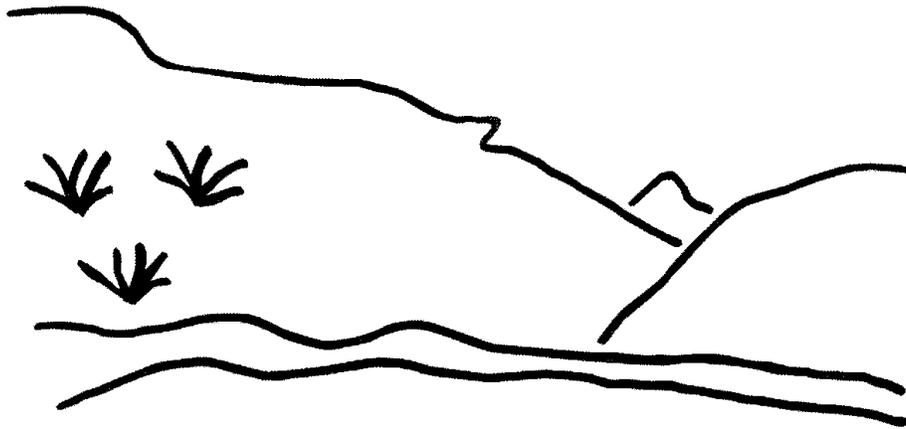
The Division updated the unit cost by using the 2004 editions of *Means* and *Blue Book*. The new unit costs were usually lower than the escalated unit costs from the 1990's.

The current bond is for \$3,238,000 and the new reclamation cost estimate is \$1,442,000 in 2005 dollars. CFC will submit an amendment that contains the Division's bond calculations and a request for bond reduction. The Division will evaluate CFC request for a bond adjustment in a future amendment.

### **Findings:**

The information provided in the application met the minimum requirements of the regulations.

# State of Utah



## Utah Oil Gas and Mining

### Coal Regulatory Program

Soldier Canyon Mine  
Canyon Fuel Company, LLC  
C/007/0018, Task ID #1784  
Technical Analysis  
April 12, 2004



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## TECHNICAL ANALYSIS

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### TECHNICAL ANALYSIS

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April 12, 2004

**TECHNICAL ANALYSIS**

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## INTRODUCTION

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## INTRODUCTION

The Division approved Canyon Fuel Company to construct a preparation plant and a refuse pile at the Soldier Canyon Mine. CFC never constructed the facilities and wanted them removed from the mining and reclamation plan because:

- CFC no longer considered washing coal economically feasible and they assumed conditions would not change for sometime.
- CFC wanted a bond reduction by removing the preparation plant and the refuse pile from the MRP.
- CFC wanted to update the MRP.

On September 5, 2003, the Division received amendment 1665 for the removal of the refuse pile and preparation plant from the Soldier Canyon Mine. The amendment removed all references about the preparation plant and the refuse pile from the MRP.

A major problem with that amendment was that the approved reclamation plan called for 20,000 CY of material to be shipped from the main mine site to the refuse pile. CFC would have used the material to cover the refuse pile. The Division denied approval of the amendment because it did not address where CFC would place the 20,000 CY of material at reclamation.

CFC handled the problem in a two-fold approach. They submitted amendment 1784 that dealt only with the removal of the preparation plant and refuse pile from Chapters 2 and 3 in the MRP. Those chapters do not deal with reclamation, so the 20,000 CY was not a concern. Another amendment dealt with the removal of the preparation plant and refuse pile from Chapter 5 of the MRP, which dealt with reclamation. The Chapter 5 amendment (1826) included a modified reclamation plan.

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## **INTRODUCTION**

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## GENERAL CONTENTS

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# GENERAL CONTENTS

## PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

### **Analysis:**

When the Division reviewed amendment 1784, they found some discrepancies in Chapters 2 and 3 of the MRP not related to the removal of the preparation plant and refuse pile. When the Division showed the discrepancies to CFC they agreed to fix the discrepancies. The Division described how CFC addressed the specific discrepancies in other sections of the technical analysis.

### **Findings:**

The information provided in the amendment met the minimum requirements of this section of the regulations.

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**GENERAL CONTENTS**

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**ENVIRONMENTAL RESOURCE INFORMATION**

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**ENVIRONMENTAL RESOURCE INFORMATION**

**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:**

When the Division reviewed the amendment, they noticed inconsistencies not related to the removal of the preparation plant and the refuse pile in the topsoil section of the MRP. The Division showed the inconsistencies to CFC and they corrected the problems.

**Findings:**

The information provided met the minimum requirements of this section of the regulations.

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**ENVIRONMENTAL RESOURCE INFORMATION**

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## OPERATION PLAN

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# OPERATION PLAN

## TOPSOIL AND SUBSOIL

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

### Analysis:

CFC removed text related to the preparation plant and the refuse pile from the MRP. CFC also included a few minor changes to this section that included:

- The correction of grammatical errors.
- The removal of outdated material and unessential information.

Those changes did not alter the requirements for the handling or storage of topsoil and subsoil.

### Findings:

The information provided in the amendment met the minimum requirements of this section of the regulations.

## VEGETATION

Regulatory Reference: R645-301-330, -301-331, -301-332.

### Analysis:

CFC removed text related to the refuse pile and preparation plant. CFC also included a few minor changes to the vegetation section of the operation plan that included:

- Modification to the final seed mix.
- Grammatical corrections.
- The removal of outdated material and unessential information.

Except for the seed mix changes, the above-mentioned changes did not alter the remaining requirements or content of this section.

**OPERATION PLAN**

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The seed mix changes included a reduction in the number of species in the following three mixes. Plants listed in bold represent species added to original mix.

DECIDUOUS STREAM BANK FINAL SEED MIX

Great basin wildrye	Leymus cinereus
Kentucky bluegrass	Poa pratensis
Mountain brome	Bromus marginatus
Slender wheatgrass	Elymus trachycaulus
Streambank wheatgrass	Elymus lanceolatus
Western wheatgrass	Pascopyrum smithii
Sweet anise	Osmorhiza occidentalis
<b>White yarrow</b>	<b>Achillea millefolium</b>
<b>Mountain lupine</b>	<b>Lupinus alpestris</b>
Antelope bitterbrush	Purshia tridentata
Woods rose	Rosa woodsii
<b>Mountain snowberry</b>	<b>Symphoricarpos oreophilus</b>

Species removed from the original mix were alfalfa, clover, and flax. These species were either not the best species for the site or not endemic to the site (Vol. 2 Append. 3).

Reclamation of the riparian areas not only included seeding, but also planting bare-root stock. The bare-root species include:

DECIDUOUS STREAM BANK BARE-ROOT STOCK: 50 stems of each spp. per acre

Narrowleaf cottonwood	Populus angustifolia
<b>Willow spp.</b>	<b>Salix spp.</b> Species selected must be endemic to the area e.g. S. exigua (coyote willow)
<b>Red osier dogwood</b>	<b>Cornus stolonifera</b>

Plants removed from the original stock selection were willow and cottonwood cuttings. CFC mentioned that revegetation success in the area with cuttings was low because the soils dry up before root began to grow. The revised reclamation called for planting fifty bare-root stems for each of three species per acre; the total number of bare-root stems would be 150 per acre.

SEWAGE LAGOON AREA FINAL SEED MIX

Great basin wildrye	Leymus cinereus
Indian ricegrass	Achnatherum hymenoides

**OPERATION PLAN**

Thickspike wheatgrass	<i>Elymus lanceolatus</i>
Western wheatgrass	<i>Pascopyrum smithii</i>
<b>Blue grama</b>	<b><i>Bouteloua gracilis</i></b>
Northern sweetvetch	<i>Hedysarum boreale</i>
<b>Annual sunflower</b>	<b><i>Helianthus annuus</i></b>
<b>Scarlet globemallow</b>	<b><i>Sphaeralcea coccinea</i></b>
Utah juniper	<i>Juniperus osteosperma</i>
<b>Wyoming big sagebrush</b>	<b><i>Artemisia tridentata wyomingensis</i></b>
<b>Black sagebrush</b>	<b><i>Artemisia nova</i></b>
<b>Shadscale</b>	<b><i>Atriplex confertifolia</i></b>

Species removed from the original mix were slender wheatgrass, alfalfa, clover, flax, birchleaf mountain mahogany, and Saskatoon serviceberry. These species were either not the best species for the site or not endemic to the site (Vol. 2 Append. 3).

**CENTRAL MINE FACILITIES AREA FINAL SEED MIX**

Great basin wildrye	<i>Leymus cinereus</i>
Indian ricegrass	<i>Achnatherum hymenoides</i>
<b>Slender wheatgrass</b>	<b><i>Elymus trachycaulus</i></b>
Western wheatgrass	<i>Pascopyrum smithii</i>
Bluebunch wheatgrass	<i>Pseudoroegneria spicata</i> ssp. <i>spicata</i>
<b>Northern sweetvetch</b>	<b><i>Hedysarum boreale</i></b>
<b>Prairie sage</b>	<b><i>Artemisia ludoviciana</i></b>
Blueleaf aster	<i>Aster glaucodes</i>
Rocky Mountain penstemon	<i>Penstemon strictus</i>
Mountain big sagebrush	<i>Artemisia tridentata vaseyana</i>
<b>Utah serviceberry</b>	<b><i>Amelanchier utahensis</i></b>
Winterfat	<i>Ceratoides lanata</i>
Antelope bitterbrush	<i>Purshia tridentata</i>

Species removed from the original mix were thickspike wheatgrass, alfalfa, clover, flax, and Saskatoon serviceberry. These species were either not the best species for the site or not endemic to the site (Vol. 2 Append. 3).

**Findings:**

The information in the amendment met the minimum requirements of this section of the regulations.

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## RECLAMATION PLAN

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# RECLAMATION PLAN

## PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES

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

### Analysis:

CFC included a few minor changes to this section of the MRP that included:

- Grammatical corrections.
- The removal out dated material and unessential information.

These changes did not alter requirements to the reclamation plan.

### Findings:

The information in the amendment met the minimum requirements of this section of the regulations.

## 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 procedure for sampling soil on the regraded surface before seeding was not consistent in the MRP. CFC, after consultation with the Division, committed to sample at a rate of one sample per five acres. CFC made the changes to correct the discrepancies in the MRP.

### Findings:

The information provided in the amendment met the requirements of this section of the regulations.

## TOPSOIL AND SUBSOIL

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

### Analysis:

CFC removed text related to the refuse pile and preparation plant from this section of the MRP.

### Findings:

The information in the amendment met the minimum requirements of this section of the regulations.

## REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

### Analysis:

CFC removed text related to the refuse pile and preparation plant as well as added updated reclamation procedures. CFC also made a few minor changes to the vegetation section of the reclamation plan that included:

- Grammatical corrections
- Removal of out dated material and unessential information.

These minor changes did not alter the remaining requirements or content of the vegetation section of the MRP.

CFC removed the following commitments about:

- Grazing on reclaimed areas during the ten-year liability period.
- State and federal requirements for control of poisonous and noxious plants and introduced species.
- Details on standards for success.

The content removed does not release CFC's obligation to follow related regulations.

## RECLAMATION PLAN

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CFC included updated reclamation procedures. CFC plans to:

- Spread the 20,000 CY of material originally scheduled to be placed at the refuse pile at the main mine site, 10 acres would receive 15" of material instead of 5" and 4 acres to receive 22" of material instead of 12".
- Grade to final contour.
- Rip to relieve compaction.
- Apply growth medium.
- Apply one ton per acre of hay (certified noxious weed free) while gouging the surface.
- Hydroseed with a small amount of mulch.
- Hydromulch at the rate of one ton per acre of organic-hydromulch that contains a tackifier.

CFC had a certified engineer stamp engineering maps indicating that the 20,000 cubic yards will not significantly alter the contour of the site.

### **Findings:**

The information in the amendment met the minimum requirements of this section of the regulations.

## **BONDING AND INSURANCE REQUIREMENTS**

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

### **Analysis:**

The removal of the preparation plant and refuse pile from the MRP reduced the reclamation cost estimate. The Division reviewed the bond amount based on the revised reclamation plan. They determined that CFC could reduce the bond amount if they submitted another amendment. The amendment would have to include a request for bond reduction and updated reclamation cost information. The Division agreed to provide CFC with updated bond calculations.

### **Findings:**

The information provided in the amendment met the minimum requirements of this section of the regulations.