

# TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

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September 27, 2007

TO: Internal File

FROM: Priscilla W. Burton, CPSSc, Environmental Scientist III *PWB by an*

RE: Degassification Volume -- Add Wells G-18, G-31 and AMV Road, Canyon Fuel Company, Dugout Canyon Mine, C/007/0039, Task ID #2846

## SUMMARY:

Attachment 2-1 of the **Methane Degassification Volume** of the MRP contains baseline survey information gathered from well sites. The well sites G-18 and 31 were surveyed in May 2007. They were sketched and photographed in July 2007. These sites are located northeast of the Pace Canyon Fan Portal in Sec 20 of T13 S., R.13 E (Table 1.1, Figure 1-1, and Plate 1-4). With this amendment, the total disturbed acreage for all degas wells is 45.5 acres. This figure includes the 14-acre AMV road and topsoil stockpiles along the road.

Information received at the Division on September 21, 2007 includes a commitment to provide AS-BUILT cross-sections of the stockpiles (MRP Sec 234.200). The Division requested these be drawn with horizontal and vertical scales equal and that two perpendicular cross sections are provided for each topsoil stockpile. This request was made to ensure stability of topsoil stockpile placement. These AS-BUILT cross-sections are required within 30 days of construction.

In addition, the information received on September 21, 2007 includes a commitment to provide AS-BUILT cross sections of the constructed road at specified stations with horizontal and vertical scales equal (MRP, Sec. 240). These cross sections will be provided within 30 days of construction, along with an AS-BUILT road profile.

The application is recommended for approval.

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**TECHNICAL ANALYSIS:**

**GENERAL CONTENTS**

**RIGHT OF ENTRY**

Regulatory Reference: 30 CFR 778.15; R645-301-114

**Analysis:**

Right of Entry information is found in the MRP Section 114 and Appendix 1-1. Federal Lease U-07064-027821 has been increased by 40 acres to include the NW ¼ NW ¼ of Sec. 21 T. 13 S., R. 13 E. A BLM Lease modification document was not available for inclusion into the MRP, but will be included when received. The Permittee must update the right of entry information in Appendix 1-1 of the MRP when the modified BLM Lease U-07064-027821 is received (see **R645-301-114.100**). The MRP tabulates the lease acreage to be 2,456.14 acres.

The Surface Owner Agreement between the Thayn Trust and Canyon Fuel Company is included in Appendix 4-2 of the MRP. The agreement will expire in 2019. Attachment 5-3 provides a letter from Arkland Co. to the landowner requesting concurrence with the AWM road construction as described in the amendment. The landowner expressed their concurrence by letter to the Division dated September 12, 2007. [09122007]

Plates 7-1 and 7-2 show the location of a jeep trail on Gil L. Conover's land that is used to access the monitoring locations in the federal lease U-07064-027821. Appendix 4-4 provides documentation for the use of the trails. Mr. Conover is listed as an affected owner and his address is provided in Section 112.500 of the MRP.

**Findings:**

The information in the proposed amendment meets the requirements for approval.

**ENVIRONMENTAL RESOURCE INFORMATION**

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

## PERMIT AREA

Regulatory Requirements: 30 CFR 783.12; R645-301-521.

### Analysis:

With this amendment, the total disturbed acreage for all degas wells is 45.5 acres. This figure includes the 15 acre AMV road and topsoil stockpiles along the road.

The total disturbed acreage for the mine is recorded as 97.6 acres. For the disturbed acreage listed for gas wells, roads, refuse pile etc, see Chapter 1 page 1-9.

### Findings:

Information provided meets the reporting requirements.

## 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:

Appendix 2-2, Volume 1 of the MRP provides a general outlook on the soils of the Book Cliffs in the vicinity of the Dugout Mine. Figure 1-1 and Plate 1-4 (**Methane Degassification Amendment Volume**) shows the location of the degas wells. Table 1-1 provides locations of the wells and Table 1-2 states each well's acreage. With this amendment, the total disturbed acreage for all disturbance associated with the degas wells is 45.5 acres (MRP Chap 1, p. 1-9). [09132007]

The specific soils information for degasification well sites G-2 through G-19 and G-31 is found in Attachment 2-1 (**Methane Degassification Amendment**) of the MRP. (Sites G-1 and G-8 were not developed.)

Baseline soil chemistry information for soils at sites G-2 through G-7 was collected at the time of disturbance (Attachment 2-1), all subsequent sites were surveyed and soil analyzed prior to disturbance. The following parameters were analyzed: texture (particle size analysis), pH, Electrical Conductivity, Sodium Adsorption Ratio, percent CaCO<sub>3</sub>, plant available Nitrogen, Potassium, and Phosphorus (Section 243). Soil sample analyses are found in Attachment 2-1.

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The sites are located at approximately 7,400 to 8,900 ft (see Fig 1-1 and Plate 1.4). The site descriptions, drawings, and photographs are in Attachment 2-1. Some of the sites were previously disturbed by logging (Table 3-1, pg 3-16, Attachment 2-1 section 4.3), previous exploration or road construction (sites G-6, G-9, G-11, G-12, G-14, G-15, G-16, G-17, G-19).

Site descriptions, sketches, profiles, and soil analyses are in Attachment 2-1 for the degas well sites.

### Findings:

The information provided meets the requirements of the Regulations.

## OPERATION PLAN

### TOPSOIL AND SUBSOIL

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

### Analysis:

#### Topsoil Removal and Storage

Sites G-8 through G-19 and G-31:  
[07202007]

Site configurations are provided in Attachment 5-1. Disturbed acreage for each well site is tallied in Table 1-2, with an additional 14 acres disturbed for road construction noted below Table 1-2. Topsoil salvage areas vary from 0.32 acres at site G-6 to 4.7 acres at site G-18 (Table 1-2).

Topsoil removal volumes are listed in Table 2-1 and Section 222.400 and Attachment 2-2. Stripping depths should vary from site to site based upon the soil evaluation at each site. Topsoil will not be salvaged from beneath the topsoil storage areas. Topsoil stockpile volumes are provided in Table 2-1 and approximate dimensions are listed in Table 2-2. Stockpiles are constructed against the slope, therefore height measurements reflect the original ground surface. Stockpiles for sites G-11 and G-12 will be constructed with 1.5h:1v side slopes (Attach. 2-2). Stockpiles at G-19 will be of two types: 1) long and low along a pre-disturbed roadway and 2) an extremely steep stockpile against the highwall at the pad site (Table 2-2 and Attachment 2-2). Figure 1 of Attachment 5-1 indicates the pad stockpile will be placed in a right triangle shape,

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against a 40 ft highwall, with a base of 30 ft ( and 125 ft long). Given these dimensions, the Division understands that the outslope will be steeper than 1h:1v and that this slope will run for approximately 50 ft.

Erosion control methods for all stockpiles will include creation of stable slopes (ordinarily no steeper than 2h:1v), a berm around the base of the stockpile, surface gouging of the pile face and seeding with seed listed in Table 3-2.

At some pad sites, stockpile slopes steeper than 2h:1v have been created temporarily. The steeper stockpile slopes allow for less disturbed area, but create difficult conditions for vegetation establishment. These steeper slopes are temporary and will be reduced during contemporaneous reclamation of the drilling pad sites. A projected date for contemporaneous reclamation of each sites is provided in the table in Attachment 5-2.

Subsoil will be excavated for use as berms and to create a mudpit at each site (Sec. 231.100, Methane Degassification Volume).

SITES 18, 31, and AMV Access Road:

An estimated 15,986 yd<sup>3</sup> will be stockpiled during construction of the road and pads 31 and 18 (Table 2-1). Road base may be used on the road to add traction and stability to steep grades (Attachment 5-4). Six topsoil stockpile locations are shown along the AMW road and at the pad sites on Plate 1 of Attachment 5-4. Volume calculations for the stockpiles are provided in Attachment 2-2. The application includes a cross section of each stockpile on Plate 3. The horizontal scale is 50 ft. The vertical scale is 20 ft. on these cross sections. This provides a skewed image of the stockpiles. Information received at the Division on September 21, 2007 includes a commitment to provide AS-BUILT cross-sections of the stockpiles (MRP Sec 234.200). The Division requested these be drawn with horizontal and vertical scales equal and that two perpendicular cross sections are provided for each topsoil stockpile. This request was made to ensure stability of topsoil stockpile placement. These AS-BUILT cross-sections are required within 30 days of construction.

**Findings:**

The information provided meets the requirements of the Regulations.

**RECLAMATION PLAN**

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**TOPSOIL AND SUBSOIL**

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

**Analysis:**

Degas Well Sites [07202007]

The reclamation timetable is shown on Figures 5-15 and 5-26. Unless otherwise specified, sites will be reclaimed in one phase after methane venting ceases. The well sites will be graded, topsoiled, roughened, seeded, and mulched (see Figures 5-4, 5-8, and 5-12). Topsoil replacement depth for each site is listed in Table 2-3. Delays in well plugging will occur as described in Sec.242.100.

The plan describes the reclamation of the drilling mud pits in Section 242.100. The mud pit will be allowed to dry and will be filled with soil that will be compacted to minimize settling. There will be mixing of the cover material with the rock fragments and sediments of the mud pit to avoid creating an abrupt boundary between the layers.

The plan indicates the sites will be ripped to a depth of eighteen to twenty four inches (Section 242.100 and 341.200) to reduce compaction.

Topsoil will be re-spread using a trackhoe. The soils will be handled when loose and friable (not too wet, not too dry), see Section 242.100. Redistribution thickness is shown in Table 2-3.

Section 542.100, Attachment 2-4 and Figure 5-26 indicates the weeks to completion from the start of reclamation activities. Reclamation of the AMV road will not take place until final reclamation of sites G-18 and G-31. Road base will be retained in the fill during reclamation (Attachment 5-4).

**Soil Nutrients and Amendments**

Soil nutrients and amendments will be applied to the redistributed soils based on analyses of samples collected from the stockpiled topsoil as compared with baseline information.

**Soil Stabilization**

Soil may be replaced at grades of up to 1.5h: 1v (p. 5-70). The steepness of these slopes will be reduced at their base, providing a concave slope. Soil stabilization techniques also include ripping the subsoils (see p. 2-39), gouging all slopes 3H: 1V or greater after topsoil

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application (p. 2-40 and 5-76) and hydromulching the seeded surface (p. 2-41 and 3-44 and 3-50). Slopes which are 3h: 1v or steeper will be gouged using a trackhoe (p. 5-70).

A road profile showing the road gradients is provided as Attachment 2-4, Plate 1. The information received on September 21, 2007 includes a commitment to provide AS-BUILT cross sections of the constructed road at specified stations with horizontal and vertical scales equal (MRP, Sec. 240). These cross sections will be provided within 30 days of construction, along with an AS-BUILT road profile.

**Findings:**

The information meets the requirements of the Regulations.

**RECOMMENDATIONS:**

The application is recommended for approval.