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TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

December 5, 2007

TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor *pgl*
Steve K. Christensen, Environmental Scientist/Hydrologist, Lead *SKC*

FROM: David Darby, Senior Environmental Scientist *DD*

RE: Permit Area Expansion- 560 Acres, Canyon Fuel Company, LLC, Dugout Canyon Mine, C/007/0039, Task ID #2873

SUMMARY:

On October 25, 2007 Canyon Fuel Company LLC submitted an amendment to the Dugout Canyon Mine plan. The amendment proposes to increase the permit area by 560 acres. The area is less than 15 percent of the existing permit and qualifies as an incidental boundary change. The permit expansion area consists of 240 acres Federal Coal Lease, U-070674-027821, and 320 acres of State Lease, ML-50582-OBA.

TECHNICAL ANALYSIS:

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:

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The Permittee submitted a description of the permit area in Section 114 and Plate 1-4, a map showing both the permit area and proposed mine expansion area. The proposed IBC constitutes an area of 560 acres. The IBC will involve the area northeast of the permit area. Longwall mining is proposed in the expansion area continuous to the existing mine. Plate 5-7 shows the proposed mining sequence. Plate A is a map showing the potential subsidence area is supplied in Appendix 5-12. No surface facilities are proposed for the extension. Only underground development will take place.

Findings:

The Permittee has addressed the minimum requirements of the Permit Area Section of the regulations.

GEOLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724.

Analysis:

The Permittee has submitted sufficient information to describe the geology, and mining of the expansion area. Regional geology is described in Chapter 6 of the MRP. The geology submittal for the extension consists of mostly maps. Plate 6-1 shows the geology of the permit and expansion area. The area lies above the escarpment in the Book Cliffs.

The PHC, Section 728, in Chapter 7 states the information for acid and toxic forming material are in the Geology Section, Chapter 6. Acid and toxic and alkaline chemical analyses are mentioned in Section 624.300. The information on acid and toxic forming materials to address R645-301-624.310 through 624.330 are presented in Appendices 6-1 and 6-2. Roof and floor rock analyses for the Rock Canyon seam are provided in Appendix 6-2. Roof and floor rock analyses for the Gilson coal seam are provided in Appendix 6-1. The analyses are dated August 24, 1995. A sample location is identified in Figure A-1 from the Gilson Coal Seam in the Dugout Canyon Mine. The operator used Table 2 in the "Guidelines for Management of Topsoil and Overburden for Underground and surface Coal Mining" as a guide.

The parameters needed by the Division to make an assessment of the acid and toxic materials in the roof, floor and coal seam to be mined include; location, pH, pyritic sulfur, sulfate, organic sulfur, total sulfur, total iron, electrical conductivity (EC), sodium absorption ratio (SAR), acid/base potential, total calcium, total magnesium, total potassium, total sodium, total boron and total selenium, total arsenic, total cadmium, total chromium, total lead and total zinc.

Findings:

The information provided by the Permittee does not meet the minimum requirements of the Environmental Resource Information – Geologic Resources Information section of the regulations.

R645-301-624.320 and 624.330, Prior to mining the IBC, the Permittee will provide chemical analyses for acid or toxic forming or alkalinity producing materials and their content in the strata above the coal seam, below the coal seam and the coal seam to be mined in the IBC. The parameters needed to make the assessment include; location, pH, pyritic sulfur, sulfate, organic sulfur, total sulfur, total iron, sodium absorption ratio (SAR), acid/base potential, electrical conductivity (EC), total calcium, total magnesium, total potassium, total sodium, total boron and total selenium, total arsenic, total cadmium, total chromium, total lead and total zinc.

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:

Coal Resource and Geologic Information Maps

The geology map, Plate 6-1, illustrates the stratigraphy of the Dugout Canyon Mine area. A geology map shows the expansion area is capped with the Colton Formation. Mining of the IBC will take place in the Gilson coal seam of the Blackhawk Formation. The dip of the strata is to the north-northeast at approximately 10 degrees. The approximate location of the Gilson is depicted on the map. The legend shows the Plate 6-2 in the MRP shows the relation of the two coal seams and the top of the Kenilworth Sandstone. The Gilson Coal seam lies below the Rock Canyon Coal seam. Figure 6-1 and Plates 6-3, 6-3a and 6-3b are geologic cross-sections that illustrate the stratigraphic relations of the permit area.

An overburden thickness map, Plate 6-4 (October 25, 2007) - Rock Canyon Seam/Gilson Seam Overburden Thickness, is very hard to read. Using a magnifying glass I was able to determine the overburden ranges around 3000 feet thick. The Permittee needs to submit an overburden map that can be read.

Permit Area Boundary Maps

The Permit area boundary is illustrated on several maps in the IBC submittal. No mining is projected outside the proposed permit area.

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Well Maps

No well or boreholes are currently proposed for the IBC.

Findings:

The information provided by the Permittee does not meet the minimum requirements of the Maps, Plans and Cross Sections of Resources Information section of the regulations.

R645-301- 622: The Permittee needs to submit an overburden map Plate 6-4 (October 25, 2007) - Rock Canyon Seam/Gilson Seam Overburden Thickness map that can be read.

OPERATION PLAN

COAL RECOVERY

Regulatory Reference: 30 CFR 817.59; R645-301-522.

Analysis:

Maps have been supplied showing to areas of projected mining. New guidelines for mining conditions are being prepared by MSHA, which will limit mining with deep cover. This may change the proposed mine plan.

Findings:

The Permittee has submitted sufficient information to address the minimum requirements of the Coal recovery regulations.

Recommendation:

The IBC submittal is not recommended for approved until all deficiencies are addressed.