

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

August 25, 2005

TO: Internal File

THRU: Peter H. Hess, Environmental Scientist III/Engineering, Team Lead

FROM: David W. Darby, Environmental Scientist III/Hydrologist

RE: Methane Degasification Wells G-8, G-9, and G-10, Canyon Fuel Company, LLC., Dugout Canyon Mine, C/007/0039, Task ID #2280

SUMMARY:

Canyon Fuel Company submitted an amendment to the Dugout Canyon Mine on July 8 2005 to permit the drilling of three methane degasification wells (G-8, G-9, and G-10) at the Dugout Canyon Mine.

The following review addresses the hydrology sections of a proposed amendment to address the installation of three methane de-gasification wells for the Dugout Mine permit area. The proposed wells will be used only to reduce methane gas levels within the gob areas of the mine following the retreat of the longwall mining operation. Access to degas wells G-9 and G-10 will be via the Pace Canyon road. The Permittee will have to access well G-8 from the Deadman Canyon road.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

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

GEOLOGIC RESOURCE INFORMATION

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

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Analysis:

Geologic resource information is evaluated in conjunction with the hydrologic features because it is often the controlling mechanism for surface and ground-water flow. The chemistry present in the geologic formations provides the source for water chemistry. The permittee has described the geology in Chapter 6 of the Mining and Reclamation Plan (MRP). No new information has been provided with the current submittal. The drill holes will penetrate the strata from the surface to the coal seam. Plate 1-4 identifies the location of the drill holes. Wells G-8 and G-10 will be spud in from the Northhorn Formation, and well G-9 will spud in from the Colton Formation.

Findings

The information provided adequately addresses the minimum requirements of the Environmental Resources – Geologic Resource Information section of the regulations.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

Analysis:

Probable Hydrologic Consequences Determination

The Permittee has adequately identified the potential impacts to the hydrologic balance and has cited adequate mitigation for those potential impacts. Plate 7-2 in the MRP shows the location of surface water bodies and existing or pending water rights. No acid- or toxic- forming materials have been identified in the soils or strata at the Dugout Mine and none are anticipated. Any groundwater encountered during drilling will be sealed with drilling mud to eliminate migration down the hole and into the mine. No hydrocarbons will be stored on site, but should a leak or spill occur, the saturated absorbent materials utilized for cleanup would be disposed of at a State certified landfill facility.

Findings:

The information provided adequately addresses the minimum requirements of the Environmental Resources – Hydrologic Resource Information section of the regulations.

OPERATION PLAN

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:

Groundwater Monitoring

There are two active spring sites (SC-97 and 98) near the drill sites G-9 and G-10. These springs should not be influenced by development of the drill pads. The location and extent of subsurface water can be seen in Figure 7-1 in the MRP. It shows the general hydrostratigraphic cross-section of the permit and adjacent area. Section 724.100 provides baseline ground-water conditions.

Surface Water Monitoring

There are three active surface water-monitoring sites in Pace Canyon. Canyon Fuel Company has permitted a fan portal in the Canyon. The streams in the area are ephemeral or are ephemeral in nature. Transporting drill equipment to the site should not impact or influence the water monitoring sites. No adverse effects to the surface drainages are anticipated. Data for the surface water monitoring sites has been submitted to the Division's Water Quality Database.

Acid- and Toxic-Forming Materials and Underground Development Waste

No acid or toxic-forming materials have been encountered in the Dugout Mine area and none are anticipated.

Discharges Into An Underground Mine

If any water is encountered during drilling, the Permittee will attempt to seal off the formation using drilling mud.

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Water-Quality Standards And Effluent Limitations

Section 751 of the methane degasification submittal indicates that any potential overflow of the mud pit will be pumped into a tank and hauled from the site. No well water discharges will occur at the site. If any excess water is encountered, it will be hauled from the site and properly handled. Surface runoff will be coursed through silt fences or straw bales prior to reporting to the undisturbed areas.

Sediment Control Measures

Road Drainage – The Permittee explains in Section 512.200 of the submittal that the proposed well sites are on existing roads; no access roads will be constructed.

Drill pads – The drill pads have been designed to minimize erosion and flow of sediment from the pads. The plans are provided in Attachment 5-1 of the submittal. A berm will be constructed around the perimeter of the disturbed area and flow will be directed to silt fences. The drill pads will be constructed so that sheet-flow will be directed toward areas of ‘cut’ rather than ‘fill’ material to minimize the potential for erosion. During contemporaneous reclamation, sheet flow will be directed toward silt fences discharging to undisturbed areas.

In Section **752, Sediment Control Measures** of the submittal, the Permittee makes the following commitment; “All sediment control measures will be located, maintained, constructed, and reclaimed according to plans and designs presented in Section 732, 742, and 760 of this submittal”.

Casing and Sealing of Wells

In section **542.700, Final Abandonment of Mine Openings and Disposal Areas** of the degasification well amendment the Permittee commits to sealing wells in accordance with Federal and State Regulations. At abandonment, the holes will be plugged at the bottom, and a lean concrete mixture will be poured into the casing until the concrete is within five (5) feet of the surface. The casing will be cut off at ground level and filled to the surface with concrete.

Findings:

The information provided adequately addresses the minimum requirements of the Operation Plan – Hydrologic Information 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:

Monitoring and Sampling Location Maps

In section **722.500, Surface Topography** of the submittal, a reference to Plate 1-4 (located in the MRP) has been included. This reference will illustrate the location of the three (3) holes relative to one another and the surface drainage.

Certification Requirements

All drawings of the proposed drill pads have been stamped, signed, and dated by Utah Registered Professional Engineer, Layne D. Jensen # 189797.

Findings:

The information provided adequately addresses the minimum requirements of the Operation Plan – Maps, Plans, and Cross Sections of Mining Operations section of the regulations.

RECOMMENDATION:

The submittal meets the minimum regulatory requirements and it should be approved.