

# TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

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April 7, 2008

TO: Internal File

THRU: James D. Smith, Permit Supervisor *JS 04/07/08*

FROM: *DD* Dana Dean, P.E., Senior Reclamation Hydrologist

RE: Equipment Abandonment, Canyon Fuel Company, Skyline Mine, C/007/0005,  
Task ID #2950

## SUMMARY:

On March 18, 2008, the Division received a request from Canyon Fuel Company (the Permittee) to amend their mining and reclamation plan (MRP) to allow underground abandonment of 148 Gullick-Dobson hydraulic shields. The shields are in a longwall panel that should be completed near the end of April. Because several of the shields are totally non-functioning, and the roof conditions in the panel have been difficult, Canyon Fuel would like to forego any unnecessary risks that may be required to recover the shields when the panel is mined out.

This technical memorandum discusses the hydrology related issues pertaining to the application.

The Permittee has not complied with the Hydrology requirements of the Regulations. They must adequately respond to each of the deficiencies listed below before the Division can approve the amendment.

TECHNICAL MEMO

TECHNICAL ANALYSIS:

## ENVIRONMENTAL RESOURCE INFORMATION

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

## HYDROLOGIC RESOURCE INFORMATION

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

### Analysis:

#### Probable Hydrologic Consequences Determination

Because much of the provided information is in letters and not the amended MRP pages, the Permittee has not met the requirements of R645-301-728.310, 728.320, 728.332, and 728.350. In order for the Division to approve the amendment, the Permittee should include all pertinent information in the amended MRP pages.

The Permittee has provided enough information for the Division to make the following analysis, but it must be included in their examination of the probable hydrologic consequences of leaving the shields in place.

#### *R645-301-728.310, 728.350*

According to R645-100-200 "Hydrologic Balance means the relationship between the quality and quantity of water inflow to, water outflow from, and water storage in a hydrologic unit such as a drainage basin, aquifer, soil zone, lake, or reservoir. It encompasses the dynamic relationships among precipitation, runoff, evaporation, and changes in ground and surface water storage." The presence of the 148 shields underground will not affect the quantity or storage of water within the hydrologic system. Quality is further discussed below.

#### *R645-301-728.320*

In a letter to the Division (March 13, 2008), the Permittee stated that they would drain the shields of hazardous material, when possible, before abandonment. They do not state if they will remove other possible hazardous materials, such as electric and electronic controls, though the BLM has indicated that the shields will be completely stripped. The Permittee should be clear about exactly what parts of the shields will be left. If indeed nothing is left but the "skeleton," the only constituents that may be of concern are iron, and chromium. The Pines Tract Project FEIS mentions studies done by the University of Utah Metallurgy Department to calculate the corrosion potential of similar high quality metal alloy hydraulic shields (p. 3-51). It states that

**TECHNICAL MEMO**

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“it would take thousands of years for the metal to corrode away, and that the metal would need to be ground to a fine particulate for chromium to be dissolved,” and “the general conditions required to hasten the corrosion of this metal do not exist in the Utah coal mining environment.” Because of the high quality of the metal alloy, the iron in the shields is much less likely to dissolve than that found in conventional roof support materials (bolts, mesh, etc.) and even natural sources. Even with the exposure of natural iron sources through mining, the placement of thousands of tons of iron roof supports throughout the mine each year, and the abandonment of longwall and other equipment in other parts of the mine, the iron content in the mine’s discharge water has not increased over the years. All information indicates that it is improbable that a change in water quality will occur due to the shields remaining in the mine.

**Findings:**

The supplied information does not adequately address the requirements of the regulations. Modifications outlined below need to be addressed before the Division can approve the application.

**R645-301-728.320, 728.332, 728.35**, The Permittee needs to contain all evidence and background information suggesting that there will be no probable hydrologic consequences (information from CFC’s March 13 and April 4 letters) in the amended MRP pages. The information should also be more specific about what part(s) of the shields will be removed, and what will stay.

## **OPERATION PLAN**

### **SPOIL AND WASTE MATERIALS**

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

**Analysis:**

#### **Disposal Of Noncoal Mine Wastes**

Discussions between the BLM, the EPA (Janice Pearson, Denver Region), and DEQ (Ralph Bonn) in 1998 revealed that “leaving incidental equipment and machinery underground would not constitute a solid waste disposal site unless materials were intended to be disposed of there, or if materials were hauled into the mine for disposal,” and “the EPA classifies old mining

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**TECHNICAL MEMO**

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equipment as scrap, and not solid waste”: (Draft BLM memorandum *Staff Report for Cyprus’ Request to Leave Longwall Machinery Underground at Starpoint Mine.*)

**Findings:**

The Permittee has met the Spoil and Waste Materials requirements 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:****Mine Workings Maps**

Canyon Fuel Company updated Drawing 2.5.2-1, “Mine Levels 2&3 Abandoned Mining Equipment Locations” to indicate where they plan to leave the Gullick-Dobson shields. The map shows the locations of all other equipment abandoned in the Skyline Mine.

**Certification Requirements**

A professional engineer, registered in the State of Utah, properly certified Drawing 2.5.2-1, as required by R645-301-512.

**Findings:**

The Permittee has met the Maps, Plans, And Cross Sections Of Mining Operations requirements of the regulations.

**RECLAMATION PLAN****CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT**

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

**Analysis:**

**TECHNICAL MEMO**

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Since there is no change to the assessment of probably hydrologic consequences associated with this amendment, the CHIA does not need to be updated at this time.

**Findings:**

The CHIA does not need to be updated at this time.

**RECOMMENDATIONS:**

The Permittee has not complied with the Hydrology requirements of the Regulations. They must adequately respond to each of the deficiencies listed above before the Division can approve the amendment.