

EXPLORATION TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

March 10, 2004

TO: Internal File

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

FROM: Gregg A. Galecki, Environmental Scientist III/Hydrology

RE: Coal Exploration for Seam Thickness and Quality, Canyon Fuel Company, LLC, Dugout Canyon Mine, C/007/039, Task ID #1834

SUMMARY:

The following Technical Memo addresses the hydrologic aspects of an application to conduct a Minor Coal Exploration project. The proposed application was received at the Division of Oil, Gas, and Mining (Division) on February 9, 2004. The application was submitted by ARK LAND COMPANY (a subsidiary of Arch Coal Inc.) on behalf of Canyon Fuel Company – Dugout Canyon Mine to conduct coal exploration and reclamation activities within the SITLA lease (approximately 2,560 acres) located adjacent to the current Dugout Canyon Mine permit. The application does not meet the minimum requirements of the regulations for hydrology and is considered deficient. The items outlined below must be adequately addressed prior to the application being approved.

EXPLORATION TECHNICAL ANALYSIS:

COMPLIANCE DUTIES

Regulatory Reference: 30 CFR 772.13; R645-202.

OPERATIONAL STANDARDS

Regulatory Reference: 30 CFR 772.13; R645-202-100.

Analysis:

Roads

The Division needs to have additional information on the existing roads requiring upgrades, as designated on Map 3 of the submittal. On roads that are outlined as requiring improvements, specifically roads leading to DUG0104 and DUG0105, 1) describe what types of improvements will be necessary, and 2) address drainage from the roads and how drainage will be treated prior to entering the respective creeks. The same requested information also applies to the section of road leading out of Pace Creek that connects to the plateau.

Hydrologic Balance

Provide a generalized map indicating the size of the disturbance necessary for sites DUG0104 and DUG0105, their proximity relative to the stream, the general size and location of any cut-banks necessary in the disturbance, and drainage from the drill site. Text needs to identify the proposed treatment of runoff/sediment leaving the drill site.

Proposed drill hole DUG0105 is in an area having many springs. The road passes water-monitoring site SC-116 and the drill pad is located in the vicinity of springs SC-93, SC-94, and SC-95. The proposal needs to indicate whether these springs will be adversely impacted due to the proposed drilling activity.

Groundwater monitoring of the geology in the vicinity coal seam is non-existent in the SITLA Lease area. If any measurable water is encountered during drilling, the depth, geology, and flow/head need to be noted in the drill logs. In consultation with the Division, this should be evaluated as a potential water monitoring well location prior to reclamation of the hole.

During drilling of the exploration holes, any water necessary for drilling will be pumped from the North Fork of Dugout or Pace Canyon Creeks. No water will be pumped from the creeks without an approved "Temporary Change of Water" permit issued from the Division of Water Rights. A copy of the permit will be forwarded to the Division and will be on-site during drilling activities. In the event the drill holes begin making excess water, the application needs to identify the method of treatment/disposal of the water.

Acid- or toxic forming materials

The application indicates no provisions have been made for the disposal of acid- or toxic-forming materials because none have been previously encountered in the geologic formations. The only material disposed of at the drill sites will be cuttings and drilling foam and /or mud that will be buried in the mud pits.

EXPLORATION TECHNICAL MEMO

Findings:

The information provided does not adequately address the minimum requirements of the Compliance Duties – Operational Standards section of the State regulations. The following regulations need to be addressed in accordance with:

R645-202-235, Provide the following information for roads outlined as requiring upgrades: 1) what improvements are necessary and how they will be accomplished, and 2) address drainage from the roads and how drainage will be treated prior to entering the respective creeks.

R645-202-235, Provide a drawing indicating the size of the disturbance necessary for the drill pads and their proximity relative to the stream. Identify the drainage from the drill site and treatment of surface runoff (whether in the drawing or in text).

R645-202-235, Provide a narrative of the proposed treatment of runoff/sediment leaving the drill sites.

R645-202-235, Text needs to address whether mitigative measures are necessary for springs identified on Plate 7-1 of the currently approved MRP, or state why they will not be adversely impacted by the proposed drilling activities.

R645-202-235, Text needs to commit to keeping geologic logs of the drilling and identify where any appreciable water is encountered, noting depth, geology, flow, etc. These areas will be evaluated for potential water monitoring well locations.

R645-202-235, Provide a narrative of the treatment/disposal of water, in the event the drill holes begin making excess water.

RECLAMATION STANDARDS

Regulatory Reference: 30 CFR 772.13; R645-202-200.

Analysis:

Revegetation

On the roads requiring improvements, specifically roads leading to DUG0104 and DUG0105, address how road drainage will be addressed in reclamation and whether any portions of these access roads will be reclaimed.

Boreholes

The application makes a specific commitment of how the drill holes will be abandoned once exploration activities are complete in accordance with Federal and State Regulations. The exploration drill holes will be plugged with cement, cement/bentonite slurry, or bentonite chips to their complete depth. Surface casings will either be removed or cut flush with the surface.

Findings:

The information provided does not adequately address the minimum requirements of the Compliance Duties – Reclamation Standards section of the State regulations. The following regulations need to be addressed in accordance with:

R645-202-244.200, On the roads requiring improvements, address how the newly disturbed areas will be reclamation.

RECOMMENDATIONS:

The deficiencies outlined above need to be adequately addressed prior to Division approval.