

EXPLORATION TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

May 19, 2004

OK

TO: Internal File

THRU: Peter H. Hess, Environmental Scientist III/Inspector, Team Lead *PHH by an*

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

RE: Coal Exploration for Seam Thickness and Quality, Canyon Fuel Company, LLC, Dugout Canyon Mine, C/007/039, Task ID #1916

SUMMARY:

The following Technical Memo addresses the hydrologic aspects of an application to conduct a Minor Coal Exploration project. The proposed application was originally received at the Division of Oil, Gas, and Mining (Division) on February 9, 2004, and returned to the applicant on April 6, 2004, with deficiencies. The current technical analysis is a review of the information re-submitted to the Division on April 30, 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 meets the minimum requirements of the regulations for hydrology. Incorporation into the currently approved MRP is recommended.

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

Information requested by the Division from the initial submittal has been provided in the current information. Access routes to the drill sites will use existing roads. Any minor improvements to existing roads will consist of only minor re-grading to improve rutted areas. Runoff from any disturbed areas in the newly disturbed roads will be treated with silt fencing or straw bales should sediment control be necessary. Access to the plateau area leading out of Pace Creek has been removed from the current submittal and no road improvements are outlined. No additional information is requested from the Division at this time.

Hydrologic Balance

Figures 1 and 2 outline the proposed drill pads and their proximity relative to the stream. The figures outline that a berm will control and direct any runoff to a silt fence where runoff will be treated prior to entering the creek.

Springs that are identified on the water-monitoring maps are located above the existing roads and proposed drill pads. No springs are located immediately adjacent to, or below the drill pads. No adverse impacts or necessary mitigation measures are anticipated.

Groundwater monitoring of the geology in the vicinity of the coal seam is non-existent in the SITLA lease area. The permittee does not commit to converting any of the exploration holes into water monitoring wells. However, "should significant amounts of water (10+ gallons per minute of continuous flow) be encountered during drilling", the Division will be contacted prior to the sealing of the hole. "Determination will be made between Division personnel and the permittee as to the potential for development of the drill hole into a monitoring well." In Appendix A, Dugout Mine personnel commits to retain all drill and geophysical logs, and commits to documenting encountered water (noting depth), geology, flow, and any other information considered pertinent. This information adequately addresses earlier deficiencies.

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 this permit has been included with the permittee's April 30, 2004 response and will be on-site during drilling activities. In the Surface Water Protection section, the permittee commits, "Water encountered during drilling and runoff water will be treated using silt fence and/or straw bale dikes prior to leaving the site. Should it become necessary, the water encountered during drilling will be pumped into a tank and hauled from the site for disposal at a licensed facility." This adequately addresses how water will be treated at the site.

EXPLORATION TECHNICAL MEMO

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. However, the applicant has made the commitment that, "Should acid- or -toxic material be encountered it will be collected and hauled to an appropriate disposal facility" (Section R645-202-236 of submittal).

Findings:

The information provided adequately addresses the minimum requirements of the State regulations.

RECLAMATION STANDARDS

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

Analysis:

Revegetation

No road improvements are anticipated that will require revegetation. Drill pads are being located in pre-existing wide areas in roads. The sites will not be reseeded or roughened. Mud pits will be constructed to assist in drilling and for the collection of drill cuttings. Following the drying of the mud pit materials, the dirt excavated to create the mud pit will be mixed with the drill cuttings and returned to the pit to prevent a boundary of hard material from forming in the mud pit area. It will then be compacted to minimize settling.

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 adequately addresses the minimum requirements of the State regulations.

RECOMMENDATIONS:

Incorporation of the modifications outlined in the current application into the currently approved MRP is recommended.