



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Kathleen Clarke
Executive Director
Lowell P. Braxton
Division Director

1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

January 17, 2001

TO: [REDACTED] File

THRU: Daron R. Haddock, Permit Supervisor *DRH*

FROM: James D. Smith, Reclamation Specialist *JDS*

RE: Underground abandonment of longwall conveyor-pan sections in the Deer Creek Mine, Energy West Mining Company, Deer Creek Mine. [REDACTED] 018

SUMMARY:

The BLM has received a request from Energy West Mining Company, dated November 8, 2000, for modification of lease U-06039. Energy West plans on final coal extraction from 14th East and 15th East longwall faces by late February 2001 and plans to remove all equipment except for 140 conveyor line pan sections. No hoses, cables, lubricants or oils of any kind are to be included in the abandoned equipment. Because of the worn condition of these pans and the low prices for scrap steel, Energy West considers it unreasonable and uneconomical to recover them.

The pans will be abandoned in cross-cuts off the 12th and 15th East gate roads, within federal lease SL-031286, under surface lands managed by the USDA Forest Service (USFS).

Utah Coal Mining Rules require a coal mine operator to demonstrate steps to be taken to minimize disturbance to the hydrologic balance within the permit and adjacent areas and to prevent material damage outside the permit area. The following is a brief evaluation by UDOGM of probable impacts to the hydrologic balance in the area.

TECHNICAL ANALYSIS:

OPERATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: R645-300-730

Analysis:

UDOGM prepared a Cumulative Hydrologic Impact Assessment (CHIA) for East Mountain, which includes the Deer Creek Mine, in 1994. Abandonment of equipment underground was not covered in that CHIA.

Consequences from abandoned mining machinery and fluids were not included in the Probable Hydrologic Consequences (PHC) determination in the Deer Creek Mine MRP. The PHC identifies water encountered in the mine as "inactive", that is having little communication with the surface and not subject to annual recharge events. UDOGM cannot currently determine whether or not it is likely that the areas where these pans are to be abandoned will be flooded.

A considerable tonnage of ferrous materials, such as steel roof bolts, wire mesh, and cans used in support pillars, is routinely abandoned in underground coal mines because the materials cannot be removed without endangering the lives of miners. In comparison to the amount of metal routinely abandoned during underground mining operations, the additional metal in the conveyor pans is not significant.

- Conditions in the abandoned mine are not conducive to oxidation or other chemical reactions;
- Recorded pH values for ground waters at the Deer Creek Mine are typically neutral to slightly alkaline;
- Oxygen would be absent or at low concentration both in the air and waters of the abandoned mine. Other oxidizing agents would not typically be found in an abandoned mine.
- The cool temperatures in the abandoned mine would tend to retard rather than accelerate most chemical reactions;

Assuming the mine were to flood and the conveyor pans to be covered with water, several probable results and impacts can be evaluated:

- Flooding of the abandoned mine might be relatively rapid, but once flooded, flow of ground water into, through, and out-of the void spaces of the mine should be slow;
- There is some potential for total discharge of 160 to 200 gpm from mine portals after reclamation. Energy West expects water quality to be the same as that of water currently being discharged from the mine under UPDES permits, but the abandoned conveyor pans are not specifically included in this evaluation.

- If steel or other metals in the conveyor pans were to oxidize, it would be at a very slow rate and the amount of iron and other metals added to the ground water at any one time would be very small;
- Oxides of most metals are insoluble or slightly soluble in water (anions in solution in the water could increase solubility, but this is not anticipated based on typical ground-water chemistries of the region), especially at temperatures expected in the mine, so once formed, metal oxides would tend to precipitate as solids within the mine rather than flow in solution in the ground water. If any metal were to go into solution, concentrations would be highest near the cars, but the volume of water in the flooded mine would dilute concentrations outside the immediate vicinity of the conveyor pans;
- Because of dilution and dispersion, natural seasonal fluctuations, and the limits of accuracy of analytical methods, changes in water quality would not be expected to be large enough to be detected at the surface at springs, ground-water baseflow to streams, or in discharges from the mine.

If the conveyor pans are not covered with water as the mine floods, the metals might oxidize at a faster rate. Even though possibly occurring over a shorter time period, the probable impacts would be negligible to nonexistent because there would be no water to convey the metal oxides to ground or surface waters.

Finding:

Abandoning the conveyor pans will cause minimal, if any, disturbance to the hydrologic balance within the permit and adjacent areas and is not expected to cause material damage outside the permit area, and therefore can be considered to have met minimum regulatory requirements.

RECOMMENDATION

The Division should approve abandonment of these conveyor pans. Monitoring of surface and ground waters should continue as stated in the Deer creek Mine MRP.