

0009



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

Copy PAM

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)

April 8, 2002

TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor *PL*  
Daron R. Haddock, Permit Supervisor *DRH*

FROM: Peter H. Hess, Sr. Reclamation Specialist/Engineering, Team Lead *PHH ryan*

RE: Remedial Action Submittal for N02-46-2-1, Discharge of Dirty Mine Water, Lodestar Energy, Inc., Horizon Mine, C/007/020-02B.

**SUMMARY:**

As the result of a complete inspection at the Horizon Mine on March 15, 2002, a notice of violation (N02-46-2-1) was issued to the permittee for discharging dirty water into Jewkes Creek on March 21, 2002. Laboratory results received from Commercial Testing and Engineering Co. on 3/21 confirmed that the permittee had exceeded the daily maximum allowable limit for total suspended solids by 286 mg/l. The remedial action required as the abatement for this notice was to re-plumb the in-Mine system to incorporate a settling sump for the section in-flow prior to seeing Mine mouth discharge. The second requirement was to submit a map and a description of this system such that it could be incorporated into the mining and reclamation plan in order to meet the requirements of R645-301-742.120. This document will review the submitted description and map for adequacy of compliance with the aforementioned rule.

**TECHNICAL ANALYSIS:**

**OPERATION PLAN**

**HYDROLOGIC INFORMATION**

**TECHNICAL MEMO**

Regulatory Reference: 30 CFR 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.

**Minimum Regulatory Requirements:**

**Sediment control measures**

Appropriate sediment control measures shall be designed, constructed, and maintained using the best technology currently available to: prevent, to the extent possible, additional contributions of sediment to stream flow or to runoff outside the permit area; meet the more stringent of applicable State or Federal effluent limitations; and, minimize erosion to the extent possible.

Sediment control measures include practices carried out within and adjacent to the disturbed area. The sedimentation storage capacity of practices in and downstream from the disturbed areas shall reflect the degree to which successful mining and reclamation techniques are applied to reduce erosion and control sediment. Sediment control measures consist of the utilization of proper mining and reclamation methods and sediment control practices, singly or in combination. Sediment control methods include but are not limited to: disturbing the smallest practicable area at any one time during the mining operation through progressive backfilling, grading, and prompt revegetation; stabilizing the backfilled material to promote a reduction of the rate and volume of runoff; retaining sediment within disturbed areas; diverting runoff away from disturbed areas; diverting runoff using protected channels or pipes through disturbed areas so as not to cause additional erosion; using straw dikes, riprap, check dams, mulches, vegetative sediment filters, dugout ponds, and other measures that reduce overland flow velocity, reduce runoff volume, or trap sediment; treating with chemicals; and, treating mine drainage in underground sumps.

**Analysis:**

**Sediment Control Measures**

The Horizon Mine has been developed in an area that has long been noted for difficult mining conditions, due to geologic conditions. The interception of ground water is but one of the conditions which has made coal production a challenge in this area of Gordon Creek.

As part of the remedial action necessary to abate the notice of violation (N02-46-2-1), the permittee submitted a map entitled "Horizon Mine Water Sump and Pumping System" (Attachment A, Plate A) and three pages of text, which upon Division approval will be inserted as Attachment A of Appendix 7-2 in the Horizon Mine mining and reclamation plan.

Pages 1 and 2 of the submitted text include a description of the underground pumping system which, when correlated with the submitted map, accurately describes how the system functions to allow contaminants generated during active coal mining the opportunity to settle out prior to the discharge of excess water through UPDES discharge point 002A.

The in-mine ground water collection system incorporates two sumps, both of which are located in the down dip or North end of the mine workings. The smaller of the two sumps is located in the old "Blue Blaze" workings, which consists of portions of two entries, a single

crosscut and a diagonal off the left hand entry. The sump capacity here is minimal, and holding capacity is limited to what the hold workings generate as in-flow.

The larger of the two sumps is referred to as the "Main North Sump" and consists of several pillars outlined by six entries. The holding capacity of the mine's sumps must be sufficient to treat 0.5 million gallons per day to effectively treat in-flow such that UPDES parameters are met.

On the day that the dirty mine water discharge was observed, the permittee had a pump failure that necessitated total replacement of one of the pumps in the producing section. Mining machinery was run back and forth in the wet area of the section to change this pump out. Upon replacement, however, the mine's management made the decision to by-pass the Main North sump and pump directly outside. The reasoning behind this decision appears to be that the management felt that direct pumping would lower the water level in the section much more quickly than if the settling sump would have been retained in the system. It was later explained that the mine's general format is not familiar with UPDES requirements and the Federal Clean Water Act.

Groundwater collected in-mine is re-distributed throughout in order to provide dust suppression and fire fighting capability underground. Excess is discharged through UPDES point 002A, which is tied directly into the undisturbed by-pass culvert designated as UC-2 under Portal Canyon.

The submittal states that as the mine expands, additional pump lines and tank pumps will be installed as necessary to handle the inflow on advance. As the mine retreats on secondary extraction, the mine water handling system will similarly be retreated.

Attachment A, Plate A also depicts a standby system that will be used in the event that the primary tank pump system goes down for whatever reason.

The description of the Horizon Mine pumping system is adequate in that the major components have been both depicted and described. Although pump horsepower and line capacity may increase with additional mine volume, component location should remain constant until completion of mining activities.

Page 3 of the permittee's submittal makes the statement that the discharged mine water has a better quality than the undisturbed surface flows that report to Jewkes Creek. As observed many times, the mine water discharging from the Blue Blaze workings appears to be of culinary quality.

Other mine water collected has the capability of meeting UPDES parameters if the settling sump is retained within the Mine water discharge system. The permittee has made the commitment to comply with all conditions stated in the approved UPDES permit. In order to

**TECHNICAL MEMO**

---

meet the requirement for total suspended solids, the permittee must keep the Main North settling sump in the operating mine water discharge system.

**Findings:**

The permittee's submittal adequately addresses the requirements of the R645 coal rules relative to in-mine treatment of ground water for sediment control.

**RECOMMENDATION:**

Permit amendment C/007/020-02B should be approved as submitted.