0024

K
#3277

TECHNICAL MEMORANDUM
Utah Coal Regulatory Program

May 20, 2009

TO: Internal File

THRU: Steve Christensen, Team Lead SJC

FROM: Priscilla W. Burton, CPSSc, Environmental Scientist III PWB by SJC

RE: Waste Analysis Lab Data, Canyon Fuel Company, Dugout Canyon Mine, C/007/0039, Task ID #3277

SUMMARY:

Supplemental information for Attachment 5-4 of the Dugout Mine MRP was received on May 6, 2009. The information includes the analyses of 19 waste rock samples pulled from the site between August 2008 and March 2009. A sampleof the topsoil salvaged from degas well G-16 in September 2008 is also provided.

The plan indicates that one grab sample will be taken for every ton (5,000 yd^3) hauled to the waste rock site. The 19 samples that were taken during this six month period, represent both Skyline Mine and Dugout Mine waste rock. Therefore, the volume of waste hauled from the Dugout Mine can not be calculated by the number of samples taken.

The analytical parameters are described in section 536.200 of the Waste Rock Amendment Volume. These samples were analyzed by Inter-Mountain Laboratories in Sheriden, WY.

Texture of the waste was evenly divided between sandy loam and loamy sand. All waste rock samples were alkaline in pH, and most have SAR values above 4, with the material encountered in March being toxic to plant growth (all four March samples have SAR values of 15.5 to 19.3). The most limiting characteristic of the majority of the waste is the range between field capacity and wilting point, which is very small, averaging 7%. What this means is that there is little ability for the waste to hold water for root growth. (This effect will be compounded by the SAR values.) By way of comparison, the water holding capacity of the topsoil is reported to be 14% or double that of the waste. The reclamation plan for the waste rock site would benefit by providing a barrier layer of clay four feet below the surface to act as a water retarding layer.

The topsoil at G-16 is a clay loam with 7.4 pH, SAR of 0.46, 8.14 ppm nitrate nitrogen, and 4.62 ppm phosphorus. Phosphorus levels are similar in the waste, but the nitrate nitrogen is far higher in the topsoil.

RECOMMENDATIONS:

The application is recommended for approval. There is no change to the Master Technical Analysis with this amendment. In addition to placing a copy of the analyses in the Waste Rock Amendment, the topsoil soil analyses should be copied and placed in Attachment 2-1 of the Degas well volume.

O:\007039.DUG\FINAL\WG3277\pwb3277.doc