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# TECHNICAL MEMORANDUM

## Utah Coal Regulatory Program

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November 16, 2011

TO: Internal File

THRU: Steve Christensen, Team Lead *SC*

FROM: Priscilla W. Burton, CPSSc, Environmental Scientist III *pwb m/sqs*

RE: Waste Analysis Lab Data, Canyon Fuel Company, Dugout Canyon Mine, C/007/0039, Task ID #3945

**SUMMARY:**

Supplemental information for Attachment 5-4 of the Dugout Mine MRP was received on October 25, 2011. The information in this application includes the analyses of 60 waste rock samples pulled from March 30 2010 to April 2011. Including the analyses already found in Attachment 5-4, there were 59 samples grabbed in 2010 and 17 analyzed to date in 2011.

The plan indicates that one grab sample will be taken for every 5,000 yd<sup>3</sup> hauled to the waste rock site (Chap. 5, Sec. 513.400, Sec. 528.300, Sec. 536 and Refuse Pile Amendment Volume Section 536.200). Using the conversion factor of 110 lbs/ft<sup>3</sup> (described in RA Attachment 5-3), the 59 samples would represent approximately 438,075 tons that were placed in the waste rock site in 2010. [(59 samples x 5,000 yd<sup>3</sup> x 27 ft<sup>3</sup> per yard x 110 lbs/ft<sup>3</sup>) / 2,000 lb/ton ]

Similar calculations indicate that 126,225 tons were placed in the waste rock site through April 2011. The February 2010 certification (December 2009 inspection) indicated that the remaining capacity of the waste rock site was 724,222 tons. The waste rock site is likely reaching capacity.

Most samples taken in the 4th quarter of 2010 and the 1<sup>st</sup> quarter of 2011 have acid forming potential based upon their pyritic sulfur content. At present, the waste has an alkaline pH, but overtime, if the material is exposed to water and oxygen, oxidation may occur. A few samples are high in sodium as seen by their SAR values. Therefore, at final reclamation, this material should be compacted and placed out of the rooting zone (below four feet).

The information should be approved and incorporated into the MRP.