



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

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June 22, 2001

TO: [REDACTED]

FROM: Priscilla B. Burton, Soils Reclamation Specialist, Team Lead

RE: Soil Sampling for Tipple Pad Excavation, PacifiCorp, Des Bee Dove Mine,  
[REDACTED] 7-AM01B

**SUMMARY:**

This amendment adds a soil sampling plan for the spoil moved during excavation of the tipple pad. The Spoil material came from the outslope of the tipple pad and had been vegetated with grasses and small shrubs. Des Bee Dove Mine is entering reclamation with very little substitute topsoil cover and no topsoil. A previous amendment (AM01A) proposed to use "suitable valley fill" material from the on-going excavation of the coal mine waste beneath the storage yard (tipple pad) for reclamation of the Little Dove and Beehive Mine pads. This amendment to the plan will enable Energy West to characterize and salvage the tipple pad spoil for its potential as substitute topsoil on the upper pad or elsewhere in the disturbed area.

This amendment was received June 8, 2001 after a conference call between Energy West and the Division on May 30, 2001. Several items were agreed upon during that conference call:

- Energy West would add a new page 4-37a that would describe a soil-sampling plan for spoil/soil/substitute plant supporting material.
- The new plan would require Energy West to refine their existing sampling plan to include additional sampling locations to adequately characterize the substitute soil/spoil material.
- Sampling of this material will be performed no later than July 31, 2001.
- Samples will be collected from the excavated material placed on the bathhouse pad and along the north side of the tipple pad in concert with DOGM personnel.
- Energy West should not place additional spoil material on top of the currently stored material to prevent loss, diminution, or contamination.

**TECHNICAL ANALYSIS:**

**ENVIRONMENTAL RESOURCE INFORMATION**

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

TECHNICAL MEMO

## CLIMATOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.18; R645-301-724.

### Analysis:

The average annual precipitation is 6 – 8 inches (page 2-153, Volume 1).

### Findings:

The requirements of this section of the regulations are considered adequate.

## SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

### Analysis:

Elevation is 7,800 feet on a south to southeast exposure and slopes of 1½H:1V to 2H:1V. The plant community is Utah juniper and pinyon pine. Plants within this community include Salina wildrye, western wheatgrass, and Indian ricegrass.

Soils were not salvaged during the development of the pre-SMCRA<sup>1</sup> mine. However, adjacent soils have been described in the MRP as either:

- Typic Ustochrepts (50%) which are characterized by a 35 cm thick (13 inches) sandy loam surface layer with 25% coarse fragments. Underlying this layer is a stony loam layer 100 cm thick (39 inches) with up to 50% coarse fragments.

Or

- Lithic Ustorthents (25%) that are characterized by rock within 50 cm or 19 inches.

Also present are small areas of Mollisols on the north and east facing slopes. In general, Mollisols are deep, well drained, with a well developed A horizon. See the General Soil Map of the Permit Area, Drawing #CE-10502-DS.

Volume 1, Part 2 of the MRP (page 2-170) states, "Nowhere in the vicinity is there a source of [soil] material." Yet over the past decade, the mine operation has cultivated suitable growth material on the outslopes of the pads. Seeding of this outslope has been very successful and the resulting growth medium is among the best in the permit area due to its microbial activity, nutrient status, and organic matter. The MRP lays plans to salvage and utilize the outslope material (where disturbed) as substitute topsoil.

<sup>1</sup> Surface Mining Control and Reclamation Act (SMCRA) of 1977 is Pub L 95 87.

If 18 inches had been salvaged from the tipple pad outslope (125 feet x 150 feet), approximately 1,041 cubic yards of substitute topsoil could have been gained (see Drawing CM-10333-DS Sheet 1 of 2). Since no soil was salvaged from the outslope, Energy West intends to identify the most suitable soil excavated.

### **Findings:**

Information provided in the proposed amendment is adequate to meet the minimum Environmental Description of the Soil Resource requirement of the Regulations.

## **OPERATION PLAN**

### **TOPSOIL AND SUBSOIL**

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

### **Analysis:**

Part 4, page 4-37 of the MRP indicates that a soil-sampling program will be conducted to determine the extent of suitable substitute topsoil material. Sample locations are proposed. Parameters to be analyzed are listed, following the Division's 1988 soil guidelines:

- Texture,
- SAR (meq/L),
- pH,
- EC (mmhos/cm),
- Saturation Percentage (%),
- Organic Carbon (%),
- Total N (%),
- Available Phosphorus (mg/kg),
- Boron (mg/kg),
- Selenium (mg/kg),
- Acid-Base Potential.

This submittal will add page 4-37a to clarify that spoil unearthed during the tipple and Deseret Pad excavation will be sampled for its potential as substitute topsoil. This submittal indicates that the samples will be analyzed according to "Appendix A of the Guidelines for Management of Topsoil and Over Burden for Underground and Surface Coal Mining (Leatherwood and Duce, 1988)." However, there is no Appendix A to the 1988 Guidelines.

The valley fill was sampled in 2000 and the results of the sampling were submitted in Appendix A of AM01A, which has not been approved. Sample locations are shown on a figure included in the appendix. The main limiting factors of this valley fill are its texture (sand) and organic carbon content (70 – 80%), and elevated SAR values. This material is not suitable for use as substitute topsoil. In the course of excavating this material, some promising spoil was uncovered and placed on the bathhouse pad and on the north side of the tipple pad.

TECHNICAL MEMO

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The Division requests that during sampling field notes are taken to record percent rock fragments and Munsell color and moisture content along with sample location. This information should be added to the submittal with the original laboratory analysis sheets. Submitting original laboratory data sheets aides in interpretation of the data and eliminates data entry errors. A discussion of the frequency of sampling and depth interval of samples is also requested.

Laboratory analysis of total organic carbon is recommended by the following procedure: Western States Laboratory Proficiency Testing Program Soil and Plant Analytical Methods. 1998. v 4.10. p 88. (combustion method).

As agreed upon during a conference call on May 30, 2001, the Division requests that the sampling plan states that samples will be collected no later than July 31, 2001 and that DOGM personnel are present during sampling. Further, the Division requests that Energy West does not place additional spoil material or coal mine waste on top of the spoil stored on the bathhouse pad and north side of the tipple yard to avoid burial or contamination of this potential soil resource.

**Findings:**

Information provided in the proposed amendment is not adequate to meet the minimum Operations Plan requirements for Topsoil Substitute and Supplements of the Regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-233,** The sampling plan should indicate that Energy West will not place additional spoil material or coal mine waste on top of the spoil stored on the bathhouse pad and north side of the tipple yard to avoid burial or contamination of this potential soil resource. The sampling plan should indicate that sampling would be conducted by July 31, 2001 with Division personnel. The plan should include a description of the sample frequency, sample depth intervals, field soil description notes and analysis according to the parameters listed on page 4-38 of the MRP. (Please submit original laboratory data sheets to eliminate data entry errors.)

**RECOMMENDATIONS:**

The submittal should include the items requested in this technical memo before being approved.