



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

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March 7, 1994

TO: File

FROM: Henry Sauer  
 Senior Reclamation Soils Specialist *HS*

RE: Refuse and Slurry Acid-and/or-Toxic Forming Potential  
 Sampling Plans, Sunnyside Cogeneration Associates,  
 Refuse and Slurry, ACT/007/035, Folder #2, Carbon  
 County, Utah

**SYNOPSIS**

The sampling and analysis plan aimed at ascertaining the acid- and/or toxic-forming potential of the refuse material and the precipitate layer within the Coarse Refuse Pile and the West Slurry Cell has been submitted (Appendix 6-5, received March 1, 1994).

The sampling plan received March 1, 1994 is a synthesis of the Division's proposal (see memo to file dated February 2, 1994), and Eckoff, Watson and Preator Engineer's original proposal (dated September 15, 1993) and discussions held between these entities on February 2, 1994.

The refuse sampling plan requires some editorial changes.

The monitoring well installation proposal will require substantive alterations.

**ANALYSIS**

**Refuse Sampling Plan**

In Appendix 6-5, page 1, item #6, the statement should read "...analyze soil samples collected from the precipitate layer for total and water soluble metals...".

In Appendix 6-5, page 3, the permittee states that an estimate of the depth ( i.e. drill hole collar to the refuse precipitate interface) to the precipitate layer will be made "...where it outcrops...". The permittee will be able to estimate the depth of the precipitate layer by reviewing the drill hole logs from the 1991 and 1992 John T. Boyd report. In appendix 6-5, page 7, paragraph 2, item #3, the statement should



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read "...mixing the ground sample to attain saturation ...". In addition, metal analyses should be accomplished utilizing Furnace Atomic Absorption. To avoid confusion, the reference for exchangeable acidity should be stated (i.e. ASA Mono. No.9, Method 9-4.1, page 163).

### **Monitoring Well Installation**

The permittee must commit to completing, for water monitoring purposes, drill holes B-3,4,5,10 and 11 as depicted on Appendix 6-5, Figure 2. The wells should be slotted through the precipitate layer (if encountered), and constructed as depicted on Appendix 6-5, Figure 4. The permittee must more precisely define the drainage channel at the base of the refuse pile. The well monitoring frequency should be increased to quarterly.

The logic behind the aforementioned requirements is as follows:

- 1) There is a high potential for caving in the refuse and mancos material.
- 2) Clogging of the filter packing and the slotted portion of the completed wells by the dissolved constituents in the water flowing at the base of the refuse is likely.
- 3) There is a low probability of encountering a piezometric surface within the zone (at least 50 feet in width) identified as the likely location of the drainage channel. One drill hole at a particular location is not likely to encounter the piezometric surface. Every effort should be made to encounter and characterize the piezometric surface.
- 4) Seasonal variations in the quantity and quality of water underneath the refuse pile must be characterized.
- 5) By completing a number well, as back-up sites, the potential for failure is minimized.

### **RECOMMENDATION**

The issues enumerated above must be adequately addressed prior to approval of the drilling proposal.

cc: Randy Harden  
Ken Wyatt