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TO: Daron Haddock, Permit Supervisor

FROM: Priscilla Burton, Reclamation Soils Specialist

RE: Technical Deficiency Review of Castle Gate Prep Plant Reclamation Plans. Castle Gate, second submittal. AMAX Coal Co. ACT/007/004. Folder #2. Carbon Co. Utah.

SUMMARY:

Amendments will be added to the Preparation Plant soils based upon sampling and analysis conducted within one year of final reclamation. At the present time, the cost of incorporation of alfalfa hay (3T/ac) of *in situ* soils at the 58 acre Preparation Plant should be included in the bond estimate.

The present submittal (9/8/92) calls for 24 inches of cover over the refuse in Schoolhouse Canyon. Supporting documentation in the form of chemical analyses of the coal mine waste is provided in Appendix 8B. A reference to the location of these analyses is requested.

TECHNICAL ANALYSIS:

224. Substitute Topsoil.

Deficiency:

1. The Division requires that a suitable soil amendment is incorporated into the surface prior to seeding of the Preparation Plant *in situ* soils.

2. The Castle Gate Preparation Plant reclamation submittal must reference the location of preparation plant soil sample analyses in the MRP's, Appendix 8B.

Proposal:

Soil amendments will be added according to samples taken within one year of final reclamation. Sampling will be conducted at a rate of 1 sample/2.5 acres and will include all the parameters listed in the Division Guidelines for substitute topsoil. Sampling will be depth segregated. (Refer to page 3.4-24 of section 3-4-4(1).

Analysis:

The commitment to resample and determine amendment levels at the time of final reclamation is acceptable. However, the Division should include in the bond estimate a projected a soil amendment treatment based on presently available results (App 8B of the MRP). The bond should include the cost of incorporation into the surface (prior to seeding) alfalfa hay (3T/ac) on 58 acres of *in situ* soils of the Preparation Plant.

Eight samples were taken from the Preparation Plant (Appendix 8B). The sample locations are no longer marked on Ex. 3.4-3 Reclamation Map, but were on this map in the June revision of Ex 3.4-3. Sample locations may be found on the Soil Survey map for Castle Gate.

A reference to the soils map and Chapter 8 appendix for the location and analysis of samples is required within the Castle Gate proposal. Deficiency #2 or R645-301-224 remains outstanding:

Deficiency:

2. *The Castle Gate Preparation Plant reclamation submittal must reference the location of preparation plant soil sample analyses in the MRP's, Appendix 8B.*

553.252. Coal mine waste

Deficiency:

1. The permanent disposal of refuse at the Castle Gate refuse site must be covered with a minimum of two feet of suitable substitute soil cover material.

2. The mining and reclamation plan must contain a commitment to resample the Schoolhouse Refuse site for a confirmation of its non-toxic, non-acidic characteristics within one year of the grading and seeding steps of final

reclamation.

Proposal:

Page 3.4-24 of Section 3-4-4(1) of the MRP describes reclamation of the refuse site utilizing 24 inches of cover material. The required 96,000 yd^3 of material will come from gravel canyon.

A sampling program has been described for the year prior to final reclamation.

Analysis:

Supporting documentation is found in Appendix 8B. Sample locations are found on drawings in the Appendix of Sec 3.5 of the July 1990 submittal.

Final reclamation is may not occur until the year 2015. In the intervening decade, a significant change in the pH, alkalinity and oxidation status of heavy metals may occur. The sampling described will insure adequate burial of acidic or toxic waste.

Deficiency:

none.

RECOMMENDATIONS:

The proposal to cover the refuse site at Castle Gate Preparation Plant with 24 inches of soil cover is recommended for approval. At the Preparation Plant, addition of a suitable soil amendment to the graded *in situ* soils should be included in the bonding estimate.