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# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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October 19, 1988

TO: John Whitehead, Permit Supervisor

FROM: Henry Sauer, Reclamation Soils Specialist *HS*

RE: Technical Deficiencies, Andalex Resources, Wildcat Loadout, PRO/007/033, Folder #2, Carbon County, Utah

## SYNOPSIS

The fourth submittal for completeness from Wildcat Loadout received October 14, 1988, has been reviewed. The data is not adequate or complete. The following subjects must be fully addressed before this section can be considered complete.

## ANALYSIS

### UMC 817.22 Soil: Removal - (HS)

Inadequacies elucidated in this section of the Third Completeness Review dated September 26, 1988 have not been thoroughly addressed by the applicant.

The soils in each and every test plot must be analyzed. Table 1 of the Division's Guidelines for Management of Topsoil and Overburden indicates the parameters to be analyzed and submitted to the Division for review.

### UMC 817.48 Hydrologic Balance: Acid- and Toxic-Forming Materials - (HS)

Data received October 14, 1988 is not adequate or complete. Coal leachate analysis determining nitrate-nitrogen, nitrite-nitrogen and ammonia-nitrogen does not indicate or represent the organic nitrogen constituent of the material. The accepted lab analysis for characterizing nitrogen in materials may be located in Table 6 of the Division Guidelines. Coal leachate analysis for determining available selenium is an appropriate test methodology (Division Guideline Table 6). The selenium analysis of coal material will be considered complete. Concentration of selenium is within acceptable limits according to the Division Guidelines Table 2.

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Memo to J. Whitehead  
PRO/007/033  
October 19, 1988

Data received August 29, 1988, indicates an acid production potential from the coal material (Acid Base Potential [ABP] of -8.56 Ton  $\text{CaCO}_3$ /1,000 Tons Material). ABP was based on the percent total sulfate. Applicant has failed to submit the percent non-sulfate sulfur analysis (% pyritic-S and % organic-S).

Based on these findings, the Division requires that an approved ground water sampling program be implemented immediately.

UMC 817.103 Backfilling and Grading: Covering Coal and Acid- and Toxic-Forming Materials - (HS)

The results of the aforementioned coal analyses indicates an acid potential of -8.56 Ton  $\text{CaCO}_3$ /1,000 Tons Material. This material must be covered and/or disposed of to prevent contamination of ground or surface water. The applicant must submit for Division review a proposal to cover and/or dispose of the acid-forming material.

RECOMMENDATIONS

UMC 817.22(e) Soil: Removal - (HS)

The applicant must submit soil sample data to the Division from each and every vegetation test plot. These samples must be noncomposite and segregated by depth.

UMC 817.48 Hydrologic Balance: Acid- and Toxic-Forming Materials - (HS)

The applicant must submit to the Division coal material analyses for the following parameters: nitrate-nitrogen and total nitrogen. Analysis must be in accordance with the Division Guidelines for Management of Topsoil and Overburden, Table 6, or other Division approved methods.

The applicant must submit for the Division's review, plans for a groundwater sampling program (UMC 817.52).

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UMC 817.103 Backfilling and Grading: Covering Coal and Acid- and  
Toxic-Forming Materials - (HS)

The applicant must submit for the Division's review a plan for proper disposal of acid-forming materials (coal contaminated material).

The aforementioned data and plans must be submitted and reviewed before these sections of the proposed permit can be considered complete and adequate.

djh  
cc: J. Fricke  
AT30/2-4



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*file*

September 7, 1988

TO: John Whitehead, Permit Supervisor

FROM: James S. Leatherwood, Reclamation Soils Specialist *[Signature]*

RE: Technical Deficiencies, Wildcat Loadout, Andalex Resources, PRO/007/033, Folder No. 2, Carbon County, Utah

The third Submittal, received August 15, 1988, has been reviewed and found to be complete. The plan is not technically adequate. The following comments must be fully addressed before the plan can be considered adequate.

UMC 817.22 Soil: Removal - JSL

The soil in each and every test plot must be analyzed. In accordance with the Divisions "Guidelines for Management of Topsoil and Overburden" the sampling frequency must consist of one noncomposite sample from each test plot location with individual samples taken at 0 - 15 cm, 15 - 30 cm, and every 30 cm thereafter to the depth of potential removal. Sampling must be performed and reported by depth intervals. Table 1 of the Guideline indicates the parameters that must be analyzed. Specifically these parameters include: soil color; texture; pH; organic carbon; saturation percentage; alkalinity; electrical conductivity; calcium carbonate percentage; sodium adsorption ratio; soluble potassium, magnesium, calcium, and sodium; total nitrogen; available phosphorus; available water capacity; and, percent rock fragments. Suitability limits for evaluating substitute topsoil are listed in Table 2 of the Guidelines. Soil samples must be taken prior to initiating the test plot seeding program.

UMC 817.48 Hydrologic Balance: Acid-Forming and Toxic-Forming Materials - JSL

The data received August 29, 1988 is not adequate or complete. In accordance with the Division's "Guidelines for Management of Topsoil and Overburden" the boney material and coal must be analyzed for the parameters listed in Table 6. Parameters not analyzed include selenium, nitrate-nitrogen and total-nitrogen.

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Technical Deficiencies  
Wildcat Loadout  
PRO/007/033

The received data indicates a potential acid production from the coal material (Acid Base Potential (ABP) of -8.56 ton/1000 tons material). The calculated ABP was determined by using the percent total sulfur. It is unlikely that all of the sulfur would be able to oxidize. A more accurate ABP would be derived from the percent nonsulfate-sulfur (% pyritic-S and % organic-S analysis of the coal material. The material should be re-analyzed for the percent nonsulfate-sulfur.

An Acid-or Toxic-Forming Material finding cannot be made by the Division until the requested information has been submitted and reviewed.

cc: S. Linner  
0534R22-23