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November 14, 1988

TO: John Whitehead, Permit Supervisor

FROM: Jim Fricke, Reclamation Hydrologist JRF

RE: Technical Deficiency Review, Andalex Resources, Inc., Wildcat Loadout, PRO/007/033, Folder #2, Carbon County, Utah

The berm at the point of diversion on UD-1 must be sized for the 100-year, 24-hour event. Include all dimensions and construction details. The face of the berm may require riprap. If so, provide all design details. UD-1 extension will intercept a side drainage. Provide construction details on cut and fill and ditch construction on fill material.

The riprap plan for UD-1 (near Pond F) will require riprap with a D50 of 18 inches.

The applicant must provide the following information on all riprap locations:

1. D15, D50, and D85 stone sizes;
2. Depth of riprap must be 1.5 times D50 (at a minimum);
3. Commit to using well graded angular riprap.

UD-2

The applicant and the Division should consult with Beaver Creek Coal Company to determine responsibility limitations on UD-2. Culvert C-33 (on UD-2) will require erosion protection. Please provide.

ND-1

Channel reclamation must be addressed for the removal of Culvert C-34 and C-33 during final reclamation.

UD-3 and UD-4

The Division has calculated channel velocities of 11 fps and 13 fps for UD-3 and UD-4 respectively. Please increase riprap sizes accordingly.

Diversion D-13 cross-sectional area must be increased to 2.0 feet squared.

Temporary Diversions

The Division recognizes that ditches near coal piles may change over time. However, this does not release the applicant from design responsibilities. The temporary ditch near Pond B must be designed to accommodate a runoff event with a 2-year recurrence interval. Furthermore, the ditch must be shown on the surface facilities map. Temporary ditches that exist more than 180 days will be considered permanent and must be designed to accommodate the 10-year, 24-hour event.

UMC 817.52 Hydrologic Balance: Surface and Ground-Water Monitoring - (JRF)

As previously requested, Plate 2 must show all water monitoring stations or the PAP must reference Plate 15 as showing water monitoring stations. Table IV-10 must incorporate the following changes:

1. N02 should read Nitrite,
2. Manganese should read Total Manganese,
3. Acidity should be included.

UMC 817.56 Hydrologic Balance: Postmining Rehabilitation of Sedimentation Ponds, Diversions, Impoundments, and Treatment Facilities - (JRF)

The following technical deficiencies exist for postmining diversions:

1. Figure IV-3 cross-sectional area is 1.5 feet squared (calculated with .3' of freeboard); as such, Diversions RD-1, 2, 4, 5, 6 and 7 will not contain the design event.

2. Submit minimum and maximum riprap stone sizes (D15, D85);
3. Depth of riprap must be 1.5 times D85;
4. Plate 8 legend gives reconstructed ditch widths as 6.0 feet, while Figure IV-3 gives 4.0 feet.
5. Plate 8 shows loose-rock checkdams on all ditches. Plate 9 does not show the checkdams for final reclamation. Please clarify.
6. Ditch configurations change from Plate 8 to Plate 9 without discussion in the text. Please clarify.
7. Delineate extent of riprap on Plates 8 and 9, for all ditches.
8. The applicant has proposed berms to control drainage during Phase I reclamation. Please provide berm dimensions and final reclamation of the berms.

djh
AT9/31-33