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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

February 22, 1989

Mr. Mike Glasson
Senior Geologist
Andalex Resources, Inc.
P. O. Box 902
Price, Utah 84501

Dear Mr. Glasson:

Re: Conditional Approval, Amendment, Aberdeen Mine Facilities, Andalex Resources, Inc., ACT/007/019-88(C), Folder #2, Carbon County, Utah

The Division has completed review of your company's submittal received December 14, 1988. The plans were reviewed by Rick Summers, Reclamation Hydrologist, of the Division's technical staff. Approval to construct the facilities is conditionally granted based upon written acceptance of the stipulations enumerated in the attached technical review memo. In addition to these, the operator will be required to submit certified as-built drawings of sediment pond E and as-built drawings of all other new facilities within 30 days following completion of construction. Please note that a construction permit for the pond is also required from the State Health Department.

If you have any questions, please call Rick Summers or me.

Sincerely,

Susan C. Linner

Susan C. Linner
Reclamation Biologist/
Permit Supervisor

Attachment
cl
cc: J. Helfrich
D. Darby
R. Summers
BT45/174

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February 21, 1989

TO: Sue Linner, Permit Supervisor

FROM: Rick P. Summers, SCL Reclamation Hydrologist

RE: Aberdeen Mine Facilities Amendment, Andalex Resources, Inc., Centennial Project, ACT/007/019-88(C), Folder #2, Carbon County, Utah

Summary:

Updated plans for the above referenced action received by the Division on December 14, 1988 have been reviewed for completeness and adequacy of hydrologic design.

Analysis:

The following areas of the plan have been found to still contain deficiencies.

UMC 817.43 Hydrologic Balance: Diversions & Conveyance of Overland Flows - RPS

Diversions UD-2, UD-4, UD-5, DD-4:

Peak flow values calculated by the Division for these areas demonstrate that the values presented in the application are correct and are generally conservative. The application does not contain sufficient slope information to verify the slopes used in the designs. However, using values presented by the applicant, the expected velocities were generally correctly calculated for the maximum slope sections. The minimum slope sections utilize a Manning's n-value of 0.04 which is the same as the heavily riprapped sections. This is an error. The application refers to p. 179 to justify the use of 6 fps as the erodable velocity. That same table presents the expected Manning's n-value for that soil group (gravel-loam) as 0.024 - 0.026. Using that value, the Division

calculated minimum slope velocities larger than the applicant's values for UD-2, UD-5, and DD-4. The expected minimum slope velocities for these diversions are 9.42 fps, 6.65 fps, and 9.48 fps, which are considered to be erosive. It should be noted that the peak flow values used in these designs by the applicant are generally twice as large as those found by the Division (exception DD-4).

In consideration of the facts that: 1) slope information cannot be verified at this time, 2) the applicant's design peaks are usually excessive, and 3) the designs are proposed at this time, the Division recommends a conditional approval for these structures. This will allow the analysis to proceed using accurate channel information (including size, slope, and manning's n-value). The applicant is advised to consider departures from the proposed design as changes occur in the field at an early stage to prevent the need for reconstruction (i.e. addition of riprap) at a later date. The applicant is considered to be responsible for meeting the performance standards of subchapter K upon completion of the structures. At a minimum, the proposed designs in the existing application must be installed. Based upon the Division review, the applicant should be advised that some of the designs appear to be excessive.

Stipulation UMC 817.43 - RPS

As a portion of the as-built certification package to be submitted to the Division upon completion of the facilities, the applicant must submit revised Tables IV-3, IV-3A, and IV-7 utilizing accurate information from the as-constructed diversions. The package must also include longitudinal profiles of the as-constructed diversions clearly depicting the slope and slope changes. Tables IV-3, and IV-3A should also include line description of the constructed channel configuration (triangular, trapezoidal, bottom width, depth of channel, depth of flow, top width, sideslope).

UMC 817.46 Hydrologic Balance: Sedimentation Ponds - RPS

Pond E - Aberdeen Facilities

The analysis performed by the Division of the runoff volume, sediment storage volume, 60 percent cleanout elevation, and proposed pond volume (stage-volume curve) demonstrates that sediment pond E is adequately designed relative to these criteria (calculations available in Division files).

The primary spillway at an elevation of 6960 ft. has been demonstrated to have a capacity of 23.6 cfs. The design flow for the 10 yr. - 24 hr. event was verified to be 12.9 cfs. The primary spillway is adequate. It should be noted the spillway has the capacity to pass the 25 yr. - 24 hr. flow event (18.97 cfs).

The ponds will be inspected quarterly (section 2.2-5) and reports will be maintained onsite and submitted to the Division on an annual basis.

There are still several minor discrepancies in the text with regards to pond E, which must be cleared up as per the following stipulation.

Stipulation UMC 817.46 - RS

The following items must be corrected and sent to the Division within 30 days of pond construction:

Plate 8 depicts the disturbed area acreage reporting to pond E as 10.87 acres. Section 2.6, p. 142 states the area is 11.82 acres. The Division approves the use of 11.82 acres, but the discrepancy should be corrected.

The orifice rating tables in Appendix O are still in error. The L in the orifice equation should be replaced with circumference of the pipe and not the pipe diameter and the ratings recalculated.

Section 2.7-2 should be revised to state that the emergency spillway will be of grouted riprap as depicted on Figure IV-6. Figure IV-6 should be revised with the dimensions of the spillway removed from the figure and placed in the design tables for the proposed pond E and pond E-PM design.

The configuration of the spillway should be specified (i.e. bottom width for operation and reclamation phases).

Recommendation:

It is recommended that construction of the pond be approved contingent upon Andalex's acceptance of the above stipulations.

BT6005/86-88