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July 26, 1990

TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Jeff Emmons, Reclamation Hydrologist J. E.

RE: **Amendment to Permit Application Package, Permanent Impoundment, Andalex Resources, Inc., Wildcat Loadout and Coal Processing Facility, ACT/007/033-90A, Folder #2, Carbon County, Utah**

Synopsis of Proposal

On July 13, 1990, the Division received a proposal to modify an existing impoundment and to create an additional storage depression to provide total containment of a 10-year, 24-hour event for an 86 acre canyon located east of the facility. A complete background discussion is provided in my June 18, 1990 memo addressed to you.

Analysis

The analysis of the proposal includes only the following items to be discussed. At the resolution of these items, a complete review and analysis of the proposal will be conducted.

Curve Number Selection: Page 97 of the January 29, 1990 submittal states "A runoff number of 65 was used for undisturbed areas. This number is based on the SCS determination for Runoff Curve Numbers for Antecedent Moisture Condition II, Soil Group B, Range in Fair Condition." The current proposal utilizes a curve number of 65 in its calculations.

The curve number listed by the SCS for the above conditions is 69, not 65 as used in the proposal. Substituting a curve number of 69 into the calculations results in the required storage capacity to be increased to approximately 1.2 acre-feet to contain a 10-year, 24-hour event.

Storage Capacity: Verification of total storage capacity was done by digitizing the surveyed map and incorporating the cross section information provided by Plate #18. The bottom contours were not provided in the surveyed map. Maximum volume was calculated by assuming the bottom contour was identical to the next contour and the maximum water level is the overflow elevation.

The maximum storage capacity of the permanent impoundment and depression was calculated to be .33 acre-feet and .42 acre-feet respectfully. The combined total capacity is .75 acre-feet, not .89 acre-feet, as described in the plan. .14 AC-FT.

Page 116 of the submittal states "Upon final reclamation, the impoundment will be enlarged to a capacity of 1 acre-foot, capable of containing runoff from a 100-year, 6-hour event." The determination of whether the enlargement to 1 acre-foot is adequate will be based on the determination of whether the curve number of 65 or 69 is most appropriate.

Recommendations

The proposal as submitted should be denied. Subsequent submittals must either (1) provide supportive documentation sufficient to reverse the Division requirement that a curve number of at least 69 be utilized and the determination that the combined storage capacity of the two structures is .75 acre-feet; or (2) be redesigned to meet the additional capacity required by a curve number of 69. Subsequent submittals must also contain a certified statement, as required by Section 733.160, which includes a schedule setting forth dates when plans will be submitted to obtain approval for the final reclamation design of the permanent impoundment, or include the plans for the final reclamation.

To reverse the required curve number of 69, the Division will consider submitted meteorological, soils or other scientific data to support the statement from page 116 "The impoundment has been in place since approximately 1971 and has never overflowed or breached during that time."

To reverse the determination that the combined storage capacity is a maximum .75 acre-feet, the Division will consider submitted detailed volume calculations for each contour interval.

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