007/019 #2

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

March 4, 1994

TO: Daron Haddock, Permit Supervisor

FROM: Steven M. Johnson, Reclamation Hydrologist

RE: Diversion Designs, Andalex Resources, Centennial Project, ACT/007/019-93E, Folder #2, Carbon County, Utah

SUMMARY

An application for a permit change was submitted to the Division, concerning designs of the diversions at the Centennial Project. The changes in the application consist of reclassification of existing diversions, and designs of newly classified diversions. The Division reviewed this proposal November 29, 1993 and changes were required before approval could be given. These changes were received in the Division office in January 1994. Upon examination it was determined that the requirements were not met satisfactorily; therefore, a phone call was place to clarify the problems outlined in the first review, and request the addition information.

A second amendment (ACT/007/019-93F) was proposed regarding the addition of an overflow culvert in Catch Basin B. This amendment was approved with the stipulation that Plate 11 would be modified to reflect the actual conditions in the basin. Andalex included a copy of the revised Plate 11 with this submittal.

ANALYSIS

R645-301-120 Permit Application Clear and Accurate

Original Deficiency:

1. *Clearly mark the location of the rock check dam for UD-4 and UD-5 on Plate 8, as stated on page 160-A. Include Figure IV-9, describing the rock check dams, as stated in the plan.*

2. *A curve number of 90 should be used for disturbed areas in calculating the flow as the operator states on page 159, rather than using the undisturbed curve number of 70, as was done on pages 169 and 169-A.*

3. *The flows through culverts CD-1 and CD-2 require greater diameters than that of the culverts currently in place. If there is currently a method to contain this flow in place it must be shown; otherwise, provide larger culverts at these locations.*

Analysis:

There are no markings on UD-5 showing the locations of the check dam. There are markings on UD-4 assumed to be the location of the check dam; however, this is not labeled as such in the drawing key or on the map. If this assumption is correct, then there are similar markings appear near the bottom of UD-5, but are not directly on the channel. They may have been mistakenly omitted from the map in the past.

The time of concentration and peak discharges for the diversion DD-2 were recalculated using the proper curve number of 90. This resulted in a decrease of discharge values that should not happen when the curve number is increase; however, after closer examination, the newest numbers seemed correct. The time of concentration and peaks flows were not recalculated for the other disturbed area diversion. It seems that they are still calculated as if the entire area was undisturbed.

The Diameters required to pass the 10-year, 24-hour storm events through culverts CD-1 and CD-2 were changed to values less that the diameter of the culverts in place. It appears that the original diameter required values were errors in calculations and these errors were corrected.

Outstanding Deficiencies:

1. Clearly mark the location of the rock check dam for UD-4 and UD-5 on Plate 8, as stated on page 160-A. These should be labeled on the map or in the map key as rock check dams.

RECOMMENDATION

The latest corrections to the Centennial mine plan are an improvement and should be approved by the Division. However, this approval should be made with the following stipulations. First, the outstanding deficiency regarding the rock check dams on UD-4 and UD-5 should be satisfied. Second, all disturbed area diversions should be calculated with there proper curve numbers. Diversions that are fed by both disturbed and undisturbed area

the proper curve number would be an average based on the percent area disturbed verses undisturbed.

ANDXDVR2.MSJ