



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

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April 2, 1997

TO: Daron Haddock, Permit Supervisor *DCA*

FROM: Wayne H. Western, Senior Reclamation Specialist *WHW*

RE: Midterm Review, Midterm Review of the Bond Amount and Calculations.  
Andalex Resources Inc., Wildcat Loadout, ACT/007/033, Folder #2, Carbon  
County, Utah *4*

**Synopsis of Proposal**

The Division reviewed the bond calculations for the Wildcat Loadout and determined the bond calculations are inadequate. The major deficiencies involve earthwork costs. The Permittee did not give the Division detailed information about equipment productivity and site factors such as haul distances and grades.

**BONDING AND INSURANCE REQUIREMENTS**

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

**Analysis:**

**Determination of Bond Amount**

We divide reclamation costs into direct and indirect costs. Direct costs include, but are not limited to, demolition, earthwork and vegetation. Those prices are based on unit costs and productivity rates. Indirect costs are based on a percentage of the total project. They include but are not limited to mobilization and demobilization, contract management, engineering design, monitoring and maintenance, contingencies, and inflation.

The Operator used building demolition costs from Means. He discounts the cost by 13% for regional price factors. The regional factor is based on construction labor and material costs. Demolition costs are based on equipment and labor costs. Regional construction costs may not be valid for demolition activities. Also, the regional factor varies from year to year. The Division does have a good method to estimate future regional cost factors. The Division does not use regional cost factors for demolition work.

The Permittee used concrete demolition costs that they derived from Means equipment costs

and productivity charts from the Caterpillar Handbook. The production curves in the Caterpillar Handbook are based on earthwork activities not concrete demolition. Those charts are not valid for demolition work.

The Permittee gave the Division enough information for us to determine the demolition and disposal costs. We determined that direct demolition and disposal costs are \$297,146. The Permittee submitted an amount of \$174,423.

The Permittee based the earthwork costs on a flat unit cost. The Division does not accept such cost rates.

Under R645-301-839.140 the cost estimates must be based on the probable difficulty of reclamation. The Division requires that the Permittee base the earthwork calculations on site factors. Those calculations must include costs based on but not limited to the material type, grade, efficiency factors, payload, rolling resistance, cycle time and the combination of equipment used.

The Permittee estimated the vegetation expense based on a per acre cost and the number of acres. He did not state where the unit cost came from. That information must be included in the cost estimate.

#### **Findings:**

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-830.140**, The Permittee needs to submit a detailed cost estimate for the earthwork and revegetation. The earthwork calculations must include but not be limited to the material type, grade, haul distances, efficiency factors, payload, rolling resistance, cycle time and the combination of equipment used. The Division will supply the Permittee with an earthwork and revegetation worksheet upon request.

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