



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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TO: Sue Linner, Permit Supervisor

FROM: Randy Harden, Reclamation Engineer ~~SRH~~

RE: Mine Permit Review, Technical Deficiencies, Aberdeen Mine Facilities, Andalex Resources, Inc., Centennial Project, ACT/007/019, Folder #2, Carbon County, Utah

The following comments refer to the completeness and the technical deficiencies for Andalex Resources Centennial Project, surface facilities for the Aberdeen Mine. The review comments are based on a response submitted to the Division on October 11, 1988.

UMC 783.24 Maps: General Requirements - JRH

Page 188-190 list sub-section by sub-section, the requirements of these sections of the regulations.

- Part (a) Surface and subsurface ownership of lands contiguous to the permit area are shown on plates 2 and 3. These plates have been updated to incorporate the surface modification of the BLM use permit.
- Part (b) The leases in which the operator has the legal right to conduct mining activities is provided on plate 4. This plate has been revised to include the Aberdeen surface facilities within the exiting permit area.
- Part (c) The operator has indicated that no additional permits will be sought and detailed sequence and timing information for the five-year permit term is located on plates 29-31. All of the underground mine workings are located within the existing lease areas and within the lease areas as modified by the operator in this plan. Those surface facilities proposed by the operator for the Aberdeen Mine are now within the permit area.

UMC 783.25 Cross Sections, Maps, and Plans - JRH

Page 188-190 list sub-section by sub-section, the requirements of these sections of the regulations.

Part (i) The operator has revised and located non-coal waste facilities on plate 6 of the mining and reclamation plan. The operator has located the temporary and permanent locations for the storage and disposal of excess spoil and mine development waste materials. This section is now considered complete.

Part (k) Plate 14 shows the surface configuration of the area to be affected and a series of three sheet for plate 15 indicate the cross sections of the site indicating that the operator intends on reclaiming the surface to the exact configuration as the original surface. These section also include the surface configuration as currently constructed and as proposed. This part is considered complete, however, refer to comments under UMC 817.101 for comments regarding backfilling and grading of the site.

Plate 14 has been revised to include the disturbed area boundary. Plate 14 also involves earthwork and design criteria and now bears the mark of a registered professional engineer. This map is now considered to be complete.

Plate 17, Final Reclamation, should include the disturbed area boundary included on it for reference and indicate the location and the extent of the reclamation to be accomplished during Phase II reclamation on the site. This drawing has not been provided by the operator in the latest review. Details of the final reclamation plan are still considered to be outstanding.

Plate 5 shows the surface disturbed area boundary but does not include the permit area boundary for reference to the location of the disturbed area. The permit area should be included on this drawing to ensure that the operator is conducting surface activities related to underground coal mining activities in accordance with the regulations. This drawing shall also be certified by a registered professional engineer. This drawing was not resubmitted as requested in the previous review.

Plate 6 as well as all other plates locating and identifying surface facilities for the mining operations should include the surface disturbed area boundary for reference to the facilities and to indicate that the structures are within the affected area. Please include these boundaries as appropriate on the drawings. This has yet to be accomplished by the operator.

UMC 784.12 Operation Plan: Existing Structures - JRH

A description of the existing structures for the underground mining facilities starts on page 85 of Chapter IV. Plates 29 through 31 indicate the location of the proposed workings as well as the extent of the abandoned workings experience within the permit area. With the exception of the Aberdeen Mine facilities, all of the structures exist on Zion's fee property. This information is found on Plates 6 and 7 of the MRP.

Construction was scheduled to begin on the Aberdeen Mine surface facilities in during the second quarter of 1988. The Aberdeen facilities will consist of approximately 2.25 acres. The proposed mine site has been previously impacted by mining activity.

This section is considered to be complete. Information found in the mining and reclamation plan indicate when the disturbance located in the vicinity of the proposed Aberdeen facilities occurred. A majority of this disturbance occurred during the construction and the installation of the other mining facilities located on the site during the installation of the undisturbed area culverts. Topsoil recovery information is found on page 95, chapter 8 of the plan.

UMC 784.13 Reclamation Plan: General Requirements - JRH

Information regarding this section of the regulations is found in the mining and reclamation plan beginning on page 90.

The operator has provided a reclamation timetable for the site. The timetable is broken down into jobs which are to be accomplished during Phase I and Phase II reclamation work.

The operator has provided a cost estimate of the reclamation work to be accomplished on the site.

The operator has indicated in the reclamation plan that the site will be returned to as near as possible the approximate original contour as the area was prior to mining. In those areas where solid rock was excavated in face up of the portals, as well as road cuts and pad development, the swell factor associated in conjunction with these excavations will not allow for total replacement of these materials to their original volume. Additionally, fill areas may not be considered stable if placed back to their original surface contour.

In those areas where steep slopes occur (greater the 2h:1v) or in other locations on the site in which the operator does not intend to completely backfill the site to the original conditions, the operator must provide detailed sections showing the final configuration of the surface and if necessary, stability analysis to ensure long-term stability of the slopes.

With regard to topsoil requirements, the operator has indicated that the site is to be covered with 6" of topsoil. Over the entire site (34.2 acres), this is approximately 27,600 cubic yards of material in place. The operator has indicated that the topsoil stored on the site is estimated to be 10,600 cubic yards. The construction of the Aberdeen Mine infers that an additional 5,600 cubic yards (6") of material (for the 7 acres of the Aberdeen site) will be stored there in the new topsoil stockpile for a total of 16,100 cubic yards of topsoil. This indicates a shortage of approximately 10,000 cubic yards of material in which the operator needs to fulfill the commitment to replace topsoil in the mining and reclamation plan.

The soil and vegetation survey located in Appendix M of the mining and reclamation plan concludes on page 272 that the surface soils be placed to a minimum depth of one foot in disturbed areas, wherever possible, before starting seeding operations. If the topsoil cover requirements were at one foot, an additional 27,000 cubic yards of topsoil materials would be needed. The operator needs to rectify the conflicts found within the mining and reclamation plan and determine the amount of topsoil required for reclamation. In the event that insufficient topsoil material has been salvaged on the site, suitable substitute topsoil material must be developed with appropriate test plots or a topsoil borrow area must be located and incorporated into the permit area.

Cut and fill calculations do not include the amount of swell or the compaction of the materials as they are relocated on the site. No adjustments in the mass balance are seen within the mining and reclamation plan.

The bond estimate as provided by the operator does not include productivity calculations for the equipment selected. In order to determine the calculations complete, equipment sizing and productivity calculations should be included in the mining and reclamation plan.

The above items were previously stated in earlier permit reviews, the operator acknowledges that these deficiencies remain in the plan and need to be addressed.

UMC 817.71 Disposal of Excess Spoil and Underground Development
Waste: General Requirements - JRH

The operator has addressed information regarding the requirements of this section on pages 174-176 of the mining and reclamation plan.

The operator indicates in part UMC 784.19 on page 174 of the mining and reclamation plan that there has been no development waste or excess spoil and there will be none. The operator further states that raw coal (run-of-mine coal) is the only product from the mine and that there are no coal processing waste facilities within the permit area.

The operator states that the only spoil material which will be developed at the mine site will be sediment pond waste. Waste material developed underground is anticipated to remain underground or will be placed in an area which will report to a sediment pond.

The operator has designated temporary and permanent locations for the storage of excess spoil and mine development waste. The operator intends on utilizing the existing waste material as fill material in the construction of the Aberdeen Mine site.

The operator has provided analysis of the existing sediment pond material for determination as to whether or not the material is acid or toxic forming material. This information is found in Appendix O of the mining and reclamation plan.

The operator is not considered to be in compliance with the requirements of this section. Once the construction of the Aberdeen site facilities are complete, the operation indicates that there will be only small areas in which the materials could be placed. The location of the permanent waste storage is shown to be directly over the diversion culvert which is to be removed upon reclamation. More detailed design of this problem must be accomplished by the operator in order to consider this section technically adequate.

The operator has correctly re-categorized waste material in the plan and on the drawings for the location of all types of waste materials.

While the operator has included methodology for handling the immediate waste situation for the site by disposal of the excess waste in the construction of the Aberdeen Mine, long-term reclamation is not apparent for the entire facilities.

UMC 817.101 Backfilling and Grading: General Requirements - JRH

Information regarding backfilling and grading is found on pages 101-103 of the mining and reclamation plan. A mass balance survey is included in the plan on pages 97 through 99, with section of the facilities taken from plate 14 and 15.

The operator has indicated that backfilling and grading of the site will be in accordance with the general requirements of this section.

In conjunction with the construction of the exiting facilities, a pad was developed which exceeded the 2h:1v slope criteria as outline in the regulations and the operator has conducted a stability analysis for that which is included in the mining and reclamation plan.

The operator is not considered to be in compliance with the requirements of this section.

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Cut and fill calculations do not account for swell or recompaction factors. Pads and portal areas which were cut in rock may not prove to be stable if reclaimed to the preexisting slopes for those areas.

In order to achieve approximate original contour, the operator will need to indicate where excess fill materials will be located. In referencing those comments made in section UMC 817.71, the operator should also incorporate the volumes of materials which will be developed from the cleaning of sediment ponds, surface cleanup of coal spills, and such waste materials which may not be returned to underground workings.

BT/15/48-53