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September 6, 1988

TO: FILE

FROM: Randy Harden, Reclamation Engineer

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

The following comments refer to the incidental boundary change and proposed amendments to the Aberdeen Surface facilities (underlined portions represent previous comments made in a May 25, 1988 memo regarding deficiencies in the plan):

UMC 783.24 Maps: General Requirements - JRH

Part (a) Surface and subsurface ownership of lands contiguous to the permit area are shown on plates 2 and 3. These plates need to be updated to incorporate the surface modification from the BLM when approval by the BLM is provided for the construction of the Aberdeen facilities which are currently proposed to be located outside of the permit area.

These plates have been revised as required.

Part (b) The leases in which the operator has the legal right to conduct mining activities is provided on plate 4. Again this plate needs to be revised to include the Aberdeen surface facilities outside of the exiting permit area.

This plate has also been corrected.

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. Only those surface facilities proposed by the operator for the Aberdeen Mine are partially located outside of the permit area. The operator is in the process of obtaining approval from the BLM for the use of this area.

The BLM has granted approval for a 10 acre right of way.

Refer to comments at the end of UMC 783.25 for specific deficiencies or items which require correction regarding maps and drawings.

UMC 783.25 Cross Sections, Maps, and Plans - JRH

Part (i) The operator has located non-coal waste facilities on plate 6 of the mining and reclamation plan. However, the operator has not located the temporary and permanent locations for the storage and disposal of excess spoil and mine development waste materials and other materials such as sediment pond waste which must be disposed of within the permit area. This section of the regulations is not considered to be complete. The operator must provide plans for the temporary and permanent location for storage and disposal of these materials. This deficiency applies to the Centennial Project, including the Aberdeen Mine.

Again, the operator has indicated temporary and permanent locations for non-coal waste and not for excess spoils and mine development waste. It is believed that the operator has only mismarked these locations and that the areas designated for non-coal waste are for excess spoils and mine development waste including such materials as sediment pond waste. The operator shall correct this in the plan and on the drawings.

Although this section of the regulations is considered to be complete, the following minor deficiencies or technical problems were found on these drawings:

1. Plate 14 does not include the disturbed area boundary. This should be included on the drawing for reference. Plate 14 also involves earthwork and design criteria and should bear the mark of a registered professional engineer. Reference should also be made as to the plate(s) on which the cross sections are located.

The disturbed area boundary has been included on the drawing, however, certification by a registered engineer has not been included on the plate.

2. 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.

   The disturbed area boundary has been included on the drawing but no delineation of Phase I and II reclamation is provided.

3. 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 has been certified, but the permit area boundary was not included on the drawing to ensure that the operator is operating within permit area. Since the permit boundaries are found on other drawings, this drawing is considered to be satisfactory.

4. 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 been accomplished by the operator.

UMC 784.12 Operation Plan: Existing Structures - JRH

This section is not considered to be complete. Information found in the mining and reclamation plan does not indicate when the disturbance located in the vicinity of the proposed Aberdeen facilities occurred. It is assumed that 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. The operator must indicate the date and the nature of this disturbance, and, if this disturbance occurred within the scope of the existing permit, provide a description of the activities. The Division's Primary concern for the prior activity on this site is topsoil recovery.

The operator has indicated that the area within and surrounding the proposed Aberdeen Mine site was previously disturbed by mining. The maps and plans provided by the operator do not indicate the date, location or extent of these surface disturbances. The operator shall be required to delineate these areas on the drawings to indicate which areas were previously disturbed by earlier mining activities and if possible indicate the date or the approximate dates in which the disturbances occurred in accordance with the requirements of UMC 771.23(e).

The operator should clarify those existing structures as defined in the Mining and Reclamation Plan (MRP). The intent of the requirements of this section in the regulations is to identify and ensure that those structures which were constructed prior to August 3, 1977, be modified or reconstructed in a manner so that they will conform to the requirements of the regulations. The structures currently listed in the operator's plan were constructed under permit in 1980.

The above deficiencies in the MRP plan have been corrected by the operator and Plate 6 has been modified accordingly.

UMC 784.13 Reclamation Plan: General Requirements - JRH

The operator has indicated in the MRP that the site will be returned as close 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 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 areas where steep slopes occur (greater the 2h:1v) or in other locations on the site where 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.

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 operator has partially addressed the above comments. There is however, no specific details regarding highwall reduction in the plan. Cross-sections provided by the operator are not sufficiently detailed to show highwall reduction for individual face-up areas. Mass balance calculations have not been adjusted.

The operator has not provided productivity calculations for the estimate of the costs for reclamation.

These issues apply not only to the proposed Aberdeen mine construction but to the mining and reclamation plan in general. Rather than requiring the operator to re-address this information just for the Aberdeen site, it is more appropriate to have them addressed in conjunction with the entire mining and reclamation plan. Subsequent review of the plan in conjunction with all of the facilities for the Centennial Project will include a more detailed explanation and requirement for these deficiencied in the plan. The operator shall be required to address the above deficiencies at a later date in conjunction with those deficiencies found in the entire plan.

UMC 784.16 Reclamation Plan: Ponds, Impoundments, Banks, Dams and Embankments - JRH

The operator indicated that sediment pond E will be enlarged during Phase I reclamation construction in order to allow the reclamation of ponds B and C. Design for this pond enlargement is not included in the mining and reclamation plan. Due to the existing limitations on the site, would it be possible to construct sediment pond E to a size which could allow for the immediate removal of ponds B and C during mining operations?

The location of the emergency spillway for sediment pond C is directly over the embankment. This is not considered to be the most suitable configuration for a spillway. It appears that the emergency spillway could be relocated to discharge over natural materials and into the undisturbed drainage diversion adjacent to the pond.

The culvert discharge structure as proposed for sediment pond E does not allow for the decanting of the pond. Since the undisturbed drainage culvert passes directly beneath the pond, the operator may wish to consider the installation of a riser from the undisturbed culvert. This vertical riser would allow for the installation of a decant valve to drain the sediment pond when necessary and eliminate the additional installation of a culvert through the embankment.

The operator should consider the above suggestions in modifications of the sediment pond design. In any event, the operator shall be required to incorporate into the design for sediment pond E, a method for decant of the pond.

Other deficiencies regarding sediment pond design and structure are found in the technical deficiencies under UMC 817.46.

This section is considered to be complete. The operator has redesigned the sediment pond for the Aberdeen facilities. Refer to comment made under UMC 817.46 regarding any further comments on the sediment pond.

UMC 817.46 Hydrologic Balance: Sedimentation Ponds - JRH

Refer to comments by R. Summers and M. DeWeese regarding sediment ponds.

The proposed sediment pond design indicates that the structure meets the combined 5:1 slope criteria and embankment with criteria for sediment ponds as required by this section and the operator has indicated that the pond will meet the minimum design standard for the construction of the embankment. This portion of the sediment pond design is considered to be technically complete and adequate.

Upon completion of the construction of the sediment pond, the operator shall be required to provide certified as-built drawings of the pond, and, certification by a registered professional engineer that the pond meet the design requirements proposed in the mining and reclamation plan.

UMC 817.59 Coal Recovery - JRH

Lease modifications have been incorporated in the Mining and Reclamation Plan. These leases include SL-027304, SL-063058, and U-010581. Total lease acreage is 2,478.31 acres. The permit area also include 200 acres of fee coal, which increases the mine plan area to a total of 2,678.31 acres. The operator has indicated that the permit area is a total of 2,798 acres, a discrepancy of approximately 120 acres. It appears that the operator has not included federal lease U-52341 in the information provided on page 1 of the plan (which is 120 acres). The operator should check this data and correct the Mining and Reclamation Plan as necessary.

Prior to permit approval, the operator should check and revise the acreage figures provided on page 1 of the mining and reclamation plan to match the acreages provided for in the state, federal, and fee leases as presented in the plan.

The operator has corrected this information in the Mining and Reclamation Plan.

UMC 817.71 Disposal of Excess Spoil and Underground Development Waste:

General Requirements - JRH

In accordance with part (a) of this section, "Underground development waste and excess spoil not required to achieve approximate original contour within the area where overburden has been removed and which is not used as backfill shall be hauled or conveyed to and placed in designated disposal areas within a permit area."

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.

The Mining and Reclamation Plan is not clear on some of the terminology that is used in discussion of the waste materials. The operator has included excess spoil and mine development waste with the treatment of non-coal waste material.

If the non-coal waste storage area described in the plan and shown on the facilities drawing were clarified to indicate that this location is for the temporary storage of excess spoil and mine development waste material, the temporary storage requirements of this section could be considered to be complete.

With regard to permanent location for disposal of excess spoil and mine development waste, the operator must re-evaluate the location and disposition of the material. The operator has indicated that this excess material will be disposed of off-site to a landfill. Under this section of the regulations, removal of excess spoil and mine development waste cannot be removed or placed outside the permit area.

In summary of the deficiencies associated with this section of the regulations, the operator needs to incorporate the following into the plan:

1. Language referring to the description of non-coal waste, excess spoil and mine development waste, and sediment pond waste must be corrected in the plan. Excess fill from earthwork and grading, sediment pond materials, underground waste rock, contaminated coal, coal waste and other such earthen materials shall be considered to be excess spoil and mine development waste and shall be treated in accordance with the requirements of this section (UMC 817.71)

2. The operator shall be required to locate on the drawings, the location(s) for both the temporary and permanent storage and disposal for these materials. The capacities for these areas should be included in the narrative description of the plan and included on the drawings. For those waste materials which are found to be non-toxic or non-acid forming, the operator may incorporate these materials into backfill areas during reclamation activities. However, a reasonable estimate of the waste materials to be accumulated on the site must be taken into consideration, and, these quantities must be factored into the mass balance for the reclamation earthwork for the site.

3. The operator needs to provide a commitment or methodology to ensure that the materials to be disposed of are non-acid or non-toxic forming and that if such materials are encountered, they will be treated accordingly.

4. It appears that the operator will most likely be able to incorporate the permanent disposal of these waste materials into the backfilling of the site in achieving approximate original contour and that a permanent waste fill facility will not have to be constructed. The material should be placed within the cuts for the highwalls from pads and portal face-ups at the time of reclamation. The major problem that the operator will encounter is the location of temporary storage area for these materials during mining operations.

Confusion and conflicting information is still found within the plan and on the drawings as outlined above. While changes to the mining and reclamation plan will have to include these revisions, they are not considered to be critical in approval for the construction of the Aberdeen facilities. The operator will have to further clarify the terminology and the description of waste materials in the reclamation plan.

UMC 817.89 Disposal of Non-Coal Wastes - JRH

The operator has misinterpreted the requirements for non-coal waste materials by including excess spoils an mine development waste materials into the discussion of non-coal waste. Non-coal waste materials as defined in the regulations include but are not limited to grease, lubricants, paints, flammable liquids, garbage, abandoned mine machinery, timber and other combustibles generated during underground coal mining activities.

Earthen materials including excess spoil, mine development waste, coal waste, waste rock, excess fill materials, sediment pond waste and soil are not considered to be non-coal waste materials.

Information found under part 3.1 Combustible Materials, is more appropriate for the requirements of this section and the plan should be revised to indicate that non-coal waste materials as defined by the regulations will be collected in trash containers and hauled to an approved landfill for the type of materials to be disposed.

The operator also needs to indicate that specific materials such as oil and grease or other waste which is subject to other specific local, state and federal requirements will be disposed in accordance with those regulations.

Refer to UMC 817.71 for discussion of excess spoil and mine development waste materials as described by the operator under non-coal waste.

The operator has addressed most of the comments regarding non-coal waste materials. However, similar to those comment made under UMC 817.71, the operator shall need to further clarify the plan and the drawing regarding non-coal waste materials.

UMC 817.101 Backfilling and Grading: General Requirements - JRH

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 pre-existing 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.

Again, the operator has not sufficiently responded to these deficiencies. A suitable backfilling design and plan must be developed and submitted for incorporation into the plan.