

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

January 4, 2007

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TO: Internal File

THRU: Pamela Grubaugh-Littig, Permit Supervisor *pgl*

FROM: Steve Christensen, Environmental Scientist III

RE: *sc* Installation of Ventilation Shaft/Blowing Fan, Andalex Resources Inc., Centennial Project, C/007/0019, Task ID #2722

SUMMARY:

On October 25th, 2006, the Division of Oil, Gas and Mining (the Division) received an application from Andalex Resources Inc. (the Permittee) to install a ventilation shaft/blowing fan and substation at the Centennial Mine. The application submitted on October 25th, 2006 replaced a previous application submitted on September 29th, 2006. The Division responded to the application on November 8th, 2006 (Task ID# 2679). A number of deficiencies were identified. On December 21st, 2006, the Division received a response to the outstanding deficiencies. The following technical memo addresses the outstanding hydrology deficiency previously identified in the Division's analysis performed in November 2006.

The Mine Safety and Health Administration (MSHA) has determined that the atmospheric conditions at the Centennial Mine are becoming increasingly dangerous due to elevated levels of methane gas. In light of this, MSHA has directed the Permittee to reduce the methane levels. The installation of the ventilation shaft/blowing fan is one component of the Permittee's efforts to reduce methane levels in the mine.

The new fan will require a vertical ventilation shaft constructed from the surface down to the Aberdeen mine workings. The proposed location for the new fan is north of the existing shop within the previously disturbed area. The installation of the new fan will not require any additional surface disturbance. In addition, there will be no change to the hydrologic design of the surface facilities located in Deadman Canyon as a result of this project. The existing drainage areas and associated structures will remain un-changed.

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The hydrologic information provided meets the requirements of the State of Utah R645-Coal Mining Rules. The proposed amendment should be approved.

TECHNICAL ANALYSIS:

OPERATION PLAN

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

Analysis:

The application meets the Operational Plan requirements for Road Systems and Other Transportation Facilities as provided in R645-301-732. The application provides a proposed surface facilities map (Plate 6-As Constructed Surface Facilities Deadman Canyon). According to Plate 6, the installation of the ventilation shaft/blowing fan and substation will not require the construction of new road systems or other transportation facilities. The existing primary haul road within Deadman Canyon will provide access to the proposed construction location. In addition, the proposed project and its construction will not alter existing road drainage ditches. The Permittee has stated "care will be taken to not place any material in any designated ditches".

Findings:

The information provided meets the hydrology requirements for Road Systems and Other Transportation Facilities as provided in the R645-State of Utah Coal Mining Rules.

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Coal Mine Waste

The application meets the Operational Plan requirements for Coal Mine Waste as provided in R645-301-746. The material or "muck" that is produced during the excavation of the ventilation shaft will fall back into the mine as it is being cut and will be disposed of in the

underground workings. As such, drainage and sediment controls are not a factor with the proposed construction in regard to the excavated material that will be removed for the shaft.

Findings:

The information provided meets the hydrology requirements for Coal Mine Waste as provided in the R645-State of Utah Coal Mining Rules.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

General

The application meets the Operational Plan requirements for Coal Mine Waste as provided in R645-301-731. It is not anticipated that ground water will be impacted by the proposed construction. The Aberdeen Mine is relatively shallow in the proposed construction location (approximately 290' below grade according to Dave Shaver of Andalex Resources, Inc). In addition, the Aberdeen Mine is located above the water table and reported to be dry at this location. The raise-bore operation proceeds from the mine workings upward towards the surface. As such, all drill cuttings and potential water encountered will be contained in the mine workings, rather than report to the surface. In the event that unexpected ground water is encountered during the advancement of the pilot hole, it will be contained within the existing concrete collar, or will be pumped into one of the existing disturbed area drainage ditches, which report to a sedimentation pond. Appendix Y of the submitted MRP amendment provides a discussion on potential impacts from the proposed project.

The proposed project will not alter the existing hydrologic drainage design for the mine site. The existing drainage areas and associated structures will not be relocated or altered for the proposed project.

The proposed site for the ventilation shaft/blowing fan and substation is within the approved disturbed area. No additional surface disturbance will be required to complete the project. As a result, material damage outside the permit area is not anticipated.

Adverse impacts to the hydrologic balance in connection to the project are not anticipated. As stated previously, the drainage of the mine site will remain unchanged. Surface

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runoff generated at the site will be conveyed to Sediment Pond C where it will be retained for a sufficient duration to remove suspended sediment prior to discharge. In addition, any potential ground water encountered will be contained in the mine workings and/or treated within a surface sedimentation pond.

Diversions: General

The application meets the Operational Plan requirements for Diversions: General as provided in R645-301-742.300. Surface runoff from the proposed site will be conveyed to Sediment Pond C via existing disturbed drainage diversion ditches and culverts (See Plate 8-Support Facilities Surface Area Drainage).

Siltation Structures: General

The application meets the Operational Plan requirements for Siltation Structures: General as provided in R645-301-732.100. All surface runoff generated from the proposed construction site will be conveyed by the existing disturbed drainage system to Sediment Pond C (See Plate 8-Support Facilities Surface Area Drainage). The proposed construction site's surface drainage is already conveyed to Sediment Pond C and it's area was figured into the design and sizing of the pond.

Findings:

The information provided meets the Operational Plan requirements for Hydrologic Information as provided in R645-301-731.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Mining Facilities Maps

The application meets the Operational Plan requirements for Mining Facilities Maps as provided in R645-301-731. Plate 6-As Constructed Surface Facilities Deadman Canyon depicts the location of the proposed construction site and the existing drainage controls that will divert the surface runoff to Sediment Pond C.

Findings:

The information provided meets the hydrology requirements for Mining Facilities Maps as provided in the R645-State of Utah Coal Mining Rules.

RECLAMATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Analysis:

Hydrologic Reclamation Plan

The application meets the Reclamation Plan requirements for the Hydrologic Reclamation Plan as provided in R645-301-761. Page 5-175 of the application states "The blowing fan ventilation shaft will be sealed by completely backfilling it from bottom to top. This shaft is 370' by 16' in diameter, and will require approximately 2,755 cubic yards of backfill material". The approved MRP adequately describes the reclamation plan that will be utilized on the surface facilities at the mine. As such, the surface water provisions of the already approved reclamation plan remain unchanged. By backfilling the entire ventilation shaft, hydrologic concerns related to ground water and hydrologic balance are adequately addressed.

Findings:

The information provided meets the hydrology requirements for Hydrologic Reclamation Plan as provided in the R645-State of Utah Coal Mining Rules.

RECOMMENDATIONS:

The hydrologic information provided in the application meets the requirements of the State of Utah R645-Coal Mining Rules. The proposed amendment should be approved at this time.