

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

June 5th, 2007

TO: Internal File

THRU: Wayne Hedberg, Permit Supervisor *WH*

FROM: Steve Christensen, Environmental Scientist II *SKC*

RE: Water Monitoring Plan, Andalex, L.L.C., Centennial Mine, C/007/0019 Task ID #2671

SUMMARY:

In August 2006, an operational water-monitoring plan was presented to the Division of Oil, Gas and Mining (the Division) from Andalex Resources, L.L.C. (the Permittee). The water-monitoring plan was submitted to correct discrepancies identified by Division personnel within the MRP. As mining at the facility has expanded, new monitoring sites have been added and new monitoring plans have been developed. As a result, several monitoring plans are located in different locations with the MRP; none of which outline all current monitoring requirements. The Permittee intends for the recently submitted water-monitoring plan to be a comprehensive document that details all operational water monitoring requirements and that it will supersede all other versions of monitoring plans that have been previously approved.

The proposed water-monitoring plan was developed based on hydrological studies performed at the mine as the permit area has been expanded. The proposed water-monitoring plan was also based upon an assessment of monitoring data collected to date, as well as upon potential future mining plans. The water-monitoring plan proposes to eliminate the sampling of five sites: four surface water sites (25-1, 8-1, 17-2 and 17-1) and one groundwater-monitoring site (S25-1).

The monitoring sites to be eliminated are located in the Centennial permit area overlying the Pinnacle Mine. Upon review of the annual reports and per phone conversations with Centennial Mine representatives, mining activity in the Pinnacle Mine has ceased. The 2006 Annual Report submitted to the Division states, relative to the Pinnacle Mine, "No mining is anticipated within the next 5 years". The Pinnacle Mine is located below the sites that the Permittee has proposed to remove from the water-monitoring plan. The water-monitoring sites proposed for elimination are located within or adjacent to ephemeral drainages.

FINDINGS:

The submitted water-monitoring plan should be approved with the following conditions:

- The plan should be incorporated into the body of the MRP. Upon review of pages 7-2 through the beginning of page 7-10, there are areas where the information presented is outdated or no longer applicable. Upon inserting the modified water-monitoring plan into the MRP, the Permittee should delete and/or edit language that no longer applies. In addition, the Permittee should provide clarifying language so that it's clear to the reader that the submitted monitoring plan is the approved/official version and that it supersedes all others located throughout the MRP.
- In the event the Permittee plans to resume mining activity in the Pinnacle Mine area or within any area where mining activity could potentially impact water resources located in vicinity of the removed monitoring sites (25-1, 8-1, 17-2, 17-1 and S25-1 respectively), the Permittee will commit to re-establishing the aforementioned monitoring sites a minimum of 1 year prior to mining activity.

TECHNICAL ANALYSIS:

GENERAL CONTENTS

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

The application does not meet the hydrology General Contents requirements for Permit Application Format and Contents as provided in R645-301-120. The water-monitoring plan was submitted in order to correct discrepancies within the MRP that were identified by Division personnel. As mining at the facility has expanded, new monitoring sites have been added and new monitoring plans have been developed. As a result, several monitoring plans are located in different locations with the MRP; none of which outline all current monitoring requirements.

Upon review of pages 7-2 through the beginning of page 7-10 of the MRP, there are areas where the information presented is outdated or no longer applicable. Upon inserting the modified water-monitoring plan into the MRP, the Permittee should delete and/or edit language that no longer applies.

Findings

The information provided does not meet the hydrologic requirements for Permit Application Format and Contents as provided in the R645-State of Utah Coal Mining Rules. However, conditional approval of the proposed monitoring plan is recommended. Upon submitting clean copies of the monitoring plan modification, the plan should be incorporated into the body of the MRP. In addition, the Permittee should provide clarifying language so that it's clear to the reader that the monitoring plan located within the body of the MRP supersedes previous plans and is the approved version.

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OPERATION PLAN

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:

Groundwater Monitoring

The application meets the hydrology Operation Plan requirements for Groundwater Monitoring as provided in R645-301-731.210. The Division finds that these standards are met because the proposed groundwater monitoring plan is based upon previous PHC determinations, previous monitoring plans as well on assessments of monitoring data collected to date. In addition, the proposed monitoring plan takes into consideration past and future mining activity.

Table 2- Groundwater Monitoring Sites lists nine surface water sites slated for monitoring. Table 4- Groundwater Parameter List outlines the specific parameters to be analyzed during groundwater monitoring activities.

The proposed water-monitoring plan proposes the elimination of one groundwater site: spring S25-1. The site is located in Hoffman Canyon above the confluence with Coal Creek. The spring flows intermittently. During quarterly sampling, the spring has produced measurable flow three times since 2001. No flow was observed on the remaining quarterly monitoring visits. In addition, per phone conversations with Centennial Mine representatives and upon review of the submitted annual reports, the Pinnacle Mine (located in the area of spring S25-1) is no longer actively mined. The 2006 annual report states in reference to the Pinnacle Mine "No other mining is anticipated within the next five years". As such, the Division approves of the elimination of spring S25-1 from the Permittee's groundwater monitoring plan provided that the Permittee commit to re-establish monitoring of the site a minimum of one year prior to mining activity resuming in the area.

Surface Water Monitoring

The application meets the hydrology Operation Plan requirements for Surface Water Monitoring as provided in R645-301-731.220. The Division finds that these standards are met because the proposed surface water monitoring plan is based upon previous PHC determinations, previous monitoring plans as well on assessments of monitoring data collected to

date. In addition, the proposed monitoring plan takes into consideration past and future mining activity.

Table 1- Surface Water Monitoring Sites lists nine surface water sites slated for monitoring. Table 3- Surface Water Parameter List outlines the specific parameters to be analyzed during surface water monitoring activities.

The proposed water-monitoring plan proposes the elimination of four surface water sites: 25-2, 8-1, 17-2 and 17-1 respectively. Sites 8-1 and 17-2 are located in Straight Canyon. Site 25-2 is located within the Hoffman Canyon drainage and site 17-1 is within the Upper Star Point Fork drainage. Flow data obtained by the Permittee demonstrates that the drainages are ephemeral (i.e. flow only in response to a precipitation event). Flow has not been observed at sites 17-1 and 17-2 during quarterly sampling since 2001. Site 8-1 produced a measurable flow one time since 2001 (8 gallons per minute on May 25, 2005). Similarly, site 25-2 produced a measurable flow one time during the same quarterly monitoring event as site 8-1 (100 gallons per minute on May 25, 2005).

In addition, per phone conversations with Centennial Mine representatives and upon review of the submitted annual reports, the Pinnacle Mine (located in the area of the aforementioned surface water sites) is no longer actively mined. The 2006 annual report states in reference to the Pinnacle Mine "No other mining is anticipated within the next five years". As such, the Division approves of the elimination of surface water monitoring sites 25-2, 8-1, 17-2 and 17-1 from the Permittee's surface water monitoring plan provided that the Permittee commit to re-establish monitoring of the sites a minimum of one year prior to mining activity resuming in the area.

Findings:

The information provided meets the hydrologic requirements for Ground and Surface Water Monitoring as provided in the R645-State of Utah Coal Mining Rules.

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:

Monitoring and Sampling Location Maps

The application meets the hydrology Operation Plan requirements for Monitoring and Sampling Location Maps as provided in R645-301-731. Figure 1- Operational Water

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Monitoring Plan Map depicts the locations of the ground and surface water sites to be monitored by the Permittee.

Findings:

The information provided meets the hydrologic requirements for Monitoring and Sampling Location Maps as provided in the R645-State of Utah Coal Mining Rules.

RECOMMENDATIONS:

The application should be approved with the following conditions:

- The plan should be incorporated into the body of the MRP. Upon review of pages 7-2 through the beginning of page 7-10, there are areas where the information presented is outdated or no longer applicable. Upon inserting the modified water-monitoring plan into the MRP, the Permittee should delete and/or edit language that no longer applies. In addition, the Permittee should provide clarifying language so that it's clear to the reader that the submitted monitoring plan is the approved/official version and that it supersedes all other plans located throughout the MRP.
- In the event the Permittee plans to resume mining activity in the Pinnacle Mine area or within any area where mining activity could potentially impact water resources located in vicinity of the removed monitoring sites (25-1, 8-1, 17-2, 17-1 and S25-1 respectively), the Permittee will commit to re-establishing the aforementioned monitoring sites a minimum of 1 year prior to mining activity.