

0047



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

007/004 # 2

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

March 21, 1995

TO: Daron Haddock, Permit Supervisor

FROM: Steven M. Johnson, Reclamation Hydrologist 

RE: Draft Review, Willow Creek Refuse Removal, Castle Gate Mine, Amax Coal Company, ACT/007/004-95B, Working File, Carbon County, Utah

SYNOPSIS

Amax Coal submitted a significant revision to the Castle Gate Mine plan which would allow for the removal of refuse in the Willow Creek area to be completed. This review is for administrative completeness of the hydrology.

ANALYSIS

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR Sec. 783., et. al.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

Analysis:

Sampling and analysis.

Sampling and analysis information is found in Section 12.7.2.3.

Baseline information.

Baseline information is included in Chapter 7 and Chapter 12. Groundwater quantity and quality is found in Section 12.7.2.4.1 and Sections 7.1 and 7.3 beginning on page 12-7-3. Surface water quality and quantity information is found in Section 12.7.2.4.2 beginning on page 12-7-5. Surface water rights are mentioned on page 12-7-5. Geology information is in Chapter 12, Section 12.6 and Climatological information is in Chapter 11 of the MRP. Section 12.7.2.4.5 says that there is no supplemental baseline information, because



the other information is adequate. There will be no underground mining in this project so there was no survey of renewable resource lands. Alluvial valley floors are addressed in Chapter 7, Appendix 7-3.

Baseline cumulative impact area information.

Section 12.7.2.5 and 12.7.2.9 say that a Cumulative Hydrologic Impact Assessment has been prepared for the Willow Creek area.

Modeling.

Section 12.7.2.6 says that the existence of data for ground water and surface water in the area made it so modeling was not necessary.

Alternative water source information.

Section 12.7.2.8 says that the project will not result in contamination, diminution, or interruption of ground or surface waters, therefore, no alternate water source information is necessary.

Probable hydrologic consequences determination.

The Probable hydrologic consequences determination is made in Section 12.7.2.8. Determinations are made that say no damage will be caused to the water quality and quantity.

Findings:

The hydrologic resource information is administratively complete.

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:

Water monitoring.

The groundwater and surface water monitoring plans for the Willow Creek Project are outlined in Chapter 12, Section 12.7.3.1.2 and in Chapter 7, Section 7.5. Information in Chapter 7 is regarding the current sampling program. In addition Amax proposes to sample one well in the Willow Creek area and sample Willow Creek above and below the disturbed site. Surface water parameters that will be sampled are total suspended solids, total dissolved solids, total iron, total manganese, and pH. Groundwater levels will be monitored.

Acid and toxic-forming materials.

Slightly toxic boron has been identified on site. It will be moved to the Castle Gate Refuse Removal Facility and handled as indicated in Chapter 3, Section 3.4 of the MRP.

Transfer of wells.

According to Section 12.7.3.1.4, no existing well ownerships will be transferred.

Discharges into an underground mine.

There will be no discharges into underground mine workings during this project according to Section 12.7.3.1.5.

Water quality standards and effluent limitations.

Section 12.7.5.1 says that all discharged water from the disturbed area will meet applicable water-quality standards and effluent limitations.

Diversions.

Diversion design criteria are outlined in Section 12.7.4.2.3 of the proposal. Diversion designs are located in Appendix 12-7-2, and shown on Exhibits 12-5-1 and 12-7-3. Table 12-7-5 is a summary of diversion criteria. Diversions are designed for the 10-year, 6-hour storm event. Only miscellaneous flow will be diverted.

Stream buffer zones.

Stream buffer zone information is provided in Section 12.7.3.1.6. Topsoil and access facilities will be located and some maintenance will occur within 100 feet of Willow Creek. The activities should not cause or contribute to Utah and Federal water standard and should not adversely effect water quality and quantity. No permanent stream channel diversion are proposed.

Sediment control measures.

Sediment control measures are discussed in Sections 12.7.3.2 through 12.7.3.2.2 and designs for sediment control measures are discussed in Sections 12.7.4.2.1 through

12.7.4.2.3. One sediment pond and six sediment traps are proposed. The pond is shown on Exhibit 12-5-1 and designs are in Appendix 12-7-2. It will contain the 10-year, 24-hour storm event and will have a spillway that will pass the 25-year, 6-hour event.

Five of the six sediment traps are currently existing, though two will require modification. Table 12-7-4 is a summary of the sediment traps at the Willow Creek facility. The outflow from each trap will be nonerosive.

Siltation structures.

One sediment pond will be constructed as part of this project.

Sedimentation ponds.

One sediment pond will be constructed as part of this project. The pond is shown on Exhibit 12-5-1 and designs are in Appendix 12-7-2. It will contain the 10-year, 24-hour storm event and will have a spillway that will pass the 25-year, 6-hour event.

Other treatment facilities.

No other treatment facilities are proposed.

Exemptions for siltation structures.

No exempt areas are proposed.

Discharge structures.

The sediment pond is proposed to have an open spillway that will pass the 25-year, 6-hour event. The designs for the spillway are included in Appendix 12-7-2.

Impoundments.

Other than the pond there are no impounding structures proposed.

Casing and sealing of wells.

Section 12.7.4.8 covers casing and sealing of wells. The one monitoring well at the Willow Creek site has been cased to prevent acid and toxic drainage from entering the ground water.

Findings:

The hydrologic operational plan is administratively complete.

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:

The reclamation plan is found in Section 12.5.4. General hydrologic reclamation information is found in Section 12.7.6. Amax does not plan to reclaim the site as part of this project because they plan to use it as an opening into a mine that will be permitted later. However, if reclamation is necessary, there is a prepared plan.

Water monitoring.

The groundwater and surface water monitoring plans for the Willow Creek Project are outlined in Chapter 12, Section 12.7.3.1.2 and in Chapter 7, Section 7.5. Information in Chapter 7 is regarding the current sampling program. In addition Amax proposes to sample one well in the Willow Creek area and sample Willow Creek above and below the disturbed site. Surface water parameters that will be sampled are total suspended solids, total dissolved solids, total iron, total manganese, and pH. Groundwater levels will be monitored and data submitted at the end of the project.

The site is intended as a surface entry following removal of the existing refuse. The mining activity will be further permitted later. However, if plans change and reclamation is necessary on-site monitoring will continue on a quarterly basis through the post-reclamation period. The data will be submitted to the Division in annual monitoring reports.

Acid and toxic-forming materials.

Slightly toxic boron has been identified on site. It will be moved to the Castle Gate Refuse Removal Facility and handled as indicated in Chapter 3, Section 3.4 of the MRP.

Transfer of wells.

According to Section 12.7.3.1.4, no existing well ownerships will be transferred.

Discharges into an underground mine.

There will be no discharges into underground mine workings during this project according to Section 12.7.3.1.5.

Water quality standards and effluent limitations.

Section 12.7.5.1 says that all discharged water from the disturbed area will meet applicable water-quality standards and effluent limitations.

Diversions.

Diversion design criteria are outlined in Section 12.7.4.2.3 of the proposal. Diversion designs are located in Appendix 12-7-2, and shown on Exhibits 12-5-1 and 12-7-3. Table 12-7-5 is a summary of diversion criteria. Diversions are designed for the 10-year, 6-hour storm event. Only miscellaneous flow will be diverted. All natural drainage patterns will be restored.

Stream buffer zones.

Stream buffer zone information is provided in Section 12.7.3.1.6. Topsoil and access facilities will be located and some maintenance will occur within 100 feet of Willow Creek. The activities should not cause or contribute to Utah and Federal water standard and should not adversely effect water quality and quantity. No permanent stream channel diversion are proposed.

Sediment control measures.

Sediment control measures are discussed in Sections 12.7.3.2 through 12.7.3.2.2 and designs for sediment control measures are discussed in Sections 12.7.4.2.1 through 12.7.4.2.3. One sediment pond and six sediment traps are proposed. The pond is shown on Exhibit 12-5-1 and designs are in Appendix 12-7-2. It will contain the 10-year, 24-hour storm event and will have a spillway that will pass the 25-year, 6-hour event.

Five of the six sediment traps are currently existing, though two will require modification. Table 12-7-4 is a summary of the sediment traps at the Willow Creek facility. The outflow from each trap will be nonerosive.

Siltation structures.

One sediment pond will be constructed as part of this project.

Sedimentation ponds.

One sediment pond will be constructed as part of this project. The pond is shown on Exhibit 12-5-1 and designs are in Appendix 12-7-2. It will contain the 10-year, 24-hour storm event and will have a spillway that will pass the 25-year, 6-hour event. Sediment ponds will be maintained until removal is approved.

Other treatment facilities.

No other treatment facilities are proposed.

Exemptions for siltation structures.

No exempt areas are proposed.

Discharge structures.

The sediment pond is proposed to have a open spillway that will pass the 25-year, 6-hour event. The designs for the spillway are included in Appendix 12-7-2.

Impoundments.

Other than the pond there are no impounding structures proposed.

Casing and sealing of wells.

Section 12.7.4.8 covers casing and sealing of wells. The one monitoring well at the Willow Creek site has been case to prevent acid and toxic drainage from entering the ground water.

Findings:

The hydrologic reclamation plan is administratively complete.

RECOMMENDATION

The hydrologic information is administratively complete and is ready for public comment and Division technical review.