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

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November 1, 1995

TO: Joe Helfrich, Permit Supervisor *Jch*
FROM: Steven M. Johnson, Reclamation Hydrologist *SMT*
RE: Draft Review, Willow Creek Field Adjustments, Castle Gate Mine, AMAX Coal Company, ACT/007/004-95F, Working File, Carbon County, Utah

SYNOPSIS

As a result of a preconstruction site visit between the Division, the operator and contractors, AMAX Coal has submitted an amendment to the Castle Gate Mine plan for the Willow Creek refuse removal project. This amendment is intended to insure compliance with all applicable coal regulations.

ANALYSIS

OPERATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: R645-301-730, 740, 750

Analysis:

Diversions: Perennial and intermittent flows.

The culvert for Willow Creek will be replaced with a larger culvert. The new culvert has been designed to convey the 100-year, 6-hour storm event (Appendix 12-7-4). It will be 8 feet in diameter and 190 feet in length. The gradient will allow velocities which are slow enough that fish can safely travel through the culvert. Additionally, two sky lights will provide light for the fish. There is no stream alteration permit at this time.

Diversions: Miscellaneous flows.

Water collected from the road will be routed into sediment traps by swales in the road. The swales are shown on Exhibit 12-5-1. The designs for each swale are **not** included in Appendix 12-7-2.

Stream buffer zones.

The stream buffer zones are shown on Exhibit 12-5-1. The new 190-foot long culvert for

Willow Creek extends outside of the delineated buffer zone.

Siltation Structures: Sedimentation ponds.

Section 12.7.3.2.2 says that there are two sediment ponds, four sediment traps and a containment berm around the topsoil pile designed as sediment ponds. This is a change from the previous plan. One of the sediment ponds was called a sediment trap and the berm around the topsoil pile was added to the sediment pond design list.

Designs for Sediment Pond 1, traps and berm are located in Appendix 12-7-2. Sediment Pond 2 designs are in Appendix 12-7-4. Pond 1 is designed to contain the 25-year, 24-hour storm event with no spillway. Pond 2 and Sediment Trap 3 contain the 10-year, 24-hour storm runoff and passes the 25-year, 6-hour storm event through an open spillway. Sediment Traps 1, 2 and 4 contain the 25-year, 24-hour runoff with no spillways. The topsoil containment berm is designed for both the 100-year, 6-hour and the 10-year, 24-hour.

Discharge structures.

Discharge spillways are designed for Sediment Pond 2 and Sediment Trap 3. These have both been designed for the 25-year, 6-hour storm events. The designs are found in Appendix 12-7-4 and Appendix 12-7-2, respectively. The remaining sediment control facilities are designed as total containment structures.

Findings:

The swales shown across the road are missing designs. AMAX must design all miscellaneous diversion to convey, at minimum, the 2-year, 6-hour storm event.

Exhibit 12-5-1 shows the 190-foot culvert for Willow Creek inside of stream buffer zone. All mining related work and facilities must be excluded from the stream buffer zone. This plate should be modified to exclude the culvert from the stream buffer zone.

AMAX Coal and the Division of Water Rights are in the process of permitting the culvert work. AMAX must have this permit before the new culvert can be installed.

Typically the Division does not require that berms around topsoil be fully classified as ponds. If classification is not changed, inspections and all other pond requirements must be met.

RECOMMENDATION

Changes in this amendment have already been requested from the operator. This amendment should not be approved until the changes have been made.