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STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

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April 28, 1988

TO: File

FROM: Kent Wheeler, Reclamation Hydrologist
Rick P. Summers, Reclamation Hydrologist

RE: Determination of Completeness and Technical Review, Banning Loadout, Soldier Creek Coal Company, ACT/007/034, File #2, Carbon County, Utah

Summary:

This Mining and Reclamation Plan (MRP) submittal is generally complete and technically acceptable. There are several points which must be addressed before the permit should be issued.

Determination of Completeness

UMC 783.15 Ground Water Information - KW

This section has been partially addressed in the MRP. As noted in Part 5.1.2, research has shown that the waters from the Mancos Shale are generally saline, with large concentrations of Sodium (Na), Calcium (Ca) and Sulfate (SO_4^{2}). Transmissivity in the Mancos Shale is very low, as would be expected in thick shale units.

The MRP has not defined the depth and horizontal extent of the aquifer which is used to supply water for fire control. Because the aquifers in the Mancos are generally small, perched and confined to sandstone channel lenses, the horizontal extent would be very

difficult to define. Defining the horizontal extent is also unnecessary, since there are no other uses of the ground water in the area.

Deficiencies Requiring Response

1. The applicant needs to define the depth to water in the underlying aquifer. This measurement can be made in the existing well onsite. The only constraint is that the well has had sufficient time to recover from any recent pumping.

2. The applicant is requested to submit one water quality sample for the next submittal and commit to an annual sample from the existing well, to be submitted in all future annual reports. The sample analysis should be performed according to the complete baseline parameter list of the Division Water Monitoring Guidelines. The need for additional monitoring will be evaluated upon the receipt of the sample results.

UMC 783.16 Surface Water Information - KW

This section has been addressed in Part 5 of the MRP. There are no perennial streams or rivers in the permit area or the adjacent areas. The permit area is located in the Grassy Trail Creek Watershed. Grassy Trail Creek is intermittent in nature, with moderate to high concentrations of dissolved solids. Most of the flow is generated in the upper benches of the watershed, far removed from the permit site. One ephemeral channel is located next to the permit site but should not be disturbed by activities at the site. Due to the relative uncommon nature of the flow in the ephemeral channel, no surface water quality measurements were collected.

UMC 783.17 Alternative Water Supply Information - KW

This section is adequately addressed in Section 5.4 of the MRP.

UMC 783.25 Cross Sections, Maps and Plans - KW

The applicant has submitted the necessary maps required in this section. However, the text in Section 2.7.4 of the MRP states that there are no water wells in the loadout area. This statement needs to be corrected.

Deficiencies Requiring Response

1. The statement in Section 2.7.4 of the MRP needs to be changed to show that there is a water well onsite.

UMC 784.11 Operational Plan: General Requirements - KW

This section is addressed in Parts 2 and 3 of the MRP.

UMC 784.14 Reclamation Plan: Protection of Hydrologic Balance -KW

This section requires that the applicant have a comprehensive plan for the protection of the hydrologic balance. This section is partially complete. Salient details of the plan are presented below.

Part 5 of the MRP describes how the runoff from the surface area will be treated by the sediment pond or by alternative methods.

Protection of the ground water resources at the site will be ensured by the following:

1. Yearly testing of coal for inorganic toxic contaminants.

2. Very low recharge rates at the site.

3. Very low transmissivity of soils and bedrock at the site.

The water monitoring plan consists of monthly sampling of the NPDES permit parameters at the NPDES discharge points and random samples of flow through straw bales or silt fences. There is no planned ground-water monitoring at this site. However, the applicant has committed to test the coal on a yearly basis, for toxic inorganics. The permit needs a commitment to implement a ground water monitoring plan if high concentrations of the toxic cations are found.

A description of the probable hydrologic consequences is found in Section 5.4 of the MRP. Because of the relative poor water quality and the nature of the disturbance, the chance of negative impacts to the hydrologic system is low.

Deficiencies Requiring Response

1. The applicant needs to commit to the implementation of an effective ground water monitoring program if any of the

yearly samples show high levels of any of the cation that are on the EPA toxicity list. This program must be approved by the Division before implementation.

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

This section has been sufficiently detailed in Section 5.2.2. and Appendices I, II and III.

UMC 784.22 Diversions - KW

The MRP incorrectly states that there are no diversions (P. 1-53) at the loadout area. However, the site map shows two diversions leading to the sediment pond. This oversight should be corrected and a narrative describing the diversions should be included in the text.

Deficiencies Requiring Response

1. The permit needs a narrative describing the use of the diversions that control the flow of water to the sediment pond.

UMC 784.24 Transportation Facilities

The control and treatment of runoff from the road is detailed in Section 5.2.1. of the MRP. This meets the requirements of this section.

Technical Analysis

UMC 817.42 Hydrologic Balance: Water Quality Standards and Effluent Limitations - KW/RS

Following the April 18, 1988 site inspection, performed by Randy Harden of the Division staff, it became apparent that the sedimentation control plan for the site should be reevaluated. It appears a topographic break exists that prevents approximately two-thirds of the disturbed area from reporting to the sedimentation pond. This runoff breached the protective berm and discharge occurred off the site.

It is the inspector's opinion that straw bale or silt fence treatment structures will not be adequate to treat this runoff. Discussions with operation personnel onsite also indicated a need to have an additional storage volume in the pond to treat water pumped from the sump.

It appears that a reasonable solution to the problems would be the construction of another small sedimentation pond in the southeast corner of the disturbed area. This would ensure complete treatment of the disturbed area drainage without excessive regrading and diversion construction It would also allow some additional volume in the currently proposed sediment pond for treatment of sump water.

The proposal currently identifies the areas that will not report to a sediment pond as two small areas that sit below the drainage controls on the south and west side of the disturbed area. These areas will not have any ongoing disturbances associated with them and should not degrade the water quality of the receiving waters.

UMC 817.43 - Hydrologic Balance: Diversions and Conveyance of Overland Flow, Shallow Ground Water Flow and Ephemeral Streams - KW

The MRP shows two diversions leading to the sediment pond. These diversions must be sized and shown to be stable while conveying the design event. See the comments under UMC 784.22 of this document.

Deficiencies Requiring Response

1. The above-mentioned diversions need to be described and shown in a typical cross-section. These diversions must be able to convey the design discharge and have the adequate freeboard to meet the design criteria of this section.

2. The above-mentioned diversions need to be shown to be stable (Ave velocity less than 5 ft/sec) or designs submitted showing that the channel can safely pass flow of higher velocities.

UMC 817.46 Hydrologic Balance: Sedimentation Ponds

The sediment pond is sized correctly to completely contain the 10yr - 24hr precipitation event. The primary spillway can pass

the peak flows from the 25yr - 24hr precipitation event. The emergency spillway provides added protection should the primary spillway become plugged.

The sediment pond has a manual dewatering device consisting of a 2" PVC pipe, with a downturned end to keep oil and grease from being released into the natural drainage. The designs for the dewatering device are acceptable. However, the location needs to be shown on the site map.

The designs for the energy dissipator at the outlet of the primary spillway are acceptable, as well as the designs for the erosion protection at the inlet ditches.

Deficiencies Requiring Response

1. The site map and the sediment pond detail map need to show the location of the dewatering device.

jr
cc: B Team
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