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

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December 16, 1997

TO: File

THRU: Daron Haddock, Permit Supervisor *DH*

FROM: Sharon Falvey, Senior Reclamation Hydrologist *SF*

RE: Fan Portal Reclamation Round II, PacifiCorp, Cottonwood/Wilburg Mine, ACT\015\019-97MT(2), Folder #2, Emery County, Utah.

SUMMARY:

As part of a midterm permit review, information contained in the existing MRP was examined to determine whether the plan meets the requirements of the R645 regulations for reclamation at the Cottonwood Wilburg Mine, Cottonwood Fan Portal Site. This submittal responds to the deficiencies noted in the September 29, 1997 Technical Analyses that followed the response to the Midterm Review. The operators response to the deficiencies is not adequate.

RECLAMATION PLAN

HYDROLOGIC RECLAMATION 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.

Ground-water Monitoring

No ground water monitoring plan is planned for the fan portal reclamation area. A number of seeps along the contact between the Blackhawk and Star Point formations occur but, none are at a rate sufficient to collect water samples based on the seepage rates observed in 1997. The source of this water is stated to be from local snowmelt that is transported through vertical fractures. No ground water monitoring is specifically tied to reclamation of this area.

The Hiawatha coal seam near the fan portal area dips 2 degrees to the northwest. The disturbance is along the west face of the coal out crop. This suggests, that changes in seepage following mining may occur. The dip of the strata in the central portion of East Mountain dips into the Straight Canyon Syncline, generally 2 to 3 degrees plunging to the northeast. The axis of this syncline lies north of the cottonwood fan portal area and would flow away from the fan portal outcrop. This suggests, that although changes in seepage following mining may occur, a large portion of the mined area to the north would not be a source of recharge/discharge to this outcrop location. Future observations should be made to determine if increases in seepage does occur at the Blackhawk/Star Point contact zones.

Surface-water Monitoring

The monitoring plan states that water monitoring will be conducted at the Cottonwood Fan Portal above and below the mine. The surface water monitoring program will be conducted quarterly through the reclamation period according to the monitoring schedule in Appendix A.

Drainage from the Cottonwood Fan Portal area will be monitored at the sedimentation pond outfall according to the UPDES permit. The UPDES permit only measures treated outflow; therefore, no monitoring is presented which will demonstrate that vegetation is adequate to control erosion on this site. Information that demonstrates that adequate erosion control exists is required prior to removal of the pond and prior to bond release.

Acid And Toxic-forming Materials

The plan states that all acid and toxic forming materials will be buried with at least four feet of material. No location was identified in the text as needing four feet of cover material.

Transfer Of Wells

No transfer of wells are proposed associated with the reclamation of the Cottonwood Fan Portal area.

Discharges Into An Underground Mine

No mine opening was developed at this site. No discharges into the mine will occur associated with the reclamation activity.

Gravity Discharges

No surface entries or access was developed at this site. Gravity discharge could occur from flow accumulated in mine and reaching the out crop. See the discussion under "Ground Water Monitoring" in this T.A.

Water Quality Standards And Effluent Limitations

The permittee will be required to show that ground and surface water at the site meet the requirements of the R645 regulations prior to bond release.

Diversions

The diversion ditch, UD-3, located above the disturbed area is proposed to remain as a permanent structure. Contour map CM-10828-CP "Cottonwood Fan Portal Diversion Ditch #UD-3" and, cross-section detail on CM-10827-CP provides the ditch design information as it existed on the 1989 survey map. The plan states that some modifications would be necessary to provide and maintain the drainage along the terrace. R645-301-761 requires that all permanent diversions meet the requirements of the approved reclamation plan. **It is recommended the applicant be sure the drainage configuration designs can be met by modifying the existing site configuration.**

The applicant has proposed to change the existing drainage at the south end of the permit area. This proposal will decrease the gradient at the junction of a natural drainage. Natural rock outcrops at this location should aid in decreasing the erosion which is occurring in the existing drainage location. An earlier recommendation by the division hydrologist suggested a grading plan that distributes the flow over the slopes and concentrates water beneath areas of upstream concentration points be proposed. However, during a site visit company representatives stated that flow over the face could jeopardize the revegetated embankment that lies below and is adjacent to the road. With that concern in mind the proposal to retain this ditch is reasonable.

The diversion DD-4, at the top of the reclaimed bank adjacent to the road, is constructed to drain to the sedimentation pond. The plan states that county official as requesting the ditch be retained so that the ditch would continue to provide a buffer zone to absorb rock fall and, to minimize impacts to the road. This statement does not adequately justify retention of the ditch for the following reasons:

- If this slope has a significant increased potential for rock fall beyond the rock fall potential of other road cuts in this region, it probably does not meet stability requirements of the R645-301 regulations.

- If the ditch is to function as a rock catch then the ditch is not able to function as designed.
- The base width of the slope provides a rock fall barrier.

The retention of this ditch can not be approved as proposed. The drainage can be re-established over the slope and continue to provide a buffer. This type of re-grading has been completed successfully in other steep slope sites in Utah.

There would be some logistic problems in coordinating the drainage discharged from DD-4 and the final reclamation of the site. The resulting configuration would not approximate the premining characteristics (R645-301-742.313). Final reclamation configuration and plans for the sedimentation ponds and the ditch must be presented. In order to meet AOC, the plan must include backfilling DD-4 to promote overland flow. The road, bypass culverts and ditch configuration should account for runoff from the final reclaimed site configuration.

The applicant has committed to provide a french rock drain at the seep locations the size and design is dependent on topographic constraints and seep size.

Stream Buffer Zones

The Cottonwood Fan Portal is within 100 feet of the Cottonwood Canyon Creek stream channel. The adjacent Trail Mountain Mine diverted the Cottonwood Canyon Creek into a culvert thus, diverting the stream. The reclamation of this site is expected to be completed prior to reclamation at the Trail Mountain Mine. Based on this information, a specific buffer zone variance is not necessary.

Sediment Control Measures

The plan states that final grading and preparation of overburden will be conducted along the contour to minimize erosion. If grading along the contour is hazardous to equipment operators, grading will be conducted in a direction other than parallel to the contours.

Disturbed areas are presently proposed to drain to the sedimentation ponds. Additional measures such as; a silt fence along DD-4 and rock gabions are also used.

Siltation Structures

Other than the Alternate Sediment Control Measure in place in Area 3-7, the sedimentation ponds will be retained to treat runoff from the site during the reclamation phase. The plan provides information which shows how disturbed areas will be treated during initial reclamation but, measures used following sediment pond removal were not identified.

Sedimentation Ponds

Under section 500 the Engineering section, the plan states "Once the bonding period is complete and revegetation is satisfactory the sedimentation ponds/basins at Cottonwood/Wilberg and Proposed Cottonwood Canyon Fan Portal will be back filled and graded". Once the bonding period is complete and revegetation is satisfactory the sedimentation ponds will be backfilled and graded. This determination is made by the Division following a request from the permittee at Phase II bond release.

Other Treatment Facilities

No other treatment facilities are associated with the Cottonwood Fan Portal area.

Siltation Structure Exemptions

No exemption from using siltation structures were granted associated with reclamation of the cottonwood fan portal area.

Discharge Structures

No discharge structures are proposed for retention as permanent structures.

Impoundments

No impoundments are proposed to be retained as permanent structures at the reclaimed cottonwood fan portal site.

Casing And Sealing Of Wells

No casing and sealing of wells are directly associated with the cottonwood mine portal reclamation.

Findings:

The permittee has not met all requirements of this section. The permittee must provide the following in accordance with:

R645-301-512, Provide a map for the final site configuration including filling of sedimentation ponds.

R645-301-742.313, The plan must include backfilling ditch DD-4 (the sediment control ditch is depicted in figure KS1709D). This ditch will no longer be needed to achieve the purpose for which it was authorized. Backfilling and

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regrading to promote overland flow will approximate AOC for the regraded portion of the site.

R645-301-742.200, Provide a sediment control plan for controlling sediment following sediment pond removal.

Because the UPDES permit only measures treated outflow no monitoring is presented to demonstrate that vegetation is adequate to control erosion on this site. This information is required for bond release. Prior to removal of the sedimentation pond the permittee will need to demonstrate that these requirements have been met.

R645-301-761 requires that all permanent diversions have been maintained and the operator will renovate such structures to conform to the approved plan. Therefore, it is recommended the applicant be sure the drainage configuration designs can be met with the proposed modification of the existing site configuration.

Recommendations:

This amendment should not be approved until the requirements as presented in this review are included in this plan and the plan is determined to meet all regulatory requirements.

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cc: Bill Malencik

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