



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Norman H. Bangert
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Executive Director

Dianne R. Nielson, Ph.D.
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

January 9, 1989

Ms. Jody Belviso
American Electric Power Company
P.O. Box 700
Lancaster, OH 43130

Dear Ms. Belviso:

Re: Technical Deficiency Review, Reclamation Plan, Willow Creek Site, ACT/007/002, Folder #2, Carbon County, Utah

The Division has reviewed your response to the technical deficiencies for the Willow Creek Final Reclamation Plan, received December 21, 1989.

The response adequately addressed several issues, however there are still deficiencies, particularly in the areas of postmining land use and hydrology (see attached technical review memos for details).

As we agreed in a phone conversation last week, these outstanding issues need to be adequately addressed before approval for permit renewal will be given. Therefore, a prompt response is requested.

Don't hesitate to contact me if I can provide any further clarification.

Sincerely,


Susan C. Linner
Reclamation Biologist/
Permit Supervisor

cl
Attachments
cc: C. Parrish, ACZ
D. Darby, DOGM
BT45/375



State of Utah

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January 4, 1990

TO: Susan Linner, Permit Supervisor

FROM: Mike DeWeese, Reclamation Hydrologist 

RE: ICR/Draft TA Response, Willow Creek Reclamation Plan, BlackHawk Coal Company, ACT/007/002, Folder #2, Carbon County, Utah

SUMMARY:

The operators' ICR response document received December 21, 1989 has been reviewed and found to be technically inadequate. Several commitments are made by the operator in this document but have not been included in the Reclamation Plan (RP). These deficiencies will be mitigated upon inclusion of these items in the RP. The only remaining deficiency needing further design analysis concerns the access road stability.

817.42 Hydrologic Balance: Water Quality Standards and Effluent Limitations - MMD

EXISTING ENVIRONMENT AND OPERATOR'S PROPOSAL

Sediment Trap 017 is proposed as runoff treatment for a small portion of the disturbed area adjacent to the access road. The Division may approve this measure only if the operator demonstrates that the requirements of subsection (a)(3) will be met. The submitted RP contains no provisions addressing this issue. The operator must incorporate this structure into the water quality monitoring plan as a demonstrative measure to ensure compliance with effluent limitations.

OPERATOR'S RESPONSE:

The operator has committed to include Sediment Trap 017 in the water monitoring program. The operator must commit to sampling immediately below the structure during the occurrence of flow events. Section 3.9 and Map 5 must be revised to include the sediment trap sample site.

The operator's response is not adequate.

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

EXISTING ENVIRONMENT AND OPERATOR'S PROPOSAL

Proposed diversion designs throughout the site employ the 100 year 24 hour design storm. Division calculations produce higher peak flow values than the submitted design calculations for virtually all diversions. This difference is due primarily to the curve number utilized. The operator based all undisturbed drainage designs on a curve of 65 which was used in the original permit. However this value is based on erroneous assumptions and applications of the curve number technique. Based on cover and soils information contained in the submitted Reclamation Plan, the Division calculated a curve number of 77 for undisturbed drainages.

OPERATOR'S RESPONSE:

The operator states that the Division determined, through personnel communication with AEP representatives, a curve number of 71 was representative of site conditions. The Division has not agreed to this value and maintains that a curve number of 77 is accurate.

EXISTING ENVIRONMENT AND OPERATOR'S PROPOSAL

The operator states on page 3-7 that 0.5 feet of freeboard exists in all diversions. The Division could not locate any specifications on channel depths. Therefore freeboard values cannot be determined for any of the proposed channels. Total channel depth must be included in the submitted diversion design specifications.

OPERATOR'S RESPONSE:

Total channel depth has been included to the diversion channel dimensions presented in Figure 6.

The operator's response is considered adequate.

EXISTING ENVIRONMENT AND OPERATOR'S PROPOSAL

Channel velocities were calculated by the operator using average channel slopes and a manning's n value of 0.04 for all channels. Division calculations determined the manning's n value to be a maximum of 0.03 for the area soil type. As a result, Division calculations produced higher design flow velocities in general. Flow velocities in Ditch No. 1 were determined to be marginally non-erosive. However erosive velocities were produced in a steep reach of Ditch No. 2 extending approximately 150 feet from Culvert A to the edge of the pad area. A design for protective channel lining must be submitted for this reach.

OPERATOR'S RESPONSE:

Submitted velocity calculations have been revised to utilize a manning's n value of 0.03 for Ditches No.s 1 and 2. The revised calculations adequately demonstrate that these diversions will safely convey the expected 100 year design storm runoff.

The operator's response is considered adequate.

EXISTING ENVIRONMENT AND OPERATOR'S PROPOSAL

The operator has submitted design peak flow calculations for the 100 year 24 event in Jap Canyon. These calculations were based on the same assumptions as the undisturbed diversions (n=0.04, CN=65). The Division specified during an on-site meeting with the operator May 18, 1989 that calculations would be required for the Jap Canyon diversion reach extending adjacent to the disturbed area from the channel bend downstream. The submitted calculations address only the natural channel upstream of the channel bend in Jap Canyon. Design calculations must be submitted demonstrating that the Jap Canyon diversion is adequate to safely convey the 100 year design storm.

OPERATOR'S RESPONSE:

Design calculations for the Jap Canyon diversion were revised based on a Division field survey of the channel. The revised channel design employs a peak discharge of 57 cfs and an existing bed material d_{50} of 6 inches. The submitted calculations demonstrate that the channel is marginally adequate to safely convey the design storm runoff. However, the operator has not provided the necessary survey data to determine the existing bed material size gradation. The operator must submit a narrative of the survey methodology used and the raw data used to determine the d_{50} value used in the proposed Jap Canyon channel design.

The operator's response is not adequate.

EXISTING ENVIRONMENT AND OPERATOR'S PROPOSAL

Site inspections have determined that surface runoff below Pond 018 is collected by a berm around the perimeter of the pad and diverted to the road system. Below the pad no defined drainage system exists to convey disturbed area runoff to Trap 017. The operator must design the road grade such that all road drainage is directed to Ditch No. 2. A ditch or other conveyance structure must be designed and constructed to convey disturbed area drainage from the lower pad area and road corridor to Sediment Trap 017.

OPERATOR'S RESPONSE:

Pursuant to a previous agreement with the operator, the AML program will be responsible for re-establishing road drainage upon completion of their portion of the reclamation project (Chris Rohrer, personal comm.).

The operator's response is considered adequate.

UMC 817.45 Hydrologic Balance: Sediment Control Measures - MMD

EXISTING ENVIRONMENT AND OPERATOR'S PROPOSAL

Sediment Pond 017 is proposed to be reconstructed to function as a sediment trap. The total drainage area reporting to this structure is approximately 0.5 acres. Division calculations demonstrate that this structure contains capacity for approximately 5 years of sediment at the bankfull stage. No provisions are submitted for maintenance of this structure. The operator must commit to cleaning sediment from the trap when the sediment volume has reached half the structural capacity for the duration of the bond period. The proposed spillway is designed to convey the 100 year storm with one foot of freeboard as a conservative design. The operator proposes to place a silt fence across the spillway crest as an additional sediment control measure. Silt fences are considered temporary measures and not appropriate in this situation. Therefore silt fences must be removed from the proposed design. A suitable alternative would be a rock filter dam across the spillway with a keyway to allow passage of the annual flow.

OPERATOR'S RESPONSE:

The sediment trap design has been revised to utilize a rock filter dam at the spillway outlet instead of a silt fence structure as originally planned.

The operator's response is considered adequate.

UMC 817.46 Hydrologic Balance: Sedimentation Ponds - MMD

EXISTING ENVIRONMENT AND OPERATOR'S PROPOSAL

The operator has proposed to convert Pond 018 to a sediment trap. This structure will actually increase in capacity from the original design. Therefore it will be classified as an impoundment and consequently will remain classified as a sedimentation pond subject to the requirements of this regulation.

Division calculations have determined that the proposed structure will contain adequate capacity to totally contain the 100 year 24 hour design storm runoff in addition to more than 10 years of sediment volume. This structure is totally incised and is constructed of material having high infiltration rates. The operator has included provisions for an open channel emergency spillway designed to convey the 100 year design event.

The operator must submit design plans addressing all the requirements of UMC 817.46 and UMC 817.49.

OPERATOR'S RESPONSE:

The operator requested a review of the pond classification. The proposed Trap 018 is classified as an impoundment under regulation definitions. Therefore it will be required to meet the requirements of UMC 817.46 (e)-(u), regardless of what the operator chooses to label the structure. The operator should be aware that the requirements of subsections (r)-(t) must be satisfied upon final construction.

UMC 817.52 Hydrologic Balance: Surface and Groundwater
Monitoring - MMD

EXISTING ENVIRONMENT AND OPERATOR'S PROPOSAL

Page 3-8 discusses the proposed water quality monitoring program, in which samples will be analyzed for constituents enumerated in Table 3-3. Two sample sites are identified on Map 5 above and below the permit area in Willow Creek. Samples are to be collected biannually on June 10 and Sept. 30. The plan does not address the duration of the proposed program.

The operator must revise the sampling schedule to include quarterly sampling until two years after reclamation activities have ceased, as per Division guidelines (see attachment). At this time sampling may be reduced to two samples per year to be collected on the proposed sample dates for the duration of the bond period.

OPERATOR'S RESPONSE:

The operator has committed to continue the current monitoring program for the duration of the bond period. The monitoring program outlined on page 3-8 and Map 5 must be revised to include the outlet of Sediment Trap 017 as a monitoring point.

The operator's response is not adequate.

UMC 817.162 Roads: Class II: Design and Construction - MMD

EXISTING ENVIRONMENT AND OPERATOR'S PROPOSAL

The operator has not provided information requested by the Division during the on-site meeting with the operator on May 18, 1989. Specifically, stability analyses and cross sections of the critical section of the access road extending from Culvert A approximately 150 feet to the northeast were requested as part of the submittal. Site inspections have determined this section of road to be constructed with excessive slopes and marginal stability.

The operator must submit two as-built cross sections, one at Culvert A and one 100 feet to the northeast, extending from the road invert to the mid-point of the stream channel. A geotechnical analysis adequate to demonstrate long term stability of this road section must be included in the submittal.

OPERATOR'S RESPONSE:

An adequate demonstration of long term road stability has not been submitted by the operator. A field survey conducted by Division personnel after the last review determined the critical road sections to be at culvert A and 130 feet above culvert A. The operator must submit cross sections at these points and a demonstration of long term road stability (s.f. = 1.5 or greater). If the required safety factor criteria cannot be met, a detailed justification for not reconstructing the road profile to a more stable configuration must be provided.

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Initial Completeness Review
Willow Creek Reclamation Plan
Blackhawk Coal Company
ACT/007/002

The operator's response is not adequate.

817.163 Roads: Class II: Drainage - MMD

EXISTING ENVIRONMENT AND OPERATOR'S PROPOSAL

Culvert A is the only structure to remain permanently as a road drainage crossing. This culvert has been demonstrated to safely convey the 100 year 24 hour storm under open channel conditions. Page 5-22 states that a flexible culvert will be connected at the outlet of the CMP section to provide protection against erosion.

Regulations require that all culverts be covered by compacted fill to a minimum depth of one foot. The operator must commit to meeting this cover requirement in the final road design.

OPERATOR'S RESPONSE:

The operator committed to providing a minimum of one foot of cover above culvert A upon final reconstruction.

The operator's response is considered adequate.

RECOMMENDATIONS:

The Division recommends that until such time as all the aforementioned deficiencies have been resolved, approval of the Willow Creek Site Reclamation Plan be denied.

BT6033/1-7



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January 4, 1990

TO: Sue Linner, Permit Supervisor
FROM: Henry Sauer, Reclamation Soils Specialist *HS*
RE: Response to Technical Deficiency Review, Blackhawk Coal Company, Willow Creek Site, ACT/007/002, Folder #2, Carbon County, Utah

Synopsis

Laboratory results of material proposed as a cover for "coally material" have been submitted (December 18, 1989) and reviewed.

Analysis

Calculations to determine Acid-Base Potential (ABP) should include pyritic-sulfur and organic sulfur (total non-sulfate sulfur) as potential acid-forming constituents. According to the data submitted, ABP for the sampled material should be as follows:

Sample AEP Upper Sediments = +87.2 Tons CaCO_3 /1,000 Tons Material

Sample AEP Lower Sediments = +68.9 Tons CaCO_3 /1,000 Tons Material

Sample AEP Upper Slope = +72 Tons CaCO_3 /1,000 Tons Material

The composition of coarse fragments within the in situ slope material is marginally acceptable as a plant growth medium when compared with the Division's Guidelines for Management of Topsoil and Overburden, Table 2. Sample AEP Upper Slope has a coarse fragment composition of 29.4 percent. Undisturbed soils in the area are high in percent coarse fragments (i.e., Shupert-Winetti Complex; Traversilla-Rock Outcrop). Therefore, slope material is similar to soils of the adjacent undisturbed areas and may be considered as adequate cover for "coally material" and an adequate plant growth medium.

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Memo to S. Linner
ACT/007/002
January 4, 1990

The soil hot water soluble selenium concentration of sample AEP Upper Slope equals 0.20 mg/kg. This level is above the acceptable limits (Division Guidelines, Table 2) of greater than or equal to 0.10 mg/kg (i.e., parts per million). Hence, the material represented by sample AEP Upper Slope should not be considered as an acceptable plant growth medium. Although elevated selenium concentrations are not known to retard plant growth, herbivores which consume plant tissue high in selenium may develop chronic toxicities.

Recommendations

ABP calculations submitted (ACZ Laboratories, Inc.) do not need to be revised. However, the above ABP values should be noted.

If the postmining land use is changed from light industry to grazing and wildlife, then the soil material identified as having elevated concentrations of selenium would be considered unacceptable as a plant growth medium.

In the event that postmining land use changes, further analysis may be required to identify suitable substitute topsoil material.

djh
AT97/22-23



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January 3, 1990

TO: Susan C. Linner, Permit Supervisor

FROM: Lynn Kunzler, Senior Reclamation Biologist *LK*

RE: Review of Blackhawk Coal Company's December 18, 1989
Response to Technical Issues, Willow Creek Site,
ACT/007/002, Folder #2, Carbon County, Utah

SUMMARY:

Blackhawk's response to technical issues, dated December 18, 1989, has been reviewed and found to adequately address concerns enumerated in my October 20, 1989, memo, regarding vegetation and revegetation, provided the plan (including permit area and landuse) does not change from what is currently proposed. However, issues regarding postmining land use have not been resolved.

ANALYSIS:

UMC 783.19 Vegetation Information - 1k

Blackhawk will modify text regarding the vegetation map to correctly identify the map scale.

UMC 784.13 Reclamation Plan: General Requirements - 1k

Blackhawk will modify text regarding seeding and mulching to show that they will be applied in two separate operations.

Blackhawk will modify the seedmix to incorporate DOGM's recommendations on areas that would be seeded within the permit area. Note, as per conversations with Division of Wildlife Resources personnel, the recommended changes were made in the seed mix for areas seeded outside the Permit area.

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Technical Issues
Blackhawk Coal Company
ACT/007/002

UMC 784.15 Postmining Land Use - 1k

Blackhawk has provided documentation to demonstrate the proposed land use is compatible with the County Zoning Ordinance for the area. Also, they have provided additional discussion to demonstrate long term use of facilities that will be left on the site. However, in conversations with Western Coal Carriers, the Division has learned that they are in the process of abandoning the site and will not be renewing their contract with Blackhawk Coal Company for use of the facilities. Therefore, Blackhawk must provide plans to reclaim the substation area. As stated in the previous review, Blackhawk Coal Co. will need to provide an adequate map showing what facilities will be left, and those that are to be reclaimed.

RECOMMENDATIONS

Blackhawk Coal Co. must adequately address the land use issues above before the Division can approve the plan. Once approved, the Division should closely monitor the area to verify the alternative land use is implemented in a timely manner and is maintained throughout the liability period. The Division should require complete reclamation of the site if these conditions are not met.

c1
cc: D. Darby
BT27/34-35