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

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June 30, 1994

Ms. Kathleen G. Welt
Mountain Coal Company
P. O. Box 591
Somerset, Colorado 81434

Re: Technical Deficiencies in Reclamation Plan, Mountain Coal Company, Gordon Creek #2, #7, & #8 Mines, ACT/007/016, Folder #3, Carbon County, Utah

Dear Ms. Welt:

The Division has completed a review of the information submitted by Mountain Coal Company on August 6, 1993 which was intended to further clarify the reclamation plan for the Gordon Creek 2, 7, & 8 mines. At this time your plan is not considered adequate. The enclosed Analysis Document outlines the remaining deficiencies in the plan. In order to achieve compliance Mountain Coal must provide an adequate response to the identified deficiencies. Please provide a response by August 30, 1994.

If you have any questions, please don't hesitate to call.

Sincerely,

A handwritten signature in black ink that reads "Daron R. Haddock".

Daron R. Haddock
Permit Supervisor

Enclosure

cc: Dan Guy
J. Kelley
T. Munson
H. Sauer
S. White

COVERLET.278



TECHNICAL ANALYSIS AND FINDINGS

MOUNTAIN COAL COMPANY GORDON CREEK #2, #7 AND #8 ACT/007/016

June 29, 1994

SYNOPSIS

Mountain Coal Company submitted a revised reclamation plan for the Gordon Creek #2, #7, and #8 Mines area on August 6, 1993. This document analyzes the submittal and discusses findings that have been made.

R645-301-233.100

Topsoil Substitute and Supplements

Analysis:

The Permittee has committed to implement a soil/spoil sampling program for the **entire disturbed area** immediately after soil/spoil placement (page 3-48 and 3-48a). The plan is designed to identify any areas which are occupied with unsuitable plant growth medium.

The sampling program for Sample Site #3 (page 8-28.1) must be implemented immediately and results received prior to the commencement of backfilling and grading activities. The soil sampling proposal for areas with slopes greater than, or equal to, 70% (page 3-19 and 3-48a) where topsoil will not be redistributed, must be implemented and results received prior to commencement of any backfilling and grading activities. The results from the soil/spoil sampling programs described above will be used to determine fertilizer application types and rates (page 8-32 and 8-32a). All sample site locations must be identified on the post mining topography map.

The Permittee must be fully aware that based on the initial results from the sampling programs mentioned above additional soil/spoil sampling may be required to determine the extent of unsuitable material if said material is encountered.

Given the timing of the soil/spoil sampling program the implications of locating poor quality material at or near the surface are immense. If said material is encountered the treatment of these areas will require four feet of suitable cover material (page 3-48a). The acquisition and characterization of suitable material subsequent to backfilling and grading activities may be extremely difficult. Given these factors, the importance of fulfilling the material handling commitments described on page 3-17, regarding the removal and select handling of contaminated backfill material (i.e: oil and grease, coal, etc.), cannot be

overemphasized. These same identification and handling procedures must be employed when shale and/or coal is encountered during backfilling and grading.

Deficiency:

1. The Operator has not adequately detailed the soil/spoil handling program. A revised plan which addresses the above-noted issues must be submitted.

R645-301-240

Reclamation Plan

Analysis:

As mentioned in previous reviews (June 10, 1993) all concrete slabs must be buried with at least four feet of suitable cover material. In addition, commitments to dispose of waste material in an approved landfill remain and must be removed from the plan.

Deficiency:

1. The Permittee must revise the reclamation plan regarding the disposal of concrete and also remove reference to disposal of waste materials in a landfill.

R645-301-354

Revegetation: Timing.

Analysis:

The Operator proposes to spread and then sample the topsoil prior to seeding. Seeding will not occur until the soil sampling results have been received; a minimum lag time of 3 weeks. It has been the experience of the Division that seeding immediately after topsoil placement is the most successful and if soil is in a loose friable condition while seeding, raking may not be required. Exposed soil has a greater potential to become crusted and subject to erosion.

The following item is a suggestion which will enhance the on site reclamation:

The Operator is encouraged to sample soil prior to placement and seed immediately after the topsoil is spread.

R645-301-341.220 Revegetation: Methods of Planting.

Analysis:

The 1993 Vegetation Survey provided data on the cut above the conveyor and concludes that the area does not meet the reclamation success standards. The plan states that this is one of the areas which will not be topsoiled and will be hand prepared by surface roughening with hand tools and receive a heavier application of fiber mulch. One of the primary reasons for poor vegetation success in this and similar areas may be the lack of water holding capacity of the soil.

Deficiency:

1. The plan must describe how the results of the surface roughening with hand tools will appear (i.e: basins two feet wide and 10 inches deep every four feet, or surface loosened to six inches deep) since this surface manipulation can greatly increase water collection. The surface application of hydromulch does not improve the water holding capacity of the soil, therefore the plan must also discuss the need for organic matter incorporation into these droughty soils.

R645-301-341.210 Revegetation: Species and Seeds.

Analysis:

Based on the results of the 1993 Vegetation Survey, *Bromus carinatus* ('Bromar') and *Poa pratensis* should be added to the seed mixture since these species were frequently included in the sampling.

Yellow sweet clover must be deleted from the seed mixture because of the potential for persistence on site. The plan states that this legume will help fix nitrogen on site. However, the seed mixture includes three other legumes which is sufficient. Likewise, rubber rabbitbrush should be greatly reduced or eliminated from the seed mixture. If the Operator decides to use this species, the more palatable white stemmed variety must be specified.

Deficiency:

1. The Operator must revise the seed mixture as indicated above in order to meet vegetation performance standards.

R645-301-356 Revegetation: Standards for Success.

Analysis:

The plan states that the fan portal area was reclaimed under the interim program. A search of the Division's archived files from 1979 through 1982 found no documentation of the fan portal reclamation.

Deficiency:

1. The Operator will have to meet the permanent regulatory program requirements for reclamation (vegetation, AOC) unless otherwise demonstrated that the area was permitted for reclamation under the interim program.

R645-301-412.100 Postmining Land-Use Plan.

Analysis:

Plate 3-1A, Sweet's Canyon Pond Plan View, does not show the disturbed area boundary. The stated post-mining land use is wildlife and limited livestock grazing. The Division of Wildlife Resources has expressed concern that the pond will be of limited use to wildlife if the riparian value is diminished by livestock grazing. The plan states that a fence will remain until bond release and then after that time, the use is out of Mountain Coal Company's control.

Deficiency:

1. The intended use by the land owner must be stated and the plan must reflect the stated post-mining land use in relation to the Sweet's Canyon Pond.

R645-301-500 Engineering

Analysis and Finding of Deficiency:

The plan still contains the following deficiencies:

- 1) On page 3-45 is a request for a variance from Approximate Original Contour (AOC) to make Sweet's Pond a permanent impoundment. However, a permanent impoundment can be created in accordance with R645-301-733.220

and does not require a variance from AOC. This request and any other reference to Sweet's Pond as a variance from AOC must be removed from the plan.

- 2) The plan states that the Old Fan Portal was reclaimed in 1983 under the Interim Regulations, but contains no documentation regarding the reclamation of that area. If it cannot be shown that the Old Fan Portal area was reclaimed in accordance with the Interim Regulations, then it will have to be reclaimed, and the highwall eliminated, in accordance with the R645 rules.
- 3) On page 3-46 is a request for a variance from AOC to allow partial retention of the Access Road cut bank. However, partial retention of a road cut bank for reasons of final fill stability does not require a variance from AOC requirements. The backfilling of road cuts in final reclamation is simply governed by the general stability requirement of R645-301-553.130 and, of course, by the specific requirements of R645-301-534. This request and any other reference to a variance from AOC for the Access Road must be removed from the plan.
- 4) On page 3-46a is a request for a variance from AOC to allow partial retention of the No. 7 Access Road cut bank. However, partial retention of a road cut bank for reasons of final fill stability does not require a variance from AOC requirements. The backfilling of road cuts in final reclamation is simply governed by the general stability requirement of R645-301-553.130 and, of course, by the specific requirements of R645-301-534. This request and any other reference to a variance from AOC for the No. 7 Access Road must be removed from the plan.
- 5) According to the plan, the highwall in the No. 7 area will be partially retained. Neither the federal regulations nor the R645 rules, however, allow for the retention of highwalls in post-SMCRA areas. Since the No. 7 area was created in 1983 and is, therefore, a post-SMCRA area, the highwall must be completely eliminated.
- 6) The plan states that the seeps in the No. 7 and No. 2 area are so small, and their flow velocities so low, that they will be allowed to flow in unarmored channels over bare fill. However, for the sake of caution, to prevent these seeps from saturating the fills and jeopardizing their stability, the channels in which they flow should be armored. This armor might be something simple like a layer of filter fabric beneath a layer of minus 3-inch rip rap.

R645-301-210 and 356.300 Impoundments

Analysis:

The requirements for providing for an adequate pond maintenance plan are spelled out above. The Operator has provided for maintenance of the temporary sediment pond during the reclamation phase. It will be reclaimed and the original channel restored when bond release requirements are met for sediment control and vegetation (page 7-33). Per the requirements of **R645-301-880-320** and **R645-301-732-210** and Phase II bond release criteria, the following structures will be affected (Sweet's Canyon Pond, Water Retention Basin for wildlife, and the temporary sediment pond) and as such, a Division of Water Rights permit, a Division of Dam Safety permit and a maintenance agreement for these structures will be required. The Operator has stated how he will comply with the requirements for permanent maintenance including sediment removal if required for the reconstructed sediment pond on page 7-50 of the plan. Sediment levels are shown as being determined by direct measurement at the outlet riser, as shown on Plate 7-8, and will be cleaned-out when they reach the cleanout level of 7882.0'. The sediment clean-out elevation information needs to be updated to jive with the information found on Plate 7-14 stating the sediment clean-out elevation of 7882.5' versus 7882.0' and the maximum sediment elevation at 7884.2' versus 7883.0' found on Plate 7-8b. The pond will be inspected quarterly and on an annual basis as required.

The Sweet's Canyon Pond will remain and be maintained by the landowner as stated in the November 17, 1987 letter to Beaver Creek Coal Company from E. E. Pierce (deceased), posing the question, "is this still valid?". This letter lacks specifics regarding ultimate use of this facility and what maintenance of this structure will require. A Slope Stability Analysis for the Sweet's Canyon Pond is found in Appendix 3-4 demonstrating a slope stability of 2.35 for saturated conditions. Water Rights Lease and Sale Agreement allocated to the Sweet's Canyon Pond was entered into on the 7th of April, 1993 and is found in Appendix 3-9. This agreement is not accurate now that Mr. Pierce is deceased.

Deficiency:

1. The Permittee has failed to provide the following information and as such a positive finding can not be made regarding any permanent or temporary impoundments. The following permits are still lacking from a State Division of Water Rights and Dam Safety. In addition the following permitting items need to be cleared up prior to a positive finding being made:

Sweet's Pond

- 1) Form 69 filed with the Division of Water Rights (i.e. Mark Page, Price office of DWR).
- 2) A transfer of Water Rights to the Sweet's Pond from Gordon Creek.
- 3) A clarification of the use and responsibility for maintenance of the pond now that Mr. E.E.Pierce is deceased.

Water Retention Basin

- 1) Form 69 filed with the Division of Water Rights.
- 2) Needs Designs showing the wildlife enhancement features.
- 3) A clear maintenance agreement is needed.
- 4) A water right is required for this structure.

Temporary Sediment Pond

- 1) Needs clarification of sediment clean-out levels and how they will be determined in the field.
- 2) Clarification of the sediment levels and any discrepancies between the old plan and the new regarding important numbers or calculations for the temporary sediment pond (i.e: Plate 7-8b versus Plate 7-14).
- 3) Form 69 is required for this structure.

R645-301-742.300 et. al.
and
R645-301-742.400 thru 743

Diversions

Analysis:

The plan provides for reclamation of the Right and Left Forks of Bryner Canyon using the 100-year 6-hour storm event in accordance with R645-301-742.323. Permanent channels for the ephemeral drainages were designed using the 10-year 6-hour event in accordance with R645-301-742.333. The main channel and the Right Fork of Bryner Canyon were considered intermittent and all others considered ephemeral. The watershed boundaries used to determine precipitation runoff from undisturbed areas within Bryner Canyon are shown on Plate 7-5A. The locations of all channels showing riprap sizes and slopes are shown on Plate 3-7. All design information for the plan regarding the applicable calculations and methodologies is found in Appendix 7-1.

The plan provides for the restoration of the Right Fork of Bryner Canyon to restore premining characteristics of the original stream channel where it meets the old pad fill. Ponding, in what is considered a natural depression that appeared to be caused by the presence of the pad and failure to reestablish original grade for the channel, has been eliminated.

As a recommendation to the Operator, to document any failure of riprap or channels caused by greater than the design storm, the following methodologies will be deemed acceptable to document these failures and release the Operator from liability of having properly maintained structures to meet the design storm criteria:

- 1) **having a drainage on the reclaimed site (as proposed in the plan); and,**
- 2) **using a known channel cross-section with staff gage (floating cork in a perforated PVC pipe) to calculate flows. This method of measuring the flows is easy and effective and remains as a suggestion only.**

The reclamation of the channel will take place in two phases. The first phase is the reclamation of the entire mine site down to the lower end of the mine yard as shown on Plate 3-7, the natural channels will be reclaimed down to this area. During this phase the No. 7A Sediment Pond will be removed. Also during this phase the No. 2 Pond will be enlarged as shown on Plate 3-7 and 7-14. All disturbed and undisturbed drainage above this point will flow to the pond. The road from the gate to the pond will be left in place with a turnaround on the south side of the pond. This will allow access for cleaning and pond maintenance.

Deficiency:

1. The Permittee has failed to obtain the necessary Stream Alteration Permit for the reclaimed stream channel from the Division of Water Rights and as such a positive finding cannot be made regarding the diversions.

R645-301-742

Sediment Control Measures

Analysis:

The Permittee has provided details on mulching rates, hydromulch application rates, tackifier amounts and types, and erosion control matting. Commitments to maintain the site from an erosion standpoint have been made in the permit in Section 7.2.8.5, Maintenance Plan For Erosion. The plans for all areas not draining to the sediment pond are shown on

Plates 3-7, 3-7A, and 3-7B. A summary of the BTCA areas and the runoff they contribute is contained in Table 4-2. The use of silt fences as opposed to land form structures such as berms and swales, which can be left in permanently and revegetated, is something that the Permittee may want to consider if maintenance of silt fences is an issue of concern. A more permanent control such as a berm with a gravel or coarse rock outlet would provide the same level of sediment control with less maintenance. The Division will be willing to provide suggestions for other sediment control alternatives.

Findings:

The Permittee meets the requirements of the regulations regarding erosion control and control of sediment.

R645-301-723 and 724.100,200,300 Water Quality Monitoring

Analysis:

The Permittee has proposed a plan which monitors 6 stations for the parameters shown in Table 7-18. The sampling program provides information on seasonal flow and water quality on intermittent and ephemeral streams that have potential to be affected by mine discharge and surface disturbance. Discussion of surface water monitoring locations, type, frequency and flow device may be found in Table 7-17. A map of the monitoring locations is provided on Plate 7-2. Analyses will be for parameters listed in Table 7-18. The Post Mining Water Monitoring plan is described on 7-67 of the permit.

Findings:

The Permittee meets the requirements of the regulations regarding water monitoring.