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

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December 16, 1993

Mr. Michael Baum, President
U. S. Fuel company
P. O. Box 887
Price, Utah 84501

Re: Deficiencies in Alternate Borrow Site Amendment, U. S. Fuel Company, Hiawatha Mine, ACT/007/011-93B, Folder #3, Carbon County, Utah

Dear Mr. Baum:

The Division has completed a technical review of your proposed amendment to utilize an alternate borrow area for topsoil. At this time, the amendment cannot be approved due to the deficiencies in your application. These deficiencies have been identified in the enclosed Technical Review Document. U. S. Fuel will need to adequately respond to the identified deficiencies and submit a revised and complete application for permit change by no later than January 17, 1993 in order to utilize the alternate borrow area.

Another issue that was identified during the review of the proposed amendment involved problems with the payment of AML fees. Our records indicate that U. S. Fuel has unpaid AML fees in connection to a slurry pond. This issue must be resolved immediately. Please contact Joe Helfrich if you have questions in regard to this issue, or contact me if you have any other questions.

Sincerely,

A handwritten signature in cursive script that reads "Daron R. Haddock".

Daron R. Haddock
Permit Supervisor

DRH
Enc.

cc: J. Helfrich



reclaiming the alternate borrow sites.

TECHNICAL DEFICIENCY REVIEW
U. S. Fuel Company
Alternate Topsoil Borrow Area
December 14, 1993

R645-301-120

Permit Application Clear and Accurate

Proposal:

Maps of the proposed topsoil borrow areas and surrounding land forms were included to show location of the disturbances and the proposed hydrologic facilities.

Analysis:

The maps showing the areas to be disturbed, the ditches and the sediment ponds are hard to read and incomplete. It is hard to differentiate between ditches and disturbed area boundaries. It appears that some ditches come to an abrupt end and do not flow into another drainage. The sediment pond in Area F appears partially inside and partially outside of the disturbed area, and there seem to be a ditch flowing through it. The orientation of the map is not apparent.

A formula used for calculating the riprap size of spillways and channels is included as E.P.A., 1976. No other information is given on this reference source and its validity can not be determined.

Deficiencies:

1. The maps should be made clearer. The route of each designed ditch should be drawn in the exact position as it will be constructed and it should be shown in its completeness from top to bottom. The exact boundary of the proposed disturbed areas and the location of sediment ponds should be displayed on the maps. A key may be helpful in clarifying location of different features. Orientation of the map should also be shown by indicating direction.
2. A complete reference for all literature used must be given.

R645-301-731.600

Stream Buffer Zones.

Proposal:

Borrow Area E is to be located within 100 feet of Miller Creek.

Analysis:

Miller Creek is a perennial stream, and no disturbances may occur within 100 feet of a perennial or intermittent stream without special authorization by the Division. Prior to authorization of this type it is required that it be shown that disturbance in the buffer zone will not contribute to violation of applicable Utah or federal water quality standards and will not effect water quality or quantity or other environmental resources. No such information is supplied in the current proposal.

Deficiencies:

1. Information must be supplied showing that the disturbance of Borrow Area E will not adversely effect water quality, water quantity, or the hydrologic balance of Miller Creek. If this information is unavailable or not achievable, a suitable alternative location outside of the stream buffer zone must be chosen.

R645-301-742.220

Sedimentation Ponds.

Proposal:

Sediment ponds were proposed at each borrow area for the purpose of sediment control. These ponds were designed to contain the runoff of 10-year, 24-hour storm event plus 0.1 acre-feet/acre of sediment storage. Each pond will have a designed decant to remove standing water and a spillway that is design to pass the peak of the 25-year, 6-hour storm event.

Analysis:

The designs for the sediment ponds and spillways are incomplete and in some cases contradictory. It is not shown at what levels the maximum sediment content and the design storm would fill the pond. The decant elevation of the Borrow Area E pond is not given. A different slope is used for the spillway in the spillway size design and the riprap size design for Borrow Area F. The calculations for determining these slopes were not provided. The sources for the Manning's n values and curve numbers is not provided, either.

A discharge of 9.93 cfs was used in the design of Area F sediment pond inlet channel (Items 3-B and C). The reference for this flow was Item 3-A in this section; however, this was incorrect and it is assumed that the proper reference should be to section 2-A, which shows a discharge of 23.2 cfs as the proper design flow. A reference to Item 4-B in Item 3-C is also incorrect, and assumed that Item 3-B is the correct source for the hydraulic radius and wetted perimeter.

Normally the estimate of 0.1 acre-feet/acre is use for sediment accumulation over a

one year period; however, the time frame for sediment accumulation in these ponds is not specified. Assuming that this is an annual rate the ponds would require sediment removal each year.

From the maps provided it appears that both the decant systems and spillways at each site discharge water onto flat ground. There is no sign of any type of channel that will allow for the water to pass without erosion problems.

Deficiencies:

1. The elevations that the total sediment volume and the design storm event would fill the sediment ponds must be shown. The elevation of structural features, such as decant devise and spillway must also be shown.
2. Accurate sources of slopes, curve numbers, and Manning's n values should be given, and the values should be used properly and consistently.
3. The Applicant must accurately reference all discharges and use proper values.
4. A commitment must be made to clean sediment from the ponds every year, or increase the amount of sediment storage in the ponds. (The Division recommends that a minimum of three years of sediment storage be designed in new ponds.)
5. All spillways and decant systems must discharge into a natural or designed channel that are protected against erosion.

R645-301-742.300

Diversions.

Proposal:

Two diversions are proposed to route undisturbed flow around the disturbance in Borrow Area E. This site will also have a collector ditch that will route water from the disturbed area into the sediment pond. This ditch will prevent water from leave the disturbed area without treatment. An inlet channel will bring water into the sediment pond.

The plan for Borrow Area F is to route the drainage off the undisturbed area up slope from the borrow area around the disturbance. This flow will be handled by one ditch on the north side of the disturbance and one on the south. There is no plans to build a ditch within the disturbed area, but there will be a inlet channel in the pond to collect water.

Analysis:

All diversions were designed for the 10-year, 24-hour storm event, except the sediment pond inlet channel which was designed for the 25-year, 6-hour event. The 10-year, 24-hour storm event, in general, returned lower peak discharges than the 10-year, 6-hour storm event that is required.

Deficiencies:

1. Temporary diversions must be designed for the 10-year, 6-hour storm event.

RECOMMENDATIONS

The plan for Borrow Area F is to route water from the up slope disturbed areas around the disturbance. This does not seem necessary, because the designed ditch would transport a peak discharge of much less than 1 cfs. It would seem reasonable to investigate increasing the size of the sediment pond and routing undisturbed water into the pond. This could be a minor adjustment to the pond and would eliminate a need for undisturbed drainage diversions.

All peak flow calculations were made using the SCS type B distribution. The SCS type 2 distribution is more acceptable because it returns a more accurate peak discharge value. Recalculating peak flows using the type 2 distribution would provide a greater level of confidence in these designs.

R645-301-224 Substitute Topsoil

Analysis

According to the soil profile description representing Borrow Area F, the top 2.5 inches of the profile consists of coal fines. Coal mine waste (i.e. coal fines) is not a desirable component of substitute topsoil nor is it an acceptable plant growth medium for final reclamation.

Deficiencies

1. The permittee must commit to the removal and proper disposal of all coal mine waste material (i.e. coal fines) in accordance with R645-301-536 et. seq.

R645-301-243 Soil Nutrients and Amendments

Analysis

On page 22 of the amendment proposal the permittee refers to "soil tests" prior to seeding operations.

Deficiencies

1. The permittee must describe the field and laboratory methods employed to ensure that the soil fertility status is adequate to meet the growth requirements of the seeded species. In addition, fertilizer application rates and types should be determined subsequent to the topsoil analyses conducted immediately prior to seeding. The rate of application must consider the effects of mulch incorporation upon the mineralization of plant available nitrogen.

R645-301-300 Biology

Analysis

The plan calls for using native straw or hay as an organic amendment to the soil. Noxious weeds have been introduced to many sites through straw or hay, creating serious problems.

Deficiency

1. U. S. Fuel should use certified noxious weed free straw or hay.

Analysis

Soil to be used is of alluvial origin and was deposited on relatively gentle slopes. Thus, it appears to be finer than soils which naturally occur on slopes in the area. The soil would be applied to slopes of up to about 30%. This may create erosion problems. Some of the soils that U. S. Fuel proposes to use contain some rocks and gravel, and these could be used on the slopes to prevent erosion. Also larger rocks, if available, could be used in piles to create wildlife habitat.

Deficiency

2. U. S. Fuel should address prevention of erosion on steeper slope areas.

R645-301-533.100 Impoundments not meeting the size of other criteria of 30 CFR 77.216(a), will have a minimum static safety factor of 1.3 for normal pool with steady state seepage saturation conditions or meet the requirements of R645-301-733.210

Analysis

The embankment height must be shown on the cross-sections. The information is essential for finding the safety factors. That dimension should be included in the drawings. There is no mention of static safety factor. The ponds need to have a static safety factor of at least 1.3.

Deficiency

1. The Applicant must address the general requirements of R645-310-533.
2. The Applicant must prove that the embankment's static safety factor is at least 1.3.
3. The Applicant must list the embankment heights on each cross-section.

R645-301-533.330 Slope protection will be provided to protect against surface erosion at the site and protect against sudden drawdown.

Deficiencies

1. The applicant must prove that the pond is protected from erosion and sudden drawdown.

R645-301-540 Reclamation Plan

R645-301-541 General

R645-301-542 Narratives, Maps and Plans

R645-301-542.100 A detailed timetable for the completion of each major step in the reclamation plan.

Applicant's proposal:

Table II-31 is a timetable describing the reclamation activities on the substitute topsoil borrow site. In year one the operations at the Hiawatha facilities will cease. At the beginning of year two cutoff ditches and sediment ponds will be installed. There is no mention of removing the sediment ponds and other sediment control structures.

Analysis:

The applicant did not state when the sediment control structures would be removed. Since the sediment control structures have not been approved for post mining land use they must be removed before bond release. R645-301-542.500 specifically requires that a timetable, and plan to remove each proposed sedimentation pond be included in the reclamation plan.

Deficiencies

1. The Applicant will state in the reclamation time table the approximate dates when the sediment control structures will be removed.

R645-301-542.200 A plan for backfilling, soil stabilization, compacting and grading, with contour maps or cross sections that show the anticipated final surface pattern of the proposed permit area.

Analysis

The Applicant needs to include cross sections of the alternative borrow sites. R645-301-542.300 also requires cross section for the final surface.

Deficiencies

1. The applicant will provide the Division with cross sections that depicts slopes of the alternative borrow areas.

R645-301-542.800 The reclamation plan for the proposed coal mining and reclamation operations will also include a detailed estimate of reclamation costs as described in R645-301-830.100- R645-301-830.300.

Analysis

The applicant must supply the Division with a detailed cost estimate for reclaiming the alternative borrow sites. If the alternative borrow site reclamation significantly increases the reclamation costs then a bond adjustment must be made.

Deficiencies

1. The Applicant will provide the Division with a detailed cost estimate for