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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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801-538-5340

August 24, 1989

TO: Susan Linner, Permit Supervisor

FROM: Mike DeWeese, Reclamation Hydrologist MD

RE: Diversion Designs, United States Fuel Company, Hiawatha Mine Complex, ACT/007/011, Folder #2, Carbon County, Utah

SUMMARY:

The operator has submitted survey results of channel material in the three Diversion channels addressed in TDN 88-2-116-2. This data was used to determine the adequacy of the existing diversions. The operator has now submitted both riprap material and check dam.

ANALYSIS:

The operator conducted a channel bed material survey using an unbiased representative sampling method recommended by the Division. Survey results were used to determine the adequacy of the existing bed material to provide channel protection during the 50 year-6 hour storm as per the approved permit. Results of the Division's calculations are as follows:

Diversion	Existing d_{50} (in)	Required d_{50} (in)
Middle Fork	2.3	<2.0
South Fork	3.6	<3.0
Upper Rail Yard	7.0	2.0

These results demonstrate that the existing channels are stable. Riprap check dams in addition to adequate bed material provide sufficient stability to meet the design requirements.

RECOMMENDATIONS:

The Division recommends that the operator's submittal regarding the diversion designs be granted final approval.

cc: B Team
BT98/77

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

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August 10, 1989

TO: Susan C. Linner, Permit Supervisor

FROM: Daron R. Haddock, Reclamation Specialist

RE: Mid-Permit Term Response, U.S. Fuel Co., Hiawatha Mines ACT/007/011, Folder #2, Carbon County, Utah

SUMMARY AND ANALYSIS:

Submittals received on May 30, and June 23, 1989 have been reviewed and found to adequately address items 1, 3, and 4 of the May 19, 1989 Mid-Permit Review letter.

A letter has been drafted to EPA and State Health which should incorporate mine water discharge from south fork tank into the NPDES permit as point 013.

The revised page 5 of Chapter XII and Exhibit III-3 adequately describe the status of the operator's slurry ponds and refuse piles.

Rip rap size analysis for mine diversions has been provided.

RECOMMENDATION:

Sign off on items 1,3, and 4 of the Mid-Permit Term Review can be made pending approval of NPDES discharge point 013 by Utah Department of Health.

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September 20, 1989

TO: Susan C. Linner, Permit Supervisor

FROM: Henry Sauer, Reclamation Soils Specialist

RE: Mid-Term Review and Organizational Suggestions, U.S. Fuel Company, Hiawatha Mine Complex, ACT/007/011, Folder #2, Carbon County, Utah

SYNOPSIS

The Hiawatha Mining and Reclamation Plan (MRP) is poorly organized and pertinent information which is imperative for the determination of completeness and/or technical adequacy is missing and/or insufficient. The following review is relevant towards the general requirements of Utah's Coal Mining and Reclamation Regulatory Program. Therefore the following recommendations should be reviewed as a preliminary evaluation only. A completeness review will ensue when the applicant submits a clear and concise MRP as required under UMC 771.23 Permit Applications - General Requirement for Format and Content.

ANALYSIS

UMC 783.14 Geology Description

The applicant must submit plans to periodically collect (sampling frequency based on time or volume of material excavated) roof, floor, coal, midseam, and refuse samples. Sample location and constituents analyzed must be specified (i.e. appropriate mine plan map and the Division Guidelines for Management of Topsoil and Overburden, Table 6). All sampling procedures must fully describe field and laboratory methodologies employed. Results of analyses may be submitted in the annual report.

UMC 783.21 Soil Resource Information

The applicant must delineate soil types, sample locations, soil description pits, topsoil borrow pit areas, refuse and slurry samples on one set of maps (i.e. Hiawatha Soil Slurry Map, Middle Fork of Miller Creek Soils Survey Map, etc.) of a scale of at least 1":6000" (1":500').

The applicant must update the soil survey of the permit area to reflect the new, published Soil Survey of Carbon Area, Utah.

Soil interpretations, and limitation tables, definitions, etc. found on pages 48-99 may be omitted from the mine plan.

Each and every soil described and delineated in the soil survey of the permit area must have a present and potential productivity statement.

The reclamation cost estimates (Table III-17, etc.) should be incorporated into the bonding section of the MRP.

Where the applicant proposes to use selected overburden, pad and existing fill materials as a supplement or substitute for topsoil, the applicant shall substantiate its use and provide results of analyses, trials and revegetation test plots as required under UMC 817.22(e)(1).

UMC 783.25 Cross-Sections, Maps and Plans

The applicant must provide as-built surveys of all topsoil stockpiles. The surveys must include: volumes of stored material; minimum and maximum slopes and all pertinent dimensions and elevations.

UMC 783.27 Prime Farmland Investigation

The applicant must obtain written verification from the State Soils Scientist (Soil Conservation Service) regarding a prime farmland determination for the lands within the disturbed area.

UMC 784.13 Reclamation Plan: General Requirements

The applicant must provide a detailed timetable for the completion of each major step in the Reclamation plan and any contemporaneous reclamation planned.

All disturbed areas to be reclaimed must have a plant growth medium allocated to that particular site of disturbance. The applicant must provide a comprehensive topsoil mass balance table to include the following: area of disturbance, required volume to redistribute topsoil upon disturbance, depth of planned topsoil redistribution; particular locations and acreage to receive topsoil; particular locations and acreage to utilize substitute topsoil material (i.e. overburden, pad and fill material); area and volume of topsoil borrow pits; source area for required topsoil;

UMC 817.21-817.25 Soil: General Requirements

The following information must be included in the PAP to meet the requirements of UMC 817.21 - 817.25.

1. Methods and equipment employed to ensure proper implementation of a soil removal plan:

   (a) vegetation removal, and
   (b) method utilized to exact depth of soil removal.

2. Methods and equipment employed to ensure proper implementation of a soil storage plan:

   (a) erosion protection (berm, mulch, contour-furrowing, seed mixture, etc.).
   (b) compaction mitigation, and
   (c) fertilizer/amendments to ensure revegetation success.

3. Methods and equipment employed to ensure proper implementation of a soil redistribution plan:

   (a) compaction mitigation.
   (b) soil/spoil scarification (i.e., depth, machinery),
   (c) method used to ensure proper topsoil redistribution depth.
   (d) fertilizer assessment sampling plan,
   (e) management to prevent erosion between topsoil redistribution and reseeding.
   (f) time between regrading and retopsoiling, and
   (g) seedbed preparation.

UMC 817.48 Hydrologic Balance: Acid-Forming and Toxic-Forming Materials

The applicant must provide description of measures employed to insure that all acid- and/or toxic-forming materials are identified and disposed of in accordance with UMC 817.48, UMC 8178.85 and UMC 817.103.

The following exhibits and table could not be located in the MRP:

Exhibit VIII-4A	Table VIII-9
Exhibit III-4B	Table VIII-11

RECOMMENDATIONS

In responding to the above comments, the applicant should discuss each issue in Chapter III of the MRP, outlining the methods, analyses, plans, equipment, etc., pertinent to fulfilling the requirements of each section. The reclamation plan should be presented as a continuum of sequential steps, specifically describing provisions and/or sampling procedures which will be accomplished concurrently to reclamation procedures and/or normal operational procedures. Data (lab analyses, soil descriptions, maps, technical reports, etc.) should be presented in Chapter VIII of the MRP. Explicit plans which reflect collected data may also be included in Chapter VIII.

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August 16, 1989

TO: Susan Linner, Permit Supervisor

FROM: Mike DeWeese, Reclamation Hydrologist MD

RE: Mid-Permit Term Review, U. S. Fuel Company, Hiawatha Mines Complex, ACT/007/011, Folder #2, Carbon County, Utah

SUMMARY:

The operator is initiating a reorganization process of the current Mining and Reclamation Plan (MRP). The following comments and attachments are provided as an aid to the operator in facilitating the reorganization process.

ANALYSIS:

UMC 817.42 Hydrologic Balance: Water Quality Standards and Effluent Limitations

Surface drainage from disturbed areas must be treated by a pond or other appropriate structure until adequate vegetative cover has been established as part of the reclamation process.

UMC 817.43 Hydrologic Balance: Diversions

All temporary diversions should be designed to convey the 10 year 24 hour event with 0.3 feet of freeboard. Permanent diversions should be designed to convey the 100 year 24 hour event with 1 foot of freeboard.

Diversion design calculations must be submitted for maximum and minimum slope conditions to determine maximum velocities and channel capacities. Channel cross-sections and longitudinal profiles sufficient to accurately determine channel slopes and dimensions must be submitted along with designs for riprap linings, check dams, and other channel protection structures or a demonstration that these measures are unnecessary.

UMC 817.44 Hydrologic Balance: Stream Channel Diversions

In addition to the aforementioned criteria the operator must submit cross sections of the natural channel immediately above and below the diversion structure sufficient to demonstrate that the diversion channel capacity is at least equal to the natural channel capacity.

UMC 817.46 Hydrologic Balance: Sedimentation Ponds

Design calculations for all sedimentation ponds must be submitted demonstrating that the ponds will provide adequate sediment storage volume as per criteria in subsection (b) of this regulation. In addition it must be demonstrated that ponds will provide the required detention time for the 10 year 24 hour event. Ponds designed for total containment of the design storm must have a manual decant device which will allow the operator to maintain the water level at a specific elevation in order to maintain the detention storage volume.

As-built drawings of each pond certified by a registered professional engineer must be submitted presenting longitudinal profiles through the spillway structure and plan views. Contours should be shown at no greater than 2 foot intervals and extend a minimum of 100 feet beyond the pond embankment. Drawings should depict the following elevations:

Top of embankment
Emergency spillway crest
Principle spillway crest
Maximum water level
Maximum and cleanout sediment levels
Pond bottom
Spillway outlet invert

The operator should commit to install reference markers in all sedimentation ponds which clearly show the sediment cleanout level. For ponds designed to totally contain the design event these markers should also show the maximum storage volume elevation.

UMC 817.47 Hydrologic Balance: Discharge Structures

Designs for energy dissipators or a demonstration that these structures are unnecessary must be submitted for each pond spillway outlet, culvert outlet, and diversion-natural channel contact.

UMC 817.49 Hydrologic Balance: Permanent and Temporary Impoundments

Designs for channel linings or demonstrations that these measures are unnecessary must be submitted for impoundment inlets to the base of the inner sideslope.

Certification reports must be submitted for all impoundments addressing the items enumerated in subsection (h) of this regulation.

UMC 817.50 Hydrologic Balance: Underground Mine Entry and Access Discharges

Gravity discharge from underground mine workings shall be prohibited unless the operator demonstrates that the discharge meets the requirements enumerated in subsection (b) of this regulation.

UMC 817.52 Hydrologic Balance: Surface and Groundwater Monitoring

The operator should submit a current surface and ground water monitoring program commensurate with the Division's guidelines (see attached).

UMC 817.53 Hydrologic Balance: Transfer of Wells

Any transfer or abandonment of exploration or monitoring wells must be conducted with the procedures outlined in the State Engineer's "Administrative Rules for Water Well Drillers" (see attached).

UMC 817.55 Hydrologic Balance: Discharge of Water Into an Underground Mine

Discharge of surface into underground mine workings is prohibited unless the operator demonstrates that the discharge meets the requirements enumerated by this regulation.

UMC 817.57 Hydrologic Balance: Stream Buffer Zones

All areas within 100 feet of any perennial or intermittent stream must be designated a buffer zone and marked in the field unless the operator demonstrates that the conditions under subsection (a)(1) and (a)(2) are met.

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