



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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August 26, 1988

RECEIVED

SEP 2 1988

DIVISION OF OIL
GAS & MINING
PRICE, UTAH

Mr. Ken Payne, Manager
Southern Utah Fuel Company
P. O. Box P
Salina, Utah 84654

Dear Mr. *Ken* Payne:

Re: State Permit and Decision Package, Southern Utah Fuel Company, Convulsion Canyon Mine Waste Rock Disposal Site, ACT/041/002, Folder #3, Sevier County, Utah

Enclosed is a revised permanent program mining permit for the Convulsion Canyon Mine, which includes the waste rock disposal site. Also included is a copy of the State's Decision Document and Technical Analysis for the waste rock disposal site.

Please note that for purposes of responding to the stipulations, the permit approval date is the date on the top of the first page of the revised permit, August 26, 1988. The permit will still expire on the original permit expiration date, May 20, 1992. Two copies of the permit are included. Please read the stipulations in Attachment A, then sign both copies and return one to the Division.

Your cooperation during the permitting process is appreciated.

Best regards,

Dianne R. Nielson
Director

SCL/djh
Enclosures
cc: V. Mortensen, Coastal
P. Rutledge, OSM
R. Hagen, OSM
B Team
1551R/1

UTAH DIVISION OF OIL, GAS AND MINING
STATE DECISION DOCUMENT AND
TECHNICAL ANALYSIS

Southern Utah Fuel Company
Convulsion Canyon Mine
Waste Rock Disposal Site
ACT/041/002
Sevier County, Utah

August 26, 1988

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ADMINISTRATIVE OVERVIEW

Southern Utah Fuel Company
Convulsion Canyon Mine
Waste Rock Disposal Site
ACT/041/002
Sevier County, Utah

BACKGROUND

Southern Utah Fuel Company (SUFCO), a subsidiary of Coastal States Energy Company, has submitted an application to develop a waste rock disposal site, which will be used in conjunction with mining operations at the approved Convulsion Canyon Mine.

The disposal site will be located on a 40-acre tract of private land located approximately 6 miles west of the Convulsion Canyon Mine (see map following this section). Underground development wastes generated during mine operation will be trucked 6.4 miles along a paved road to the disposal site.

The applicant anticipates that approximately 10,000 tons of waste material will be disposed of at the site each year. The total disturbance proposed at the waste rock disposal site is approximately 8 acres. However, operation of the site is designed to minimize areal disturbance at any given time. The waste material will be placed in compacted lifts and topsoiled and revegetated in the first appropriate season following completion. It is anticipated that once the initial fill bench-slope configuration is established, about 0.5 acres will be filled and reclaimed each year. The fill is expected to be completed in 2008.

Coordination With Existing Permit and Decision Document

Once approved, the waste rock disposal site will be incorporated into the overall permit for the Convulsion Canyon Mine. A five-year permanent program permit was issued to the Convulsion Canyon Mine in May of 1987. The application and, consequently, this Decision Document, addresses compliance with the rules as it specifically applies to the waste rock disposal site. Areas of the rules that are not applicable to this site or that have been previously adequately addressed in the Convulsion Canyon Mining and Reclamation Plan (MRP) are not included in the application or in this Decision Document.

Recommendation for Approval

It is recommended that the Mining and Reclamation Plan (MRP) for the Convulsion Canyon Mine Waste Rock Disposal Site be approved with the stipulations delineated in Attachment A to the permit. The permit term will run concurrent with that of the existing mine permit.

PERMITTING CHRONOLOGY

Southern Utah Fuel Company
Convulsion Canyon Mine
Waste Rock Disposal Site
ACT/041/002
Sevier County, Utah

- 8/3/87 Southern Utah Fuel Company (SUFCO) submits application for Waste Rock Disposal Site.
- 10/6/87 Initial Completeness Review (ICR) sent to SUFCO.
- 1/20/88 SUFCO submits response to ICR.
- 2/2/88 Division of Oil, Gas and Mining (DOGM) sends letter to SUFCO documenting deficiencies in baseline hydrologic and soils information.
- 2/9/88 DOGM and SUFCO representatives meet to discuss issues outlined in the February 2, 1988 letter.
- 3/10/88 DOGM forwards Determination of Completeness (DOC) review to SUFCO.
- 3/30/88 DOGM forwards Technical Deficiencies Review to SUFCO.
- 3/31/88 DOGM receives SUFCO's response to DOC review.
- 4/8/88 DOGM determines the application complete.
- 4/20/88 Notice published in the Salina Sun for the first time, and continues for the following three weeks.
- 4/27/88 DOGM publishes Notice of Public Hearing for Mining Within 100 Feet of a Public Road in the Salina Sun and Richfield Reaper.
- 4/27/88 SUFCO responds to Technical Deficiencies review.
- 6/1/88 DOGM cancels public hearing, since no written requests were received by the deadline.
- 6/20/88 Public Comment Period expires with no comments received.
- 8/26/88 DOGM issues Decision Document, State Permit.

FINDINGS

Southern Utah Fuel Company
Convulsion Canyon Mine
Waste Rock Disposal Site
ACT/041/002
Sevier County, Utah

1. The plan and the permit application are accurate and complete and all requirements of the Surface Mining Control and Reclamation Act (the "Act"), and the approved Utah State Program have been complied with (UMC 786.19[a]).
2. The applicant proposes acceptable practices for the reclamation of disturbed lands (MRP Part 4). These practices have been shown to be effective in the short-term; there are no long-term reclamation records utilizing native species in the western United States. Nevertheless, the regulatory authority has determined that reclamation, as required by the Act, can be feasibly accomplished under the Mining and Reclamation Plan (MRP) (UMC 786.19[b]) (see Technical Analysis (TA) Section UMC 817.111-.117).
3. The assessment of the probable cumulative impacts of all anticipated coal mining and reclamation activities in the general area on the hydrologic balance has been made by the regulatory authority. The Mining and Reclamation Plan proposed under the application has been designed to prevent damage to the hydrologic balance in the permit area (UMC 786.19[c] and UCA 40-10-11[2][c]). (See Cumulative Hydrologic Impact Analysis [CHIA] following this Findings Document.)
4. The proposed lands to be included within the waste rock disposal site are:
 - a. not included within an area designated unsuitable for underground coal mining operations;
 - b. not within an area under study for designated lands unsuitable for underground coal mining operations;
 - c. not on any lands subject to the prohibitions or limitations of 30 CFR 761.11[a] (national parks, etc.), 761.11[f] (public buildings, etc.) and 761.11[g] (cemeteries);

- d. within 100 feet of a public road; however, DOGM gave opportunity for a public hearing as required by UMC 761.12[d]. No request for a public hearing was received. Therefore, the requirements of the rules have been met and the applicant may conduct mining activities within 100 feet of a public road (UMC 761.11);
- e. not within 300 feet of any occupied dwelling (UMC 786.19[d]). (See MRP Section 1.2, page 3.)
5. The regulatory authority's issuance of a permit is in compliance with the National Historic Preservation Act and implementing regulations (36 CFR 800) (UMC 786.19[e]). (See attached letter from State Historic Preservation Officer [SHPO] dated September 24, 1987.)
6. The applicant has the legal right to enter and complete mining and reclamation activities in the permit area through fee ownership of the property (UMC 786.19[f]).
7. The applicant has shown that prior violations of applicable laws and regulations have been corrected (UMC 786.19[g]). (Memo of July 27, 1988 from Joe Helfrich, DOGM.)
8. Neither Southern Utah Fuel Company (SUFCO) nor its parent company, Coastal States Energy Company, are delinquent in payment of fees for the Abandoned Mine Reclamation Fund (UMC 786.19[h]). (Memo of July 27, 1988 from Joe Helfrich, DOGM.)
9. The applicant does not control and has not controlled mining operations with a demonstrated pattern of willful violations of the Act of such nature, duration and with such resulting irreparable damage to the environment as to indicate an intent not to comply with the provisions of the Act (UMC 786.19[i]). (Memo of July 27, 1988 from Joe Helfrich, DOGM.)
10. Underground coal mining and reclamation operations to be performed under the permit will not be inconsistent with other operations anticipated to be performed in areas adjacent to the proposed permit area. The only adjacent mining property is the Convulsion Canyon Mine (UMC 786.19[j]).
11. A detailed analysis of the proposed bond has been made. The bond estimate is \$1,172,000.000. The regulatory authority has made appropriate adjustments to reflect costs which would be incurred by the state, if it was required to contract the final reclamation activities for the mine site. The bond shall be posted (UMC 786.19[k]) with the regulatory authority prior to final permit issuance.

12. No lands designated as prime farmlands or alluvial valley floors occur on the permit area (UMC 786.19[1]). (See MRP part 2.12, 2.15.)
13. The proposed postmining land-use of the permit area has been approved by the regulatory authority (UMC 786.19[m]). (See TA, Section UMC 817.133.)
14. The regulatory authority has made all specific approvals required by the Act, the Cooperative Agreement and the Federal Lands Program (UMC 786.19[n]).
15. The proposed operation will not affect the continued existence of any threatened or endangered species or result in the destruction or adverse modification of their critical habitats (UMC 786.19[o]). (See MRP Part 2.1.2.)
16. All procedures for public participation required by the Act, and the approved Utah State Program have been compiled with (UMC 786.11-.15).
17. The applicant does not propose to use any existing structures in connection with or to facilitate underground coal mining activities (UMC 786.21).

Arnar C. Linnar
Permit Supervisor

Lowell P. Brafton
Administrator, Mineral Resource
Development and Reclamation Program

Dianna R. Nielson
for Associate Director, Mining

Dianna R. Nielson
Director

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

Southern Utah Fuel Company
Waste Rock Disposal Site
Convulsion Canyon Mine
ACT/041/002
Sevier County, Utah

July 24, 1988

I. Introduction

This report assesses the cumulative hydrologic impacts for a Waste Rock Disposal Area (WRDA) proposed by Southern Utah Fuel Company (SUFCo), a subsidiary of Coastal States Energy Company, for their Convulsion Canyon Mine. The Convulsion Canyon Mine is located in Sevier County, Utah.

This assessment evaluates the hydrologic regime of the WRDA and addresses whether the operations proposed under the application have been designed to prevent diminution to the hydrologic balance within and adjacent to the mine plan area. On August 3, 1987 the Division of Oil, Gas and Mining received notification of intent to revise mining activities by developing a waste rock disposal site six miles west of SUFCo's Convulsion Canyon Mine. This proposal was treated as a new permit action, since the new area lies outside of the existing permit area.

SUFCo's Waste Rock Disposal Site will be located west of the Convulsion Canyon Mine (see Figure 1) on private land within the boundaries of the Fishlake National Forest. The facility will be used for disposal of underground development wastes generated during mine operations. The disposal site will eventually encompass about 8 acres and contain an estimated 204,700 tons of waste rock. The waste material will be placed in compacted lifts 300 feet long and 200 feet wide. The fill will be terraced to fit the natural contour to the extent allowed for stability. Annual fill volume is estimated at 10,000 tons or 8,200 cubic yards. Contemporaneous reclamation is expected to be 0.5 acres per year. The fill is expected to be completed in 2008 and complete reclamation is expected in 2018.

This report complies with federal legislation passed under the Surface Mining Control and Reclamation Act (SMCRA) and subsequent Utah and federal regulatory programs under UMC 786.19(c) and 30 CFR 784.14(f).

The Waste Rock Disposal Site will be accessed from the paved county road that connects I-70 and the Mine. The site is located in the northwest 1/4 of the northeast 1/4 of Section 18, Township 22 South, Range 4 East, Salt Lake Base and Meridian. This location is 6.4 miles west of the minesite, in Sevier County.

The site will not be used for a sanitary landfill or for disposal of mining related rubbish or debris. The material deposited at the site will be non-toxic and non-acid forming waste shale, coal, and sandstone. The site is situated between two small natural drainages. Drainage from the waste rock disposal area will be treated by a sedimentation pond designed to handle the runoff from a 10-year, 24 hour precipitation event. Drainage from the area eventually flows into Skumpah Creek which will be considered the furthest extent of potential impact for surface flow.

Geology

The bedrock which underlies the site and is exposed to the north and east of the site consists of massive sandstones and sandy, carbonaceous claystones of the Price River Formation. The Price River Formation is part of the Mesaverde Group which is upper Cretaceous in age. The total thickness of the Price River Formation is about 700 feet. Thickness below the site has not been determined. Local bedrock dips do not appear to exceed 10 degrees. There are no apparent faults in the immediate area of the site. There has been no underground mining beneath the site.

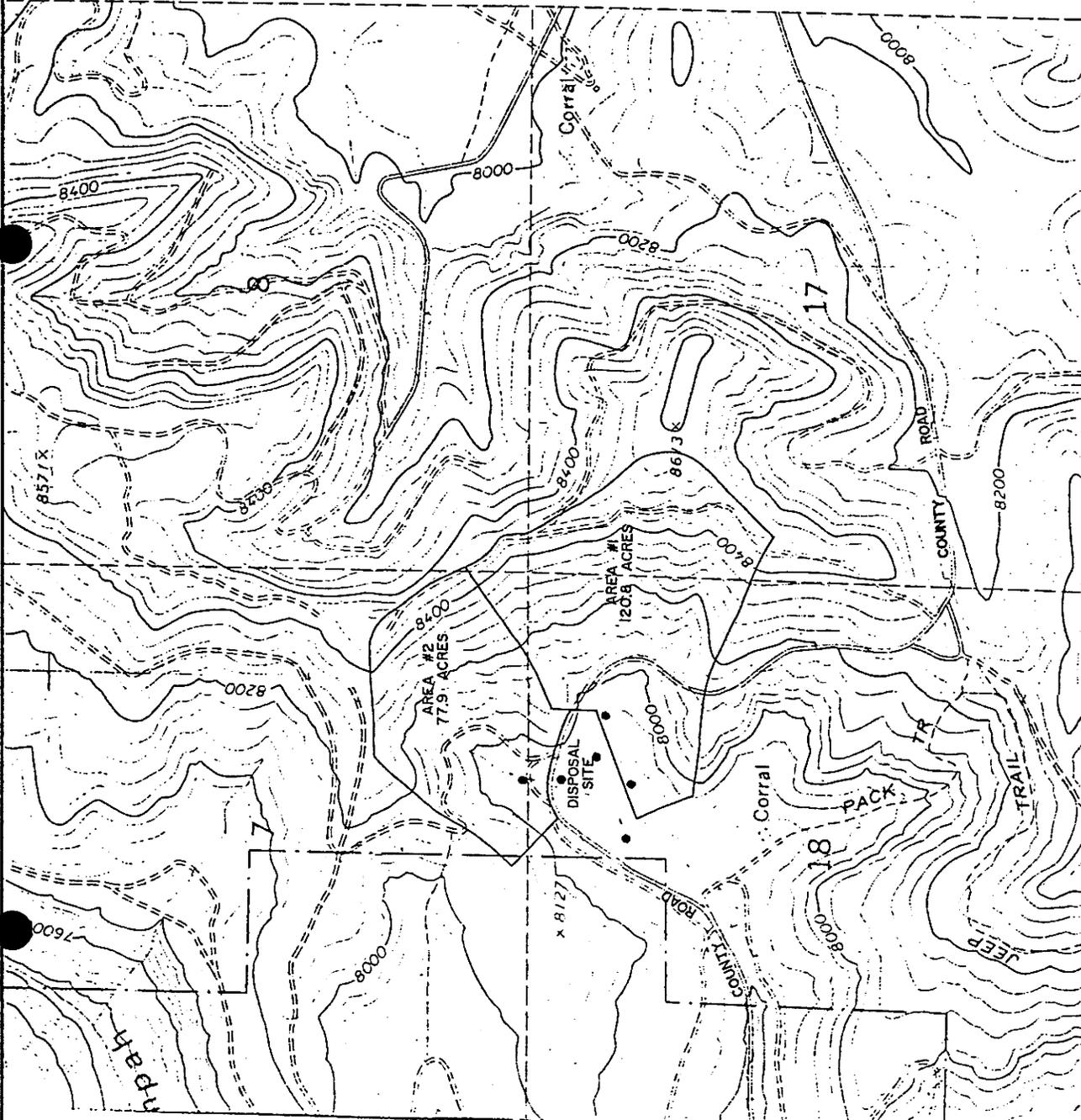
Seven boreholes were drilled and five test pits were excavated to obtain information about the subsurface. The Price River Formation is overlain by 4 to 30+ feet of unconsolidated alluvium over the disposal site. A borehole to the north of the county road showed 59 feet of alluvial material. The alluvium consists of soft to hard clay sequences which vary in amounts of silt and sand.

Ground Water

Six ground water monitoring wells (shown on Map 3 of the MRP, also enclosed as Figure 2) show ground water was encountered in the bedrock, but not in the soils and alluvium on the site. Original ground water levels in observation wells are recorded in the Well Completion Records. Subsequent water level measurements were recorded and a piezometric surface established. Data shows the piezometric surface dips 3° N. 55° S. (shown on Map 6 of the MRP).

Ground water quality and levels will be monitored seasonally for a minimum of two years. Operational and reclamation water quality monitoring parameters will be supplied in the MRP.

• Water Monitoring Well



SOUTHERN UTAH FUEL CO.	
MINE NUMBER ONE	
UNDERGROUND DEVELOPMENT	
WASTE DISPOSAL SITE	
DRAINAGE AREA	
DATE NOV. 6, 87	SCALE 1" = 1000'
DRAWN BY	DRAWING NO. MAP 3

Figure 2

Water monitoring has been initiated at the site to establish the baseline conditions of the hydrologic regime for the current condition of the permit area. Baseline water quality data were submitted separately from the application package. A sampling station will be added to the monitoring schedule during the post-mining phase of the operation to monitor the drainage entering the pond.

No seeps or springs have been identified to the west along Salina Canyon.

No production water wells exist on the permit area thus, no transfer of any well is proposed.

Surface Water

No perennial or intermittent streams exist within or adjacent to the waste rock area. Ephemeral surface runoff from the disturbed area will be controlled by using a combination of diversions, berms, channels, culverts, a catch basin and a sedimentation pond. Undisturbed drainage will be diverted from the site utilizing three diversions (identified as Diversions #1, #2, and #3, Map 2, MRP), and no disturbed area drainage will mix with undisturbed drainage. No mine water will be produced at the site.

All disturbed area drainage will report to a sedimentation pond. Four diversions will be constructed along the contour of the waste fill area. These four diversions will route the drainage from the fill area to ditches #1 and #2 (Map 2 in the MRP) at the perimeter of the disturbed area and ultimately to the sedimentation pond for treatment. The terrace diversions have been adequately sized to pass the expected flow event from the 100 yr. - 24 hr. precipitation event. The pond will be constructed prior to disturbance of the area. The pond is adequately sized to totally contain the runoff expected from the 10 yr - 24 hr precipitation event and the design sediment volume (0.99 Acre - feet). The design sediment storage volume was calculated by the applicant using the Universal Soil Loss Equation (USLE). This volume was 142.11 tons/year or 9,148 ft.³ for a three year period. The Division calculated the volume to be 6,952.9 ft.³,

Diversion channels proposed for the site are adequate to pass, at a minimum, the expected peak flow from a 10 yr - 24 hr precipitation event. Channel linings of riprap are proposed where necessary to reduce channel velocities and provide channel erosion protection. A riprap lining with a D₅₀ of approximately 5 inches for ditch reaches that exceed 4 percent (Appendix III, in the MRP). Division analysis of the site indicates that both ditches exceed 4 percent for the entire length. Therefore, the applicant will riprap the entire reach for both diversions.

Two ephemeral drainages (shown on Map 3 of the MRP, also shown as Figure 2 in this report) will be diverted from the WRDA via Diversions #1 and #2 (Map 2 in the MRP). The largest drainage area for these is 120.8 acres or 0.19 mile² which is less than the 1 square mile requirement of this regulation. Diversion #3, (Map 2 in the MRP) will divert a small (0.6 acre) portion of County road drainage from the disposal area.

The sedimentation pond will have a capacity of 0.71 acre-ft. (31,000 ft.³) to the top of the primary spillway. The pond has a capacity of 0.99 acre-ft. (43,000 ft.³) to the crest of the emergency spillway. The primary spillway will be fitted with a decant valve at an elevation of 7887.0 feet, which is 0.37 ft. above the maximum sediment storage elevation. The applicant has proposed a drop inlet spillway with a 12 inch riser and a 12 inch barrel diameter. The dam will have a height of 6.8 ft., sideslopes of 2.5:1, and a top width of 10.0 feet. Pond capacity includes a 5 percent increase in the construction height of the embankment to allow for settlement. The pond meets the design requirements for the peak flow event calculations for the 10 yr. - 24 hr. and 25 yr. - 24 hr. precipitation events. Therefore, the pond is designed to completely contain the design sediment volume and the expected runoff from a 10 yr. - 24 hr. precipitation event. The applicant has committed to removal of sediment when the sediment reaches 60 percent of the maximum design volume.

A small secondary basin will be built below the discharge from the sediment pond to retain the decant water from the pond during sediment removal operations. Baseline data for the site has been collected at monthly intervals since December of 1987.

No surface water monitoring for the site has been proposed. This is approvable due to the completely ephemeral character of the hydrologic regime in the permit and adjacent areas.

Subsidence

No underground mining activity has occurred beneath the site. One half to one inch of subsidence is expected over the life of the disposal site due to settlement of the fill from the consolidation of surface soils and elastic compression of the underlying bedrock.

II. Cumulative Impact Area

Plate 1 delineates the Cumulative Impact Area (CIA) for the WRDA. The CIA includes the two unnamed ephemeral drainages above the site and a portion of the unnamed stream below the site. The CIA encompasses approximately 260 acres.

Potential Hydrologic Impacts

Ground Water

The greatest potential impacts to ground water resources are related to changes in water quality caused by leaching and discharge of high total dissolved solids (TDS) concentration. Ground water monitoring via observation wells will detect changes in ground water quality. However, sampling and monitoring waste to detect acid and toxic forming materials should prevent ground water contamination.

Surface Water

The main concern in terms of impact to surface water is water quality deterioration downstream from the WRDA. There should be no impact to the quantity of water due to the ephemeral nature of the drainages. The drainages in the CIA flow only in response to snowmelt runoff and rainfall events. Infiltration rate and runoff volumes will be altered by disturbance, however the implementation of sedimentation control structures should abate deleterious effects to receiving stream channels.

The area influenced by surface disturbance is of limited areal extent and confined only to ephemeral drainages. Surface sediment controls will be in place prior to disturbance and during reclamation. The water quality impacts associated with reclamation will be minimal or nonexistent due to the fact all drainage from the disturbed area will be routed through sediment controls and treated prior to any release if a release does occur.

Influence of Other Mining

The WRDA is located in a drainage separate from any other mining operations. A Cumulative Hydrologic Impact Assessment prepared March 12, 1986 for the Convulsion Canyon Mine has addressed the hydrologic impacts for the anticipated mining in the Quitchupah Creek drainage.

III. Conclusion

The operational design proposed for the Waste Rock Disposal Site is herein determined to be consistent with preventing damage to the hydrologic balance outside the mine plan area.

1299R

REFERENCES

- Doelling, H. H. 1972. Wasatch Plateau Coal Fields. In Doelling, H. H. (ed.). Central Utah Coal Fields; Sevier-Sanpete, Wasatch Plateau, Book Cliffs and Emery. Utah Geological and Mineralogical Survey Monograph Series No. 3. Salt Lake City, Utah.
- Mundorff, J. C. 1972. Reconnaissance of Chemical Quality of Surface Water and Fluvial Sediment in the Price River Basin, Utah. Utah Department of Natural Resources, Division of Water Rights. Technical Publication No. 39. Salt Lake City, Utah.
- Price, D. and K. M. Waddel. 1973. Selected Hydrologic Data in the Upper Colorado River Basin. U. S. Geological Survey Hydrologic Investigations Atlas HA-477. Washinton, D. C.
- U. S. Soil Conservation Service. 1975. Erosion, Sediment, and Related Salt Problems and Treatment Opportunities. Special Projects Division. Golden, Colorado.
- United States Geological Survey, 1979. Development of Coal Resources in Utah, Final Environmental Statement, Part 1.

STIPULATIONS

Southern Utah Fuel Company
Convulsion Canyon Mine
Waste Rock Disposal Site
ACT/041/002
Sevier County, Utah

Stipulation UMC 817.11 - (1) - SCL

1. A mine and permit identification sign must be placed at each point of access from a public road to the area of surface operations prior to initiation of surface-disturbing activities. The sign shall show the name, business address, telephone number, mine name and permit identification number.

Stipulation UMC 817.13-.15 - (1) - JRH

1. Prior to the construction or abandonment of any water monitoring wells, and no later than 30 days from permit approval for the waste rock disposal facilities, the operator shall incorporate into the plan, a commitment to construct and abandon all water monitoring wells in compliance with the Administrative Rules for Water Well Drillers, Division of Water Rights.

Stipulation UMC 817.22 - (1) - JSL

1. Within 90 days of permit approval the operator shall submit to the Division, plans to remove sufficient volume of soil materials such that a 2.5 feet soil redistribution depth over the waste materials will be achieved.

Stipulation UMC 817.41 - (1) - RPS

1. Within 30 days of permit approval, the applicant must submit an appropriate number of copies of all baseline ground water quality data collected to date in a format for direct insertion into the approved Mining and Reclamation Plan (MRP). The submittal must also contain a summary narrative discussing the results of the monitoring program.

Stipulation UMC 817.48 - (1) - JSL

1. Within 90 days of permit approval, the operator shall submit to the Division, a commitment to submit an acid- or toxic- forming mitigation plan if the collected quarterly waste analysis indicates that an acid- or toxic- forming potential exists other than high boron levels. Said acid- or toxic- forming material mitigation report shall be submitted to the Division not more than 30 days from receipt of analysis. All identified potential acid- or toxic- forming materials must be buried or treated within 30 days after the material is first exposed on the mine site. The proposed mitigation plan must meet the requirements of UMC 817.48 and UMC 817.103.

Stipulation UMC 817.49 - (1) - RPS

1. The applicant must submit a certification report that complies with the requirements of subsection (h) of this rule within 30 days of completion of the construction of the sedimentation pond.

Stipulation UMC 817.52 - (1) - RPS

1. The applicant must submit a revised ground water monitoring plan. In addition to the proposed plan, this plan is to include: 1) collection of baseline water quality and level measurements for a period of two years (inclusive of data collected to date) in accordance with the Division Guidelines for Water Monitoring Programs, 2) specific sampling frequency information, and 3) a plan for collection of ground water quality and level data during the operational and postmining phases of the project. This plan must be submitted in approvable form within 30 days of permit approval.

Stipulation UMC 817.89 - (1) - JRH

1. Within 30 days of permit approval, the operator shall incorporate into the plan for the waste rock disposal facility, a commitment not to dispose non-coal waste materials within the refuse embankment and to dispose of non-coal waste materials in accordance with the requirements of this section.

Stipulation UMC 817.99 - (1) - JSL

1. Within 30 days of permit approval, the operator shall provide and incorporate into the text of the MRP a commitment to notify the Division in the event of a slide or other damage as required by this section.

Stipulation UMC 817.101 - (1) - JRH

1. Within 90 days of permit approval, the operator shall revise the plan to increase the amount of cover material required in accordance with the requirements of Stipulation UMC 817.22-(1)- JSL. At the same time all drawings, text, and calculations relevant to this change in the amount of cover material shall also be modified and resubmitted into the plan.

Stipulation UMC 817.111 - (1) - LK

1. Within 30 days of permit approval, the operator will clarify the seeding method to be used and revise the appropriate pages in the MRP to clarify the discrepancy. If broadcast seeding methods are to be utilized, the operator must also identify the broadcast seeding rate.

Stipulation UMC 817.114 - (1) - LK

1. Within 30 days of permit approval, the operator will clarify the rate of straw mulch to be applied during reclamation activities.

Stipulation UMC 817.116 - (1) - LK

1. Within 30 days of permit approval, the operator will modify Table 4.6.3-1 of the MRP to show that productivity will be sampled on reclaimed areas for the last two (2) years (years 9 and 10) of the liability period.

TECHNICAL ANALYSIS

Southern Utah Fuel Company
Convulsion Canyon Mine
Waste Rock Disposal Site
ACT/041/002
Sevier County, Utah

UMC 817.11 Signs and Markers - SCL

Existing Environment and Applicant's Proposal

The applicant has committed to properly post signs in accordance with UMC 817.11 (Mining and Reclamation Plan [MRP] Section 3.2.6, page 34). Specifically, the applicant proposes to mark the disturbed area boundary and label topsoil storage piles.

Compliance

The applicant has committed to comply with this section and specifically addressed the requirements for perimeter markers and topsoil piles. The applicant will also be required to post an appropriate mine identification sign. No other requirements of this section are applicable to the waste rock disposal site.

Stipulation UMC 817.11 - (1) - SCL

1. A mine and permit identification sign must be placed at each point of access from a public road to the area of surface operations prior to initiation of surface-disturbing activities. The sign shall show the name, business address, telephone number, mine name and permit identification number.

UMC 817.13 Casing and Sealing of Exposed Underground Openings: General Requirements - JRH

UMC 817.14 Casing and Sealing of Exposed Underground Openings: Temporary - JRH

UMC 817.15 Casing and Sealing of Exposed Underground Openings: Permanent - JRH

Existing Environment and Applicant's Proposal

Information regarding these sections of the regulations is found in Section 4.2 of the plan.

The operator indicates that the monitoring borehole will be closed as part of Phase II reclamation. The shallow pipes will be pulled from the ground and the wells buried. These areas will then be reseeded by hand broadcasting.

Compliance

The operator is not considered to be in compliance with the requirements of this section. The operator does not indicate that the wells are to be sealed in accordance with State regulations for the casing and sealing of water wells.

In accordance with the State Division of Water Rights, under the Administrative Rules for Water Rights, Part I.1.3, "In order to provide for protection of the water resources of the state and obtain valuable information on the aquifers of the state, the "Rules" have been extended to include the drilling of monitoring wells."

Under Part II, Section 12.2; "Any well that is to be permanently abandoned shall be completely filled in such a manner to prevent vertical movement of water within the borehole as well as preventing the annular space surrounding the well casing from becoming a conduit for possible contamination of the groundwater supply".

Well construction and abandonment shall be accomplished under the direct supervision of a currently licensed water well driller who shall be responsible for verification of the procedures and materials used.

Materials to be used shall be in compliance with the requirements of the water well drillers rules.

The casings of the wells to be abandoned shall be severed a minimum of 2 feet below either the natural ground surface adjacent to the well or at the collar of the hole, whichever is the lower elevation. A minimum of 2 feet of compacted native material shall be placed above the abandoned well upon completion.

Any additional monitoring wells drilled on the site must be in compliance with the Administrative Rules for Water Well Drillers, State of Utah, Division of Water Rights. Refer to these rules for additional licensing and procedural requirements for the drilling and reclamation of wells.

Stipulation UMC 817.13-.15 - (1) - JRH

1. Prior to the construction or abandonment of any water monitoring wells, and no later than 30 days from permit approval for the waste rock disposal facilities, the operator shall incorporate into the plan, a commitment to construct and abandon all water monitoring wells in compliance with the Administrative Rules for Water Well Drillers, Division of Water Rights.

UMC 817.21-.25 Topsoil - JSL

Existing Environment and Applicant's Proposal

The SUFCO Waste Rock Disposal site soil resources are discussed in Appendix Five (V). The soil survey was conducted in December of 1987, and March of 1988, by Dr. Sheldon Nelson, Soil Scientist.

The soils in the proposed 7.5 acre waste disposal area consist primarily of one soil type. This soil is classified as a Typic Torrifuvent. Surrounding soils are classified as Typic Argixerolls.

The soils at the proposed site are primarily alluvium derived from sandstone and limestone. A torric moisture with a frigid temperature regime prevail. Average annual soil temperature is lower than eight degrees centigrade at a 50 cm depth.

The topography of the area is moderately sloping ranging from 5 to 9 percent. The site occurs in a small flood plain, primarily concave with a west aspect. The capability class is V nonirrigated with limitations due to climate and slope.

The soil profile depth is generally 140+ centimeters (cm). The present A horizon is 0-10 cm underlain by a C horizon extending to the 40-45 cm depth. A buried A horizon is located below the C horizon to a 45-140 cm with a IIIC horizon extending from 140+ cm.

Under native vegetation and non-vegetation the erosion hazard is slight and moderate, respectively. The texture ranges from a sandy loam to loam in the A horizon while the lower horizons range from a sandy loam to clay loam. Permeability is moderate. The water holding capacity ranges from 1.29 to 5.13 in the A horizon, 0.4 to 1.37 in the C horizon, and 2.4 to 9.4 in the Ab horizon. Vegetative root growth is found down to the IIIC horizon. Root growth may be restricted due to a water table at 80 to 140 cm depth.

The soil pH is neutral ranging from 7.0 to 7.5. The soil is considered non-saline and non-sodic with an electrical conductivity averaging 0.82 mmho/cm and the average sodium adsorption ratio of 0.61. The soil structure is granular in the top horizon and ranges from blocky to massive in the subsoil.

Removal

Approximately 0.5 of the 7.5 acres proposed for the disposal area will be used at a time. The soil removal plan is discussed in the operation plan, section 3.1.2, 3.2.1 and 3.2.3. Topsoil will be salvaged after vegetation has been removed from the site. The soil survey indicates a topsoil horizon depth of 0-10 cm, underlain by a C horizon and buried A horizon at 45-140 cm. Topsoil will be removed primarily by a front end loader. Removal operations will be monitored by the grid stake method.

Compliance

The applicant's proposal does not adequately address the requirements of this section. The waste material is presently considered as a potentially acid- or toxic-forming material (ATFM) based on a high boron level of 6.13 ppm. The potential ATFM analysis is based on one spoil sample. The operator states that further samples are currently being analyzed. In the "Addition to the Soil Survey" in Appendix V, Mr. S. L. Welsh states that the "waste rock buried at 2.5 feet of the existing soil profile should be sufficient to insulate the vegetation from slightly high concentrations of boron in the waste rock." The Division concurs with the 2.5 foot soil redistribution depth recommendation given by Dr. Welsh.

However, the MRP frequently states that only 24 inches of soil will be removed and 12 inches will be replaced. The MRP does not include any justification of reclaimability with the 12 inch redistribution depth. Therefore the plan must be updated to reflect that a sufficient volume of soil will be removed such that the total depth of redistributed soil will be a minimum of 2.5 feet.

Stipulation UMC 817.22 - (1) - JSL

1. Within 90 days of permit approval the operator shall submit to the Division, plans to remove sufficient volume of soil materials such that a 2.5 feet soil redistribution depth over the waste materials will be achieved.

Storage

Topsoil was salvaged during the previous disturbance. This stockpile will be placed over the first area to be reclaimed. The soil removed from the second area will be placed into long term storage on site. The topsoil from each preceding area will be directly hauled to the site to be reclaimed. Topsoil from the construction of the sediment pond will be placed into long term storage.

All long term storage topsoil stockpiles will be revegetated with the seed mix described in table 4.6.1-1, page 40. All short term stockpiles will be located away from the operations activities and will be protected as necessary with silt fence.

Compliance

The applicant's proposal adequately addresses the requirements of this section.

Stipulations

None.

Redistribution

The MRP soil redistribution plan is discussed in sections 3.2.3, 4.5 and 4.6. The first reclamation section will be covered by the existing soil stockpile located on site. Topsoil redistribution in subsequent sections will be a direct haul from the next section. The soil material will be left in a rough state to enhance micro-water harvesting and to reduce the erosion potential. The soil will be scarified to a minimum six inch depth. Redistribution will not be carried out when the soil is excessively moist to avoid excessive compaction.

Compliance

The applicant's proposal does not adequately address the requirements of this section. Pursuant to the discussion under topsoil removal, the depth of topsoil redistribution must be increased from twelve inches to 2.5 feet over the potential ATFM. This section will be in compliance with a commitment to stipulation UMC 817.22 - (1) -JSL.

Stipulations

None.

Nutrients and Amendments

The fertilizer rate will be determined by soil analysis at the time of final reclamation. The soil will be sampled prior to the reclamation effort. The fertilizer will be drilled one inch below the seed.

Compliance

The applicant's proposal adequately addresses the requirements of this section.

Stipulations

None.

UMC 817.41 Hydrologic Balance: General Requirements - RPS

Existing Environment and Applicant's Proposal

The applicant proposes to control surface runoff from the disturbed area by using a combination of diversions, berms, channels, culverts, a catch basin and a sedimentation pond. All undisturbed drainage will be routed from the disturbed area utilizing three diversions (identified as diversions #1, #2, and #3, Map 2, MRP). All disturbed area drainage will report to a sedimentation pond via two main diversions (ditches #1 and #2, Map 2) and a series of terrace diversions. The diversions have been sized adequately to pass a 100 yr - 24 hr. precipitation event. The pond is adequately sized to totally contain the runoff expected from the 10 yr - 24 hr precipitation event and the design sediment volume (0.99 Acre - feet). Details of the sedimentation pond and diversions are discussed in Section UMC 817.43, 817.44, and 817.46 of this document.

Water monitoring has been initiated at the site to establish the baseline conditions of the hydrologic regime for the current condition of the permit area. Map 2 depicts the proposed ground water sites to be monitored. Baseline water quality data were submitted separately from the application package. This data was not submitted in a format for direct insertion into the MRP. In addition, a summary narrative and discussion of the data was not included.

Diversion channels proposed for the site are adequate to pass, at a minimum, the expected peak flow from a 10 yr - 24 hr precipitation event. Channel linings of riprap are proposed where necessary to reduce channel velocities and provide channel erosion protection.

Compliance

The operator has proposed designs utilizing best technology available to minimize water pollution in the permit and adjacent areas. TA Sections UMC 817.42, 817.43, 817.44, 817.46, and 817.47 discuss details of the applicant's proposal and the Regulatory Authority's Technical Analysis. The applicant will be in compliance with this regulation when the conditions of stipulation UMC 817.41 - RPS are met.

Stipulation UMC 817.41 - (1) - RPS

1. Within 30 days of permit approval, the applicant must submit an appropriate number of copies of all baseline ground water quality data collected to date in a format for direct insertion into the approved Mining and Reclamation Plan (MRP). The submittal must also contain a summary narrative discussing the results of the monitoring program.

UMC 817.42 Hydrologic Balance: Water Quality Standards And Effluent Limitations - RPS

Existing Environment and Applicant's Proposal

The applicant proposes to route all disturbed area drainage from the main disposal area to a sedimentation pond (7.93 acres) for treatment. The applicant commits to retaining the sedimentation system at the site until the site has been completely reclaimed (section 4.9, MRP). The applicant proposes to add a sampling station to the monitoring schedule during the post-mining phase of the operation to monitor the drainage entering the pond.

Undisturbed drainage will be diverted from the site and no disturbed area drainage will mix with undisturbed drainage. No mine water will be produced at the site.

Compliance

The applicant is in compliance with this section.

Stipulations

None.

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

Existing Environment and Applicant's Proposal

The applicant proposes to construct two diversions (ditches #1 and #2, Map 2) to route the disturbed area drainage to the sedimentation pond. Drainage from the disposal area will be routed to these diversions via four terrace diversions. Ditches #1 and #2 have been demonstrated to safely pass the 100 yr. - 24 hr. design flow event from the entire disturbed area. In reality, only a portion of the total area would report to either diversion. In addition, UMC 817.43 only requires a design for a 10 yr. - 24 hr. event. Therefore, the applicant's proposal is conservative and the ditches are oversized. The ditches will be reclaimed when the sedimentation pond is removed during final reclamation.

The applicant proposes a riprap lining with a D50 of approximately 5 inches for ditch reaches that exceed 4 percent (Appendix III, MRP). Division analysis of the site indicates that both ditches exceed 4 percent for the entire length. Therefore, the applicant will riprap the entire reach for both diversions.

The applicant proposes the use of four diversions to be constructed along the contour of the waste fill area. These four diversions will route the drainage from the fill area to ditches #1 and #2 at the perimeter of the disturbed area and ultimately to the sedimentation pond for treatment. The terrace diversions have been adequately sized to pass the expected flow event from the 100 year - 24 hour precipitation event.

All the diversions used to control disturbed area drainage have been designed with 0.3 foot of freeboard .

Compliance

The applicant's proposal is in compliance with this section.

Stipulations

None.

UMC 817.44 Hydrologic Balance: Stream Channel Diversions - RPS

Existing Environment And Applicant's Proposal

The proposed operation will not require the diversion of any perennial or intermittent streams. Two ephemeral drainages will be diverted from the waste disposal area via diversions #1 and #2 (Map 2). The largest drainage area for these is 120.8 acres or 0.19 mile² which is less than the 1 square mile requirement of this rule. However, the application contains information demonstrating compliance with this rule for those diversions. A diversion (diversion #3, Map 2) has been proposed to divert a small (0.6 acre) portion of county road drainage from the disposal area.

The applicant has presented designs and calculations for these three diversions (Appendix III, MRP). Division analysis for these diversions consisted of verifying the design peak flow, calculating the diversion capacity and expected flow velocity, and review of the proposed riprap sizing. Generally, the applicant has correctly calculated the design peak flow events from the 10 yr. - 24 hr. and 100 yr. - 24 hr. precipitation events.

A short reach (approximately 40 ft.) of diversion #3 (and potentially ditches #1 and #2) has a slope in excess of 60 percent. The applicant has not submitted riprap designs for these reaches. However, considering the relatively short length of these sections and a potential reduction in the final slope during construction, the Division feels that the proposed riprap size may be adequate. The applicant has agreed (phone conversation with Wes Sorensen, 7/21/88) to selectively place larger riprap (estimated to be D50 of eight inches) in these reaches. The diversions will be revegetated and they are to remain as permanent diversions upon final reclamation.

Compliance

The applicant is in compliance with this regulation.

Stipulations

None.

UMC 817.45 Hydrologic Balance: Sediment Control Measures - RPS

Existing Environment and Applicant's Proposal

The applicant has proposed a sediment control and drainage plan that includes diversion of undisturbed drainage from the disposal area, routing of disturbed area drainage to a sedimentation pond, and contemporaneous reclamation of the disposal material. The plan has been designed to minimize sediment production and contributions of sediment to runoff outside the permit area.

Compliance

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.46 Hydrologic Balance: Sedimentation Ponds - RPS

Existing Environment and Applicant's Proposal

The applicant proposes to treat the disturbed area runoff in a single sedimentation pond located southwest of the disturbance (Map 2). The applicant has committed to constructing the pond prior to disturbance of the area (section 3.2.1, MRP). The design sediment storage volume was calculated by the applicant using the Universal Soil Loss Equation (USLE). This volume was 142.11 tons/year or 9,148 ft.³ for a three year period. The Division calculated the volume to be 6,952.9 ft.³ The following table summarizes the review:

Assumption Values

<u>Parameter</u>	<u>Applicant's Value</u>	<u>DOGM Value</u>
K	0.15	0.16
LS	11.38	6.08
S(%)	13.4	18
S(°)	13.4	10.2
M	0.5	0.5
L	443	400
C _{ro}	0.5	0.8
R	35	30
P	0.6	0.6
Area	7.93	7.23

Soil Loss Results

<u>Soil Loss</u>	<u>Applicant's Value</u>	<u>DOGM Value</u>
tons/yr.	142.11	101.28
ft. ³ /yr.	3036.1	2317.62
3 yr. Volume (cf)	9,148	6953

The runoff from a 10 yr. - 24 yr. precipitation event was estimated using the SCS curve number methodology. The design storm volume was estimated to be 21,792 ft.³ by the applicant and 21,312 ft.³ by the Regulatory Authority. The following table summarizes the review:

<u>Parameter</u>	<u>Applicant</u>	<u>DOGM</u>
Area (acres)	7.93	7.23
Ppt. 10-24(in.)	2.1	2.1
CN	81	81
Pond area (acres)	1.0	0.49
Runoff (ft. ³)	21,792	21,312

The applicant has proposed a sedimentation pond with a capacity of 0.71 ac.-ft.. (31,000 ft.³) to the top of the primary spillway. The pond has a capacity of 0.99 ac.-ft.. (43,000 ft.³) to the crest of the emergency spillway. Therefore, the pond is designed to completely contain the design sediment volume and the expected runoff from a 10 yr. - 24 hr. precipitation event. The applicant has committed to removal of sediment when the sediment reaches 60 percent of the maximum design volume. Figure 1 in the Appendix of this TA contains a stage-storage curve for the pond.

Figure 1 demonstrates that the pond meets the requirements of subsections (i) and (j) relative to elevational differences between the primary spillway, the crest of the emergency spillway, and the embankment top.

The primary spillway will be fitted with a decant valve at an elevation of 7887.0 feet, which is 0.37 ft. above the maximum sediment storage elevation (Figure 1, TA Appendix and Appendix III of the MRP).

The applicant has proposed a drop inlet spillway with a 12 inch riser and a 12 inch barrel diameter. The design peak flow event calculations for the 10 yr. - 24 hr. and 25 yr. - 24 hr. precipitation events are summarized in the following table:

<u>Parameter</u>	<u>Applicant</u>	<u>DOGM</u>
Area (acres)	7.93	7.23
Slope (%)	7.0	18.0
Hyd. Length (ft.)	1140	1029
Time Conc. (hrs.)	0.42	0.12
Ppt. 10-24 (in.)	2.1	2.1
Ppt. 25-24 (in.)	3.0	3.0
Peak 10-24 (cfs)	4.42	5.04
Peak 25-24 (cfs)	6.69	7.58

The primary spillway was demonstrated to function under orifice controlled flow for the available head of 1.2 ft. (elevation difference between the top of the primary spillway and the crest of the emergency spillway). The applicant presented a capacity for the spillway at this head of 4.48 cfs, while the Division calculated the capacity to be 4.14 cfs. The difference largely results from the selection of the orifice flow coefficient (C'). The applicant uses a value of 0.65 while the Division selected 0.60. The difference is less than 8 percent and the design as proposed is acceptable.

The dam will have a height of 6.8 ft., sideslopes of 2.5:1, and a top width of 10.0 feet. The proposal includes a 5 percent increase in the construction height of the embankment to allow for settlement. This design meets the requirements of subsections (k), (l), (m), and (n) of this rule.

The applicant proposes to install a small secondary basin below the discharge from the sediment pond. This will act to retain the decant water from the pond during sediment removal operations. Decant operations will use the secondary structure to control the decant and allow infiltration of the discharge. Therefore, no discharge from the system is expected to leave the permit area for precipitation events less than the 10 yr. - 24 hr. recurrence event. A spillway has been proposed with the same dimensions as the emergency spillway for the sediment pond (25 yr. - 24 hr. event capacity).

The proposed designs for the sedimentation system have been certified by Wess Sorenson, registered professional engineer, #5369, State of Utah. The applicant has committed to submittal of pond certification following construction (section 3.2.7).

The applicant has committed to monitoring the drainage entering the sedimentation pond on a seasonal basis during the reclamation period. Although not explicitly stated in the MRP, the applicant must meet applicable water quality limitations for that drainage prior to pond removal (UMC 817.46 (u)).

Compliance

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.47 Hydrologic Balance: Discharge Structures - RPS

Existing Environment and Applicant's Proposal

The applicant has proposed adequate energy dissipators at the outlets of the two culverts crossing the county road, at the outlet of the sedimentation pond, and the outlet of diversion #3.

Compliance

The applicant is in compliance with this section.

Stipulations

None.

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

Existing Environment and Applicant's Proposal

Based on the presented limited data in the January 19, 1988 submittal, the waste material may be a potential ATFM. This determination is based on the water soluble boron content of 6.13 ppm. In accordance with the Division's Management of Topsoil and Overburden Material Guidelines, any material with available boron concentrations equal to or greater than 5 ppm is considered a potential toxic- forming material. This determination is based on only one sample.

The operator has committed (January 19, 1988 submittal) to composite sample and analyze the waste material on a quarterly basis with the provision that more frequent sampling will take place if a serious problem arises.

Compliance

The applicant's proposal does not meet the requirements of this section. As previously discussed under UMC 817.22 and required by stipulation UMC 817.22 - (1) - JSL the reclamation plan is not conducive to preventing environmental degradation from the potential ATFM. A commitment to stipulation UMC 817.22 - (1) - JSL should adequately mitigate any potential environmental degradation caused by high boron availability but may not mitigate any other acid- or toxic- forming problems should they arise.

A commitment to stipulation UMC 817.48 - (1) - JSL will bring this section of the plan into compliance.

Stipulation UMC 817.48 - (1) - JSL

1. Within 90 days of permit approval, the operator shall submit to the Division, a commitment to submit an acid- or toxic- forming mitigation plan if the collected quarterly waste analysis indicates that an acid- or toxic- forming potential exists other than high boron levels. Said acid- or toxic- forming material mitigation report shall be submitted to the Division not more than 30 days from receipt of analysis. All identified potential acid- or toxic- forming materials must be buried or treated within 30 days after the material is first exposed on the mine site. The proposed mitigation plan must meet the requirements of UMC 817.48 and UMC 817.103.

UMC 817.49 Hydrologic Balance: Permanent And Temporary
Impoundments - RPS

Existing Environment and Applicant's Proposal

The applicant does not propose any permanent impoundments. A temporary impoundment (sediment pond) will be constructed to be used during the life of the project and removed during final reclamation. The application does not commit to conduct and submit the pond certification report required by subsection (h) of this regulation.

Compliance

The applicant will be in compliance with this regulation when the conditions of stipulation UMC 817.49 - (1) - RPS are met.

Stipulation UMC 817.49 - (1) - RPS

1. The applicant must submit a certification report that complies with the requirements of subsection (h) of this rule within 30 days of completion of the construction of the sedimentation pond.

UMC 817. 50 Hydrologic Balance: Underground Mine Entry And Access
Discharges - RPS

Existing Environment and Applicant's Proposal

The proposal for the waste rock disposal area does not include any underground entries. This section is not applicable for this proposal.

UMC 817.52: Hydrologic Balance: Surface And Ground Water
Monitoring - RPS

Existing Environment and Applicant's Proposal

The applicant proposes to monitor the groundwater regime. The applicant has drilled six monitoring bore holes to be used for the collection of baseline ground water quality and quantity data. The locations and collar elevations for the bore holes are depicted on Map 2 of the MRP. A piezometric map developed from the borehole data indicates the groundwater gradient in the disposal area dips to the southwest (reference Map 6, MRP). Water level data is presented in Table 4.7.2-2 of section 4.7.2. The applicant discusses a monitoring plan for the groundwater regime in section 4.7.2.

Baseline data for the site has been collected at monthly intervals since December of 1987. At this time, a complete baseline data set has not been collected. However, due to the urgent need for the disposal site and considering that the amount of area to be disturbed in the first two years of the project is small (less than 1 acre), the Division feels that approval can be granted at this time and the baseline data collection can be completed during the early stages of the project. The proposal states that groundwater quality and levels will be monitored seasonally for a minimum of two years. The proposal does not commit to a specific monitoring frequency (i.e. does not define "seasonally"). Additionally, the proposal does not commit to a monitoring plan for the operational and reclamation phases of the project.

The water quality parameters to be sampled are presented in Table 4.7.2-1. With the addition of potassium, this list will be adequate for operational and postmining sampling. However, this list is incomplete for baseline data. The applicant's data submitted to date indicates that samples have been analyzed for the entire baseline parameter list contained in the Division Water Monitoring Guidelines. The MRP does not commit to the complete baseline parameter list for the baseline data collection period.

No surface water monitoring for the site has been proposed. This is approvable due to the completely ephemeral character of the hydrologic regime in the permit and adjacent areas.

Compliance

The application does not comply with this regulation. The ground water monitoring plan: 1) is not specific relative to frequency, 2) does not commit to collection of two years of baseline quality data according to the complete parameter list of the Division guidelines, and 3) does not present a plan for operational and postmining monitoring. Therefore, stipulation UMC 817.52 - (1) - RPS is necessary for permit approval.

Stipulation UMC 817.52 - (1) - RPS

1. The applicant must submit a revised ground water monitoring plan. In addition to the proposed plan, this plan is to include: 1) collection of baseline water quality and level measurements for a period of two years (inclusive of data collected to date) in accordance with the Division Guidelines for Water Monitoring Programs, 2) specific sampling frequency information, and 3) a plan for collection of ground water quality and level data during the operational and postmining phases of the project. This plan must be submitted in approvable form within 30 days of permit approval.

UMC 817.53 Hydrologic Balance: Transfer of Wells - RPS

Existing Environment and Applicant's Proposal

The waste rock disposal area will utilize several boreholes for monitoring prior to and during the life of the operation. No production water wells exist on the permit area. Section 4.2 discusses reclamation (plugging) of these wells. No transfer of any well is proposed.

Compliance

The applicant does not propose transfer of any proposed well. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.56 Hydrologic Balance: Postmining Rehabilitation of Sedimentation Ponds, Diversions, Impoundments, And Treatment Facilities - RPS

Existing Environment and Applicant's Proposal

The application does not contain a proposal for permanent ponds or impoundments. Two diversions are to remain as permanent structures (diversions #1 and #2). These diversions will be constructed to meet the design for 100 yr. - 24 hr. event during site development.

Compliance

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.71 Disposal of Excess Spoil and Underground Development Waste: General Requirements - JRH

Existing Environment and Applicant's Proposal

- (a)(1) The operator has indicated on page 25 of the mining and reclamation plan that all surface precipitation falling directly on and infiltrating the underground development waste fill shall be channeled into a sedimentation pond. The sedimentation pond is designed to handle the 10 year - 24 hour event. Design criteria for the pond are presented in Section 2.4.2.

All surface drainage from above the location of the fill will be diverted away from the fill by the installation of diversion ditches.

- (a)(2) On page 26 of the plan, the operator indicates that a stability analysis of the fill was accomplished. Analysis of the fill was performed by Sargent, Hauskins and Beckwith and is included in the plan as Appendix II.
- (a)(3) Suitability for reclamation is described in the soils and revegetation sections of the plan.
- (b) Design parameters and methodology for construction of the fill are outlined in Section 4 and in Appendix II of the plan.
- (c) Site preparation and removal of organic material is described in Section 3.1.2 of the plan. Clearing and grubbing and topsoil protection are included as a part of this description. This methodology is also in accordance with those recommendations found in the consultant's report in Appendix II.
- (d) Refer to comments made under UMC 817.43 for discussion regarding the design of diversions required for slope protection.
- (e)(1) The location of the disposal area is provided on the maps provided with the plan.
- (e)(2) Slope criteria as described in this section of the regulations is not found within the limits of the waste disposal site. This section is considered to be not applicable.
- (f) Placement of waste material is found in Section 3.2.5 of the plan. The operator indicates that material will be placed in horizontal lifts not to exceed 3 feet in thickness and compacted with suitable equipment for both grading and compaction. Stability analysis is found in Appendix II of the plan.
- (g) Suitability for postmining land use is discussed under UMC 817.133.
- (h) Terracing is utilized in the final construction of the waste fill. These terraces consist of "V"-ditches at 1-2% grades in approximately the middle of 10 foot wide benches. These benches are to be spaced vertically at 20 feet. This information is found in the plan in section 3.2.5.

- (i) Inspections for both the fill and the sediment pond have been committed to by the operator in accordance with this section and section UMC 817.46(r). This information is found in section 3.2.7 of the plan.
- (j) This section regarding the disposal of coal processing waste in the fill is considered to be not applicable to the operator's plan.
- (k) The operator has indicated in Section 3.1.1 that there are no seeps or springs within the proposed fill area at the time of the investigation which would require special treatment. The operator also indicates that no underdrains or rock core chimney drains will be required.
- (l) Analysis of the foundation and abutment materials is found in the consultant's report in Appendix II of the plan.
- (m) This facility deals with the disposal of excess spoils and underground development waste on the surface. Information regarding the disposal of materials underground is pertinent to the mining and reclamation plan and is not applicable to the technical analysis of the waste rock disposal facility.

Compliance

General Due to the determination that 2.5 feet of cover material will be required over the waste material, much of the design details provided by the operator are not considered to be sufficient.

- (a)(1) Refer to technical comments made under UMC 817.42.
- (a)(2) This section is considered to be technically adequate. The stability analysis provided by SHB indicates that the proposed configuration has a long term static factor of safety of approximately 2. Although the amount of cover material which is required to be placed on the waste material may vary from 12 inches to 2.5 feet, the overall configuration and stability of the fill as designed will not change appreciably.
- (a)(3) Refer to comments made under the soils and revegetation sections of the technical review.
- (b) This section is considered to be technically adequate. The design drawings and the consultants' reports provide the mark of a registered professional engineer and therefore meet the requirements of this section.

- (c) This section is considered to be technically adequate. The operator has provided sufficient detail in the design for clearing and grubbing of the site.
- (d) Refer to comments made under UMC 817.43 for discussion regarding the technical adequacy of design of diversions required for slope protection.
- (e)(1) This section is considered to be technically adequate. The operator has located the site in a moderately sloping area. The construction and development is adjacent to an existing road fill and the material is planned to blend in with the surrounding area and up to the road fill. The area is considered to be stable.
- (e)(2) This section is considered to be not applicable.
- (f) This section is considered to be technically adequate. The operator has committed to place the material in a manner that will achieve long term stability. Due to the nature of coal waste materials, the operator has indicated that density and compaction parameters will be accomplished by visual methods rather than by physical or mechanical testing of the material during placement. This determination is reasonable since the material to be placed will consist of poorly graded shales and sandstone with a low percentage of fine materials. Routine soil testing for compaction is not amenable to this type of material.

Slopes of the fill will be initially constructed at 2h:1v, with final slopes to be regraded to 3h:1v to facilitate revegetation. The operator has committed to place a minimum of 12" of topsoil material over the refuse, with the top 6" to be scarified in preparation for revegetation. Refer to comments elsewhere in this review regarding the total amount of cover material to be required.

- (g) Suitability for postmining land use is discussed under UMC 817.133.
- (h) This section is considered to be technically adequate. The terraces described by the operator in the construction of the final fill configuration are more oriented toward surface runoff erosion control than for overall fill stability. These terraces serve as water bars with the ditches employed to carry water along the contours of the slopes to the perimeter for the fill. Ditches skirting the fill are used to collect the water from these terraces and carry it below the fill.
- (i) This section is considered to be technically adequate. Inspections for both the fill and the sediment pond have been committed to by the operator in accordance with this section and section UMC 817.46(r).

- (j) This section of the regulations can be considered as technically adequate. Although coal processing waste is not a consideration for disposal in the waste rock disposal facility, the operator has provided the methodology for disposal of similar materials in the fill. Such materials are to include non-cemented soft shales, clay spoil, or fine-grained material which are to be mixed with the coarser materials to limit concentrations of these fines in the fill. Most notable of these waste materials is the sediment pond waste materials which have a high amount of sand and silt materials as well as a considerable amount of clay. By the operator's commitment to mix and blend these materials with the coarse refuse, it is considered acceptable to allow the disposal of sediment pond waste in the waste rock disposal site.
- (k) This section could be considered to be complete. However refer to hydrologic comments in this review regarding groundwater evaluation.
- (l) This section is considered to be complete. The information presented in the consultant's report indicated that the foundation material is suitable. The operator further indicates the specifications for recompaction of the foundation material once the topsoil materials have been removed.
- (m) This section is not applicable, this facility does not deal with returning of waste materials to the underground workings. Refer to the mining and reclamation plan for descriptions regarding returning materials to underground workings.

Stipulations

None.

UMC 817.72 Disposal of Underground Development Waste and Excess Spoil: Valley Fills - JRH

Existing Environment and Applicant's Proposal

This section of the regulations is considered to be not applicable. The waste rock disposal site does not meet the criteria to be considered as a valley fill.

UMC 817.73 Disposal of Underground Development Waste and Excess Spoil: Head-of-Hollow Fills - JRH

This section of the regulations is considered to be not applicable. The waste rock disposal site does not meet the criteria to be considered as a head-of-hollow fill.

UMC 817.74 Disposal of Underground Development Waste and Excess Spoil: Durable Rock Fills - JRH

This section of the regulations is considered to be not applicable. The waste rock disposal site does not meet the criteria to be considered as a durable rock fill.

UMC 817.89 Disposal of Non-Coal Wastes - JRH

Existing Environment and Applicant's Proposal

Information regarding the disposal of mine waste materials only was found in the text, Part 1.1.

Compliance

This section is not considered to be complete. The operator must at least indicate that no non-coal waste materials will be disposed of in the refuse material. As indicated in this section of the regulations, "At no time shall any solid waste material be deposited at refuse embankments or impoundment sites." Additionally, the operator shall commit to disposing of non-coal waste material in accordance with the requirements of this section.

Stipulation UMC 817.89 - (1) - JRH

1. Within 30 days of permit approval, the operator shall incorporate into the plan for the waste rock disposal facility, a commitment not to dispose non-coal waste materials within the refuse embankment and to dispose of non-coal waste materials in accordance with the requirements of this section.

UMC 817.95 Air Resources Protection - SCL

Existing Environment and Applicant's Proposal

The applicant has submitted an Air Pollution Control Plan (Section 4.14, page 48). Fugitive dust emissions at the waste rock disposal site will be minimized by the wet nature of the waste material and by keeping the area disturbed at any one time small. The operator will have a trained observer available to monitor fugitive dust and will use water to control emissions if necessary.

Compliance

The applicant has received an Approval Order from the Bureau of Air Quality dated April 1, 1988. The Approval Order stipulates, among other things, that no more than 3 acres be disturbed at one time, that truck speed shall not exceed 5 miles per hour on the unpaved portion of the haul road, and that unpaved roads and operational areas shall be treated with water spray or chemicals to reduce fugitive dust emissions.

The applicant's plan complies with the requirements of this section.

Stipulations

None.

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values - LK

Existing Environment and Applicant's Proposal

The waste rock disposal site is adjacent to the study area for the wildlife information found in the Convulsion Canyon MRP. The site is not of major importance to wildlife, even though some deer and elk probably utilize the area in the winter. The area is not suitable for raptor nesting, although it lies within the hunting territory of golden eagles. The site does not provide habitat for any known threatened or endangered species (Pages 20 - 21 and Exhibit 2, MRP).

Compliance

The applicant has committed to promptly report any threatened or endangered species, or golden eagles not previously reported to the Division (page 14).

There are no springs at the site. No perennial or intermittent streams pass through the area. The sediment pond is not expected to contain drainage that is toxic to wildlife (pages 15 - 16, MRP).

The applicant will not use persistent pesticides unless approved in advance by the Division (page 20).

The applicant will help to prevent, control, and suppress range, forest, and coal fires in the permit area which are not approved by the Division.

Disturbance will be kept to a minimum with prompt revegetation of each section as it is completed. The species selected for revegetation are known for their quality as forage and cover for wildlife (see revegetation plan).

The site will be enhanced during operations due to retention of water in the sediment pond (page 20).

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.99 Slides and Other Damages - JSL

Existing Environment and Applicant's Proposal

No indication or reference to the requirements of this section could be found in the MRP.

Compliance

The operator needs to provide in the MRP, a commitment to notify the Division at any time a slide occurs which may have potential adverse effect on the public, property, health, safety, or the environment.

Stipulation UMC 817.99 - (1) - JSL

1. Within 30 days of permit approval, the operator shall provide and incorporate into the text of the MRP a commitment to notify the Division in the event of a slide or other damage as required by this section.

UMC 817.100 Contemporaneous Reclamation - LK

Existing Environment and Applicant's Proposal

The applicant has proposed to reclaim each segment of the waste disposal site (ca. 200 ft. X 300 ft.) as it is completed (page 36 & 38, MRP).

Compliance

Reclamation will occur as contemporaneous as practicable. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.101 Backfilling and Grading: General Requirements - JRH

Existing Environment and Applicant's Proposal

Information regarding backfilling and grading of the site during the operation as well as reclamation can be found in the plan in sections 3.2.5 and 4.4.

The operator has indicated that waste rock materials are to be placed in lifts not to exceed three feet in thickness. Compaction of the fill will be accomplished by routing loaded equipment over the fill in a manner to cover the fill area uniformly. Final slopes of the fill are not to exceed 2h:1v and will be regraded upon completion of the reclamation to an exterior slope of 3h:1v.

The operator has indicated that topsoil material will be placed over the waste rock material in segments or strips which are approximately 300 feet long and 200 feet wide. Topsoil will be spread to a minimum depth of 12 inches.

Compliance

This section of the regulations could be considered to be complete pending modification of the cover requirements for the waste rock disposal facility. Upon modification of the plan to increase the depth of the cover material, this section can be considered complete.

Construction of the waste rock disposal facilities is to be accomplished in a manner that will involve reclamation of the site throughout the life of the facility. Once a portion of the waste fill has reached capacity, sufficient cover material can be placed over the area and reclamation of that particular area can be accomplished. In order to determine the worst case based on the information presented by the operator, it should be assumed by the operator that 2.5 feet of suitable cover material will be required over the coal waste rather than the 12 inches as indicated in the existing proposal.

The operation plan should reflect this contingency in the design and operation of the facility. In other words, the initial borrow area and removal of topsoil from the area in which waste material will first be placed should be increased in depth to account for the 2.5 feet of cover material that may be required.

By maintaining sufficient cover material that may be required to cover acid- and toxic- forming materials, the operator will not have a shortfall in the amount of cover materials that may be required.

Additionally, 12" of cover material is not considered sufficient from the standpoint of surface erosion of the site. As previously mentioned in earlier reviews, the allowable depth in which rills and gullies would have to be reduced in order to ensure sufficient cover of the waste materials. By increasing the amount of cover from 12" to 2-2.5 feet, the allowable depth for rills and gullies could remain at 9 inches.

Stipulation UMC 817.101 - (1) - JRH

1. Within 90 days of permit approval, the operator shall revise the plan to increase the amount of cover material required in accordance with the requirements of Stipulation UMC 817.22-(1)- JSL. At the same time all drawings, text, and calculations relevant to this change in the amount of cover material shall also be modified and resubmitted into the plan.

UMC 817.103 Backfilling and Grading: Covering Coal and Acid- and Toxic-Forming Materials - JSL

Existing Environment and Applicant's Proposal

Pursuant to UMC 817.22 and UMC 817.48 the material to be disposed is considered to be a potential acid- or toxic- forming material. The operator's current plan calls for redistributing soils over the waste rock.

Compliance

The applicant's proposal does not adequately meet the requirements of this section. The operator currently proposes to redistribute 12 inches of soil over the waste. As discussed under UMC 817.22 and UMC 817.48 a cover depth of 2.5 feet is considered to be adequate mitigation for the potential high available boron problem. A commitment to stipulations UMC 817.22 - (1) - JSL and UMC 817.48 - (1) - JSL will satisfy the requirements of this section.

Stipulations

None.

UMC 817.106 Regrading or Stabilization of Rills and Gullies - JSL

Existing Environment and Applicant's Proposal

The applicant commits to fill, stabilize and revegetate rills and gullies greater than nine inches deep in section 4.5 of the plan.

Compliance

The applicant's proposal adequately meets the requirements of this section.

Stipulations

None.

UMC 817.111 -.117 Revegetation - LK

Existing Environment and Applicant's Proposal

The proposed site is within a sage/grassland type. A vegetation survey was performed according to the current Division guidelines for vegetation information requirements. The applicant originally intended to utilize a reference area for determination of revegetation success. However, during the review process the company realized that they did not have control of the reference area. Since a statistically adequate sample of the area to be disturbed by the disposal site was obtained for cover, productivity and woody plant density, and the site is in good range condition as

UMC 817.111 -.117 Revegetation - LK (cont'd.)

Existing Environment and Applicant's Proposal (cont'd.)

determined by the Soil Conservation Service (Exhibit 3, MRP), the operator has elected to use the baseline method as described in the Division's vegetation guidelines for determining revegetation success rather than obtaining control over the proposed reference area. Therefore, the standards for each parameter have been established as: vegetation cover must be equal to 75.3 percent, productivity must be equal to 1,008 pounds dry forage per acre, and woody plant density must be equal to 25,000 stems per acre.

Compliance

UMC 817.111 Revegetation: General Requirements

The applicant has provided a revegetation plan that will re-establish adequate vegetation in a timely manner (pages 39 - 43, MRP). The plan was developed to provide forage and cover to meet the postmining land use of wildlife habitat and occasional grazing by domestic livestock. However, there is a discrepancy in the plan regarding the seeding methods (i.e. drill seeding is discussed on pages 39, 40 and 41; broadcast seeding is discussed on page 39). While the seed mix and rates listed on Table 4.6.1-1 are adequate for drill seeding, they would need to be adjusted for broadcast seeding. With acceptance of stipulation 817.111 -(1) - LK, compliance with this section will be achieved.

Stipulation UMC 817.111 - (1) - LK

1. Within 30 days of permit approval, the operator will clarify the seeding method to be used and revise the appropriate pages in the MRP to clarify the discrepancy. If broadcast seeding methods are to be utilized, the operator must also identify the broadcast seeding rate.

UMC 817.112 Revegetation: Use of Introduced Species

The proposed seed mix (page 40, MRP) contains only one introduced species, that being Melilotus officinalis (Yellow sweetclover). The Regulatory Authorities have determined in the past that this species is desirable for reclamation in that it is non-noxious, compatible with the plant and animal species of the area, is short lived and thus a poor competitor, and it is a good soil stabilizer and builder. The applicant is in compliance with this section.

UMC 817.113 Revegetation: Timing

The applicant proposes to perform revegetation work in the late fall (late September to early October). This is the preferred time for establishing the species for revegetation from seed (page 36, MRP). The applicant is in compliance with this section.

UMC 817.114 Revegetation: Mulching and Other Stabilizing Practices

The applicant has proposed to mulch all areas seeded with straw, or on steep areas, with erosion control blanket. Mulching materials will be appropriately anchored (page 41, MRP). However, the rate of straw mulch is not discussed. With acceptance of stipulation UMC 817.114 - (1) - LK, compliance with this section will be achieved.

Stipulation UMC 817.114 - (1) - LK

1. Within 30 days of permit approval, the operator will clarify the rate of straw mulch to be applied during reclamation activities.

UMC 817.116-.117 Revegetation: Standards for Success

The applicant will use the baseline data collected as the standards for revegetation success. Revegetation efforts will be considered successful when the parameters from the revegetated area are 90 percent or greater than the values for the parameters from the baseline survey for the last two years of the 10-year liability period (pages 41-43, MRP). However, the MRP does not identify what years of the liability period productivity will be sampled. With acceptance of stipulation UMC 817.116 - (1) - LK, compliance with this section will be achieved.

Stipulation UMC 817.116 - (1) - LK

1. Within 30 days of permit approval, the operator will modify Table 4.6.3-1 of the MRP to show that productivity will be sampled on reclaimed areas for the last two (2) years (years 9 and 10) of the liability period.

Finding of Reclamation Feasibility

The applicant's revegetation plan has been evaluated by the Division. Standard range revegetation practices will be employed and seeding will occur during the time most likely for revegetation success. The species selected for revegetation are adapted to the site conditions that exist at the proposed site. The soil types and precipitation for the area are favorable for revegetation. A small portion of the area had been previously used as a borrow area and had been seeded within the last few years. A site inspection of this area showed that vegetation establishment was progressing favorably (The SCS evaluated the past reclamation and determined it to be in good range condition [Exhibit 3, MRP]). Therefore, the Division finds that revegetation, according to the proposed plan with the conditions outlined above, is feasible.

UMC 817.133 Postmining Land Use - LK

Existing Environment and Applicant's Proposal

The proposed site is suitable for summer range for cattle (although it has not been used as such for the last several years)(page 23, MRP) and provides habitat for several species of birds and mammals (Exhibit 2, MRP). Several summer homes have been built in the area adjacent to the site (page 23).

Compliance

The applicant has proposed to minimize the impacts on the land use by disturbing only a small portion at a time and prompt reclamation of each segment as it is completed. Activities at the site will be scheduled during the week to minimize impact to recreational users of the surrounding summer homes. The reclamation plan is designed to restore the premining land use capabilities (pages 23 - 24 and the reclamation plan, MRP). The applicant is in compliance with this section.

Stipulations

None.

UMC 817.150-.156 Class I Roads - JRH

UMC 817.160-.166 Class II Roads - JRH

UMC 817.170-.176 Class III Roads - JRH

Existing Environment and Applicant's Proposal

Plate 4 indicates that a haul road will be constructed on which the waste rock material is to be transported for disposal.

Compliance

The operator is considered to be in compliance with the requirements of this section. The haul road indicated on map 4 serves to facilitate the conceptual use of the site only. Temporary haul roads will be constructed as the fill progresses and will be incorporated into the fill area and covered or removed as required.

All of the areas in which these temporary haul roads will be constructed will report to the sediment pond for the facility. All of these roads are considered to be only a part of the construction of the fill itself and are not required to meet the criteria for roads as described in these sections of the regulations.

Stipulations

None.

UMC 817.180 Other Transportation Facilities - JRH

Existing Environment and Applicant's Proposal

No transportation facilities other than the haul roads are to be installed at the waste rock disposal site. This section of the regulations is considered to be not applicable.

Compliance

The operator is considered to be in compliance with the requirements of this section.

Stipulations

None.

UMC 817.181 Support Facilities and Utility Installations - JRH

Existing Environment and Applicant's Proposal

No other support facilities or utility installations are proposed in conjunction with the waste rock disposal facility.

Compliance

The operator is considered to be in compliance with the requirements of this section. This section is considered to be not applicable.

Stipulations

None.

UMC 822 Alluvial Valley Floors - JSL

Existing Environment and Applicant's Proposal

The proposed waste rock disposal area does not contain an alluvial valley floor. The soil land use capability is determined to be a Class V with limitations due to climate and slope. The site does not contain sufficient water to support agricultural activities. There is no indication of current or historic irrigation or agricultural activities.

Compliance

The applicant's proposal adequately addresses the requirements of this section.

Stipulations

None.

UMC 823 Prime Farmland - JSL

Existing Environment and Applicant's Proposal

The Soil Conservation Service has submitted a negative determination of Prime Farmland for the waste rock disposal site. This determination is in Exhibit 4 of the plan.

Compliance

The applicant's proposal adequately addresses the requirements of this section.

Stipulations

None.

1551R
7-20-88
djh

LETTERS OF CONCURRENCE

Southern Utah Fuel Company
Convulsion Canyon Mine
Waste Rock Disposal Site
ACT/041/002
Sevier County, Utah

File ACT/041/002
Kent #2

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SEP 28 1987

DIVISION OF OIL
GAS & MINING



NORMAN H. BANGERTER
GOVERNOR



STATE OF UTAH
DEPARTMENT OF COMMUNITY AND
ECONOMIC DEVELOPMENT

24 September 1987

Division of
State History
(UTAH STATE HISTORICAL SOCIETY)

MAX J. EVANS, DIRECTOR
300 RIO GRANDE
SALT LAKE CITY, UTAH 84101-1182
TELEPHONE 801/533-5755

Susan C. Linner
Permit Supervisor
Division of Oil, Gas, and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

RE: New Permit, Waste Rock Disposal Site, Southern Utah Fuel Company,
Convulsion Canyon Mine, PRO/041/002-1, Folder No. 2, Sevier County, Utah

In Reply Please Refer To Case No. J965

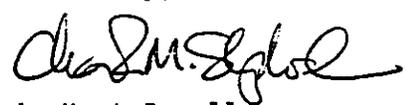
Dear Ms. Linner:

The Utah Preservation Office has received for consideration the new permit information on the Waste Rock Disposal Site for the Convulsion Canyon Mine project. After review by our staff, we have the following comments.

We understand that AERC, the archaeological contractor, found no cultural resources in the 30 acre proposed project area. Therefore, we concur with the determination of "no effect" by this project on known cultural resources.

The above is provided on request as outlined by 36 CFR 800 or Utah Code, Title 63-18-37. If you have questions or need additional assistance, please contact Lorraine Dobra or Charles Shepherd at (801) 533-7039.

Sincerely,

for 
A. Kent Powell
Deputy State Historic
Preservation Officer

LAD:jrc:J965/4610V



STATE OF UTAH
NATURAL RESOURCES
Wildlife Resources

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
William H. Geer, Division Director

Southern Region • 622 North Main Street • P.O. Box 606 • Cedar City, UT 84720-0606 • 801-586-2455

September 25, 1987

Susan C. Linner, Biologist
355 W. North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Ms. Linner:

We have reviewed the "Waste Rock Disposal Site Plan" prepared by SUFCO. It has addressed our previous concerns and will fill our expectations for wildlife.

Thank you for allowing us to review the plan.

Sincerely,

Wes Shields
92

Wesley C. Shields
Wildlife Program Manager

F. Clair Jensen

F. Clair Jensen
Regional Wildlife Supervisor

cc: Mike Schwinn

RECEIVED

SEP 28 1987

DIVISION OF OIL
GAS & MINING



UNITED STATES DEPARTMENT OF AGRICULTURE
 FOREST SERVICE
 FISHLAKE N. F.
 115 EAST 900 NORTH
 RICHFIELD, UTAH 84701

*File ACT/04/002
 kent*

Reply To: 2820-4 SUFCo

Date: February 16, 1988

RECEIVED
 FEB 18 1988

DIVISION OF
 OIL, GAS & MINING

State of Utah Natural Resources
 Oil, Gas, and Mining
 355 W. North Temple
 3 Triad Center, Suite 350
 Salt Lake City, UT 84180-1203

Attn: Susan C. Linner

Dear Ms. Linner:

Re: Response Document, Waste Rock Disposal Site, Southern Utah Fuel Company, Convulsion Canyon Mine, ACT/041/002, Sevier County, Utah.

In response to your January 26, 1988 request regarding the above reference, we have no objection to the proposal being approved. We do not foresee any adverse impacts resulting when implemented as specified.

We appreciate the opportunity to comment and also your efforts in keeping us informed.

Sincerely,

Ronald K. Jew

For J. KENT TAYLOR
 Forest Supervisor

cc:
 District Ranger, Richfield Ranger District





Norman H. Bangerter
Governor

Suzanne Dandoy, M.D., M.P.H.
Executive Director

BAQE-126-88

April 1, 1988

Mr. Ken Payne
Southern Utah Fuel Company
P.O. Box P
Salina, Utah 84654

RECEIVED

APR 5 1988

SOUTHERN UTAH
FUEL COMPANY

RECEIVED
JUL 20 1988

Dear Mr. Payne:

Re: Approval Order for Waste Rock Disposal Site
Sevier County, CDS B

DIVISION OF
OIL, GAS & MINING

The above-referenced project has been evaluated and found to be consistent with the requirements of the Utah Air Conservation Regulations (UACR) and the Utah Air Conservation Act. A 30-day public comment period was held and all comments received were evaluated. The conditions of this approval order reflect any changes to the proposed conditions which resulted from the evaluation of the comments received. This air quality approval order authorizes the project with the following conditions:

1. Southern Utah Fuel Company (SUFCO) shall operate the waste rock disposal site according to the information submitted in the notice of intent dated November 9, 1987.
2. Visible emissions from any point or fugitive emission source associated with the installation or control facilities shall not exceed 20% opacity. Opacity observations of emissions from stationary sources shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9.
3. Opacity observations of intermittent sources shall use procedures similar to Method 9, but the requirement for observations to be made at 15-second intervals over a 6-minute period shall not apply. The opacity of any single reading shall not exceed 20% for intermittent sources.
4. All unpaved roads and other unpaved operational areas in use shall be water sprayed and/or chemically treated to reduce fugitive dust. The application rate of water shall be a minimum of 0.5 gallons per square yard. Application shall be made at least once every two hours during all times the installation is in use unless daily rainfall exceeds .10 of an inch or the road is in a muddy condition or if it is covered with snow. If chemical treatment is to be used, the plan must be approved by the Executive

Secretary. Records of water treatment shall be kept for all periods when the plant is in operation. The records shall include the following items:

- A. Date
- B. Number of treatments made
- C. Rainfall received, if any, and approximate amount
- D. Time of day treatments were made

Records of treatment shall be made available to the Executive Secretary upon request and shall include a period of two years ending with the date of the request.

5. All installations and facilities authorized by this approval order shall be adequately and properly maintained.
6. The Executive Secretary shall be notified in writing upon start-up of the installation, as an initial compliance inspection is required.
7. The amount of waste rock disposal shall not exceed 10,000 tons per year without prior approval in accordance with Section 3.1, UACR. Records of waste disposal shall be kept for all periods when the plant is in operation. Records of waste disposal shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request. The amount of waste disposal shall be determined by the product of the average truck payload multiplied by the number of truckloads of waste rock delivered to the site.
8. The moisture content of the waste rock shall have a value of no less than 10% during transport and leveling of the lifts.
9. The speed of trucks on any portion of unpaved haul road shall not exceed five miles per hour.
10. The area of disturbed soil/waste shall not exceed three acres without prior approval in accordance with Section 3.1, UACR.

Any future modifications to the equipment approved by this order must also be approved in accordance with Section 3.1.1, UACR.

This approval order in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including the Utah Air Conservation Regulations.

Ken Payne
Page 3

The fee for issuing this approval order is \$366.88. The amount is payable to the Utah Department of Health, sent to the Executive Secretary, Utah Air Conservation Committee, 288 North 1460 West, P.O. Box 16690, Salt Lake City, Utah 84116-0690 and is due within 30 days after receipt of this approval order.

Sincerely,

F. Burnell Corrier
F. Burnell Corrier
Executive Secretary
Utah Air Conservation Committee

FBC/DK/sh

cc: EPA Region VIII, John Dale
Central Utah Health District

File ACT/041/002 #2

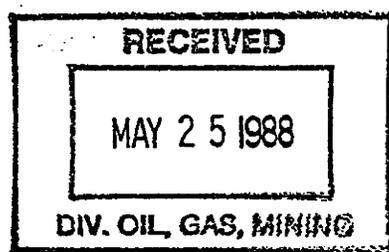


State of Utah

OFFICE OF PLANNING AND BUDGET

Norman H. Bangarter
Governor
Dale C. Hatch, C.P.A., J.D.
Director
Michael E. Christensen, Ph.D.
Deputy Director

116 State Capitol Building
Salt Lake City, Utah 84114
(801) 538-1027



May 23, 1988

Lowell P. Braxton
Division of Oil, Gas and Mining
3 Triad Center, Suite 350
355 West North Temple
Salt Lake City, Utah 84180-1203

SUBJECT: Southern Utah Fuel Co. (SUFCO) Permit Proposal for a Waste Rock Disposal site ACT/041/002, Folder No. 2 at the Convulsion Canyon Mine (Includes a determination of completeness on the plan) State Application Identifier #UT880415-040

Dear Mr. Braxton:

The Resource Development Coordinating Committee of the State of Utah has reviewed this proposed action. We have received no comments from potentially affected state agencies.

The Committee appreciates the opportunity of reviewing this document. Please address any other questions regarding this correspondence to Carolyn Wright (801) 538-1535.

Sincerely,

Michael E. Christensen

Michael E. Christensen
Deputy Director

MEC/jw



State of Utah

DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

Norman H. Bangertter
Governor
Suzanne Dandoy, M.D., M.P.H.
Executive Director
Kenneth L. Alkema
Director

288 North 1460 West
P.O. Box 16690
Salt Lake City, Utah 84116-0690
(801) 538-6121

RECEIVED

JUL 12 1988

SOUTHERN UTAH
FUEL COMPANY

July 8, 1988

Mr. Wesley K. Sorenson, P.E.
Southern Utah Fuel Company
P.O. Box P
Salina, Utah 84654

RECEIVED

JUL 20 1988

DIVISION OF
OIL, GAS & MINING

Re: Sediment Pond at Waste Rock
Disposal Site

Dear Mr. Sorenson:

We have reviewed plans and specifications for construction of a sediment pond to be built in conjunction with the proposed waste rock disposal site for the Convulsion Canyon Mine. The initial information was received on March 16, 1988. Additional information, as requested, was received on May 11 and June 7, 1988.

The plans and specifications, as submitted, comply with the *Utah Wastewater Disposal Regulations*. A construction permit, as constituted by this letter, is issued, subject to the following conditions:

1. *Any modifications to the approved plans and specifications must be reviewed and approved before issuance to the prospective bidders or the contractor as applicable.*
2. *Facilities constructed under this permit must not be placed in service until the Bureau of Water Pollution Control has inspected the same, and has authorized you to do so.*

The issuance of this permit does not relieve you in any way, of obtaining applicable permits from local jurisdictions. You may contact Mr. Bruce Hall, of the Central Utah Health Department, at (801) 896-5451 for compliance with any other local requirements.

The basic project components consist of the construction of a sediment pond immediately below the proposed waste rock disposal site. Surface runoff from the disposal site is to be retained in the pond, based on a ten-year, 24 hour storm. Sediment is to be retained within the pond, with removal at planned intervals. An additional retention area below the pond will accept pond overflow from larger storms. Surface runoff from unaffected areas will be re-routed around the site so it will not affect the disposal area or the retention pond.

It is understood that only approximately 1/3 of the 9 acre site will be used at any one time. Each section is to be reclaimed prior to use of the next section. The site is intended to last for 20 years with full abandonment of the site 10 years after use is discontinued. Full reclamation will be accomplished in accordance with the reclamation plan, at the end of the active use period.

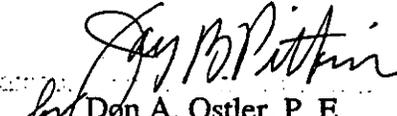
Mr. Sorenson
Page Two

A set of approved plans and specifications is returned bearing our construction permit stamp. This set of plans must be kept available for examination and inspection to be conducted by the Bureau of Water Pollution Control, and for resolution of any conflicts or discrepancies in installation that may arise.

Please advise the Central Utah Health Department and us of the beginning of the construction. This will enable us to monitor the progress and schedule periodic inspections.

If we can be of further assistance in any way, please contact Mr. Roger Foisy P.E., District Engineer at the Central Utah Health Department or this office.

Sincerely,
Utah Water Pollution Control Committee


for Don A. Ostler, P. E.
Executive Secretary

cc: Roger A. Foisy, P.E., District Engineer
George Johansen, R.S., Central Utah District Health Department
Division of Oil, Gas and Mining

RAF/ag

4030y



Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Dianne R. Nielson, Ph.D.
Division Director

State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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

July 27, 1988

TO: Sue Linner, Permit Supervisor

FROM: Joe Helfrich, Compliance Coordinator *JH*

RE: Compliance Status Review on Southern Utah Fuel
Company's Convulsion Canyon Mine, ACT/041/002, Folder
#2, Sevier County, Utah

As of the writing of this letter, Southern Utah Fuel Company's Convulsion Canyon Mine has no NOV's or CO's which are not corrected or in the process of being corrected. Any NOV's or CO's that are outstanding are in the process of administrative or judicial review. There are no finalized civil penalties or AML fees which are outstanding and overdue in the name of Southern Utah Fuel Company's Convulsion Canyon Mine.

Finally, they do not have a demonstrated pattern of willful violations, nor have they been subject to any bond forfeitures for any operation in the state of Utah.

djh
1541R/4

APPENDIX

Southern Utah Fuel Company
Convulsion Canyon Mine
Waste Rock Disposal Site
ACT/041/002
Sevier County, Utah

SUFCO BOND ESTIMATE
 ADDITION OF WASTE ROCK DISPOSAL SITE - 7/88 - JRH

BREAKDOWN OF RECLAMATION ACTIVITIES

ITEM	JOB	MATERIAL	EQUIPMENT	ACRES	QUANTITY	UNITS	PROD.	UNITS	COST /UNIT	TOTAL COST
------	-----	----------	-----------	-------	----------	-------	-------	-------	------------	------------

I. WASTE ROCK DISPOSAL SITE

A.	WASTE PREPARATION									
	RIPPING	CAT DBL		2.73	2.73	ACRES	1.68	AC/HOUR	\$129.54 /HOUR	\$210.51
	SUBTOTAL A. WASTE PREPARATION									\$210.51

B. TOPSOIL DISTRIBUTION

(ESTIMATED TOPSOIL/COVER DEPTH AT 2.5 FEET - WORST CASE)

	LOADING	CAT 988-B					500	LCY/HOUR	\$134.84 /HOUR	\$4,665.30
	HAULING	12YD3 TRUCKS					98.4	LCY/HOUR	\$59.73 /HOUR	\$10,500.63
	SPREADING	CAT DBL					470	LCY/HOUR	\$118.54 /HOUR	\$4,363.36
	DISCING	60 HP TRACTOR					1.7	AC/HOUR	\$39.08 /HOUR	\$62.76
	SUBTOTAL B. TOPSOIL DISTRIBUTION									\$19,592.04

C. REVEGETATION

(REVEGETATION COSTS ARE FOR ENTIRE SITE AS PER BONDING REQUIREMENTS FOR PHASE I AN PHASE II RECLAMATION)

	SEEDING	SEED		8.5	8.5	ACRES			\$310.00 /ACRE	\$2,635.00
		MULCH		8.5	8.5	ACRES			\$225.00 /ACRE	\$1,912.50
		FERTILIZER							\$70.00 /ACRE	\$595.00
	HYDROMULCHING	60 HP TRACTOR					1.7	AC/HOUR	\$39.08 /HOUR	\$195.40
		HYDROMULCHER					0.5	AC/HOUR	\$100.26 /HOUR	\$1,704.37
	RESEEDING COSTS (20% OF ABOVE)									\$1,408.45

SUBTOTAL C. REVEGETATION

\$8,450.72

D. SEDIMENT POND RECLAMATION

	EARTHWORK									
	EMBANKMENT	CAT DBL					520	LCY/HOUR	\$118.54 /HOUR	\$197.19
	TOPSOIL DISTRIBUTION									
	LOADING	CAT 988-B					500	LCY/HOUR	\$134.84 /HOUR	\$625.37
	HAULING	12YD3 TRUCKS					113	LCY/HOUR	\$59.73 /HOUR	\$1,225.71
	SPREADING	CAT DBL					470	LCY/HOUR	\$118.54 /HOUR	\$584.89
	DISCING	60 HP TRACTOR					1.7	AC/HOUR	\$39.08 /HOUR	\$22.99
	(REVEGETATION FACTORED INTO ITEM E.)									

SUBTOTAL D. SEDIMENT POND RECLAMATION

\$2,656.14

ITEM	JOB	MATERIAL	EQUIPMENT	ACRES	QUANTITY	UNITS	PROD.	UNITS	COST /UNIT	TOTAL COST
E.	SUPERVISION									
	FOREMAN				44	HRS			\$33.65 /HOUR	\$1,480.60
	PICKUP				44	HRS			\$6.97 /HOUR	\$306.55
	SUBTOTAL E. SUPERVISION									\$1,787.15

SUBTOTAL FOR ALL ACTIVITIES -										\$32,696.56

10% MAINTENANCE AND MONITORING COSTS										\$3,269.66

10% CONTINGENCY AND ENGINEERING COSTS										\$3,596.62

SUBTOTAL IN 1988 DOLLARS										\$39,562.84

SUBTOTAL WITH ESCALATION @ 2.3% /YR FOR 3 YEARS (1991 DOLLARS) -										\$42,355.94

***** WASTE ROCK SITE BOND AMOUNT ESTIMATED TO THE NEAREST \$1,000 IN 1991\$ -										\$42,000

II. ADJUSTMENT OF EXISTING BOND FOR SUFCO:(BASED ON MEANS ESCALATION FACTORS)										
CURRENT BOND AMOUNT DOES NOT INCLUDE WASTE ROCK DISPOSAL SITE										
(SEE MARCH 13, 1986 TA AND DECISION DOCUMENT FOR DETAILS OF EXISTING BOND)										

PREVIOUS BOND AMOUNT (IN 1986\$)										\$1,013,781.00
MEANS ESCALATION FOR 1987										\$21,289.40
MEANS ESCALATION FOR 1988										\$20,183.87
ESCALATION FACTOR FOR 1988 FORWARD										\$74,500.07

EXISTING BOND ADJUSTED TO 1991\$										\$1,129,754.35

***** EXISTING BOND AMOUNT ESTIMATED TO THE NEAREST \$1,000 IN 1991\$ -										\$1,130,000

TOTAL BOND REQUIREMENTS FOR SUFCO										
EXISTING BOND AMOUNT ESTIMATED TO THE NEAREST \$1,000 IN 1991\$ -										\$1,130,000
WASTE ROCK SITE BOND AMOUNT ESTIMATED TO THE NEAREST \$1,000 IN 1991\$ -										\$42,000

TOTAL BOND AMOUNT REQUIRED FOR SUFCO IN 1991\$										\$1,172,000

III. EQUIPMENT COSTS INCLUDING OPERATOR [BLUE BOOK EQPT. RATES; MEANS OPERATOR COSTS]:

EQUIPMENT	MONTHLY RATE	ADJ. RATE /HR	MAINT /HR	OPERATOR /HR	TOTAL COST/HR
D8 DOZER CAT DBL	\$10,805.00	\$61.39 /HR	\$28.50 /HR	\$28.65	\$118.54
RIPPER ATTACHMENT	\$1,540.00	\$8.75 /HR	\$2.25 /HR	\$28.65	\$11.00
D6 DOZER CAT D6D	\$5,920.00	\$33.64 /HR	\$13.70 /HR	\$28.65	\$75.99
BROADCAST SEEDER/FERTILIZER	\$735.00	\$4.18 /HR	\$3.05 /HR	\$28.65	\$35.88
LOADER CAT. 9888	\$10,795.00	\$61.34 /HR	\$42.00 /HR	\$31.50	\$134.84
LOADER CAT. 955L	\$4,865.00	\$27.64 /HR	\$11.85 /HR	\$28.65	\$68.14
LOADER CAT. 953	\$4,710.00	\$26.76 /HR	\$11.65 /HR	\$28.65	\$67.06
12Y03 TRUCK	\$3,155.00	\$17.93 /HR	\$16.55 /HR	\$25.25	\$59.73
FARM TRACTOR DEERE 301A	\$945.00	\$5.37 /HR	\$3.35 /HR	\$28.65	\$37.37
DISC ATTACHMENT	\$125.00	\$0.71 /HR	\$1.00 /HR		\$1.71
DRILL ATTACHMENT	\$125.00	\$0.71 /HR	\$1.00 /HR		\$1.71
CRIMPER ATTACHMENT	\$125.00	\$0.71 /HR	\$1.00 /HR		\$1.71
LOADER BACKHOE DEERE 4108	\$2,425.00	\$13.78 /HR	\$6.70 /HR	\$28.65	\$49.13
EXCAVATOR LINK-BELT LS-3400	\$7,410.00	\$42.10 /HR	\$16.05 /HR	\$28.65	\$86.80
GROVE MODEL 68 CRANE	\$5,230.00	\$29.72 /HR	\$12.75 /HR	\$31.00	\$73.47
TRACTOR-TRAILER 40TON CAP.	\$4,475.00	\$25.43 /HR	\$15.00 /HR	\$24.25	\$64.68
MULCH BLOWER (W/3 LABORERS)	\$1,235.00	\$7.02 /HR	\$5.55 /HR	\$99.60	\$112.17
HYDO SEEDER W/LABOR	\$3,750.00	\$21.31 /HR	\$8.00 /HR	\$70.95	\$100.26
COMMON LABORER				\$23.65	\$23.65
FOREMAN				\$33.65	\$33.65
PICKUP	\$575.00	\$3.27 /HR	\$3.70 /HR		\$6.97

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FEDERAL
(April 1987)

Permit Number ACT/041/002, August 26, 1988
(Revised)

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
(801) 538-5340

This permit, ACT/041/002, is issued for the state of Utah by the Utah Division of Oil, Gas and Mining (DOGM) to:

Coastal States Energy Company
175 East 400 South, Suite 800
Salt Lake City, Utah 84111
(801) 596-7111

for the Convulsion Canyon Mine. Coastal States Energy Company is the lessee of federal coal leases SL-062583, U-062453, U-0149084, U-28297 and U-47080, and the lessee of certain fee-owned parcels. A performance bond is filed with the DOGM in the amount of \$1,172,000.00, payable to the state of Utah, Division of Oil, Gas and Mining and the Office of Surface Mining Reclamation and Enforcement (OSMRE). DOGM must receive a copy of this permit signed and dated by the permittee.

Sec. 1 STATUTES AND REGULATIONS - This permit is issued pursuant to the Utah Coal Mining and Reclamation Act of 1979, Utah Code Annotated (UCA) 40-10-1 et seq, hereafter referred to as the Act.

Sec. 2 PERMIT AREA - The permittee is authorized to conduct underground coal mining activities on the following described lands (as shown on the maps appended as Attachments B and C) within the permit area at the Convulsion Canyon Mine, situated in the state of Utah, Sevier County, and located:

Township 21 South, Range 4 East, SLBM

Section 25: All
Section 36: All

Township 21 South, Range 5 East, SLBM

Section 28: SW 1/4 SW 1/4
Section 29: W 1/2, W 1/2 E 1/2, SE 1/4 SE 1/4
Section 30: S 1/2, S 1/2 N 1/2
Section 31: All
Section 32: All
Section 33: W 1/2 W 1/2

Township 22 South, Range 4 East, SLBM

Section 1: All
Section 12: N 1/2, N 1/2 SE 1/4, portion of NE 1/4 SW 1/4
Section 18: NW 1/4 NE 1/4

Township 22 South, Range 5 East, SLBM

Section 4: W 1/2 W 1/2
Section 5: All
Section 6: All
Section 7: All
Section 8: All
Section 17: NE 1/4, N 1/2 NW 1/4
Section 18: N 1/2

This legal description is for the permit area (as shown on Attachments B and C) of the Convulsion Canyon Mine. The permittee is authorized to conduct underground coal mining activities connected with mining on the foregoing described property subject to the conditions of the leases, the approved mining plan, including all conditions and all other applicable conditions, laws and regulations.

Sec. 3 PERMIT TERM - This revised permit becomes effective on August 26, 1988 and expires on May 20, 1992.

Sec. 4 ASSIGNMENT OF PERMIT RIGHTS - The permit rights may not be transferred, assigned or sold without the approval of the Director, DOGM. Transfer, assignment or sale of permit rights must be done in accordance with applicable regulations, including but not limited to 30 CFR 740.13(e) and UMC 788.17-.19.

- Sec. 5 RIGHT OF ENTRY - The permittee shall allow the authorized representative of the DOGM, including but not limited to inspectors, and representatives of OSMRE, without advance notice or a search warrant, upon presentation of appropriate credentials, and without delay to:
- A. have the rights of entry provided for in 30 CFR 840.12, UMC 840.12, 30 CFR 842.13 and UMC 842.13; and,
 - B. be accompanied by private persons for the purpose of conducting an inspection in accordance with UMC 842.12 and 30 CFR 842, when the inspection is in response to an alleged violation reported by the private person.
- Sec. 6 SCOPE OF OPERATIONS - The permittee shall conduct underground coal mining activities only on those lands specifically designated as within the permit area on the maps submitted in the mining and reclamation plan and permit application and approved for the term of the permit and which are subject to the performance bond.
- Sec. 7 ENVIRONMENTAL IMPACTS - The permittee shall minimize any adverse impact to the environment or public health and safety through but not limited to:
- A. accelerated monitoring to determine the nature and extent of noncompliance and the results of the noncompliance;
 - B. immediate implementation of measures necessary to comply; and
 - C. warning, as soon as possible after learning of such noncompliance, any person whose health and safety is in imminent danger due to the noncompliance.
- Sec. 8 DISPOSAL OF POLLUTANTS - The permittee shall dispose of solids, sludge, filter backwash or pollutants in the course of treatment or control of waters or emissions to the air in the manner required by the approved Utah State Program and the Federal Lands Program which prevents violation of any applicable state or federal law.
- Sec. 9 CONDUCT OF OPERATIONS - The permittee shall conduct its operations:

- A. in accordance with the terms of the permit to prevent significant, imminent environmental harm to the health and safety of the public; and
- B. utilizing methods specified as conditions of the permit by DOGM in approving alternative methods of compliance with the performance standards of the Act, the approved Utah State Program and the Federal Lands Program.

- Sec. 10 AUTHORIZED AGENT - The permittee shall provide the names, addresses and telephone numbers of persons responsible for operations under the permit to whom notices and orders are to be delivered.
- Sec. 11 COMPLIANCE WITH OTHER LAWS - The permittee shall comply with the provisions of the Water Pollution Control Act (33 USC 1151 et seq,) and the Clean Air Act (42 USC 7401 et seq), UCA 26-11-1 et seq, and UCA 26-13-1 et seq.
- Sec. 12 PERMIT RENEWAL - Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with the Act, the approved Utah State Program and the Federal Lands Program.
- Sec. 13 CULTURAL RESOURCES - If during the course of mining operations, previously unidentified cultural resources are discovered, the permittee shall ensure that the site(s) is not disturbed and shall notify DOGM. DOGM, after coordination with OSMRE, shall inform the permittee of necessary actions required. The permittee shall implement the mitigation measures required by DOGM within the time frame specified by DOGM.
- Sec. 14 APPEALS - The permittee shall have the right to appeal as provided for under UMC 787.
- Sec. 15 SPECIAL CONDITIONS - In addition to the general obligations and/or requirements set out in the leases, the federal mining plan approval, and this permit, the permittee shall comply with the special conditions appended hereto as Attachment A.

The above conditions (Secs. 1-15) are also imposed upon the permittee's agents and employees. The failure or refusal of any of these persons to comply with these conditions shall be deemed a failure of the permittee to comply with the terms of this permit and the lease. The permittee shall require his agents, contractors and subcontractors involved in activities concerning this permit to include these conditions in the contracts between and among them. These conditions may be revised or amended, in writing, by the mutual consent of DOGM and the permittee at any time to adjust to changed conditions or to correct an oversight. DOGM may amend these conditions at any time without the consent of the permittee in order to make them consistent with any new federal or state statutes and any new regulations.

THE STATE OF UTAH

By: Dianne R. Nielson

Date: 8/26/88

I certify that I have read, understand and accept the requirements of this permit and any special conditions attached.

Authorized Representative of
the Permittee

Date: _____

APPROVED AS TO FORM:

By: [Signature]

Assistant Attorney General

Date: 8/26/88

ATTACHMENT A

STIPULATIONS

Southern Utah Fuel Company
Convulsion Canyon Mine
Waste Rock Disposal Site
ACT/041/002
Sevier County, Utah

Stipulation UMC 817.11 - (1) - SCL

1. A mine and permit identification sign must be placed at each point of access from a public road to the area of surface operations prior to initiation of surface-disturbing activities. The sign shall show the name, business address, telephone number, mine name and permit identification number.

Stipulation UMC 817.13-.15 - (1) - JRH

1. Prior to the construction or abandonment of any water monitoring wells, and no later than 30 days from permit approval for the waste rock disposal facilities, the operator shall incorporate into the plan, a commitment to construct and abandon all water monitoring wells in compliance with the Administrative Rules for Water Well Drillers, Division of Water Rights.

Stipulation UMC 817.22 - (1) - JSL

1. Within 90 days of permit approval the operator shall submit to the Division, plans to remove sufficient volume of soil materials such that a 2.5 feet soil redistribution depth over the waste materials will be achieved.

Stipulation UMC 817.41 - (1) - RPS

1. Within 30 days of permit approval, the applicant must submit an appropriate number of copies of all baseline ground water quality data collected to date in a format for direct insertion into the approved Mining and Reclamation Plan (MRP). The submittal must also contain a summary narrative discussing the results of the monitoring program.

Stipulation UMC 817.48 - (1) - JSL

1. Within 90 days of permit approval, the operator shall submit to the Division, a commitment to submit an acid- or toxic- forming mitigation plan if the collected quarterly waste analysis indicates that an acid- or toxic- forming potential exists other than high boron levels. Said acid- or toxic- forming material mitigation report shall be submitted to the Division not more than 30 days from receipt of analysis. All identified potential acid- or toxic- forming materials must be buried or treated within 30 days after the material is first exposed on the mine site. The proposed mitigation plan must meet the requirements of UMC 817.48 and UMC 817.103.

Stipulation UMC 817.49 - (1) - RPS

1. The applicant must submit a certification report that complies with the requirements of subsection (h) of this rule within 30 days of completion of the construction of the sedimentation pond.

Stipulation UMC 817.52 - (1) - RPS

1. The applicant must submit a revised ground water monitoring plan. In addition to the proposed plan, this plan is to include: 1) collection of baseline water quality and level measurements for a period of two years (inclusive of data collected to date) in accordance with the Division Guidelines for Water Monitoring Programs, 2) specific sampling frequency information, and 3) a plan for collection of ground water quality and level data during the operational and postmining phases of the project. This plan must be submitted in approvable form within 30 days of permit approval.

Stipulation UMC 817.89 - (1) - JRH

1. Within 30 days of permit approval, the operator shall incorporate into the plan for the waste rock disposal facility, a commitment not to dispose non-coal waste materials within the refuse embankment and to dispose of non-coal waste materials in accordance with the requirements of this section.

Stipulation UMC 817.99 - (1) - JSL

1. Within 30 days of permit approval, the operator shall provide and incorporate into the text of the MRP a commitment to notify the Division in the event of a slide or other damage as required by this section.

Stipulation UMC 817.101 - (1) - JRH

1. Within 90 days of permit approval, the operator shall revise the plan to increase the amount of cover material required in accordance with the requirements of Stipulation UMC 817.22-(1)- JSL. At the same time all drawings, text, and calculations relevant to this change in the amount of cover material shall also be modified and resubmitted into the plan.

Stipulation UMC 817.111 - (1) - LK

1. Within 30 days of permit approval, the operator will clarify the seeding method to be used and revise the appropriate pages in the MRP to clarify the discrepancy. If broadcast seeding methods are to be utilized, the operator must also identify the broadcast seeding rate.

Stipulation UMC 817.114 - (1) - LK

1. Within 30 days of permit approval, the operator will clarify the rate of straw mulch to be applied during reclamation activities.

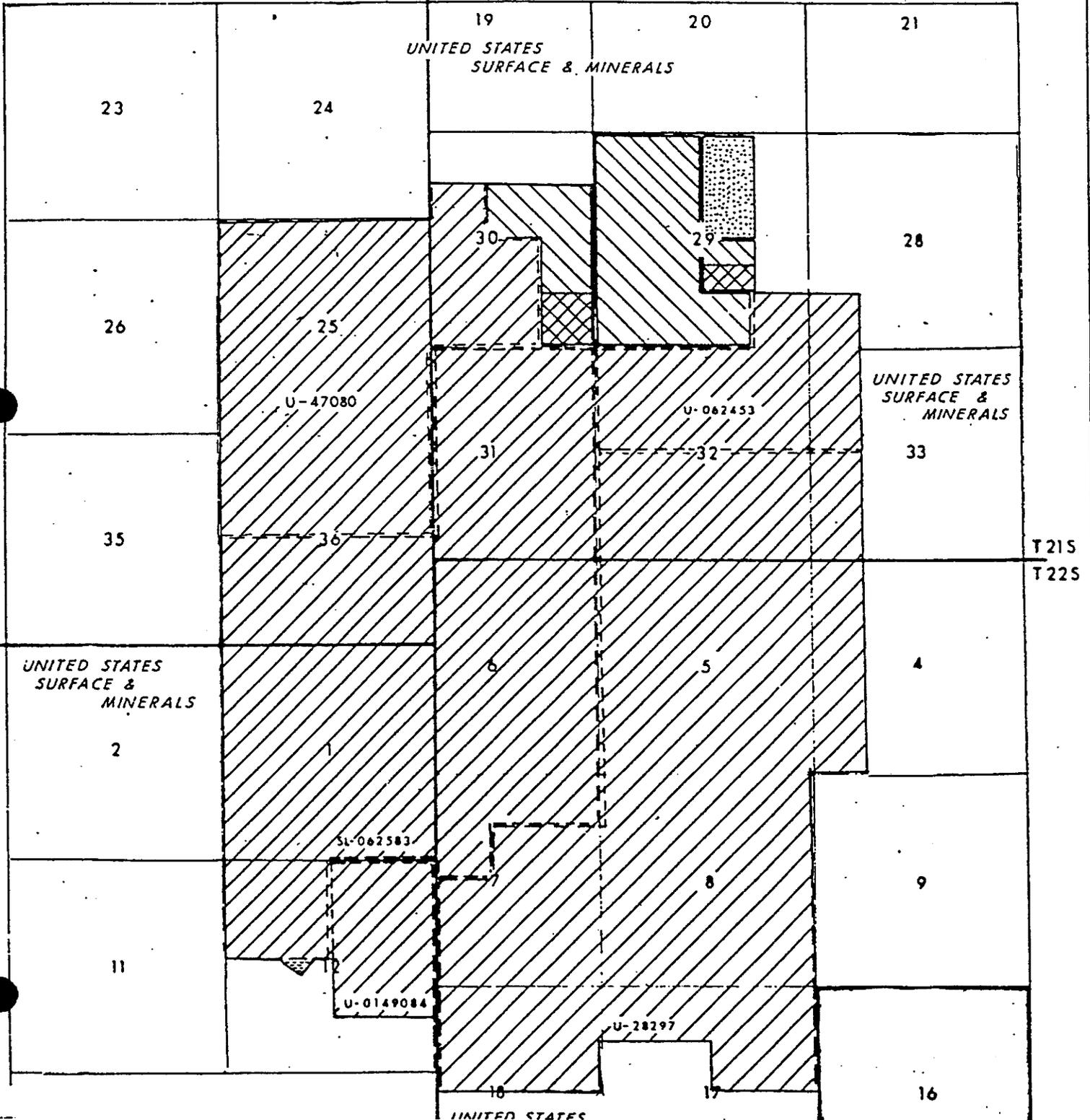
Stipulation UMC 817.116 - (1) - LK

1. Within 30 days of permit approval, the operator will modify Table 4.6.3-1 of the MRP to show that productivity will be sampled on reclaimed areas for the last two (2) years (years 9 and 10) of the liability period.

CONVULSION CANYON PERMIT AREA

SEVIER COUNTY, UTAH

R4E R5E



WASTE ROCK DISPOSAL SITE PERMIT AREA

