



0080  
STATE OF UTAH  
NATURAL RESOURCES & ENERGY  
Oil, Gas & Mining

Scott M. Matheson, Governor  
Temple A. Reynolds, Executive Director  
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

February 19, 1982

# 0367276

REGISTERED - RETURN RECEIPT REQUESTED

Mr. Robert Wiley  
Environmental Engineer  
Price River Coal Company  
P.O. Box 629  
Helper, Utan 84526

RE: Technical Analysis Completion for  
Crandall Canyon Modification  
ACT/007/004  
Carbon County, Utah

Dear Mr. Wiley:

The Division has completed its technical review of the Crandall Canyon Modification to the Price River coal Company mine plan. A conditional approval is hereby given based upon acceptance and implementation of seventeen separate stipulations herewith attached:

Stipulation - 2-19-82-1TT (UMC 817.11)

The applicant must submit a statement to the Division to the effect that all signs; identification, perimeter and otherwise, have been installed and conform specifically to the 817.11 regulations.

Stipulation - 2-19-82-2TT (UMC 817.13-.15)

The applicant should submit a statement to the Division that all exploration holes and monitoring wells will be or have been abandoned in accordance with UMC 817.13-.15. (Although never specifically mentioned, the applicant is assumed to be aware of the minimum State and U.S. Geological Survey requirements).

Stipulation - 2-19-82-3EH (UMC 817.22)

The applicant must indicate the depth and volume of soil to be removed from each area of construction. These figures are needed to insure enough soil material is available to provide the six inch depth of resoiling proposed by the applicant.

Stipulation - 2-19-82-4EH (UMC 817.22)

The applicant must indicate the equipment and methods to be employed in removal from insitu and transporting of topsoil to storage locations.

Stipulation - 2-19-82-5EH (UMC 817.23)

The applicant must address the methods of erosion control used to insure topsoil stockpile protection prior to plant establishment.

Stipulation - 2-19-82-6EH (UMC 817.24)

The applicant must provide the equipment and methods employed to insure that the requirements set forth under UMC 817.24 are achieved.

Stipulation - 2-19-82-7SK (UMC 817.45)

If an NPDES permit is not required, then the operator shall carry out storm discharge monitoring from the two oil separators. Data shall be gathered at least once per 90 day period (assuming an occurrence of runoff). An analysis of the first flush should be carried out with at least one more discharge sample obtained 10 minutes later. Those parameters included in the impact monitoring program shall be applied to this analysis.

Stipulation - 2-19-82-8SK (UMC 817.46)

The applicant must submit detailed design specifications addressing UMC 817.46 (j-u), as applicable, to assure the stable construction and operation of pond 016.

Stipulation - 2-19-82-9SK (UMC 817.47)

A plan must be submitted to the Division and approved at least 60 days prior to construction; the applicant must provide:

Detailed design specifications for the constructed spillway on pond 016. Include the design for point of discharge.

Stipulation - 2-19-82-10SK (UMC 817.47)

The applicant must provide:

Designs indicating stormwater routing for upper and lower pad through oil separators.

Stipulation - 2-19-82-11SK (UMC 817.54)

The applicant must describe adjacent water uses which may be impacted by the shaft excavation and determine a means for supplying water if interruption, contamination or diminution occurs.

Stipulation -2-19-82-12SK (UMC 817.56)

Price River Coal Company must submit an adequate discussion on measures to renovate the permanent Crandall Creek stream channel diversion at the time of final reclamation.

Stipulation - 2-19-82-13MR (UMC 817.89)

The applicant must obtain a letter from appropriate landfill authorities showing approval to dispose of trash at the landfill.

Stipulation - 2-19-82-14MR (UMC 817.89)

Is the area where the oil and etc., stored in tanks covered by the application's SSCP plan?

Stipulation - 2-19-82-15MR (UMC 817.99)

Should a slide occur within the permit area, the applicant would be required to notify the Division and comply with any remedial measures required by the Division.

Stipulation - 2-19-82-16MR (UMC 817.131)

The applicant must address Section 817.131 and comply with this regulation should temporary abandonment of the Crandall Canyon facility be initiated.

Stipulation - 2-19-82-17MR (UMC 817.150-.176)

The applicant must submit a letter from the Utah Division of Transportation stating their approval of plans for the new intersection at Utah State Route 6 and the Crandall Canyon access road.

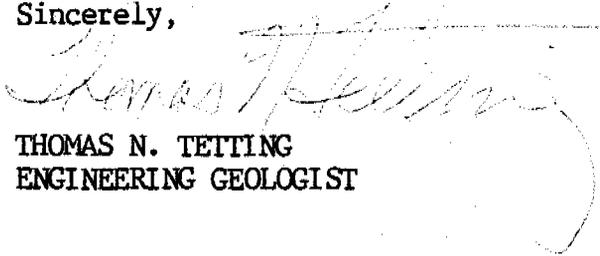
These stipulations must be accepted in writing before approval is issued. All stipulations must be implemented and proof furnished to the Division within 60 days of the date of Division approval unless otherwise noted within a stipulation.

Mr. Robert Wiley  
February 19, 1982  
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A complete compilation of all material requested for the modification should be kept on file at the Carbon County Recorder's office.

If any questions develop or you desire to have further discussion over any of the stipulations, please contact Lynn Kunzler or myself.

Sincerely,

A handwritten signature in cursive script, appearing to read "Thomas N. Tetting", is written over a horizontal line. The signature is fluid and somewhat stylized.

THOMAS N. TETTING  
ENGINEERING GEOLOGIST

TNT/te

cc: Richard E. Dawes, OSM, Denver  
Jackson Moffett, U.S.G.S.

Enc: T.A.

## TECHNICAL ANALYSIS

PRICE RIVER COAL COMPANY  
CRANDALL CANYON MODIFICATION  
ACT/007/004, Carbon County, Utah

### Introduction

The Price River Coal Company has submitted an underground mining and reclamation permit application for the Price River Mine Complex. The Crandall Canyon modification to this mine plan has been reviewed under a complete technical and environmental assessment process because major changes in design for the underground mining operation have been developed. Due to the nature and extent of these changes, the length of the review process, and the pending necessity for their implementation, the Crandall Canyon modification was singled out for separate review and will later be assimilated into the entire complex mine plan review.

The facilities under review are located north of Price off of Highway 6 in northwestern Carbon County, Utah; T. 12 S., R. 9 E., Sections 27, 28 and 29. Twenty-eight acres of land are involved. The Price River, Willow Creek and Spring Canyon Creek are the closest drainages to the property. Mining activities associated with the modification take place in the #3 and #5 mines which have their main entries in Hardscrabble Canyon and Sowbelly Gulch to the south. Coal will not be hauled or extracted through the Crandall Canyon facilities. The proposed facilities in Crandall Canyon include; two mine access shafts, support facilities such as a bathhouse, warehouse, leach field and parking, as well as access roads. These are required to provide needed improvement in the ventilation of the mine and to reduce the underground transportation time for men and materials during the projected minimum 30 year life of the mine.

Mining in the consolidated leased and fee simple reserves has occurred to some degree in all mineable seams by various business entities since the turn of the century. In 1971, a corporate entity, Braztah, began mining activities. After internal reorganization in 1979, the operating interest became Price River Coal Company, a holding of the American Electric Power Company.

The proposed permit area is in the Wattis Planning Unit in the northwest portion of the Price River Resource Area, Moab District. The Wattis Planning Unit Management Framework Plan (MFP) was completed in March 1973. The MFP was updated in September 1978 and took into consideration 22 criteria developed under the Surface Mining Control and Reclamation Act, including meeting BLM requirements. An approved mining and reclamation plan under the interim program was issued by the Utah Division of Oil, Gas and Mining with USGS concurrence on April 27, 1977.

The current Mining and Reclamation Plan was received at the Division of Oil, Gas and Mining offices on March 20, 1981. The Apparent Completeness Review was finished and returned to Price River Coal Company together with USGS and OSM comments on July 17, 1981. Final submittal of the Crandall Canyon Modification was determined complete on December 17, 1981. Concurrence with the Determination of Completeness by the OSM was given on January 15, 1982. At the time when the Price River Complex Mining and Reclamation Plan completeness determination is made, the Crandall Canyon Modification will be included in the newspaper publications and agency notifications required under UMC 786.11(a) and (b). In addition, the OSM will review the Crandall Canyon Modification Technical Analysis in conjunction with their review of Price River Complex Technical Analysis and concurrence will not be necessary for completion of the review at this time. Coordination of review was achieved with the following State agencies; the Department of State Health, Division of Water Rights, Division of Wildlife Resources, and the following Federal agencies; the OSM, the Forest Service, the BLM and the USGS. Most agencies concerns have not dealt specifically with the Crandall Canyon Modification but rather with the other portions of the mine complex.

#### Existing Environment and Operations

The permit area is located in a narrow canyon of the Wastach Plateau. Elevation ranges approximately between 6,400 feet and 8,400 feet. Mixed mountain brush, Douglas fir/aspen forest and a riparian/canyon bottom complex are the major vegetation types located in the canyon. Most of the impact will be associated with the latter vegetation type. No known threatened or endangered species have been observed in the canyon.

The stream in the bottom of the canyon is classified as ephemeral above the spring which is located approximately one mile below the surface facilities. The reader is referred to the Environmental Assessment performed by the Bureau of Land Management on the power transmission line which supplies the electric power for the surface facilities.

#### UMC 817.11 Signs and Markers

#### Applicant's Proposal

The existing sign used on the permit area can be easily seen and read and indicates the name of the mine, owner and permit identification information. It is located at the public access point. Perimeter marker signs have been suggested by inspectors and a time period for implementation has been given. Topsoil stockpile signs are in current use. There are no perennial streams or a stream with a biological community on the permit area, therefore, no buffer zone markers will be necessary. No surface blasting will be conducted by the applicant and no signs will be posted.

Stipulation - 2-19-82-1TT

The applicant must submit a statement to the Division to the effect that all signs; identification, perimeter and otherwise, have been installed and conform specifically to the 817.11 regulations.

Compliance

The applicant will comply with this section when this stipulation is met.

UMC 817.13-.15 Casing and Sealing of Exposed Underground Openings

Applicant's Proposal

The two shafts proposed for the Crandall Canyon facilities will be lined with approximately one foot of concrete during construction. Interformational waters will be effectively sealed off or controlled throughout operational use. After operations, about one third of the material removed from the shafts will be available to be returned down hole (the remainder will have been emplaced into fills). All paved surfaces except for the access roadway will have been broken up and removed and consequently placed into the shafts. A reinforced concrete cap will be placed over the shafts and will be covered by at least two feet of surficial material.

Stipulation - 2-19-82-2TT

The applicant should submit a statement to the Division that all exploration holes and monitoring wells will be or have been abandoned in accordance with UMC 817.13-.15. (Although never specifically mentioned, the applicant is assumed to be aware of the minimum State and USGS requirements.)

Compliance

The applicant will comply with this section when this stipulation is met.

817.21-.25 Topsoil

Applicant's Proposal

Topsoil removal and storage procedures will be performed during all phases of site construction. Prior to construction activities for designated areas within the proposed area of disturbance, the topsoil or upper six (6) inches of unconsolidated growth medium will be removed and stored in designated locations (see Exhibits No. 4, 5 and 6). Existing organic materials will not be included in topsoil storage piles. Topsoil will only be collected from areas where collection is technologically feasible; considering degree of slope and percentage of large boulders as limiting factors. Specifically, topsoil removal will not occur in the rocky Castle Valley soil formations.

This includes slopes above the colluvial/alluvial valley soil complexes (Horrocks & Corollo, 7-79). Access road development, as shown in Exhibits 8A through 8F, will primarily disturb the Castle Valley formation with the exception of areas between State Route 6 and the first stream crossing. This stretch is "made land" (based on recommendations by the Bureau of Land Management and DOGM), being previously affected by highway construction. Some suitable growth material may be obtainable.

In areas where suitable unconsolidated growth media exists in excess of six inches, a greater amount may be collected to provide resoiling material in areas for which topsoil is unavailable.

Topsoil will be stored in designated areas to the point of stable capacity. Measures to achieve rapid growth will be attempted as soon as possible after each stockpile is complete. Methodology will include mechanical scarification, mulching, crimping and seeding with species of both an annual and perennial habit. Soil amendments will be added to stimulate growth as per soil test recommendations. Topsoil stockpiles will remain intact for a minimum of thirty (30) years. Surrounding mature species will not be discouraged from colonization. The following species will be included in the planting plan (based on recommendations by the Bureau of Land Management and DOGM):

<u>Common Name</u>	<u>Species</u>	<u>Habit</u>	<u>Lbs. Per Acre</u>
Barley	Hordeum vulgare	Annual	26
Intermediate Wheatgrass	Agropyron intermedium	Perennial	4
Russian wildrye	Elymous junceous	Perennial	4
Great Basin wildrye	Elymous cinereus	Perennial	4
Woods rose	Rosa woodsii ultramontana	Perennial	1/2
Bitterbrush	Purshia tridentata	Perennial	1/2
Curlleaf Mtn. Mahogany	Cecocarpus ledifolus ledifolus	Perennial	1/2
Birchleaf Mtn. Mahogany	Cecocarpus montanus montanus	Perennial	1/2

Upon final reclamation, all disturbed areas will be graded to approximate original contour, tying into the natural slopes. Stored resoiling material will be spread on all graded areas to a minimum depth of six (6) inches.

Fertilizer or other soil amendments will be applied to the seeded areas based on soil analyses to be performed at the time of resoiling.

The soils in the area are entisols, inceptisols and mollisols. These soils are found at an elevation of from 7,000-9,000 feet and have an annual precipitation in the range of 16-30 inches and a mean annual air temperature of about 38° F.

Stipulation - 2-19-82-3EH

817.22 Topsoil Removal

Applicant must indicate the depth and volume of soil to be removed from each area of construction. These figures are needed to insure enough soil material is available to provide the six inch depth of resoiling proposed by the applicant.

Stipulation - 2-19-82-4EH

UMC 817.22 Topsoil Removal

Applicant must indicate the equipment and methods to be employed in removal from insitu and transporting of topsoil to storage locations.

Stipulation - 2-19-82-5EH

817.23 Topsoil Storage

Applicant must address the methods of erosion control used to insure topsoil stockpile protection prior to plant establishment.

Stipulation - 2-19-82-6EH

817.24 Topsoil Redistribution

Applicant must provide the equipment and methods employed to insure that the requirements set forth under UMC 817.24 are achieved.

Compliance

Compliance will be achieved when the previous stipulations have been met.

817.41-.42 Water Quality Standards and Effluent Limitations

Applicant's Proposal

Price River Coal Company has proposed to utilize a sedimentation pond, #016, for topsoil storage runoff, an oil separator for facilities area runoff and a septic system with a leach field for waste water treatment. The sediment control facilities are described specifically under Sections UMC 817.45, 817.47 and 817.52 of this review.

Stipulation

None.

Compliance

Applicant has complied with this section.

UMC 817.43 Stream Channel Diversions

Applicant's Proposal

Applicant has adequately sized the permanent stream channel diversion for the ephemeral Crandall stream channel utilizing the Rational Method to determine the peak flow rate for the 100-year event in the Crandall Creek watershed. The Chezy-Manning formula was used to determine the minimum height and width required for the diversion channel to handle the peak flow rate.

The slopes of the channel will be riprapped as required and contained between the natural canyon wall stone facade and a concrete retaining wall in specific sections. The gradient of the floor of the stream channel will not be changed. Price River Coal Company intends to maintain and enhance the permanent stream channel diversion to reflect its natural condition.

Stipulation

None.

Compliance

Applicant has demonstrated compliance with UMC 817.44.

UMC 817.44 Stream Channel Diversions

Not applicable.

## UMC 817.45 Sediment Control Measures

### Applicant's Proposal

Applicant has not proposed sediment control devices for the support facilities area around the shaft. The basic assumption is that runoff will meet Federal and State effluent limitations for all parameters except oil and grease. Two oil separators will be installed along the facilities pad to ensure compliance for oil and grease in runoff from the shop-maintenance and paved areas. The oil skimmers are equipped to handle up to 30 gpm. Oil collected in the skimming device will be directed to a sump which will be pumped to a waste oil tank.

Natural drainage from the surrounding watershed will be routed directly to the stream channel by use of strategically located culverts. A stilling basin is proposed at the entrance of each culvert. The natural drainage diversion around the facilities area has been designed to pass the 25-year, 24-hour event. Calculations provided show that a surface ditch with a cross sectional area of 2.25 ft<sup>2</sup> will be adequate.

Drainage from the access road will be routed to a roadway ditch. Sizing calculations are adequate for predicted peak runoff.

### Stipulation - 2-19-82-7SK

If an NPDES permit is not required, then the operator shall carry out storm discharge monitoring from the two oil separators. Data shall be gathered at least once per 90 day period (assuming an occurrence of runoff). An analysis of the first flush should be carried out with at least one more discharge sample obtained 10 minutes later. Those parameters included in the impact monitoring program shall be applied to this analysis.

### Compliance

The applicant has not discussed monitoring storm water runoff as it discharges from the oil separators. Sampling the flow will determine the feasibility of utilizing this treatment technology. As stated in UMC 817.42(a)(3)(i), Price River Coal Company must demonstrate that a conventional treatment system is not warranted. If the monitoring stipulation is fulfilled, Price River Coal Company will be in compliance with the requirements of this performance standard.

## UMC 817.46 Hydrologic Balance

### Applicant's Proposal

Runoff from the topsoil stockpile at the west end of the facilities pad will be routed through a sediment pond designated as 016. Sizing calculations

provided show adequate treatment of runoff will be achieved. The topsoil resource will be protected in that 714 ft<sup>3</sup> collected in the sediment pond each year will be returned to the stockpile on an annual basis. The applicant has not provided detailed design specifications for the construction of pond 016.

Stipulation - 2-19-82-8SK

Applicant must submit detailed design specifications addressing UMC 817.46(j-u), as applicable, to assure the stable construction and operation of pond 016.

Compliance

The applicant will achieve compliance by submitting detailed design specifications for sediment pond 016 60 days prior to construction (or from this approval).

UMC 817.47 Discharge Structures

Applicant's Proposal

Applicant has provided calculations for the peak flow rate occurring from the 25-year event for the emergency spillway on pond 016.

The calculations for the storm drain system are provided for the 25-year, 24-hour event. Maximum runoff discharge and culvert sizing are provided.

Stipulation - 2-19-82-9SK

A plan must be submitted to the Division and approved at least 60 days prior to construction; the applicant must provide:

Detailed design specifications for the constructed spillway on pond 016. Include the design for point of discharge.

Stipulation - 2-19-82-10SK

The applicant must provide:

Designs indicating stormwater routing for upper and lower pad through oil separators.

Compliance

Applicant has not included design specifications for the spillway on pond 016. Although the size of the CMP riser is indicated, the discharge point is not discussed in terms of energy dissipation.

Stormwater routing must be indicated for the upper and lower pad areas to provide assurance that flows will run through the oil separators before discharge into Crandall Creek. When these stipulations have been met the operator will be in compliance.

UMC 817.48 Acid-forming and Toxic-forming Materials

Applicant's Proposal

Applicant has provided a toxicity analysis for the excavated materials due to shaft development. The materials are to be placed and compacted for facilities pad development. The pad will then be paved for the life of the shaft thus there is little chance that erosion or breakdown of these materials will result.

Stipulation

None.

Compliance

Applicant complies with this section.

UMC 817.49 Permanent and Temporary Impoundments

Not applicable.

UMC 817.50 Underground Mine Entry and Access Discharges

Applicant's Proposal

Any aquifers encountered during shaft development will either be grouted off or collected in shaft water rings and pumped to storage tanks for later use in the mine. Excessive inflow during and after shaft development will be discharged in accordance with State of Utah effluent limitations (addendum January 1982).

Stipulation

None.

Compliance

Applicant complies with this section.

UMC 817.52 Surface and Ground Water Monitoring

Applicant's Proposal

The applicant has two surface water monitoring stations located above and below the disturbed area in Crandall Canyon. These stations (B-25, B-26) were added to the two ground water monitoring stations in existence in April, 1981.

Ground water stations (B-22 and B-43) are located at and below surface facilities. The sample locations established will adequately depict the impacts due to the shaft excavation and operation and associated surface facilities occurring in Crandall Canyon.

Price River Coal Company has followed the State of Utah's guidelines for establishing surface and ground water baseline data in the mine plan area. Crandall Creek is an ephemeral drainage. Thus far, very limited surface water baseline data have been collected due to the erratic occurrence of flow. However, the amount of baseline data are sufficient for the reviewer to determine seasonal variation. The frequency of impact monitoring is as follows: ground water samples are collected biannually; and, surface samples are collected bimonthly.

In an addendum submitted in January 1982, Price River Coal Company requested to be allowed to discharge (70 gpm) overflow from storage tanks holding the discharge from shaft excavation. Unless a NPDES permit is issued for this flow, there will be no specific monitoring to characterize the quality of this flow.

The Manti-LaSal National Forest supervisor has expressed concern on the impact of changes in the ground water regime on surface resource management and present land-use due to the shaft excavation and use (letter dated May 5, 1981).

Stipulation

None.

Compliance

The applicant has shown compliance with this section.

UMC 817.53 Transfer of Wells

Not applicable.

UMC 817.54 Water Rights and Replacement

Applicant's Proposal

The applicant has not addressed the interruption, contamination or diminution of water supply for owners of real property who obtain their supply either from surface or ground water sources affected by the mining activity.

Stipulation - 2-19-82-11SK

Applicant must describe adjacent water uses which may be impacted by the shaft excavation and determine a means for supplying water if interruption, contamination or diminution occurs.

Compliance

Applicant must evaluate the impact of the shaft excavation and future use of the facilities on surrounding water users before being considered "in compliance" with this regulation.

UMC 817.55 Discharge of Water into an Underground Mine

Not applicable.

UMC 817.56 Postmining Rehabilitation of Sedimentation Ponds, Diversions, Impoundments and Treatment Facilities

Applicant's Proposal

The applicant proposes to maintain the present existing gradient of the stream channel floor. The upstream end will be widened to funnel the flow from upper slopes of the canyon. The slopes will either be rip-rapped or contained with a metal retaining wall.

Stipulation - 2-19-82-12SK

Price River Coal Company must submit an adequate discussion on measures to renovate the permanent Crandall Creek stream channel diversion at the time of final reclamation.

Compliance

The applicant has not discussed renovation of the permanent diversion at the time of final reclamation and therefore compliance with this section has not been achieved. When the stipulation is met, however, compliance will be achieved.

UMC 817.57 Stream Buffer Zones

Crandall Creek is classified as an ephemeral stream therefore this section does not apply.

UMC 817.59 Coal Recovery

Section 817.59, Coal Recovery, for the Price River Crandall Canyon facilities will be addressed in the Technical Analysis of the entire Price River Coal Company facility. As a mine access surface facility, no coal removal is directly involved in Crandall Canyon.

Stipulations

None.

Compliance

Compliance has been achieved.

UMC 817.61-.68 Use of Explosives

Applicant's Proposal

Explosives will be used below ground level to fracture resistant strata during shaft construction. No wells, dwellings or public buildings exist within 1/2 mile of the blasting sites. The blast site is nearly two (2) miles from any public roads.

Stipulation

None.

Compliance

Applicant will comply with Section 817.61-.68.

UMC 817.71-.74 Disposal of Underground Development Waste, Excess Spoil, Nonacid and Nontoxic-forming Coal Processing

Applicant's Proposal

All underground development waste encountered during the construction of the two shafts will be spread in even layers and compacted as fill beneath the bathhouse/office building, the parking lot, the access road at the intake shaft area and the exhaust shaft/sewage plant site. The fill area is considered a Valley Fill and will comply with the requirements of 817.71 and 817.72.

The development waste will be compacted in two foot lifts. The materials and plans for compaction have been reviewed by registered engineers and certified as acceptable for the use intended if properly compacted to 95 percent relative density (Exhibit 7A and 373.A, page 4).

The materials to be excavated and used in the fill construction have been chemically analyzed and determined to be nonacid/nontoxic-forming (Exhibit 7 [test hole analyzed] and Exhibit 7B [laboratory results]).

All water will be diverted away from and around the fill area by diversion ditches which will remain for the life of the facility. Exhibit 5 shows the diversion ditches and the drainage off of and under the fill area. The fill area will be paved.

The outslope of the fill is 1v:2h. This is the only portion of the fill that will not be bounded by a retaining wall or a natural slope (Exhibits 5A-5B and ACR response, page 12).

Exhibits 5A-5B show cross sections of the fill area.

Stipulation

None.

Compliance

Applicant will comply with 817.71-.74.

UMC 817.81-.88 Coal Processing Waste Banks

Applicant's Proposal

No coal processing waste will be associated with the Crandall Canyon Modification proposal.

Stipulation

None.

Compliance

The applicant complies with Sections 817.81-.88.

UMC 817.89 Disposal of Noncoal Waste

Applicant's Proposal

Applicant has stated that a contract will be let with a local trash hauling company who will most likely haul trash to the nearest approved landfill.

Waste oil will be stored in minimum 3,000 gallon capacity tanks and scavenged by contracted, licensed waste oil haulers. Solvents will be mixed with waste oil. Oil tanks will be installed within concrete berm areas capable of retaining the entire capacity of the tank without discharge. All oil spills will be captured. Exhibit 5 shows the location of waste oil storage.

Stipulation - 2-19-82-13MR

Applicant must obtain a letter from appropriate landfill authorities showing approval to dispose of trash at the landfill.

Stipulation - 2-19-82-14MR

Is the area where the oil and etc., stored in tanks covered by the application's SSCP plan?

Compliance

Applicant will comply if the above stipulations are met.

UMC 817.91-.93 Coal Processing Waste: Dams and Embankments

There is no coal processing waste generated at the Crandall Canyon facility.

UMC 817.95 Air Resources Protection

Applicant's Proposal

Price River Coal Company has committed to watering roads during construction activities to suppress dust. Upon final completion of the facilities in Crandall Canyon, the main access road and the majority of the disturbed area will be paved. Cut areas, banks, etc., that are not paved will be revegetated. Pursuant to the fact that coal or mining wastes will not be removed from the shafts at Crandall Canyon, no other measures should be necessary to control fugitive dust.

Stipulation

None.

Compliance

Pursuant to the MRP, this section is in compliance.

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values

Applicant's Proposal

The permit area for the Crandall Canyon facilities are located in the Wasatch Plateau and is represented by the upper Sonoran/Transition and Canadian life zones. These life zones provide habitat for approximately 368 species of fish and wildlife of which the main species include mule deer, elk, mountain lion, black bear, blue grouse, cottontail rabbits, golden eagles and mourning doves.

High priority habitat for cougar, black bear and cottontail rabbit exists in the permit area. A pair of golden eagles have a nest in Robinson Gulch and another nest of this pair possibly exists in Crandall Canyon. No known threatened or endangered species have been found in Crandall Canyon.

The power transmission line between Hardscrabble Canyon and the Crandall Canyon facilities has been designed and constructed according to the criteria set forth in the REA Bulletin 61-10, Power Line Contacts by Eagles and Other Large Birds.

Several species of raptors inhabit the permit area. The applicant has in the past, and will continue to, notify the Division of Oil, Gas and Mining and the Division of Wildlife Resources of the locations of any nests or roost trees of raptors.

Stipulation

None.

Compliance

Pursuant to the MRP, this section is in compliance.

UMC 817.99 Slides

Applicant's Proposal

The Slope Stability Analysis Report submitted for cut/fill slopes on the access road suggests there is a possibility of slumping on the steeper slopes should the slopes become saturated. It also concludes that it was unlikely a massive slope failure would occur in this area.

Stipulation - 2-19-82-15MR

Should a slide occur within the permit area, the applicant would be required to notify the Division and comply with any remedial measures required by the Division.

Compliance

This applicant will comply with this section when the above stipulation is met.

UMC 817.100 Contemporaneous Reclamation

Applicant's Proposal

Price River Coal Company has committed to revegetate all areas of disturbance (i.e., road cuts, outcrops, etc.) to prevent erosion as soon as it is feasible after disturbance to establish a vegetative cover.

Stipulation

None.

Compliance

Pursuant to the MRP, this section is in compliance.

UMC 817.101-.106 Backfilling and Grading

Applicant's Proposal

Upon final reclamation, approximately 34 percent of the materials removed during shaft construction will be returned to the shafts. The remaining material will be graded and used to backfill any toe of slope cuts. The reclamation contour will approximate the original contour and be 3-10 feet higher in elevation. Stable drainage ways will be established across the regraded areas. All backfilling and grading reclamation will be done in accordance with the reclamation timetable (3.75C, page 35-38).

Final reclamation cross sections are shown on Exhibits 9, 9A, 9B and 9C. Exhibit 9 shows the natural drainage pattern.

The fill material has been tested for toxicity and is classified as nonacid/nontoxic-forming (Exhibit 7B).

Stipulation

None.

Compliance

Applicant will comply with this section.

UMC 817.111-.117 Revegetation

Applicant's Proposal

Price River Coal Company has selected to use the "reference area" method for establishing the success criteria and standards for revegetation success.

Three community types will be affected by the activities in Crandall Canyon, and reference areas have been established for each type and approved by the Division (see memos dated August 20, 1981, and August 27, 1981).

The "riparian bottom" community encompasses a narrow band along the bottom of the canyon. Living cover was estimated at 47.2 percent, woody plant density at 550 plants/acre (146 trees/acre and 404 shrubs/acre) and production at 2,500-3,000 pounds dry weight/acre. The reference area for this type is located approximately .5 miles below the surface facilities.

The "conifer" community occurs on north-facing slopes in the canyon. Less than two acres of this type will be affected. Total living cover for this type was estimated at 74.4 percent, tree density at 400 trees/acre, shrub density at 5,350 plants/acre and productivity at 200-300 pounds dry weight/acre.

The "mixed brush" community encompasses most of the south-facing slopes at lower elevations. Total cover for this type was estimated at 40.9 percent, shrub density at 2,500 plants/acre and productivity at 650-700 pounds dry weight/acre.

The goal of the applicant's revegetation effort is to return the area to premining conditions and productivity.

The seed mixes to be used for reclamation are adapted to the area and are compatible with the postmining land-use.

Stipulation

None.

Compliance

The applicant is in compliance with this section.

UMC 817.121-.126 Subsidence Control

Applicant's Proposal

The applicant has agreed with the Division of Oil, Gas and Mining that the effects of subsidence associated with mining in the multiple seam area beneath

Crandall Canyon will be better addressed during a review of the entire complex. An analysis at this time associated with a review of surface facility installations would be inappropriate.

Stipulation

None.

Compliance

The applicant will comply with these sections when a review is conducted of the Complex plan.

UMC 817.131 Cessation of Operations: Temporary

Applicant's Proposal

The applicant has not addressed this section.

Stipulation - 2-19-82-16MR

The applicant must address Section 817.131 and comply with this regulation should temporary abandonment of the Crandall Canyon facility be initiated.

Compliance

Applicant will comply with this section when the stipulation is met.

UMC 817.132 Cessation of Operations: Permanent

Applicant's Proposal

The Crandall Canyon facility will remain active for a minimum of thirty (30) years. All surface facilities and structures will be removed in accordance with the reclamation activities listed on 3.75C, page 35-39. All areas will be backfilled, graded and revegetated in compliance with regulations. The mine access road will remain (discussed under Section 817.150-.176, Roads).

Stipulation

None.

Compliance

Applicant will comply with 817.132.

UMC 817.133 Postmining Land-Use

Applicant's Proposal

The premining land in Crandall Canyon is primarily undeveloped and unmanaged. Much of the land is owned by Price River Coal Company and leased to local ranchers for light cattle grazing. No management activities or hay production have taken place. Historical and cultural studies (3.74G) revealed some past use in the canyon; residential, recreational and sheep herding. These uses existed fifty (50) years ago and the area has returned to an undeveloped state through natural succession.

Postmining reclamation activities will reestablish the land to conditions capable of supporting the land-use activities before mining began.

Stipulation

None.

Compliance

Applicant will comply with Section 817.133.

UMC 817.150-.176 Roads

Applicant's Proposal

The access road to Crandall Canyon is an existing jeep trail and will be upgraded to meet the requirements of a Class II road. Exhibits 8B-8F show plans and profiles of the access road. The overall road grade is approximately 5.5 percent. The maximum pitch grade is 9.0 percent. Typical roadway cross sections showing proposed cut/fill slopes have been submitted as Figure No. 1 found in the Slope Stability Analysis Report, October 1981. The analysis concluded that slopes would be stable under ordinary conditions (a factor of safety of 1.5 and 1.6 was obtained). The report added that if the slopes become saturated, slumping of the steeper slopes will likely occur. It is not anticipated any massive slope stability failures will occur in this area. Recommendations for construction of the facility to help prevent slope failure are submitted in the Slope Stability Analysis Report. A typical access road cross section shows the road surface sloped two percent from the centerline to drainage ditches (Exhibit 5B). The drainage culverts in Crandall Canyon were designed to handle a 10-year, 24-hour precipitation event. Culverts are located at the "fingers" in the canyon and/or every 500 feet (shown on Exhibits 8B-8F). Typical culvert design is shown on Attachment 7, ACR response. Culvert sizing calculations for various drainages were included in a Hydrological Report, July 20, 1981. The road crosses the stream channel in three locations. Bridges are designed to safely pass a 100-year, 24-hour precipitation event (MRP-373.B, page 7). The access road will be 24 feet wide and hard surfaced.

To facilitate safe access between the proposed Crandall Canyon road and Utah State Route 6 at the mouth of Crandall Canyon, a new intersection will be constructed to Utah Department of Transportation specifications. Exhibit 8A shows plans, profiles and a typical cross section of the intersection.

A Class III road will be constructed to provide access for construction equipment and infrequent routine inspection to the leachfield. Plans, typical cross section and profile of the road is shown on Plates 1 and 2 in the Crandall Canyon Waste Water Treatment Plan (WWT). The road is discussed in the WWT Plan. The overall road grade is eight percent. The maximum pitch grade is approximately 10 percent. Road cuts are 1v:1.5h, 1v:1h; fills are 1v:2h, 1v:4h. Drainage design calculations are shown in WWT Plan. Thirty-six inch culverts have been used for the major drainage areas that cross the roads. The road will be 24 feet wide, crowned at the center and surfaced with gravel.

Reclamation. The access road will remain a hard surfaced permanent road from the state highway to the edge of the lower pad area. The road beyond that point will be returned to a Class III condition, tying into the pre-existing road system up the canyon. The permanent road is needed for access to evaluate reclamation, continuation of the subsidence monitoring program and to provide a corridor to upper canyon grazing areas which will be leased after reclamation is successful.

Stipulation - 2-19-82-17MR

Applicant must submit a letter from UDOT stating their approval of plans for the new intersection at Utah State Route 6 and the Crandall Canyon access road.

Compliance

When the above stipulation is met, the applicant will comply with 817.150-.176.

UMC 817.180 Other Transportation Facilities

The applicant is in compliance as this section is not applicable to the Crandall Canyon facilities.

UMC 817.181 Support Facilities and Utility Installations

Applicant's Proposal

Price River Coal Company plans to construct the following support facilities in Crandall Canyon; hoist building, fan house, bathhouse, office, warehouse and a power transmission line between Hardscrabble Canyon and Crandall Canyon.

These facilities will be constructed so as to minimize damage to fish, wildlife and related environmental values. All runoff from this area will pass through approved sediment control devices so as to minimize the contribution of suspended solids to stream flow or runoff outside the permit area.

Stipulation

None.

Compliance

The applicant is in compliance with this section.