



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

Michael O. Leavitt
Governor
Kathleen Clarke
Executive Director
Lowell P. Braxton
Division Director

1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

May 4, 2000

Ken May, General Manager
Canyon Fuel Company, LLC
397 South 800 West
Salina, Utah 84654

Re: Technical Review of Pines Tract Lease, Canyon Fuel Company, LLC, SUFCO Mine, ACT/041/002-SR99D, Outgoing File

Dear Mr. May:

The Division has completed a third Technical Analysis (TA) of your application to permit the Pines Tract Lease as part of the SUFCO Mine, (see enclosed). Deficiencies will need to be adequately addressed before your application can be approved. In responding, please use the redline strike-out editing method to identify additions and deletions to the previous submittal.

Please submit your response within 90 days. Please call me if you have any questions, or would like to set up a meeting to discuss the deficiencies.

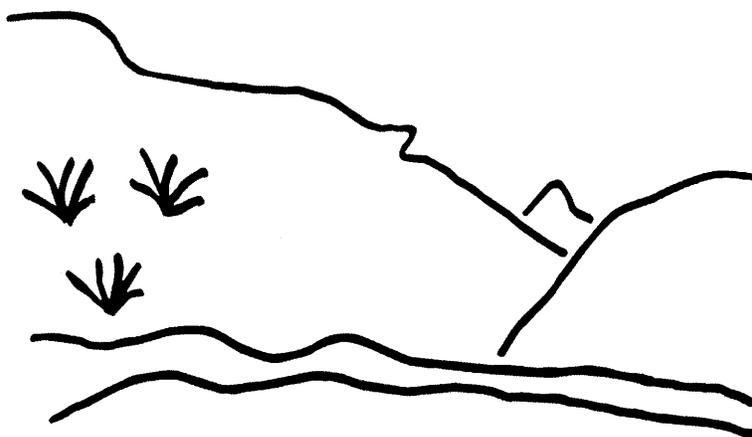
Sincerely,

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

Daron Haddock
Permit Supervisor

sm
Enclosure
cc: Price Field Office
O:\041002.CON\FINAL\PineTAdef3.wpd

State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

SUFCO
Pines Track Significant Revision
ACT/041/002- SR99D-3
Technical Analysis
May 4, 2000

TABLE OF CONTENTS

INTRODUCTION	1
SUMMARY OF OUTSTANDING DEFICIENCIES	2
ADMINISTRATIVE INFORMATION	4
OWNERSHIP AND CONTROL	4
VIOLATION INFORMATION	4
RIGHT OF ENTRY	4
UNSUITABILITY CLAIMS	5
PERMIT TERM, INSURANCE, PROOF OF PUBLICATION, AND FACILITIES OR STRUCTURES USED IN COMMON	5
ENVIRONMENTAL RESOURCE INFORMATION	6
GENERAL	6
PERMIT AREA	6
HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION	7
CLIMATOLOGICAL RESOURCE INFORMATION	8
VEGETATION RESOURCE INFORMATION	8
FISH AND WILDLIFE RESOURCE INFORMATION	10
Wildlife Information	10
Threatened and Endangered Species	10
SOILS RESOURCE INFORMATION	12
LAND-USE RESOURCE INFORMATION	12
ALLUVIAL VALLEY FLOORS	13
PRIME FARMLAND	13
GEOLOGIC RESOURCE INFORMATION	14
HYDROLOGIC RESOURCE INFORMATION	14
Sampling and analysis.	14
Baseline information.	15
Ground-water information.	15
Surface-water information.	15
Baseline cumulative impact area information.	16
Modeling.	16
Alternative water source information.	16
Probable hydrologic consequences determination.	16
MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION	17
Affected Area Boundary Maps	17
Archeological Site Maps	17
Coal Resource and Geologic Information Maps	17
Existing Structures and Facilities Maps	18
Existing Surface Configuration Maps	18
Mine Workings Maps	18
Monitoring Sampling Location Maps	18
Permit Area Boundary Maps	18
Surface and Subsurface Ownership Maps	19
Subsurface and Subsurface Water Resource Maps	19

TABLE OF CONTENTS

Vegetation Reference Area Maps 19
Well Maps 19
Contour Maps 19

OPERATION PLAN 20

MINING OPERATIONS AND FACILITIES 20
 General 20
 Type and Method of Mining Operations 20
 Facilities and Structures 21
PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES 21
EXISTING STRUCTURES: 22
RELOCATION OR USE OF PUBLIC ROADS 22
AIR POLLUTION CONTROL PLAN 22
COAL RECOVERY 23
SUBSIDENCE CONTROL PLAN 23
 Renewable resources survey. 23
 Subsidence control plan. 24
 Performance standards for subsidence control. 25
SLIDES AND OTHER DAMAGE 25
FISH AND WILDLIFE INFORMATION 25
 Protection and enhancement plan. 25
TOPSOIL AND SUBSOIL 27
VEGETATION 27
ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES 28
 Road Systems 28
 Other Transportation Facilities 28
HYDROLOGIC INFORMATION 28
 Ground-water monitoring. 28
 Surface-water monitoring. 29
 Acid and toxic-forming materials. 29
 Transfer of wells. 29
 Discharges into an underground mine. 30
 Gravity discharges. 30
 Water quality standards and effluent limitations. 30
 Stream buffer zones. 30
 Sediment control measures. 30
 Impoundments. 30
 Casing and sealing of wells. 30
SUPPORT FACILITIES AND UTILITY INSTALLATIONS 31
MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS 31
 Affected area maps. 31
 Mining facilities maps. 31
 Mine workings maps. 31
 Monitoring and sample location maps. 31

RECLAMATION PLAN 33
 GENERAL REQUIREMENTS 33

TABLE OF CONTENTS

POSTMINING LAND USES	33
PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES	33
APPROXIMATE ORIGINAL CONTOUR RESTORATION	34
BACKFILLING AND GRADING	34
MINE OPENINGS	35
TOPSOIL AND SUBSOIL	35
ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES	36
HYDROLOGIC INFORMATION	36
Surface and Groundwater monitoring.	36
Acid and toxic-forming materials.	36
Discharges into an underground mine.	36
Gravity discharges.	37
Sedimentation ponds.	37
Impoundments.	37
Casing and sealing of wells.	37
CONTEMPORANEOUS RECLAMATION	37
REVEGETATION	38
STABILIZATION OF SURFACE AREAS	38
CESSATION OF OPERATIONS	38
MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS	39
Affected area boundary maps.	39
Bonded area map.	39
Reclamation backfilling and grading maps.	39
Reclamation facilities maps.	39
Final surface configuration maps.	39
BONDING AND INSURANCE REQUIREMENTS	40
Determination of bond amount.	40
INDEX	41

INTRODUCTION

INTRODUCTION

The Division received a significant revision to the SUFCO Mine Mining and Reclamation Plan on July 16, 1999. This revision is for the addition of Federal Leases UTU-76195, Pines Tract Lease (PTL). Division determined the proposal to be administratively incomplete on September 7, 1999. The permittee submitted additional information on October 18, 1999, and the Division determined the new information Administratively Complete and ready for technical review.

Submittal of the PTL follows the permitting of the Box Canyon Amendment, the 150 acre Amendment and the 160 acre Incidental Boundary Change. These mining areas lie west of the proposed Pines Tract Lease. Mining has already taken place adjacent to Box Canyon and will advance through the 150 acre revision by the end of June, 2000. No surface facilities are planned other than a breakout in Muddy Creek Canyon for ventilation.

Canyon Fuel Company, LLC, (Canyon Fuel) owner and operator of the SUFCO Mine submitted a significant revision to their Mining and Reclamation Plan (MRP) on June 8, 1999. The proposed tract encompasses 5,786 acres and contains an estimated 71 million tons of recoverable coal reserves. The tract lies directly east of the existing mine permit area. The addition of the PTL will increase production of the mine and extend operations 15 to 20 years.

This lease addition has been under review by the U.S. Forest Service (USFS) and the U.S. Bureau of Land Management (BLM) through the NEPA process, resulting in development of the Pines Tract Project, Final Environmental Impact Statement (FEIS). On January 28, 1999, the USFS and BLM issued a Record of Decision (ROD) regarding this proposed action. As the Surface Management Agency, the Forest Service has conducted their own review and submitted r comments.

This significant revision has been studied and evaluated along with information drawn from all those known to have been developed. The format presented here will be to first review the mine Operator's Application and then draw from the following:

- Pines Tract Project, Final Environmental Impact Statement, USFS and BLM, (FEIS)
- Evaluation and Prediction of Potential Surface Subsidence Impacts from Longwall Mining under the Box Canyon Area, Sufco Mine, Agapito Associates, Inc.(AGAPITO)
- Hydrology and Effects of Mining in the Quitcupah and Pines Coal-Lease Tracts, Central Utah, U.S.G.S. Report 90-4084, by Thiros & Cordy (USGS)
- Probable Impact From Longwall Coal Mining at the SUFCO Mine to the Hydrologic Balance of Box Canyon Creek, Sevier County, Utah (MAYO)

SUMMARY OF OUTSTANDING DEFICIENCIES

The Technical Analysis regarding the proposed permit changes is not complete at this time, pending submittal of additional information by the Permittee and further review by the Division, to address outstanding deficiencies in the proposal. A summary of those outstanding deficiencies is provided below. Additional comments, concerns, and deficiencies may also be found within the analysis and finding make in the Draft Technical Analysis which have not been presented in this summary. Upon finalization of this review, any outstanding deficiencies will be evaluated for compliance with the regulatory requirements. Such deficiencies may be conditioned to the requirements of the permit issued by the Division, result in denial of the proposed permit changes, or may result in other executive or enforcement actions as deemed necessary by the Division at that time to achieve compliance with the Utah Coal Regulatory Program.

Accordingly, the permittee must address those deficiencies as found within this Draft Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:

- R645-301-321**, The applicant needs to provide a plan for monitoring some of the hanging garden communities in Box Canyon. 9
- R645-301-321**, The applicant needs to show the riparian/wetland communities in Link Canyon on a map, such as Plate 3-1. 10
- R645-301-411.140**, The applicant needs to present evidence of clearances from the State Historic Preservation Officer. 21
- R645-301-411.140**, The application says it has not been determined whether cultural resources site 42SV2434 is eligible for listing in the National Register of Historic Places, and while this was originally true, the site has now been determined eligible. This portion of the application needs to be corrected. 8
- R645-301-411.140**, The text of the application indicates 38 cultural resource sites have been found in the Pines Tract area, but Plate 5-10B and the cultural resources report only show 30 sites. This discrepancy needs to be resolved. 8
- R645-301-521.100**, The applicant shall submit cross-sectional design maps identify the characteristics and features of the breakout in Muddy Creek including slope, breakout height, elevation and distance to Muddy Creek. 32
- R645-301-521.150**, The Permittee must give the Division a detailed contour map or equivalent of the proposed PTL breakout. 19
- R645-301-521.190**, The Permittee must give the Division a legal description of the permit area and the number of federal, State and fee acreage. 7
- R645-301-522**, The Permittee needs to give the Division a detailed coal recovery plan. The plan should contain the same information that is the R2P2 (Resource

SUMMARY OF OUTSTANDING DEFICIENCIES

Recovery Protection Plan). The Division relies heavily on the recommendations of the BLM. Therefore, a letter from the BLM stating that they approved the R2P2 would be viewed by the Division as indication that the coal recovery plan is adequate. 23

R645-301-542.200, The Permittee must give the Division detailed maps and cross sections that show how the breakout portal will be reclaimed. Those maps must show the final surface configuration. 39

R645-301-542.800, The Permittee must give the Division detailed reclamation cost data for the breakout portal. 40

R645-301-551, The Permittee must show whether of not the seal for the Muddy Creek portal will be subjected to hydrostatic pressure. If the seal will be subject to hydrostatic pressure then the Permittee show how much the pressure the seals will hold. 35

R645-301-553, The Permittee must show how the breakout portal area will be restored to AOC requirements. 34

R645-301-711, The applicant shall commit to mapping the surface flows in Box Canyon on an annual basis to be completed around the first of October and compare results with precipitation data to determine if there are any mining-caused effects to perennial flow. 17

R645-301-711, The applicant shall identify and discuss the areas of perennial flow in the upper reaches of Link Canyon 17

R645-301-711, All stock watering ponds on and adjacent to the PTL should be evaluated to determine the functionality and holding capacity of stock watering ponds. Drainage areas should be identified, the amount of precipitation provide water to the pond and the ability of the pond to hold water. 17

R645-301-722.100, The applicant should provide a hydrologic inventory map of the PTL. A complete inventory should identify all water resources on the proposed mine area. The USGS hydrologic study , Water Resources Investigation, identifies spring sources not identified on Plate 7-3. No other maps or literature was found in the MRP identifying the inventory of surface waters. 19

ADMINISTRATIVE INFORMATION

OWNERSHIP AND CONTROL

Regulatory Reference: R645-301-112

Analysis:

The application includes no changes to this section. All land within and contiguous to the proposed addition to the permit area is owned by the United States, so no updates to the land ownership section are needed.

Findings:

Information provided in the application is considered adequate to meet the requirements of this section of the regulations. The Division will need to check ownership and control information currently in the mining and reclamation plan with the applicant violator system.

VIOLATION INFORMATION

Regulatory Reference: R645-301-113

Analysis:

The applicant has proposed to update violation information. Information on violations issued prior to 1993 would be eliminated, and more recent violations would be added. The applicant has proposed no other changes to this section of the mining and reclamation plan.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations. Violation information will need to be checked in the applicant violator system.

RIGHT OF ENTRY

Regulatory Reference: R645-301-114

Analysis:

The application contains a copy of Coal Lease UTU-76195 which was issued by the Bureau of Land Management to Canyon Fuel Company on September 1, 1999. The application text also includes a

ADMINISTRATIVE INFORMATION

new legal description and acreages for the lease. This satisfies the requirements of this section of the regulations.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

UNSUITABILITY CLAIMS

Regulatory Reference: R645-301-115

Analysis:

The application includes no changes in this section. The Division has no indication the proposed addition to the permit area is within an area designated as unsuitable for coal mining and reclamation operations or under study for such designation.

The application identifies no occupied dwellings within the proposed addition. The surface of the plateau does contain unimproved USFS roads that could be affected by subsidence, and the Environmental Impact Statement (EIS) considers these effects. The USFS did not restrict mining to reduce potential effects on roads, so their decision to allow mining constitutes approval to undermine the roads.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

PERMIT TERM, INSURANCE, PROOF OF PUBLICATION, AND FACILITIES OR STRUCTURES USED IN COMMON

Regulatory Reference: R645-301-116, R645-301-117

Analysis:

The proposed revision will not affect the permit term. The insurance policy currently on file with the Division meets regulatory requirements. As soon as advertising is complete, the applicant will need to include a copy of the proof of publication in the application. There are no changes to the section dealing with facilities or structures used in common.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations. As soon as it becomes available, the applicant will need to include a copy of the proof of publication in the application.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR Sec. 783., et. al.

GENERAL

Regulatory Reference: 30 CFR Sec. 783.12; R645-301-411, -301-521, -301-721.

Analysis:

PTL is located on the high Wasatch Plateau of the Manti-La Sal National Forest in Sanpete County. The surface rock forms near level outcrops that rims the area around to steep gorges of Box Canyon and Muddy Creek Canyon. At the 8000 to 9000 feet elevation the area usually receive several feet of snow. The hard sandstone cap rock reduces erosion so that the high mountain streams flow clear and product a high quality runoff. The clarity of flow changes as it cuts over the softer clays, muds and shales of the lower formations which form the canyon slopes and bottoms.

The massive Castlegate Sandstone forms the consolidated rim of Box Canyon and Muddy Creek Canyon. The coal bearing units are found in the Blackhawk Formation which underlies the Castlegate Sandstone. The Blackhawk Formation contains interbedded sequences of sandstones, siltstones, shales, mudstones and coal. The Upper Price River Formation overlies the area to the east of the canyon and some knolls of the proposed lease.

Findings:

The applicant has submitted sufficient information for this section.

PERMIT AREA

Regulatory Requirements: 30 CFR Sec. 783.12; R645-301-521.

Analysis:

Several plates, such as 7-3, Hydrologic Monitoring Stations, show the Pines Tract Lease (PTL) located northeast of the existing lease. The East Fork of Box Canyon extends approximately 1.25 miles onto the PTL.

ENVIRONMENTAL RESOURCES INFORMATION

The substantial and unique environment in Box Canyon has been well documented and includes springs, a perennial stream with pools, mosses and ferns. The riparian area along the stream is therefore designated as a crucial wildlife habitat. Detailed evaluation of the plant and animal considerations can be found in the respective Technical Analysis.

The permit boundaries are shown on Plate 5-6, Land Ownership and Permit Area Map. The plate has a scale of 1" = 2000'. It shows the existing permit boundaries and the proposed PTL expansion.

On Page 1-33 through 1-35 the Permittee lists the legal descriptions for the federal leases and fee ground. The Permittee also states that 13.03 acres under U.S. Forest Service special use permits are included in the permit and disturbed areas. The Division needs a copy of the legal description of the special use permit areas if possible. Also the Division needs an AUTOCAD file that show the disturbed and proposed disturbed area boundaries and ties those areas into known locations such as section corner or UTM coordinates.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with Prior to approval, the Permittee must provide the following in accordance with:

R645-301-521.190, The Permittee must give the Division a legal description all the disturbed areas, including the U.S. Forest Service special use permit areas and all breakouts. Those disturbed areas must also be included in an AUTOCAD file that show the disturbed area boundaries. The boundaries must be tied into known locations such as section corners or UTM coordinates.

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.12; R645-301-411.

Analysis:

The current mining and reclamation plan, as amended for the recent 150-acre incidental boundary change, contains a report on cultural resources in the Pines Tract. The Pines Tract contains ten previously recorded and twelve newly identified cultural resource sites. Of these, six sites are considered eligible for nomination to the National Register of Historic Places and one is potentially eligible but would need further evaluation to make a definite determination. Also discovered were eight isolated artifacts.

The sites include a historic sawmill and associated buildings and several lithic scatters and rock shelters. The rock shelters are near canyon rims, and the sawmill is in the upper part of the East Fork of Box Canyon.

The application says thirteen cultural resource surveys have identified 38 cultural resource sites within the Pines Tract area. The cultural resources report and Plate 5-10B only show 30 sites including

the isolated artifacts. This discrepancy needs to be resolved. This might be done through referencing the Memorandum of Agreement (MOA) concerning the cultural resource sites since this agreement lists all the sites.

The application indicates it has not been determined whether site 42SV2434 is eligible for listing in the National Register of Historic Places, and while this was originally true, this site has now been determined eligible. This needs to be corrected.

The current mining and reclamation plan indicates the permit area contains no cemeteries, public parks, or units of the National System of Trails or the Wild and Scenic Rivers System, and none are identified in the application. Therefore, it can be assumed none are in the proposed addition to the permit area.

Findings:

Information provided in the proposal is not adequate to meet the requirements of this section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

R645-301-411.140, The text of the application indicates 38 cultural resource sites have been found in the Pines Tract area, but Plate 5-10B and the cultural resources report only show 30 sites. This discrepancy needs to be resolved.

R645-301-411.140, The application says it has not been determined whether cultural resources site 42SV2434 is eligible for listing in the National Register of Historic Places, and while this was originally true, the site has now been determined eligible. This portion of the application needs to be corrected.

CLIMATOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.18; R645-301-724.

Analysis:

Climatological information is provided in Chapter 7, page 7-23. Data has been collected at the mine surface facilities since July 1996. Normal annual precipitation at the mine is about 18 inches per year.

Findings:

The applicant has submitted sufficient information for this section.

VEGETATION RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.19; R645-301-320.

ENVIRONMENTAL RESOURCES INFORMATION

Analysis:

Appendix 3-9 contains a discussion of plant communities in the lease area, including dominant species and approximate percentage of the area covered by each community. The proposed breakout is in an alderleaf mountain mahogany/Salina wild rye community.

Vegetation communities are mapped on Plate 3-1. This map shows riparian communities along both forks of Box Canyon Creek and next to Muddy Creek.

The Pines Tract portion of Plate 3-1 has vegetation mapping information directly from the Environmental Impact Statement. The vegetation community classification scheme is different in the Pines Tract compared to the rest of the permit area, and boundary lines do not match between the Pines Tract and Quitcupah areas. The map shows the sources for the two different sets of information.

The current mining and reclamation plan contains quantitative vegetation information for several areas within the permit area, not just the surface facilities area. The vegetation communities sampled include at least three that are similar to the mountain mahogany/Salina wild rye community in the breakout area, including ponderosa pine/manzanita/mountain brush, mountain brush, and pinyon/juniper/mountain mahogany.

For the breakout, the applicant only plans to disturb 0.017 acres, an area of about 720 square feet or the equivalent of a square with sides of about 27 feet. Considering the small size of the breakout and considering the current plan contains quantitative vegetation information for communities very similar to what exists at the proposed breakout, the Division does not feel additional quantitative vegetation data is needed for the breakout area.

By lease stipulation, the applicant is required to monitor the effects of underground mining on vegetation, and the current mining and reclamation plan contains a plan to do this with color infrared photography every five years. Color infrared photography can detect water stress, so it is appropriate for monitoring potential effects of mining on riparian vegetation.

The Forest Service commented that the applicant should monitor some hanging garden communities in Box Canyon. The applicant is already monitoring Link Trail columbines in the main fork of Box Canyon using photopoints, and the same method could be used for some of the hanging gardens.

Link Canyon contains some segments of riparian and/or wetland vegetation, particularly below the Link Canyon Mine portals. These areas need to be shown on a map, such as Plate 3-1, and they should be specifically included in the color infrared photographs.

Findings:

Information provided in the proposal is not adequate to meet the requirements of this section of the regulations. Prior to final approval, the applicant must supply the following in accordance with:

R645-301-321, The applicant needs to provide a plan for monitoring some of the hanging garden communities in Box Canyon.

R645-301-321, The applicant needs to show the riparian/wetland communities in Link Canyon on a map, such as Plate 3-1.

FISH AND WILDLIFE RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21; R645-301-322.

Analysis:

Wildlife Information

Appendix 3-9 contains a report with a discussion of wildlife use of the area. According to this report, there are about 80 species of mammals, 130 species of birds, eight amphibians, and 17 reptiles that may occur in the Pines Tract area. The lower parts of Box Canyon contain some fish.

Plate 3-2 shows elk ranges, and Plate 3-3 shows deer ranges and raptor nests. Most of the proposed addition to the permit area contains critical elk winter range. Nearly all of the area is high priority deer winter range.

The proposed addition contains six golden eagle nests and one falcon scrape. According to Plate 3-3, four of the eagle nests were inactive and two were tended, but it is not clear how current this data is. The applicant commits in the mining and reclamation plan to monitor any area with suitable habitat where raptor nests could be adversely affected by mining for both known and potential new nests. This will be done annually on a helicopter flight near the end of May.

Muddy Creek and the lower portion of Box Canyon Creek support fish populations. These barely enter parts of the Pines Tract lease but would not be undermined.

Threatened and Endangered Species

As part of the 150-acre incidental boundary change, lists of threatened, endangered, and sensitive species have been recently updated. Appendix 3-9 is a report on the vegetation and wildlife of the Pines Tract area, and it discusses threatened, endangered, and sensitive species that might be in the area. All but one of the listed threatened and endangered plant species discussed in the report grow at elevations lower than the mine; they are basically desert species and are adapted to soils derived from geologic formations not found within the Pines Tract area. The only high elevation species is Heliotrope milkvetch (*Astragalus montii*) which is known only from Flagstaff limestone at elevations of 10,990 to 11,320 feet on the Wasatch Plateau. Flagstaff limestone does not outcrop in the current permit area or in the proposed addition, and the highest elevation in the mine area is about 9160 feet on Duncan Mountain, well below the reported lower elevation limit for this species.

Table 2 of the report in Appendix 3-9 lists seven sensitive plant species that were investigated for the EIS. Of these, only one, the Link Trail columbine (*Aquilegia flavescens* Var. *rubicunda*), has been documented to occur in the area. Two other species, the Arizona willow (*Salix arizonica*) and canyon

ENVIRONMENTAL RESOURCES INFORMATION

sweetvetch (*Hedysarum occidentale* Var. *canone*) have potential habitat in the proposed addition to the permit area, but they have not been found.

Link Trail columbines have been found in both the main and east forks of Box Canyon, and although they have been found in areas with no obvious subsurface water source, they mostly grow in relatively wet areas, often in cracks in the sandstone. The most likely effects to Link Trail columbine plants would be from loss of water. Some of the populations in the main fork of Box Canyon are being monitored for possible effects caused by mining. The east fork has not been surveyed as extensively as the main fork, and it is not known if the applicant documented the location(s) of any population(s).

Longwall mining to the east of the main fork of Box Canyon is expected to occur in 2000, so the effects of this mining on groundwater and on the populations of Link Trail columbines in this canyon should be evident before any mining occurs east of the east fork of Box Canyon. The applicant has committed monitor columbines in the east fork if it is determined that mining negatively affects the populations monitored as part of the 150-acre incidental boundary change east of the main fork.

Table 3 in Appendix 3-9 includes ten listed threatened, endangered, and candidate wildlife species that were evaluated for occurrence in the Pines Tract area. These are the same species included in the EIS. Peregrine falcons were included in the analysis, but they are no longer listed as threatened or endangered. They are still protected, however.

Bald eagles could occasionally pass through or roost in the area, but the mine is unlikely to have any negative effects.

According to the EIS, the willow flycatcher has recently been found on the Wasatch Plateau north of the mine area, but it is not known if this was the southwestern willow flycatcher subspecies. The Forest Service reviewed habitats in the project area for the EIS and determined that "... while some habitat does exist in the area, this habitat is not suitable as willow flycatcher nesting habitat."

Except for peregrine falcons which have been documented to nest within about one-half mile of the Pines Tract, none of the other wildlife species in Table 3 is likely to occur in the area. Through water depletions, the mine could potentially adversely affect the four fish species listed, but the increase in the size of the permit area is not expected to increase water consumption.

Spotted bats, northern goshawks, and northern three-toed woodpeckers have been found in the project area, and the Pines Tract contains potential habitat for flammulated owls. All of these are Forest Service Region 4 Sensitive Species.

The Forest Service commented verbally that the sage grouse is a Forest Service Region 4 sensitive species that should be included in the list in Table 3-3; however, the applicant indicated in their cover letter that the most current list of sensitive species does not include the sage grouse. Once it is officially listed, the plan will be modified accordingly.

Findings:

Information provided in the proposal is adequate to meet the requirements of this section of the regulations.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.21, 817.200(c); R645-301-411, -301-220.

Analysis:

Appendix 2.8. briefly describes the soil map units found in the PTL.

The soil survey information for the PTL is found in Appendix 2.7. Attachment A of Appendix 2.7 contains an Order III survey of portions of the PTL. Attachment B and C of Appendix 2.7 contain the Order I survey of the Muddy Canyon breakout location. This survey was conducted in June of 1999 by James Nyenhuis, a Certified Professional Soil Scientist.

The location of the breakout is a steep (70%) slope which is covered with birchleaf mountain mahogany, Salina wild rye and an occasional pinyon pine or Douglas fir. Two soil pits were dug by hand on the northwest facing slope. The soil in both locations was classified as a loamy-skeletal; mixed; Typic Argiboroll and was correlated to map unit 107, the Curecanti soil in the Order III survey.

The soil contains an A horizon which is approximately 4 inches deep and which has a texture of sandy clay loam. The laboratory analysis of the A horizon clearly indicate it to be superior growing medium with N, P, K, and Zn values that are three times more concentrated than in the B and C horizons. Likewise the concentrations of Fe and Mn are twice as great in the A horizon than the lower horizons.

The B and C horizons had a texture of clay loam. All horizons contained 25 to 30% stones and gravels. Map unit 107 soil is described as a deep soil, but the depth of the soil at Muddy Canyon breakout pit locations could not be determined due to the presence of stones, cobbles and boulders which inhibited further digging below 20 inches.

The permeability of this soil is moderately slow. The soil is well drained. The erosion condition of the survey site was slight. The erosion hazard of the bare surface is high, due to the steep 70% slope (1.5h: 1.0v)

Findings:

The information provided meets the regulatory requirements of this section.

LAND-USE RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.22; R645-301-411.

ENVIRONMENTAL RESOURCES INFORMATION

Analysis:

Plate 4-1 shows land uses in the area. The land is managed by the USFS for multiple uses, including, timber, grazing, wildlife, and mining. These are the same uses identified as occurring in the current permit area.

Findings:

Information provided in the proposal is considered adequate to meet the requirements of this section of the regulations.

ALLUVIAL VALLEY FLOORS

Regulatory Reference: 30 CFR Sec. 785.19; R645-302-320.

Analysis:

The applicant has provided alluvial valley (AVF) floor characterization in Plate 9-1 and described the potential for flood irrigation of lands in the MRP. Hydrologic resource information has been reviewed concerning the potential for AVFs existing within and down stream of the PTL. Alluvial sediments are sparse and the canyons are narrow within Box Canyon. More sediments and riparian areas are present in Muddy Creek Canyon, however the canyon are still constricted and wide alluvial plains do not exist. AVF do not exist in the since of providing suitable flood or subirrigation within the canyons. AVFs potential exists at the mouth of the large canyons, several miles away from the PTL.

Findings:

The applicant has provided sufficient information to address this section.

PRIME FARMLAND

Regulatory Reference: 30 CFR Sec. 785.16, 823; R645-301-221, -302-270.

Analysis:

The NRCS prime farmland determination is found in Appendix 2.1. No prime farmland exists within or adjacent to the PTL.

Findings:

The information provided meets the regulatory requirements of this section.

GEOLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.22; R645-301-623, -301-724.

Analysis:

Changes to the text have been made on pages 6-iii, 6-2, 6-4, 6-5, 6-7 through 6-10, and 6-12 of Chapter 6. The changes are minor and generally either clarify statements already in the MRP or expand statements to include the PTL. Four drill logs have been added to Appendix 6-1 and several analyses of coal and rock have been added to Appendix 6-2; otherwise, there is no new geologic information.

Plates 6-3 and 6-4 (geologic cross-sections B-B' and C-C') have been added to show the nature, depth, and thickness of the coal seam to mined and of overlying and underlying strata. The Upper Hiawatha Seam is the only seam mineable within the permit boundary (p. 6-7). The revised Plate 6-1, Geology and Drillhole Location Map, includes federal lease UTU-76195 within the permit boundary and shows the locations of the two new cross-sections.

There is a plugged and abandoned gas well in the PTL in Sec 23, T. 21 S., R. 5 E.

The permittee states that detailed geologic information is in the R2P2 on file with the BLM. The BLM requested in a letter to UDOGM, dated February 4, 2000 (a similar letter, dated March 13, 2000, was sent to Ken May of SUFCO) that a new R2P2 be prepared for the Pines tract significant revision. SUFCO has prepared a new R2P2 for the Pines Tract Lease.

Findings:

Information on geologic resources is considered adequate to meet the requirements of this section.

HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 701.5, 784.14; R645-100-200, -301-724.

Analysis:

Sampling and analysis.

The applicant had conducted surface and groundwater monitoring surveys via Mayo Associates. Baseline hydrologic information is presented in Sections 7.2.4.1 and 7.2.4.2, and in the Probable Hydrologic Consequences Appendix 7-18. Water monitoring has been conducted on streams, springs, ponds and wells. The operator has presented the results in the Significant Revision (SR) submittal.

ENVIRONMENTAL RESOURCES INFORMATION

Baseline information.

Based on available scientific information and data collected by the applicant's consultants, the applicant has described the geologic and hydrologic setting on the PTL. Baseline information has been collected that identifies the premining features and characteristics of the site. Maps and cross-sections depict the geologic, hydrologic, mining and archeological resources. Literature and maps describe and identify stratigraphy, formation thickness, structural geologic features, mined areas, proposed mined areas, archeological sites, and surface structures.

Ground-water information.

The significant revision references the PHC included in the original MRP for a discussion of groundwater occurrence and recharge. There is general agreement among the studies that the recharge to the saturated zones is principally by snowmelt seeping into outcrops. Groundwater movement is controlled mainly by fractures, dip of the beds (dip is approximately 2 degrees to the northeast) and hydraulic conductivity of the strata. The movement of groundwater is regarded as relatively rapid (USGS). More seeps appear along the eastern edge of the walls consistent with the concept of groundwater following the dip slope.

Mayo and Associates have proposed a hydraulic disconnect between in-mine waters and near-surface groundwater. Mayo is considered a leading authority on isotopic dating of groundwater resources by some managing agencies and mining operators. Studies conducted by his firm have identified the groundwater regimes for several mining operations. Analysis of the groundwater for the PTL is substantiated by tritium analysis and carbon dating which shows the mine waters to be very old (greater than 7,000 to 20,000 years) as compared to meteoric waters that replenish the near surface waters (MAYO and FEIS). "The cause of this disconnect is attributed to shale and mudstones in the Blackhawk Formation that hinder the downward migration of water" (FEIS). Mayo has concluded, "groundwater should not be diverted from the Castlegate Sandstone into the Blackhawk Formation" (FEIS)

Surface-water information.

Surface water sources are characterized in the MRP. The applicant has identified streams, springs and man-made ponds. Most of the stream flow is attributed runoff from snowmelt or rain. Spring flow contributes the most to the baseflow of the streams in later summer and fall months. Streams appear to be unquestionably perennial below the confluence of the tributaries. The low flows that emanate from spring in the upper reaches leave some to question if the streams are not intermittent. The term perennial functioning has been used by the USFS to describe the upper reaches of the East Fork of Box Canyon. The West Fork of the East Fork of Box Canyon is protected from subsidence, however mining has not been prevented by the USFS on the East Fork of the East Fork.

Some surface water sites that contribute to the land management and riparian habitat, but do not exhibit continuous flows should be characterized to identify their source and overall function. The Forest Service submitted comments on March 27, 2000, which identified the need to characterize the functionality of the existing stock watering ponds on the PTL. Pre-mining characterization of the ponds, consisting of drainage area, expected filling frequency and holding capacity, should provide information to determine if impacts occur and to what degree. Also, there are sections of the in Box Canyon drainage which contain flow at different times of the year, but appear to support riparian vegetation. The

flow and frequency in these areas should be established to quantify water volumes in the event it should be impacted by subsidence.

Baseline cumulative impact area information.

The applicant discusses potential impacts in Chapter 7, Page 7-25. has identified the potential subsidence limits, Plate 5-10. Potential impacts are discussed in Appendix 7-18.

Modeling.

Using groundwater chemistry analysis, the recharge to the springs is believed to result primarily from flows in the Castlegate Sandstone as compared to the overlying Price River Formation. This appears to indicate that recharge to the springs in the Box Canyon tributaries is derived primarily from the area 1,000 feet of the canyon rims (FEIS) and (MAYO). Theoretically, decreased stresses along the canyons allows movement of the blocks in the fractured Castlegate Sandstone to widen creating more storage and conductivity of groundwater. Using Plate 5-2c, the escarpment boundary was used to draw a line 1000 feet in from the canyon rim. This revealed the area of potential recharge. A second chemical analysis suggests that the recharge locations for groundwater in the Castlegate Sandstone are different than the groundwater in the Blackhawk Formation, or that the groundwater recharged under different climatic conditions. This appears to be inconclusive.

Alternative water source information.

The applicant describes water resources and identifies the water rights in Appendix 7-1 and their locations on Plate 7-2. A plan to mitigate water resource impacts by alternative water source has not been identified.

Probable hydrologic consequences determination.

The probable hydrologic consequences are described in Appendix 7-18. There are two mechanisms where by ground and surface water can be adversely impacted, the direct interception of groundwater by opening mine workings and interception or rerouting of surface and groundwater by strata deformation.

Mayo addressed these issues on Pages 47 and 48, Appendix 7-18 he states that groundwater in the Blackhawk Formation is discontinuous and horizons of shales and mudstones and shales. Groundwater from three Blackhawk Formation springs (Pines 204, 206 and 303) were radiocarbon dated between 500 years to 4000 years. The ages of these waters are younger than the water encountered in the mine workings which yield dates between 7500 years to 20,000 years.

As mining progresses toward this area more information pertaining to impacts can be obtained. By extrapolating new information to similar areas on the PTL operational and reclamational predictions can be made. Mining of the upper reach of the West Fork of Box Canyon has revealed how subsidence fractures have developed when mining panels parallel and directly under a canyon. Mapping, measuring and analyzing these fractures over time can provide information on fracture healing, shallow groundwater interception and the effects of subsidence on local vegetation.

ENVIRONMENTAL RESOURCES INFORMATION

Findings:

R645-301-711, All stock watering ponds on and adjacent to the PTL should be evaluated to determine the functionality and holding capacity of stock watering ponds. Drainage areas should be identified, the amount of precipitation provide water to the pond and the ability of the pond to hold water.

R645-301-711, The applicant shall commit to mapping the surface flows in Box Canyon on an annual basis to be completed around the first of October and compare results with precipitation data to determine if there are any mining-caused effects to perennial flow.

R645-301-711, The applicant shall identify and discuss the areas of perennial flow in the upper reaches of Link Canyon

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR Sec. 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Affected Area Boundary Maps

Plate 5-5 shows the affected area boundary. Several other maps have been submitted, such as Plate 7-2, which show the topography, mine plan area, the proposed mine layout, structural features, hydrologic, archeological sites and wildlife habitat. Plate 5-10 identifies the extent of expected subsidence. In recognition of the Record of Decision by the USFS the applicant have identified the West Fork of the East Fork of Box Canyon as a non-subsidence area.

Archeological Site Maps

The report on the archaeological resources contains maps showing where these sites are located. The information must remain in the confidential file.

Coal Resource and Geologic Information Maps

Plates 6-3 and 6-4 (geologic cross-sections B-B' and C-C') have been added. The revised Plate 6-1, Geology and Drillhole Location Map, includes federal lease UTU-76195 within the permit boundary and shows the locations of the two new cross-sections. Detailed geologic information is in the R2P2 on file with the BLM

Revised Plate 5-11 shows overburden isopach thickness for the SUFCO mine area, including the Pines tract. Revised Plate 5-10 shows the limits of anticipated subsidence for the same area.

Plate 5-7 the current MRP shows projected mining through the year 2004, plus outlines of additional longwall panels that are apparently projected for recovery at some time after 2004. Plate 5-7 indicates only about half of the Pines Tract Lease will be mined. In Section 5.2.2, Coal Recovery, the

permittee states that mining is not planned for the extreme east and southeast portions of the Pines Tract because of poor coal quality and insufficient seam height for the longwall equipment being used. Coal has also been lost to burn under several areas in the tract. The permittee states that the R2P2 on file with the BLM contains detailed mine plan and reserves calculations.

Existing Structures and Facilities Maps

Archeological sites, dirt roads, fences and runoff ponds and stock watering troughs are the only manmade structures that exist on the PTL (Plate 5-5). The ponds were developed as a watering source for livestock.

Plate 5-5 shows the existing structures and facilities for the permit area. Plate 5-2A is a detailed map of the surface facilities.

Existing Surface Configuration Maps

Plate 5-5 shows the existing surface configuration for the PTL. The Permittee proposes to construct a breakout in the PTL as shown on Plate 5-2C. The drawing does not contain contours or other information about the existing surface configuration. The Permittee must give the Division contour maps of the predisturbed area as outlined in R645-301-521.150.

Plate 5-5 shows the existing surface configuration for the Pines tract. The Permittee shows the Muddy Creek breakout on Page 5-12A of the amendment. The drawing does not show the disturbed area boundaries, or has a scale. The contour map of the Muddy Creek breakout has contour lines at 25 foot intervals. The drawings do not have enough details for the Division to evaluate the proposed breakout. The Permittee must give the Division a map at a scale of 1" = 100' or larger, and contour lines at 5 foot intervals or less. The cross sections must be at the same scales.

Mine Workings Maps

Several maps, including Plate 5-7, Upper Hiawatha Mine Plan, 5 Year Projection, have been revised to show the mining sequence in the PTL. Plate 5-7 already shows the that operations are already advancing according to previous approved plans incorporated into the MRP on September 2, 1999 as associated with the 160 acre incidental boundary change. Plate 5-1 shows the previous mine workings.

Monitoring Sampling Location Maps

The applicant has supplied surface and groundwater monitoring location maps. Plate 7-3 identifies spring, stream and well monitoring locations. All sites are accompanied with an elevation identification.

Permit Area Boundary Maps

Several maps have been submitted, such as Plate 7-2, which show the topography, mine plan area, the proposed mine layout, structural features, hydrologic, archeological sites and wildlife habitat. Plate 5-10 identifies the extent of expected subsidence.

Surface and Subsurface Ownership Maps

The applicant has identified the surface and subsurface ownership on Plate 5-6. The surface is USFS managed land the subsurface is federal coal reserves. Plate 5-6 shows the surface and subsurface ownership.

Subsurface and Subsurface Water Resource Maps

Surface and groundwater rights are identified on Plate 7-2. Water has been allocated for stock ponds, springs and streams. The perennial flows in the West and East Forks of Box Canyon as well as the main channel are allocated. Water rights have also been issued on Muddy Creek a receiving stream of Box Canyon.

The applicant has provided a hydrologic monitoring stations map on Plate 7-3 of the SR. A hydrologic inventory map has not been supplied, which would provide a better concept of the extent of water resources.

Vegetation Reference Area Maps

The reference area is shown on a map in the current mining and reclamation plan.

Well Maps

Water monitoring wells are located on Plate 7-3.

Contour Maps

Several maps such as Plate 7-2 have incorporated contour intervals on the maps.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-521.150, The Permittee must give the Division a detailed contour map or equivalent of the proposed Pines tract breakout. At a minimum the Permittee must give the Division a map at a scale of 1" = 100' or larger and contours must be 5 foot intervals or less. The cross sections must be at the same scales..

R645-301-722.100, The applicant should provide a hydrologic inventory map of the PTL. A complete inventory should identify all water resources on the proposed mine area. The USGS hydrologic study, Water Resources Investigation, identifies spring sources not identified on Plate 7-3. No other maps or literature was found in the MRP identifying the inventory of surface waters.

OPERATION PLAN

MINING OPERATIONS AND FACILITIES

Regulatory Reference: 30 CFR Sec. 784.2, 784.11; R645-301-231, -301-526, -301-528.

Analysis:

General

The applicant has identified probable hydrologic consequences of mining the PTL, which are described in Appendix 7-18, Probable Hydrologic Consequences. The PHC was incorporated as part of the 160 acre Incidental Boundary Change. The geologic setting controls the flow patterns and quality of surface and groundwater as they come in contact with the mineral constituents of the strata. The SR describes the Castlegate Sandstone which forms the rim and plateau of Box Canyon and Muddy Creek Canyon. The Blackhawk Formation, which contains the coal bearing units, underlies the Castlegate Sandstone. The Blackhawk Formation contains interbedded sequences of sandstones, siltstones, shales, mudstones and coal. The Upper Price River Formation overlies the area to the east of the canyon and some portions of the proposed lease. Several Plates submitted by the applicant show the topographic features of the area.

From past mining experience in areas adjacent to Box Canyon, it can be expected that fractures will develop at the surface, even when overburden height is as great as 800 feet. Recent, fractures along the canyon rim of the West Fork of Box Canyon and past mining under stock pond have shown that the natural joint pattern, which occurs in the area, can promote the effects of surface subsidence. The applicant has presented information that minimizes the effects of subsidence and fracturing. Fracture healing and groundwater flow patterns have been described, however conclusive evidence for fracture healing or mitigation has not been proven.

Information is still being collected and assembled from mining the West Fork of Box Canyon and the 150 acre incidental boundary change. Determination of impacts will not be concluded until the area is mined and hydrologic and subsidence data is analyzed.

The best method to obtain information for future impacts is to monitor impacted areas and try to extrapolate the information to future mine areas. Information is needed to determine if fractures close or heal, groundwater in the Castlegate Sandstone is reestablished after a time period, vegetation is sustained by long-term groundwater sources or by short term surface water sources.

Type and Method of Mining Operations

The applicant proposed to employ the room and pillar mining method in the PTL. Overburden ranges between 400 feet to a little over 900 feet. Areas where overburden is less than 400 feet will not be mined by the applicant. The U.S. Forest Service has stipulated in the Record of Decision (ROD) that areas under perennial streams will not be mined. In response the applicant has established barriers under

OPERATION PLAN

perennial sections of the East Fork of Box Canyon which will protect the stream and adjacent areas of the canyon rim from subsidence.

Facilities and Structures

A new breakout portal is proposed for construction in Muddy Creek drainage. Mining is planned under most existing structures which include archeological sites, dirt roads, fences and runoff ponds and stock watering troughs. The applicant discussed potential impacts to surface structures and hydrologic sources and concluded that adverse impacts will not occur.

Findings:

Information provided in the proposal is adequate to meet the requirements of this section of the regulations.

PROTECTION OF PUBLIC PARKS AND HISTORIC PLACES

Regulatory Reference: R645-301-140

Analysis:

Three of the significant or potentially significant cultural resource sites are in the subsidence area shown on Plate 5-10A. These are 42SV 2425, 42SV 2433, and 42SV 2434. Site 42SV 2425 is a lithic scatter, and the other sites are rock shelters that could be adversely affected.

The application is required to describe coordination efforts with and present evidence of clearances by the State Historic Preservation Officer (SHPO). The applicant, the Forest Service, the Division, and SHPO have been working to develop an MOA showing what monitoring and mitigation would be done for the eligible sites that would be subsided and could potentially be damaged. This MOA is in the late stages of development, and the applicant has committed in the application to follow the terms of this agreement.

The applicant still needs to present evidence of clearances from SHPO, but since the MOA has not yet been finalized, this clearance is not available. When it becomes available, the application will need to mention the SHPO clearance or contain a copy.

Findings:

Information provided in the proposal is not considered adequate to meet the requirements of this section of the regulations.

R645-301-411.140, The applicant needs to present evidence of clearances from the State Historic Preservation Officer.

EXISTING STRUCTURES:

Regulatory Reference: 30 CFR Sec. 784.12; R645-301-526.

Analysis:

Mining is planned under most existing structures which include archeological sites, dirt roads, fences and runoff ponds and stock watering troughs. The applicant discussed potential impacts to surface structures and hydrologic sources and concluded that adverse impacts will not occur.

The U.S. Forest service has designated two archeological shelter and sites for protection against subsidence. One site, the Elusive Peacock is directly above a barrier established to protect a perennial stream and should not be impacted. The Refugia/Grotto site is located near a barrier wall separating the PTL from the Quitchupah Lease. This site contains a perennial pond at the base of the cliff which is the supply source of riparian habitat in the vicinity and downstream of the shelter. The site appears to fall within the angle of draw of subsidence.

Some stock water monitoring ponds in the region have been impacted by surface fracturing when undermined, while others have not. Rock pond and Johnson Pond in the Quitchupah Lease leak as a result of undermining and subsidence. These ponds are supplied by ephemeral runoff. Grouting of the pond has been conducted, however after heavy rainstorms personnel from the USFS witnessed that the ponds were no holding water. The applicant anticipates that eventually sediment will fill any fractures that have developed to drain the pond and their use will be restored. It is not possible to predict the extent or duration of impacts. The applicant has also proposed mitigation plans to repair any damage.

Findings:

Information provided in the proposal is adequate to meet the requirements of this section of the regulations.

RELOCATION OR USE OF PUBLIC ROADS

Regulatory Reference: 30 CFR Sec. 784.18; R645-301-521, -301-526.

Analysis:

The Permittee does not propose to relocate or use a public road in connection with the PTL.

Findings:

The Permittee met the minimum requirements of this section.

AIR POLLUTION CONTROL PLAN

Regulatory Reference: 30 CFR Sec. 784.26, 817.95; R645-301-244.

OPERATION PLAN

Analysis:

The applicant has proposed no activities that should require changes to the Air Quality Approval Order, so no changes are needed to this section of the mining and reclamation plan.

Findings:

Information provided in the proposal is adequate to meet the requirements of this section of the regulations.

COAL RECOVERY

Regulatory Reference: 30 CFR Sec. 817.59; R645-301-522.

Analysis:

The Permittee did not include a detailed coal recovery plan in the amendment.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-522, The Permittee needs to give the Division a detailed coal recovery plan. The plan should contain information similar to that in the R2P2 (Resource Recovery Protection Plan). Note: the Division relies heavily on the recommendations of the BLM for determination of maximum coal recovery. **Therefore, a letter from the BLM stating that they approved the R2P2 would be viewed by the Division as information supporting the claim that the Permittee will maximize coal recovery.**

SUBSIDENCE CONTROL PLAN

Regulatory Reference: 30 CFR Sec. 784.20, 817.121, 817.122; R645-301-521, -301-525, -301-724.

Analysis:

Renewable resources survey.

The Permittee identified the renewable resources on Plate 4-1A and Plate 4-1B. Those plates have scales of 1" = 1,000' (1 to 12,000).

Subsidence control plan.

1. The Permittee proposes to use longwall and room-and-pillar mining methods to extract the coal. Those methods are currently used to extract the coal. The Permittee shows the mine layout on Plate 5-2C.
2. Plate 5-10B shows the underground working. The Permittee states on that plate the methods will be used to prevent subsidence. First mining only and no extraction areas are the methods used to control subsidence.
3. The description of the physical condition that could affect subsidence will be reviewed by the Division's geologist.
4. The general subsidence control plan in the MRP was determined adequate for the existing permit. The proposed changes to the plan are shown on Plate 5-10B. On that plate the Permittee shows the areas that will be protected from subsidence and the limits of surface disturbance. Table 5-2 has been updated to show the new subsidence monitoring stations.
5. Two items in the PTL must be protected from subsidence impacts. The first is the Refugia/Grotto, an archeologic site, and the second is the perennial stream, the West Fork of the East Fork of Box Canyon. The Refugia/Grotto consists of a 50-foot cliff with a perennial pond at the bottom, a rock shelter and artifacts.

The effects of subsidence vary with local conditions. Before the Permittee mines near the Refugia/Grotto, it must be shown that site will be protected from subsidence. The Division needs the Permittee to calculate the local angle-of-draw for the area around the Refugia/Grotto and use mining methods that will protect the Refugia/Grotto from any subsidence.

The East Fork of the East Fork of Box Canyon is identified as a perennial stream that needs to be protected from subsidence. The Division is concerned that subsidence could create or open cracks that would capture the stream. The Permittee must adopt mining methods that will prevent damage to the East Fork of the East Fork of Box Canyon. Methods used to prevent subsidence damage may include first mining only or leaving barrier pillars.

6. The Permittee states in the MRP that no subsidence damage should occur. If damage occurred, they would mitigate the damage. The Permittee has caused some damage to stock watering ponds and has repaired the damage. The Division anticipates that subsidence damage would be limited to surface cracks.
7. The Permittee committed to repair any subsidence damage that should occur.
8. No significant surface resources are in the area that needs protection.

OPERATION PLAN

Performance standards for subsidence control.

The Permittee committed to meet all subsidence performance standards.

Findings:

The Permittee met the minimum requirements of this section.

SLIDES AND OTHER DAMAGE

Regulatory Reference: 30 CFR Sec. 817.99; R645-301-515.

Analysis:

The existing plan is considered adequate.

Findings:

The Permittee met the minimum requirements of this section.

FISH AND WILDLIFE INFORMATION

Regulatory Reference: 30 CFR Sec. 784.21, 817.97; R645-301-322, -301-333, -301-342, -301-358.

Analysis:

Protection and enhancement plan.

The existing mining and reclamation plan contains commitments to protect wildlife from the adverse effects associated with mining. Underground mining is likely to have little if any effect on most species on the plateau, including deer, elk, and sage grouse.

Endangered and Threatened Species and Bald and Golden Eagles

The Environmental Impact Statement for the Pines Tract lists eighteen threatened and endangered species that could occur in the project area. The only species that might be affected are the southwestern willow flycatcher and the four threatened and endangered fish of the upper Colorado River basin. However, as discussed in the fish and wildlife resource information section of this analysis, there is no suitable habitat for the southwestern willow flycatcher in the area.

The Fish and Wildlife Service has determined that water losses from the upper Colorado River basin jeopardize the continued existence of the four threatened and endangered fish species found there. Mitigation is required when losses exceed 100 acre-feet per year. The mine is not expected to use additional water because of the increase in the size of the permit area, but there could potentially be some disruption of groundwater flows. The amount of loss is expected to be nonexistent or minor, and

the environmental impact statement concludes "the effects of the proposed small water withdrawals are so limited in scope and intensity and are so far-removed from the remaining populations of [the listed fish] species that they are negligible." For these reasons, the Division does not expect mitigation to be required.

On April 26, 2000, the Division received a letter from the Fish and Wildlife Service concurring with the Division's findings on threatened and endangered species.

Four eagle nests and one falcon scrape shown on Plate 3-3 are in the subsidence area shown on Plate 5-10. The current mining and reclamation plan says in Section 3.3.3.3 that any raptor nest that might be disturbed by subsidence will be evaluated by Wildlife Resources and the Fish and Wildlife Service. An appropriate plan of action will be developed on a case by case basis, and the applicant will obtain any permits necessary for disturbing the nest if this becomes necessary. The Division of Oil, Gas and Mining will be notified in advance. This plan is acceptable.

A golden eagle nest and a falcon scrape are on the north side of Muddy Canyon apparently in full view of the proposed breakout. They are about 3/4 mile from the breakout, and this is outside the buffer zone normally used for golden eagles. The application says if the scrape is still active at the time of construction, the breakout will be built outside the nesting period. This commitment is acceptable.

The Fish and Wildlife Information section of this analysis discusses potential effects of mining on the Link Trail columbine and monitoring requirements.

Three-toed woodpeckers, goshawks, and flammulated owls use Ponderosa pines and other tree species for roosting and nesting in and near the area; however, it is unlikely trees would be affected by underground mining. The EIS concluded that individuals of these species could possibly be affected but that there would be no significant effects to the populations or to the species.

The mining and reclamation plan contains a survey for bats in the Link Canyon and Muddy Creek areas. The consultants that did this survey suggested that subsidence could affect roosting areas and that some individuals could be lost; however, they felt new cracks would offset the ones destroyed and that there would be little net effect. They believe there could be some impact on local populations of spotted bats. The report says if subsidence occurred in spring and summer it might cause reproductive females to carry young to another less favorable roost site. In the winter, torpid bats might not have time to arouse and escape during subsidence.

Subsidence could occur in these areas as a general lowering of the topography or it could cause sudden failure of some rock features. Bats would likely either be unaffected or would not have time to fly away to escape subsidence.

From the information in the report, the Division draws the following conclusions about bats:

- There are bats, including spotted bats, present in the general area although spotted bats may not be present in the upper part of Box Canyon.
- There are no known hibernacula, maternal roosting sites, or other areas of heavy concentration in the area that would be subsided.

OPERATION PLAN

- Cracks in rocks being used by bats could fail and kill or trap any animals using them, but since there are no known concentration areas, it is unlikely this would seriously reduce the local population. Generally, rock crevices and defective trees are used by only a few bats rather than large populations.
- It is possible that new habitat could be created, but this is also unlikely.

For these reasons, there should be no need to mitigate possible effects on bats or to do further monitoring.

Findings:

Information provided in the proposal is adequate to meet the requirements of this section of the regulations. The Division has received concurrence from the Fish and Wildlife Service.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Analysis:

The area to be disturbed by the breakout is approximately 20 feet square, less than 0.01 acre. The location is on a very steep slope (70%). The plan for topsoil salvage is to collect what falls into the breakout, separate it from the coal and store it within the mine tunnel. Space will be made for approximately 25 CY of soil (enough to replace 20 inches of soil over the disturbance).

Findings:

The soil survey indicates that there is a four inch A horizon which is clearly superior in texture and fertility to the soil below. The 400 square foot area would yield about 4 yards of topsoil. However, the logistics of soil salvage from the small area on a steep and remote slope makes the removal of the topsoil impractical. The operation plan is permissible under R645-301-232.710.

VEGETATION

Regulatory Reference: R645-301-330, -301-331, -301-332.

Analysis:

Chapter 3 of the current mining and reclamation plan contains a plan for interim revegetation that is adequate for the proposed breakout.

Findings:

Information provided in the proposal is adequate to meet the requirements of this section of the regulations.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

Analysis:

Road Systems

The Permittee does not propose any changes to the road systems

Other Transportation Facilities

The Permittee does not propose any changes to the other transportation facilities.

Findings:

The Permittee met the minimum requirements of this section.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Ground-water monitoring.

Longwall mining is planned for the Tract Lease. The panel alignment trends north-south. Subsidence of up to four feet is expected along the midline of the panels and subsidence cracks are expected to occur. AGAPITO estimates that fractures of 1 to 4 inches can occur in the canyons and fractures up to 2 feet can take place on the canyon rim where panels are parallel the canyon.

Several springs are located in the canyon and at its confluence with the West Fork of Box Canyon. There are also several springs in the main channel of Box Canyon, which eventually drain into Muddy Creek. The upper reaches of the East Fork of Box Canyon are what the USFS term a perennially functioning stream, Page 3-61, FEIS, Page 7, ROD. Carter Reed, USFS, Geologist defined the upper reaches as flows on the surface and in the alluvial system which contributes to the base flow of the down-stream system and supports riparian vegetation, Personal Communication, January 13, 2000. The

OPERATION PLAN

canyons exhibit perennial flows near the confluence of the East Fork tributaries, shown on Figures 3, 7, 8 and 9 of the PTL P.C., Appendix 7-18. The applicant proposes a groundwater monitoring program which includes springs and wells. The groundwater monitoring plan is identified in Table 7-2 of the SR.

An area has been identified during the review that has a potential being impacted during mining. The information presented by the applicant and research reports presents a scenario where subsidence fractures could develop along canyon rims, and in one canyon, the East Fork of the East Fork of Box Canyon, which is planned to be undermined. This canyon is also considered perennially functioning. The propagation of cracks may influence the flow pattern within the recharge zone (1000 feet in from the rim of the canyons) identified by Mayo. The seep and spring flow in this canyon is minor in comparison to the watershed, but significant to the riparian resource. It has been proposed that flows will be reestablish in time as the voids fill with groundwater or sediment to reach the original levels.

The applicant has committed to conduct bi-annual (operational) fracture monitoring study to analyze the fractures that have developed in the upper reaches of the West Fork of Box Canyon. The applicant shall develop a monitoring plan to survey perennial flows in the channel of the East Fork of the East Fork of Box Canyon. This should be conducted on an annual basis during the months of September or October.

Surface-water monitoring.

The upper reaches of the tributaries contain springs of low flow which are perennial, but do not supply continuous flow to the stream channels. The upper reaches of the East Fork are shown be lined with riparian habitat in the PHC, Figure 3 and the FEIS, Figure 3-11. This area is identified as perennially functioning according the Page 7, of the PTL Record of Decision. Although identified as containing riparian habitat, the East Fork of the East Fork of Box Canyon does not have the same designation of protection as the West Fork of the East Fork of Box Canyon. The perennial springs in the upper reaches of the canyon do not sustain a constant or perennial flow in the channel. The Record of Decision for the FEIS allows the development and longwall panels under the channel.

The applicant recommends monitoring seven stream locations in Table 5 of the P.C. These locations include Pines 106, Pines 108, Pines 403, Pines 405, 406, Pines 407 and Pines 408.

Acid and toxic-forming materials.

Information on acid and toxic forming materials is presented in Chapter 6 of the MRP and on page 53 of the P.C. Sulfide mineral pyrite has been identified in SUFCO Mine. Although pyrite oxidation does occur acid mine drainage does not. Alkalinity of mine drainage water typically exceeds acidity by a factor of 20. The applicant claims that no acid-forming materials or any toxic forming materials have been identified or are suspected to exist in materials disturbed in the PTL.

Transfer of wells.

Transfer of wells is not currently considered. Any future transfers will be in accordance with DOGM approval.

Discharges into an underground mine.

There are no planned discharges into underground mines for the PTL. Only on breakout is planned for the PTL which is down-dip in Muddy Creek Canyon.

Gravity discharges.

It is anticipated that in-mine water will be generated from mining the PTL. There are no gravity discharges currently planned from the PTL. Intercepted groundwater will be used in the mining process and excess water will be pumped from the mine to the Quitchupah Creek UPDES mine discharge site. The mine is currently discharging approximately 1500 gallons per minute from the Quitchupah Lease into Quitchupah Creek.

Water quality standards and effluent limitations.

The applicant plans to maintain water quality standards by employing sediment control structures on disturbed areas and settling in-mine waters prior to their discharge.

Stream buffer zones.

The applicant has implemented stream buffer zones along perennial reaches that have been designated perennial or have an overburden height of less than 400 feet.

Sediment control measures.

The applicant proposes to construct a breakout for mine ventilation. The disturbed will be small, approximately .01 acres. The area is very steep and no major hydrologic structures will be needed. The applicant plans to handle runoff control by placing silt fences below the disturbed area to trap and contain sediments.

Impoundments.

The Permittee does not propose any changes to the existing impoundments or construction of a new one. The Forest Service has identified a need to evaluate the stock water ponds for functionality, that is to identify the current physical characteristics of the ponds to determine holding capacity.

Casing and sealing of wells.

The applicant has submitted plans in the approved MRP to case and seal all monitoring wells in accordance with their reclamation timetable. The Permittee does not propose any changes in way wells are sealed.

Findings:

The applicant has submitted sufficient information to address this section.

OPERATION PLAN

SUPPORT FACILITIES AND UTILITY INSTALLATIONS

Regulatory Reference: 30 CFR Sec. 784.30, 817.180, 817.181; R645-301-526.

Analysis:

The Permittee does not propose any changes.

Findings:

The Permittee met the minimum requirements of this section.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Affected area maps.

The Permittee did not provide affected area map. However, the mine map shows the extent of mining operations and the permit boundaries. The Division considers that map sufficient.

Mining facilities maps.

The Permittee did not give the Division detailed maps and cross sections of the portal breakout area. The Permittee must give the Division detailed topographic maps and cross sections that show the operational phase of that area. The breakout area planned for the Muddy Creek drainage does not show detail for features, sediment control or topsoil storage.

Mine workings maps.

In a meeting with the BLM on January 22, 2000, Stan Perks mentioned that the new R2P2 showing the mine working has changed from the copy submitted with the SR. Mike Davis also mentioned changes in panel widths that are planned for the PTL panels during in a Link Canyon meeting on January 27, 2000.

Plate 5-10A and Plate 5-10B show the mine workings, including updates for the Pines Track lease.

Monitoring and sample location maps.

The applicant has submitted Plate 7-3 identifying the location of surface and groundwater monitoring locations.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-521.100, The applicant shall submit cross-sectional design maps identify the characteristics and features of the breakout in Muddy Creek including slope, breakout height, elevation and distance to Muddy Creek.

RECLAMATION PLAN

RECLAMATION PLAN

GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR Sec. 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

Analysis:

The applicant has provided a reclamation plan in the MRP, page 7-48. Since only a the breakout is proposed for surface disturbance, surface reclamation of the PTL is relatively small. Any surface disturbance from subsidence or affects to the hydrologic system on the PTL would be covered in mitigation during the operation phase.

Findings:

The applicant has submitted sufficient information for this section

POSTMINING LAND USES

Regulatory Reference: 30 CFR Sec. 784.15, 784.200, 785.16, 817.133; R645-301-412, -301-413, -301-414, -302-270, -302-271, -302-272, -302-273, -302-274, -302-275.

Analysis:

The applicant has proposed no changes to the postmining land uses of wildlife habitat and grazing.

Findings:

Information provided in the proposal is adequate to meet the requirements of this section of the regulations.

PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES

Regulatory Reference: 30 CFR Sec. 817.97; R645-301-333, -301-342, -301-358.

Analysis:

The revegetation plan in the current mining and reclamation plan is designed for the wildlife and grazing postmining land uses. It complies with regulatory requirements.

Findings:

Information provided in the proposal is adequate to meet the requirements of this section of the regulations.

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-270, -301-271, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

Analysis:

The Permittee stated that the information on AOC for the Muddy Creek breakout is on Figure 5-0. That figure is clearly labeled as a conceptual sketch and does not contain enough information for the Division to evaluate the reclamation of the breakout.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-553, The Permittee must show how the breakout portal area will be restored to AOC requirements.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-233, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Analysis:

The Permittee did not include detailed backfilling and grading plans for the Muddy Creek breakout. Figure 5-0 is a conceptual sketch that does not contain enough information for the Division to evaluate the project.

RECLAMATION PLAN

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-552 and R645-301-553, The Permittee must give the Division detailed reclamation plans for the breakout portal area. A conceptual sketch is not adequate for the Division to make an determination about backfilling and grading.

MINE OPENINGS

Regulatory Reference: 30 CFR Sec. 817.13, 817.14, 817.15; R645-301-513, -301-529, -301-551, -301-631, -301-748, -301-765, -301-748.

Analysis:

The Division is concerned that water might be backup against the mine seals. If that were to occur, the pressure could damage the seals and allow water to flow out of the mine. The Division needs the Permittee to show whether or not the seals will be subject to hydrostatic pressure. If hydrostatic pressure will be encountered then the Permittee must give the Division designs for a hydrostatic seal.

Findings:

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-551, The Permittee must show whether or not the seal for the Muddy Creek portal will be subjected to hydrostatic pressure. If the seal will be subject to hydrostatic pressure then the Permittee show how much the pressure the seals will hold.

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

Stored soil from within the mine will be brought to the surface and temporarily stored on the slope while the portal is backfilled from within the mine. Then, the soil will be spread over the surface. This will be accomplished using mining equipment and hand labor. The surface will be left roughened and gouged by hand using rakes and shovels.

Findings:

The information provided meets the regulatory requirements of this section.

ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR Sec. 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

Analysis:

There are no rads associated with the PTL.

Findings:

The Permittee met the minimum requirements of this section.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Analysis:

Surface and Groundwater monitoring.

The applicant has identified a surface and ground water monitoring plan outlined in Tables 7-2 and 7-3. Additional sites have been requested to be monitored by the U. S. Forest Service. Although a monitoring plan has been established and the applicant should identify the period of monitoring which includes a time table when monitoring will cease.

Acid and toxic-forming materials.

Iron-sulfide is present in the mine capable of forming acids. The buffering capacity of carbonates in surrounding rock and continuous flow of groundwater flow prevent concentrated acid build-up.

Discharges into an underground mine.

The applicant plans no discharge of fluids or materials into the mine.

RECLAMATION PLAN

Gravity discharges.

The applicant describes the process for discharging intercepted groundwater. Currently all intercepted in the mine is discharged to Quitchupah Creek via a UPDES permit. The mine currently discharges approximately 1000 gpm or 2.25 cfs from the Quitchupah portal. As mining progresses into the PTL the intercepted groundwater will also be discharged to Quitchupah Creek. The Muddy Creek portal proposed in the mine plan is downdip of the mine. Sealing the portal will cause groundwater to back up behind the seals and could seep from the mine. The permittee addressed discusses the seals on page 5-69, section 5.5.1 in the approved MRP. The seal is designed to hold the head of water behind it to keep mine water from flowing from the mine after the opening has been sealed.

Sedimentation ponds.

There are no sediment ponds associated with the PTL.

Impoundments.

There are no impoundments associated with the PTL.

Casing and sealing of wells.

When no longer needed for monitoring or other use designated by UDOGM and upon a finding of no adverse environmental or health and safety effects, or unless approved for transfer as a water well, each well will be capped, sealed, backfilled. Wells will be sealed and backfilled by placing a concrete plug from TD to surface.

Findings:

The applicant has submitted sufficient information to address this section.

CONTEMPORANEOUS RECLAMATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.100; R645-301-352, -301-553, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

No contemporaneous reclamation is schedule to take place on the PTL. The breakout portal will be recovered after the mine shuts down.

Findings:

The Permittee met the minimum requirements of this section.

REVEGETATION

Regulatory Reference: 30 CFR Sec. 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

Analysis:

The revegetation plan includes specific mention of the remote portals. These portals would be broadcast seeded with the standard seed mix. Reclaimed slopes in the area of the Muddy Creek Breakout will be protected from erosion by the application of an erosion mat stapled in place. This plan is acceptable.

Findings:

Information provided in the proposal is adequate to meet the requirements of this section of the regulations.

STABILIZATION OF SURFACE AREAS

Regulatory Reference: 30 CFR Sec. 817.95; R645-301-244.

Analysis:

During operations, soil will be stored within the mine where it will be sheltered from wind and water.

During reclamation, the soil surface will be left rough. The breakout will be hand seeded with the seed mix listed in section 3.4.1.2 of the MRP. Section 3.4.1.2 further indicates that mulch will be applied at 2000 lbs/acre along with 100 lbs of N/ac and 100 lbs of P/ac. Section 2.4.2.1. indicates that organic matting may be used if the slope is thought to be unstable.

Findings:

The information provided meets the regulatory requirements of this section.

CESSATION OF OPERATIONS

Regulatory Reference: 30 CFR Sec. 817.131, 817.132; R645-301-515, -301-541.

Analysis:

The Permittee addressed this in the MRP.

RECLAMATION PLAN

Findings:

The Permittee met the minimum requirements of this section.

MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

Analysis:

The surface disturbance should be limited to reclamation of the breakout area which covers an area of 0.01 acres.

Affected area boundary maps.

The permit area maps and the mine maps show the affected area boundaries.

Bonded area map.

The bonded area is the permit area and is shown on several maps.

Reclamation backfilling and grading maps.

The Permittee did not provide the Division with backfilling and grading maps for the portal breakout areas.

Reclamation facilities maps.

The Permittee does not propose to leave any facilities associated with the PTL.

Final surface configuration maps.

The Permittee did not give the Division the final surface configuration maps for the breakout portal area.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-542.200, The Permittee must give the Division detailed maps and cross sections that show how the breakout portal will be reclaimed. Those maps must show the final surface configuration.

BONDING AND INSURANCE REQUIREMENTS

Regulatory Reference: 30 CFR Sec. 800; R645-301-800, et seq.

Analysis:

Determination of bond amount.

The Permittee did not provide detailed information for the reclamation costs of the breakout portal.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-542.800, The Permittee must give the Division detailed reclamation cost data for the breakout portal.

RULES INDEX

- RULES INDEX -

30 CFR

701.5	14, 36
773.17	28
774.13	28
783	6
783.12	6, 7
783.18	8
783.19	8
783.21	12
783.22	12
783.24	17
783.25	17
784.11	20
784.12	22
784.13	33
784.14	14, 28, 33, 36
784.15	33, 34
784.16	28, 33
784.17	33
784.18	22, 33
784.19	33
784.2	20
784.20	23, 33
784.200	33
784.21	10, 25, 33
784.22	14, 33
784.23	31, 33, 39
784.24	27, 28, 33, 36
784.25	33
784.26	22, 33
784.29	28, 36
784.30	31
785.15	34
785.16	13, 33, 34
785.18	37, 38
785.19	13
800	40
817.100	37
817.102	34
817.107	34
817.111	38
817.113	38
817.114	38
817.116	38
817.121	23
817.122	23
817.13	35
817.131	38
817.132	38
817.133	33, 34
817.14	35
817.15	35

RECLAMATION PLAN

817.150	27, 28, 36
817.151	27, 28, 36
817.180	31
817.181	31
817.200	12
817.22	27, 35
817.41	28, 36
817.42	28, 36
817.43	28, 36
817.45	28, 36
817.49	28, 36
817.56	28, 36
817.57	28, 36
817.59	23
817.95	22, 38
817.97	25, 33
817.99	25
823	13
R645	
-100-200	14, 36
-300-140	28
-300-141	28
-300-142	28
-300-143	28
-300-144	28
-300-145	28
-300-146	28
-300-147	28
-300-148	28
-301-220	12
-301-221	13
-301-230	27
-301-231	20, 33
-301-233	33
-301-234	34
-301-240	35
-301-244	22, 38
-301-270	34
-301-271	34
-301-320	8
-301-322	10, 25, 33
-301-323	17, 33, 39
-301-331	33
-301-333	25, 33
-301-341	33
-301-342	25, 33
-301-352	37
-301-353	38
-301-354	38
-301-355	38
-301-356	38
-301-358	25, 33
-301-411	6, 7, 12, 17, 33

RULES INDEX

-301-412	33, 34
-301-413	33, 34
-301-414	33
-301-422	33
-301-512	28, 31, 33, 34, 36, 39
-301-513	33, 35, 36
-301-514	28, 36
-301-515	25, 36, 38
-301-521	6, 17, 22, 23, 27, 28, 31, 33, 36, 39
-301-522	23, 33
-301-525	23, 33
-301-526	20, 22, 31, 33
-301-527	27, 28, 33, 36
-301-528	20, 33
-301-529	33, 35
-301-531	28, 33, 34
-301-532	28, 36
-301-533	28, 33, 34, 36
-301-534	27, 28, 33, 36
-301-536	28, 33, 34
-301-537	33, 34, 36
-301-541	38
-301-542	28, 31, 33, 34, 36, 39
-301-551	35
-301-552	34
-301-553	34, 37
-301-622	17
-301-623	14, 33
-301-624	33
-301-625	33
-301-626	33
-301-631	33, 35
-301-632	31, 33, 39
-301-720	28
-301-721	6
-301-722	17
-301-723	33, 36
-301-724	8, 14, 23, 33, 36
-301-725	33, 36
-301-726	33, 36
-301-728	33, 36
-301-729	33, 36
-301-731	17, 28, 31, 33, 34, 36, 39
-301-732	27, 28, 33, 34, 36
-301-733	28, 33, 34, 36
-301-742	28, 36
-301-743	28, 36
-301-746	33
-301-748	35
-301-750	28, 36
-301-751	36
-301-760	36
-301-761	28, 36

RECLAMATION PLAN

-301-764	28, 33, 34
-301-765	35
-301-800	40
-301-830	33
-302-230	34
-302-231	34
-302-232	34
-302-233	34
-302-270	13, 33
-302-271	33
-302-272	33
-302-273	33
-302-274	33
-302-275	33
-302-280	37, 38
-302-281	37, 38
-302-282	37, 38
-302-283	37, 38
-302-284	37, 38
-302-320	13
-302-323	31