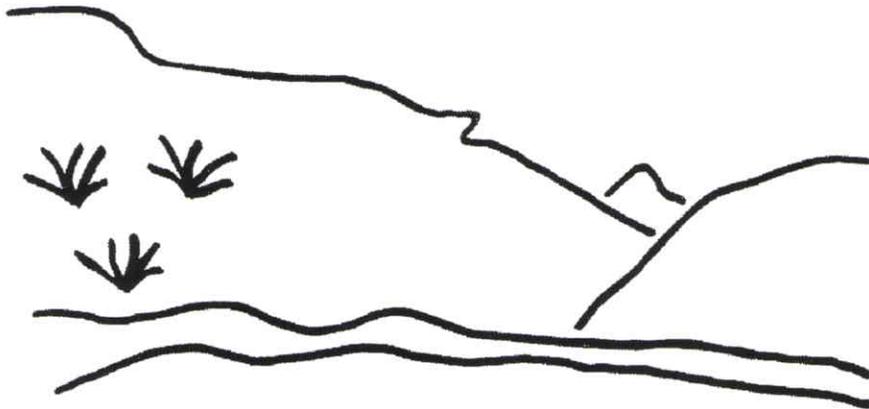


State of Utah



Utah Oil Gas and Mining

Coal Regulatory Program

Des Bee Dove
PacifiCorp
Technical Analysis
February 12, 2007

File in:

Confidential

Shelf

Expandable

Refer to Record No. 0005 Date 02/20/07

In C 0150017 outgoing

For additional information

TABLE OF CONTENTS

TECHNICAL ANALYSIS DESCRIPTION	1
GENERAL CONTENTS	3
IDENTIFICATION OF INTERESTS	3
VIOLATION INFORMATION.....	3
RIGHT OF ENTRY	3
LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS	4
PERMIT TERM.....	5
PUBLIC NOTICE AND COMMENT	6
PERMIT APPLICATION FORMAT AND CONTENTS	6
MAPS AND PLANS	6
ENVIRONMENTAL RESOURCE INFORMATION	9
PERMIT AREA	9
HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION.....	9
CLIMATOLOGICAL RESOURCE INFORMATION.....	10
VEGETATION RESOURCE INFORMATION	10
FISH AND WILDLIFE RESOURCE INFORMATION	11
SOILS RESOURCE INFORMATION.....	12
LAND-USE RESOURCE INFORMATION.....	14
PRIME FARMLAND.....	15
HYDROLOGIC RESOURCE INFORMATION	15
Sampling and Analysis	16
Baseline Information.....	16
Baseline Cumulative Impact Area Information	16
Modeling	16
Probable Hydrologic Consequences Determination	17
Groundwater Monitoring Plan	17
Surface-Water Monitoring Plan.....	17
MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION.....	17
Existing Structures and Facilities Maps.....	18
Existing Surface Configuration Maps.....	18
Mine Workings Maps	18
Monitoring and Sampling Location Maps	18
Permit Area Boundary Maps	18
Surface and Subsurface Manmade Features Maps	18
Surface Water Resource Maps.....	18
Vegetation Reference Area Maps	19
OPERATION PLAN	21
MINING OPERATIONS AND FACILITIES.....	21
MINE OPENINGS.....	21
COAL RECOVERY	22
SUBSIDENCE CONTROL PLAN.....	22
Renewable Resources Survey	22
Subsidence Control Plan.....	22
Notification	23

TABLE OF CONTENTS

SLIDES AND OTHER DAMAGE	23
TOPSOIL AND SUBSOIL.....	24
Topsoil Removal and Storage.....	24
VEGETATION	25
ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES	26
Road Classification System	26
Other Transportation Facilities	27
SPOIL AND WASTE MATERIALS	27
Disposal Of Noncoal Mine Wastes.....	28
Coal Mine Waste.....	28
Refuse Piles.....	28
Impounding Structures.....	28
Burning And Burned Waste Utilization.....	28
Return of Coal Processing Waste to Abandoned Underground Workings.....	28
Excess Spoil:.....	28
HYDROLOGIC INFORMATION	29
General.....	29
Groundwater Monitoring	29
Surface Water Monitoring	29
Acid- and Toxic-Forming Materials and Underground Development Waste	30
Discharges Into An Underground Mine.....	30
Gravity Discharges From Underground Mines.....	30
Water-Quality Standards And Effluent Limitations	31
Diversions: General	31
Diversions: Miscellaneous Flows	31
Stream Buffer Zones	31
Sediment Control Measures.....	31
Siltation Structures: General	32
Siltation Structures: Sedimentation Ponds.....	32
Siltation Structures: Other Treatment Facilities	32
Siltation Structures: Exemptions.....	32
Discharge Structures	32
Impoundments.....	32
SIGNS AND MARKERS	33
USE OF EXPLOSIVES	33
General Requirements.....	33
MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS.....	34
Affected Area Maps.....	34
Mining Facilities Maps	34
Mine Workings Maps	34
Monitoring and Sampling Location Maps	34
Certification Requirements	34
RECLAMATION PLAN	37
GENERAL REQUIREMENTS	37

TABLE OF CONTENTS

POSTMINING LAND USES	37
PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES...	38
APPROXIMATE ORIGINAL CONTOUR RESTORATION.....	39
BACKFILLING AND GRADING.....	39
General.....	39
MINE OPENINGS.....	41
TOPSOIL AND SUBSOIL.....	42
ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES	44
Reclamation	44
Retention.....	45
HYDROLOGIC INFORMATION	45
Hydrologic Reclamation Plan.....	45
CONTEMPORANEOUS RECLAMATION	46
General.....	46
REVEGETATION.....	47
Revegetation: General Requirements	48
Revegetation: Timing.....	48
Revegetation: Standards For Success	48
Reclamation Treatments Maps	49
STABILIZATION OF SURFACE AREAS	49
CESSATION OF OPERATIONS.....	50
MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS	50
Final Surface Configuration Maps.....	51
Reclamation Monitoring And Sampling Location Maps.....	51
Reclamation Surface And Subsurface Manmade Features Maps	51
Reclamation Treatments Maps	51
Certification Requirements.....	51
BONDING AND INSURANCE REQUIREMENTS.....	51
General.....	51
Determination of Bond Amount	52
Terms and Conditions for Liability Insurance.....	52
CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT (CHIA).....	53

TABLE OF CONTENTS

TECHNICAL ANALYSIS DESCRIPTION

TECHNICAL ANALYSIS DESCRIPTION

The Division ensures that coal mining and reclamation operations in the State of Utah are consistent with the Coal Mining Reclamation Act of 1979 (Utah Code Annotated 40-10) and the Surface Mining Control and Reclamation Act of 1977 (Public Law 95-87). The Utah R645 Coal Mining Rules are the procedures to implement the Act. The Division reviews each permit or application for permit change, renewal, transfer, assignment, or sale of permit right for conformance to the R645-Coal Mining Rules. The Applicant/Permittee must comply with all the minimum regulatory requirements as established by the R645 Coal Mining Rules.

The regulatory requirements for obtaining a Utah Coal Mining Permit are included in the section headings of the Technical Analysis (TA) for reference. A complete and current copy of the coal rules can be found at <http://ogm.utah.gov>

The Division writes a TA as part of the review process. The TA is organized into section headings following the organization of the R645-Coal Mining Rules. The Division analyzes each section and writes findings to indicate whether or not the application is in compliance with the requirements of that section of the R645-Coal Mining Rules.

GENERAL CONTENTS

IDENTIFICATION OF INTERESTS

Regulatory Reference: 30 CFR 773.22; 30 CFR 778.13; R645-301-112

Analysis:

Legal and Financial information was previously incorporated into a separate Legal and Financial Volume (which contains this information for all four PacifiCorp mines); this amendment removes all remaining information from Volume 1, Part 1, with Appendix F being moved to Volume 5 to become part of Appendix XIII and the rest removed completely. [10142005]

Findings:

Information provided in the PAP meets the minimum requirements of the Identification of Interests section of the regulations. [10142005]

VIOLATION INFORMATION

Regulatory Reference: 30 CFR 773.15(b); 30 CFR 773.23; 30 CFR 778.14; R645-300-132; R645-301-113

Analysis:

PacifiCorp has never had a federal or state coal mining permit suspended, revoked or forfeited a performance bond (page 1-13). A list of all violations received by PacifiCorp is provided on pages 1-14 through 1-28.

Findings:

The Permittee is in compliance with all sections of R614-301-100.

RIGHT OF ENTRY

Regulatory Reference: 30 CFR 778.15; R645-301-114

Analysis:

The documents upon which the Permittee bases their legal right to enter and conduct coal mining and reclamation operations are found in the Legal and Financial Volume, a separate volume that covers all four PacifiCorp mines [03112005].

Figure 1 of the MRP provides a schematic of the permit area. Since that drawing was made, the federal lease SL-066116 has been fully relinquished and 490 acres of federal lease U-02664 have been relinquished.

Though federal coal lease U-02664, PacifiCorp holds right of entry to 1,430 acres in Sections 14, 23, 24 and 26 in T. 17 S., R. 7 E. PacifiCorp owns 1,000 acres of land in Sec 11, 14, 23, and 26 of the same Township and Range. However, the August 29, 2005 Permit documents an area of 154.86 acres as shown on the Permit Area Boundary Map 1-5, Dwg # CM-10658-DS. Access to the mine site was acquired through a U.S. Forest Service Special Use Permit through Sec. 25. The Forest Service Special Use permit includes 100.41 acres of federal lands in Sec 25 and 26. A Bureau of Land Management right of way U-57134 and State right of way #3137 and Surface Use Lease Agreement (SULA) #1195 allow access to and use of land for the sediment pond in Sec 36. [01312007]

Tables on pages 1-5 and 1-11 and in Appendix B were updated to show the relinquishment of BLM ROW UTU-53809. The Permit Boundary Description for the sediment pond in Appendix G has been corrected for errors made when the original surveyors notes were initially transferred to AutoCAD (phone conversation with Dennis Oakley on March 10, 2005) [03112005].

Surface owner consent for severance from surface and coal rights was given by the McKinnon Trust (page 1-29.1 through 1-29.2).

Findings:

Right of Entry information is sufficient to meet the requirements of the R645 Coal Rules [03112005].

LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS

Regulatory Reference: 30 CFR 778.16; 30 CFR 779.12(a); 30 CFR 779.24(a)(b)(c); R645-300-121.120; R645-301-112.800; R645-300-141; R645-301-115.

GENERAL CONTENTS

Analysis:

Legal and Financial information was previously incorporated into a separate Legal and Financial Volume (which contains this information for all four PacifiCorp mines). Volume 1, Part 1, Appendix F, which includes Lease Relinquishment information, was moved to Volume 5 to become part of Appendix XIII. [10142005]

The Permittee has consulted with federal land agencies and the Division, no lands within or adjacent to the permit area is designated or under study as unsuitable for coal mining and reclamation operations (page 1-30). No facilities or operations will be conducted within 300 ft of an occupied dwelling.

Findings:

Information provided in the PAP meets the minimum requirements of the Legal Description and Status of Unsuitability Claims section of the regulations. [10142005]

PERMIT TERM

Regulatory References: 30 CFR 778.17; R645-301-116.

Analysis:

As of February 6, 1987, the Des Bee Dove Mine was put in temporary cessation. Reclamation of the site began in 2000. The permit was renewed on August 29, 2005, for a 154.86-acre permit area, and will expire on August 30, 2010.

The Certificate of Liability Insurance is carried by Associated Electric & Gas Insurance Services Limited. Public notice of permit renewal was made by PacifiCorp for the Des-Bee-Dove Mine.

The permit application package is clear, concise and filed in a format which is acceptable to the Division. A notarized signature by the Permitting Administrator stating that all information in the permit is true and correct is found on page 7.

All maps and plans are of an appropriate scale, and all applicable maps and plans distinguish between operations, which occurred prior to August 3, 1977 and prior to issuance of a permit by the Division on August 29, 1985.

Findings:

The Permittee is in compliance with all sections of R614-301-100.

PUBLIC NOTICE AND COMMENT

Regulatory References: 30 CFR 778.21; 30 CFR 773.13; R645-300-120; R645-301-117.200.

Analysis:

A notice of post-mining land use change for the entire permit area ran in the Emery County Progress Sept. 12, 19, 26 and October 3, 2006. The public notice included all lands within the permit area. [01312007]

Findings:

The information in the application meets the requirements for public notice.

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

The description of Phase 1 Reclamation of Little Dove and the Beehive Mines is located in Appendix XIV of the MRP. Phase 2 reclamation of the Deseret pad, Bathhouse pad, Tipple yard and access road are in Appendix XV. The Phase 3 Reclamation Plan is described in Appendix XVI (a separate MRP Volume for reclamation of the sediment pond site).

Map 2-17B has been moved from Volume 3 to the Confidential and Private binder. The Introduction to the MRP includes a statement that all maps, plans, and cross sections have been prepared under the supervision of a Registered Professional Engineer. [10142005]

Findings:

Information provided meets the requirements of the Permit Application Format and Contents section of the regulations.

MAPS AND PLANS

Regulatory Reference: 30 CFR 777.14; R645-301-140.

GENERAL CONTENTS

Analysis:

Map 2-17B has been moved from Volume 3 to the Confidential and Private binder. The Introduction to the MRP includes a statement that all maps, plans, and cross sections have been prepared under the supervision of a Registered Professional Engineer. [10142005]

Findings:

Information provided in the PAP meets the minimum requirements of the Maps and Plans section of the regulations. [10142005]

ENVIRONMENTAL RESOURCE INFORMATION

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

PERMIT AREA

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

Analysis:

Map 1-5 shows the permit area and also differentiates between federal, fee and state ownership. [01312007]

There are 36.22 disturbed acres within the permit area (Ex A of the Reclamation Agreement). [The disturbed acreage is erroneously reported as 23.88 acres in the Division's Inspection Report form.] Within the disturbed area, there are 29 acres at the main mine site, 7 acres at the sediment pond, and .02 acres disturbed by remote portals. The application indicates that **29 acres main mine site is further divided into 19.8 acres federal and 9.1 acres of fee (privately held land)**. [01312007]

The permit area has been reduced to 154.86 acres down from 1,430 acres in June 2001 and down from 2,760 acres in the September 2000 permit (see Legal Financial Volume). [01312007]

Maps and tables on pages 1-5 and 1-11 and in Appendix B were updated for the relinquishment of BLM ROW UTU-53809. The Permit Boundary Description for the sediment pond in Appendix G has been corrected for errors made when the original surveyors notes were initially transferred to AutoCAD (phone conversation with Dennis Oakley on March 10, 2005). [03112005]

Findings:

Information on the Permit Area is sufficient to meet the requirements of the R645 Coal Rules.

HISTORIC AND ARCHEOLOGICAL RESOURCE INFORMATION

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

Analysis:

Archaeological survey information - Paper 22 - has been moved from Volume 1: Part 2 to the Confidential and Private Volume. [10142005]

Findings:

Information provided in the PAP meets the minimum requirements of the Historic and Archeological Resource Information section of the regulations. [10142005]

CLIMATOLOGICAL RESOURCE INFORMATION

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

Analysis:

Climatological information for PacifiCorp's East Mountain mines is described in Volume 9. The Permittee maintains a rainfall gauge and weather station above the Des-Bee-Dove Mines as shown on Map HM-1. All data from the weather station is submitted quarterly to the Division. This includes rainfall, temperature, and humidity. There is a rain gauge on the reclaimed Des Bee Dove site that is checked periodically when accessible. [09232005]

Findings:

Information provided in the MRP meets the Climatological Resource Information requirements of the regulations. [09302005]

VEGETATION RESOURCE INFORMATION

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

The Des-Bee-Dove Mine permit area covers five vegetative communities (page 2-159). The Pinyon-Juniper is the largest covering 1,480 acres or 53 percent of the area. The Pinyon-Juniper community is also the largest vegetative type that has been disturbed, 70 percent of the disturbance or 55 acres. There are 640 acres of sagebrush and 607 acres of mixed-Conifer communities within the permit area, although none of these vegetation typed are located within the disturbed area. The Salt-Desert shrub community, which only makes up three percent of the permit area vegetation, makes up 30 percent of the disturbed area. One small Aspen community is within the permit area, this area is only three acres in size.

The Soil Conservation Service estimated productivity of the Pinyon-Juniper and Salt-Desert shrub communities at the Des-Bee-Dove Mine area. Potential production of the Pinyon-

Juniper community is 1,000 pounds per acre and only 200 pounds per acre in the Salt-Desert shrub community (page 2-154). Low productivity on these sites is not unexpected due to low rainfall amounts and the southern exposure of the mine area.

A letter from the U. S. Fish and Wildlife Service in 1980 states, "To the best of our knowledge, no endangered or threatened plant species or critical habitat or threatened or endangered wildlife species occur in the disturbed areas of the subject mining operations" (page 2-196). A letter sent to the U.S. Fish and Wildlife Service by the Division requesting current confirmation of this statement was signed on March 26, 1991. The Permittee states that there have been winter sightings of Bald Eagles flying above the permit area.

The lower portion of the permit area haul road is classified as high priority deer winter range (Map 2-18A). Critical elk winter range is located above the disturbed area, within the permit area on East Mountain (Map 2-18B) [03112005]. The entire escarpment area along East Mountain is designated as a raptor nesting zone (Map 2-17B). This includes the mine disturbance area. Three golden eagle nest groups are found within the permit area.

The location and boundary of the reference areas are shown on Map 2-12 (Map 2-13 has been removed from the MRP) [03112005]. These maps also delineate vegetative communities within the disturbed area boundary and within and adjacent to the permit area.

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

FISH AND WILDLIFE RESOURCE INFORMATION

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

Analysis:

A letter from the U. S. Fish and Wildlife Service in 1980 states, "To the best of our knowledge, no endangered or threatened plant species or critical habitat or threatened or endangered wildlife species occur in the disturbed areas of the subject mining operations" (page 2-196). A letter sent to the U.S. Fish and Wildlife Service by the Division requesting current confirmation of this statement was signed on March 26, 1991. The Permittee states that there have been winter sightings of Bald Eagles flying above the permit area.

The lower portion of the permit area haul road is classified as high priority deer winter range (Map 2-18A). Critical elk winter range is located above the disturbed area, within the permit area on East Mountain (Map 2-18B) [03112005]. The entire escarpment area along East Mountain is designated as a raptor-nesting zone (Map 2-17B). This includes the mine disturbance area. Three golden eagle nest groups are found within the permit area.

The location and boundary of the reference areas are shown on Map 2-12 (Map 2-13 has been removed from the MRP) [03112005]. These maps also delineate vegetative communities within the disturbed area boundary and within and adjacent to the permit area.

Information on raptor nests and habitat has been relocated to the Confidential and Private binder. [10142005]

Findings:

Information provided in the MRP meets the Fish and Wildlife Resource Information requirements of the regulations. [09302005]

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Analysis:

Substitute topsoil information for the Des-Bee Dove Mine site is found in Appendix A of Appendix XIV to the MRP and in Vol. 1, Part 2 of the MRP.

The topography of the Des Bee Dove mine area is steep, ranging from 50% to 80% slopes. The soils are derived from sandstone and shale. The depths of the A horizon ranges from 4-18 inches. The soils are very stony, reflecting their colluvial origin. Volume 1, Part 2 of the MRP provides the Order III soil survey information gathered by Dr. Southard, Soil Scientist, Utah State University. Soils are described in the MRP as very gravelly loam derived from sandstone, containing 75% coarse fragments with a lithic contact at 14 inches. The Calciorthid map unit is characterized by a caliche layer (hard packed calcium) in the subsoil. Also present are small areas of Mollisols on the north and east facing slopes. In general, Mollisols are deep, well drained, with a well developed A horizon. See the General Soil Map of the Permit Area, Drawing #CE-10502-DS (Map 2-14). [09292005]

The MRP states that the average annual precipitation is 6 – 8 inches (page 2-153, Volume 1). The major limiting factors for productivity of the soils are steep slopes, drought, and at lower elevations (such as the sediment pond), high exchangeable sodium. The latter difficulty leads to poor physical conditions which deter water movement and limit moisture availability. Native soil samples were very low in the phosphorus nutrient.

Phase 1 Reclamation Soil Resources [04162002]

Phase 1 covered the reclamation of 3.85 acres of the Little Dove/Beehive pad, the substation and water storage area and the access road down to the Deseret pad. Substitute topsoil

for the Phase 1 area was derived from the outslope of the Little Dove/Beehive pad, which was sampled for use as substitute topsoil in March of 2001. The site is represented by sample SS8 in Table 3 of App. A in App. XIV and on Plate CS1814D. As reported by Intermountain Laboratories, Sheridan, the outslope soil is a loam or sandy loam, with a near neutral pH, Electrical Conductivity less than 1.0 and SAR less than 1.0 (See Appendix A of Appendix XIV). Other useful soil within the area to be reclaimed is represented by SS9. This soil is also equivalent to the undisturbed native soils in chemistry (Table 3 of App. A in App. XIV). This soil was not initially shown as being disturbed during the reclamation, but field modifications to the reclamation plan drew upon this soil for cover of the coal seam along the access road to the Deseret pad.

Phase 2 Reclamation Soil Resources [11082002]

Substitute topsoil for the Phase II area [Deseret Mine portal pad/material storage (1.1 acres) Bathhouse pad (2.0 acres) and Tipple pads (3.4 acres), and the access road from the mine site to the cattle guard (4.5 acres)] came from the slopes above and below the Deseret pad. Soil and Refuse sample sites are shown on Map 200-1. Laboratory Data Sheets for these sites are found in Appendix A of Appendix XIV. The 1990 soil samples were collected by Val Payne in April 1990 and analyzed by ACZ Laboratories in Steamboat Springs, CO. The 2001 samples were collected by Dennis Oakley and Chuck Semborski in March 1990 and analyzed by Intermountain Laboratories in Sheridan, WY.

The following samples have been taken of the soils adjacent to the Deseret pad and represent undisturbed soil quality: SS8A, collected in 1990 and SS5, 8A and SS10 collected in 2001. Disturbed soils in the Deseret pad area are described by samples SS8 and SS9. Refuse quality is represented by sites SS6 and site 1117. The major characteristics of these sites are summarized in the table below.

Deseret Pad and Tipple Area Soils Information Summary

	Undisturbed (sites SS5, SS8A, SS10)	Disturbed (sites SS8 and SS9)	Refuse sites (sites SS6 and 1117)
PH	7.2 – 7.6	7.0 – 7.3	7.0 – 10.0
EC			
mmhos/cm	0.32 – 0.63	0.55 – 3.0	2.1 – 13.3
SAR	0.5 – 0.6	0.81 – 1.76	8.5 – 9.1
NO ₃ – N ppm	0.3 – 1.9	0.78 – 10.3	5.1 – 6.7

Phase 3 Reclamation Soil Resources [09292005]

Map 2-16 shows soils of the sedimentation pond and access road. Elevation of the sediment pond is 6,750 ft on the southern end of East Mountain along Emery County road 412. The disturbed area is approximately 7 acres (4.6 acres for the sediment pond and 2.7 acres for the

access roads, with an additional 0.13 acres added during reclamation, App. XVI, Sec 241). The soil is predominantly derived from Mancos shale with intermixed gravels and sand (Section 222). The plant community is desert shrub. The dominant plant is saltbush (*Atriplex*).

Soil Map 2-16 (in Volume 3) indicates that soil salvaged from excavation of the pond was of the Lithic Ustorthents map unit. The MRP indicates that the sediment pond site soils are 15 inches thick and high in gypsum (Section 222). Subsoils stored at the site were sampled in March 2005 and are represented by samples 105 and 205 shown on Dwg. 200-1. Below two ft, the subsoil becomes saline/sodic (App. B of App. XVI).

Topsoil salvaged from the adjacent undisturbed area will be used for final cover over the regraded site. Sample DB 505 represents the chemistry of the native soil to a depth of two ft. The plan indicates that a volume of 640 yd³ will be salvaged (Sec. 224) from the topsoil salvage area shown on Dwg. 200-2 (approximately 0.05 acres). The Division calculates that this equates to an eight-ft depth of salvage. When the topsoil is spread over the 3.17 acre redistribution area shown on Map 200-2, it will contribute 1.5 inches to the total topsoil redistribution depth of 10.7 in..[09292005]

Maps 2-14 and 2-16 have been updated to show the relinquishment of BLM R.O.W. UTU-53809 [03112005]

Findings:

The information provided meets the soils environmental resource requirements of the Regulations.

LAND-USE RESOURCE INFORMATION

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

Analysis:

Map 2-17A shows land use for the Des Bee Dove mine area. It has been updated to show the relinquishment of BLM ROW UTU-53809 [03112005].

Mining began in 1898 in an unnamed canyon in which the Des-Bee-Dove mines are now located. Mining has continued off and on until the present (page 3-1). Utah Power and Light purchased the mine from the LDS church in 1972. Both the Blind Canyon Seam (map 1-3) and Hiawatha Seam (map 1-3) were mined prior to August 3, 1977. Additionally, the haul road was built without Division approval and a cessation order was issued. As such, no pre-mining productivity or land conditions are available.

ENVIRONMENTAL RESOURCES INFORMATION

However, reference areas are representative of the premining condition of the land. Productivity data is given on page 2-154, and the ecological condition of these reference areas are rated as fair. Land uses within the permit area, as described by the land use agencies, are recreation, forestry and mining, non-rangeland, grazing, and sand and gravel, as designated on map 2-17A. A discussion on livestock and wildlife stocking rates is given on pages 2-220 and 2-221.

Two cultural resource surveys were conducted for the permit area. One survey in 1980 for the general permit area (pages 2-1 through 2-131) and another for the haul road (pages 2-134 through 2-142). The consultant did not report any significant find. A letter from the Utah Division of State History (page 2-132), dated August 8, 1990, confirms the consultants report.

Findings:

The Permittee is in compliance with all sections of R614-301-400.

PRIME FARMLAND

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

Analysis:

An investigation was conducted by the Soil Conservation Service to determine if prime farmland exists within the permit area. Ferris P. Allgood, State Scientist (1983) for the U.S. Soil Conservation Service, determined that the soils in the permit area are too steep and/or above established irrigation systems and therefore, do not meet the requirements for prime farmland (pages 2-224 through 2-227).

The Division concurs with this assessment that the land in the permit area does not fall into the category of prime farmland.

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

HYDROLOGIC RESOURCE INFORMATION

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

Analysis:

Existing hydrologic resources for PacifiCorp's East Mountain mines are discussed in Sec R614-301-722, Volume 9 of the PAP. All springs locations, as well as perennial, intermittent, or ephemeral drainages, are on Map HM-5. No subsurface water has been encountered in the Des Bee Dove Mines. The Des Bee Dove Mines were bounded by faults on either side of the permit area, leaving the area basically devoid of any aquifers. [09232005]

Sampling and Analysis

Sampling and Analysis is covered in Sec 723, Volume 9. [09232005]

Baseline Information

The location of surface water bodies such as streams, lakes, ponds, and springs on East Mountain can be found on Map HM-5, Volume 9. The elevations and locations of monitoring stations used to gather baseline data on water quality and quantity for all of PacifiCorp's East Mountain mines are found on Map HM-1. The only surface water monitoring station at Des Bee Dove, UPDES monitoring point UT-0023591-001, is shown on Map HM-1; however, with removal of the pond there will no longer be a UPDES permitted discharge point and no further scheduled water monitoring. [09232005]

No water wells are known to exist in the Des Bee Dove permit area or adjacent area. [09232005]

Climatological information for PacifiCorp's East Mountain mines is described in Volume 9. The Permittee maintains a rainfall gauge and weather station above the Des-Bee-Dove Mines as shown on Map HM-1. All data from the weather station is submitted quarterly to the Division. This includes rainfall, temperature, and humidity. There is a rain gauge on the reclaimed Des Bee Dove site that is checked periodically when accessible. [09232005]

Baseline Cumulative Impact Area Information

The Des Bee Dove Mines are included in the East Mountain CHIA, prepared by the Division and last updated in 2005. [09232005]

Modeling

No modeling was done for the Des Bee Dove permit application.

The Permittee used RUSLE, developed by the NRCS, to estimate sediment contribution from undisturbed and reclaimed watersheds at Des-Bee-Dove, similar to what was done at the nearby Deer Creek Mine. A discussion of RUSLE and the calculation results are found in

Appendix XIV, Sec R645-301-700, Appendix B. Input values used by the Permittee were checked and appear realistic. The values for soil loss and sediment yield calculated by the Permittee seem to be reasonable approximations (RUSLE is not intended for calculations of soil loss from steep slopes, but provides at least a calculated estimate of the expected sediment levels as a starting point should further evaluation be needed). [09192005]

Probable Hydrologic Consequences Determination

The PHC determination for the Des Bee Dove Mines is included in Sec 728 of Volume 9. Appendices XVI, XV, and XVI each contain a Sec 728 with a PHC determination for each respective phase of the reclamation work. [09232005]

Groundwater Monitoring Plan

All information related to hydrologic baseline and operational data collection and sampling programs for PacifiCorp's East Mountain mines is in Volume 9. The Permittee has identified water sampling locations, parameters sampled, and monitoring schedules in Appendix A of Volume 9. There are no ground-water resources in the Des Bee Dove area. [09192005]

Surface-Water Monitoring Plan

All information related to hydrologic baseline and operational data collection and sampling programs for PacifiCorp's East Mountain mines is in Volume 9. The Permittee has identified water sampling locations, parameters sampled, and monitoring schedules in Appendix A of Volume 9. The only surface-water resources in or adjacent to the Des Bee Dove Mines, including the sedimentation pond and sedimentation-pond road area, is the ephemeral stream channel that drains the minesite and reports to the sedimentation pond. [09192005]

Findings:

Information provided in the MRP meets the Hydrologic Resource Information requirements of the regulations. [09232005]

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

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

Analysis:

Affected Area Boundary Maps

Maps 1-1 (Coal Ownership Map) and 1-2 (Surface Ownership Map) in Volume 3 show the boundaries and present owners of all lands within or contiguous to the Des Bee Dove permit

area as well as those lands upon which the Permittee has the legal right to enter and begin coal mining operations. They have been updated to show the relinquishment of BLM ROW UTU-53809 [03112005].

Existing Structures and Facilities Maps

After removal of the sedimentation pond, no structures or facilities will remain at the Des Bee Dove Mines. [09192005]

Existing Surface Configuration Maps

The existing surface configuration of the sedimentation pond and adjacent area is shown on Drawing 500-1. The post-reclamation surface configuration is shown on Drawings 500-5 and 700-1 in Appendix XVI. The configuration of the road is shown with cross sections and a centerline profile on Drawings 500-3 and 500-4. [09192005]

Mine Workings Maps

Maps 1-3 (Mine Permit Area with Mine Development - Beehive/Little Dove Mine), 1-4 (Mine Permit Area with Mine Development - Deseret Mine) have been updated to show the relinquishment of BLM ROW UTU-53809 [03112005].

Monitoring and Sampling Location Maps

There is only one sampling location at the Des Bee Dove Mines, the UPDES discharge point for the sedimentation pond. With removal of the pond, there will no longer be UPDES permitted discharge, and there is no plan to monitor the ephemeral stream after removal of the pond. [09192005]

Permit Area Boundary Maps

Map 1-5 (Disturbed Area Boundary Map) has been updated to show the relinquishment of BLM ROW UTU-53809 [03112005].

Surface and Subsurface Manmade Features Maps

Map 1-6 (Des Bee Dove Mines Sediment Pond and Access Road Permit Areas) in Volume 3 has been updated to show the relinquishment of BLM ROW UTU-53809. After the sedimentation pond is removed, no manmade features, other than the recontoured surface, will remain in the area. [09192005]

Surface Water Resource Maps

ENVIRONMENTAL RESOURCES INFORMATION

The unnamed ephemeral stream is the only surface-water resource. Both pre- and post-reclamation configurations are shown on Drawings 500-1, 500-5, and 700-1 in Appendix XVI. [09192005]

Vegetation Reference Area Maps

Map 2-12 has been updated to show the relinquishment of BLM ROW UTU-53809[03112005].

Well Maps

There are currently no oil, gas, or water wells in the area, but XTO has staked a location for a coal-bed methane (CBM) well on the reclaimed pump house area. [09192005]

Findings:

Information provided in the MRP meets the Maps, Plans, and Cross Sections Of Resource Information requirements of the regulations. [09232005]

OPERATION PLAN

OPERATION PLAN

MINING OPERATIONS AND FACILITIES

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

Analysis:

The application contains a full description of the proposed mining operation. Room-and-pillar methods with continuous mining machinery will be employed. The mining plan will be based on a six-entry system, with 20-foot entries on 80-foot centers. Three to five entries will be driven in development sections, and these entries will be 20-ft wide and will be driven on 50-foot X 100-foot centers. Using these mining methods, the Permittee expects to reach an annual production of approximately 800,000 tons (pages 3-7 through 3-17).

The application contains a narrative explaining the construction, use, maintenance, and removal of all surface facilities. All facilities are listed, along with their respective dates of construction, on page 3-57. Individual descriptions of all facilities are located throughout the text of Part 3. All facilities are located on Maps 3-6 and 3-7 (Surface Facilities Location Map), and photographs of all facilities are found in Appendix IX.

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

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 mine was idled in February of 1987. At that time, all openings to the surface from underground were temporarily sealed and posted with warning signs, in accordance with 30 CFR 75.1711 (page 3-1). All openings will be maintained in this temporarily sealed condition throughout the permit period. The Division will be given 30 days notice if and when the mine reopens.

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

COAL RECOVERY

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

Analysis:

The mining operation will involve only room-and-pillar methods. Pillars will be extracted, except in those areas where they may be needed for roof support. Only barrier pillars and strata control coal will be left in place. Using such mining methods, the Permittee expects an overall coal recovery rate of just over 50%. The Permittee commits, moreover, to work with the Bureau of Land Management to extract the maximum amount of economically recoverable coal (pages 3-7 through 3-9).

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

SUBSIDENCE CONTROL PLAN

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

Analysis:

Volume 1, Part 1, Appendix F, which includes Subsidence information, has been moved to Volume 5 to become part of Appendix XIII. [10142005]

Renewable Resources Survey

Subsidence Control Plan

The application contains a subsidence control plan which includes an inventory of the area likely to be affected by subsidence, a description of methods of subsidence control to be employed, plans for mitigation of subsidence-caused damage, and details of a subsidence monitoring plan (pages 4-148 through 4-160).

The area likely to be affected by subsidence contains renewable resources in the form of springs, water seeps, grazing land, timber, and wildlife. Streams in the area are all ephemeral or

OPERATION PLAN

intermittent. No structures such as buildings, roads, powerlines, oil or gas wells, pipelines, or utility structures are found in the area (page 4-148).

Room-and-pillar mining with pillar extraction is, by definition, a method of planned and controlled subsidence. The Permittee expects, therefore, that any subsidence will occur as a gradual and uniform lowering of the land surface with little effect on the resources of the area (page 4-149).

The Permittee commits to mitigate any material damage caused by subsidence. Such mitigation will consist of repair of subsidence cracks, repair of fences or stock ponds, and restoration of lost or diminished water resources (pages 4-155 through 4-157).

Subsidence was originally monitored using a combination of conventional surveying and aerial photogrammetry. However, since 1987, aerial photogrammetry has been the sole method of gathering subsidence data. Subsidence data are gathered from a network of control points which are established over each panel. The data are compiled in both map and table form and are submitted to the Division in the Annual Report. Subsidence monitoring will continue until subsidence has ceased, as agreed upon by both the Permittee and the Division (pages 4-150 through 4-155).

Notification

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

SLIDES AND OTHER DAMAGE

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

Analysis:

In the event of either a slide or an impoundment hazard, the Permittee is committed to notify the Division promptly and to comply with any remedial measures required to protect and ensure the public health and safety (page 3-18).

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

TOPSOIL AND SUBSOIL

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

Analysis:

The description of Phase 1 Reclamation of Little Dove and the Beehive Mines is located in Appendix XIV of the MRP. Phase 2 reclamation of the Deseret pad, Bathhouse pad, Tipple yard and access road are in Appendix XV. Soils information for both Phases 1 and 2 is located in Appendix XIV. The Phase 3 Reclamation Plan for the sediment pond is described in Appendix XVI (a separate MRP Volume).

R614-301-233 Topsoil Substitutes and Supplements

The information in the MRP meets the requirements for topsoil and subsoil handling information. The disturbance associated with the mine area occurred prior to the passage of PL 95-87 (SMCRA). Topsoil was not salvaged and substitute topsoil was demonstrated to be suitable by field trials (seeding of the fill slopes). The Permittee utilized substitute topsoil from the major fills of the mine area App. XIV Sec. 200. In Phase 1 reclamation, 3.85 acres of the Little Dove/Beehive pad, the substation and water storage area and the access road down to the Deseret pad were graded. Approximately 20,500 cubic yards of material was redistributed against the cut slopes as follows:

	2.13 acres Little Dove/Beehive	15,000 cy fill
	0.75 acres substation and access road	2,500 cy fill
	<u>0.97</u> acres access road	<u>3,000</u> cy fill
TOTAL	3.85 acres	20,500 cy fill

The elevation is 7,800 ft on a south to southeast exposure and slopes of 1 ½ H:1V to 2H:1V. The plant community is Utah juniper and pinyon pine. Plants within this community include Salina wildrye, western wheatgrass, and Indian ricegrass. [04162002]

Topsoil Removal and Storage

The sediment pond reclamation will add 0.13 acres of disturbed acre to the existing 7.3 acre sediment pond site (App. XVI, Sec. 241). Map 700-1 shows the main channel and side-drainages. Approximately 12,714 yd³ of topsoil and subsoil are stockpiled from pond excavation (Section 230). As discussed in Sec. 241, the subsoil is not the best available material in the permit area for establishing vegetation. The surface two ft of this stockpile will be used as topsoil (approximately 1,800 yd³), one half of which will be applied to the topsoil redistribution

OPERATION PLAN

area shown on Plate 200-2 and the other half of which will be returned to the original ground surface in the location of the [former] subsoil stockpile (Sec. 241). And one foot will be placed on the surface of the sediment pond. The remainder of the stockpile will be placed in the fill, due to its high sodium content (samples DBD 105 and DBD 205, App. B of App. XVI and Dwg 200-1).

Finally, the top two ft. of native soil beneath the stockpile will be salvaged and utilized for topdressing of the fill along with the pond sediments.

Section 241 describes the origin of the topsoil totaling 5,586 yd³ (1,800 yd³ subsoil + 3,146 yd³ pond sediments + 640 yd³ native topsoil). The total area to receive topsoil cover is 3.1 acres is shown on Dwg. 200-2. In this manner, the pond area will receive approximately ten in. of topsoil cover. [09292005]

Findings:

The information provided meets the requirements for Operations Topsoil and Subsoil information.

VEGETATION

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

Analysis:

Most of the mine area at the Des-Bee-Dove Mine was disturbed prior to August 3, 1977. However, the Permittee has stabilized all fill slopes within the mine facilities area with planting an interim seed mixture (page 4-164). The Permittee has committed to control erosion on disturbed areas by vegetative planting (page 4-66). The seed mixture, seedbed preparation, fertilizer and mulch plans for interim revegetation are found on pages 4-66 through 4-68.

Planned subsidence is expected through pillar extraction. Subsidence from both coal seams should not exceed 20 ft (page 4-150). The Permittee has committed to replace any water, or any other resources, lost due to subsidence (page 4-156). Historically, the mine has had escarpment failure under the Castle Gate Sandstone (page 4-157). Future mining plans provide for greater protection of the escarpment. The golden eagle nests, 56B and 87C, are located within future proposed mining areas. Both these nest sites overlie barrier pillars which will remain unmined (page 4-161) as protection from subsidence.

Critical elk winter range and other areas on East Mountain are generally unaffected from mining disturbance (page 4-160). Subsidence monitoring is conducted annually to detect any such disturbance. No prime fisheries are located within the permit area, however hydrologic monitoring and sediment treatment continues on the properties. The transmission line to the mine provides phase-to-phase and phase-to-ground clearances to preclude electrical contact of raptors as agreed by the U. S. Fish and Wildlife Service (page 4-161). The haul road runs through high priority deer winter range. Employees are shown a video produced by the Utah Division of Wildlife Resources (UDWR) to reduce the disturbance and killing of wildlife (page 4-162). Training is also provided on how to avoid deer-vehicle collisions as well as posting signs on the haul road (page 4-163). Personnel will also be instructed on the value of snake dens and reporting such locations to UDWR.

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

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:

Roads and conveyors are the only transportation facilities at this mine. All are shown on Maps 3-6 and 3-7 (Surface Locations Map) and described in detail in the text of the mine plan (pages 3-43 through 3-46).

Road Classification System

There are two primary roads and no ancillary roads in the permit area. The two primary roads are the mine access road and the Des-Bee-Dove/Wilberg junction road. The mine access road begins at the lower end of the mine property and ends in the area of the Beehive portal. It is approximately 6,100 ft in length. The Des-Bee-Dove/Wilberg Haul Road begins near the lower end of the property, on Danish Bench, winds past the sedimentation pond, and ends at its junction with the Wilberg road. It is approximately 2.8 miles long (pages 3-43 through 3-45).

The Des-Bee-Dove/Wilberg Haul Road begins near the lower end of the property, on Danish Bench, winds past the sedimentation pond, and ends at its junction with the Wilberg road. It is approximately 2.8 miles long and is paved over its entire length. Plans, profiles, and cross-sections for the Des-Bee-Dove/Wilberg junction road are found in Appendix XIV (pages 3-43 through 3-44).

OPERATION PLAN

The road embankments were analyzed for static stability by the firm of Chen Northern, Inc. in August of 1990. Chen Northern used, for the analysis, a standard rotational failure model (Bishop's Simplified Method of Slices). The embankments were found to have a minimum static factor of safety of 1.72. This figure compares favorably with the required minimum value of 1.3 (Appendix III).

Other Transportation Facilities

Seven conveyors are used in the coal handling and sizing process. They are (1) the Little Dove Conveyor, (2) the Transfer Reclaim Conveyor, (3) the Deseret Conveyor, (4) the Main Stockpile Feed Conveyor, (5) the Auxiliary Stockpile Feed Conveyor, (6) the Tipple Feed Conveyor, and (7) the Tipple Process Conveyor. All conveyors are 42 in in width except for the Tipple Feed Conveyor, which is 36-in width.

The Little Dove Conveyor delivers coal from the Little Dove portal to the stacking tube transfer, from the base of which it is delivered to the Deseret transfer by the Transfer Reclaim Conveyor. The Deseret Conveyor delivers coal to the Deseret transfer from both the Deseret mine and the Beehive mine via an underground transfer.

Two conveyors leave the Deseret transfer: the Main Stockpile Feed Conveyor and the Auxiliary Stockpile Feed Conveyor. The Main Stockpile Feed Conveyor delivers coal from the Deseret Transfer to the Main Stockpile by way of the picking table and the large concrete surge bin. The Auxiliary Stockpile Feed Conveyor delivers coal from the Deseret transfer to the upper coal storage pile, which lies next to the Main Stockpile and on the same earthen pad.

The Tipple Feed Conveyor takes coal from the base of the Main Stockpile to the Tipple and the Tipple Process Conveyor. The Tipple Process Conveyor, of course, is simply the internal tipple conveyor system (pages 3-45 through 3-46).

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Disposal Of Noncoal Mine Wastes

Noncoal mine waste is gathered in concrete trash bins near the mine portals and in a pile below the tipple. As required, the noncoal waste is hauled from these bins to a state landfill for disposal (page 3-28).

Coal Mine Waste

Coal mine waste, including sedimentation pond cleaning waste, is disposed of in a 16-acre waste rock disposal facility which lies just west of the Cottonwood/Wilberg haul road. This facility is shared with the Cottonwood/Wilberg Mine and was Permitted in 1990 as a major revision of the Cottonwood/Wilberg permit (ACT/015/019).

The waste rock disposal facility is essentially a head-of-hollow fill which lies at the head of an ephemeral wash near the base of a cliff. Waste rock is placed in the fill and compacted in 10-foot lifts. As each lift is being filled, its outslopes are covered with topsoil and revegetated. This cycle of compaction and contemporaneous reclamation will continue until the design capacity of the entire facility is reached (page 3-43 and Cottonwood/Wilberg Waste Rock Storage Facility Volume, ACT/015/019).

Refuse Piles

There are no refuse piles that require inspection or certification.

Impounding Structures

There are no impoundments which meet the size or volume criteria of 30 CFR 77.216(a), no coal processing waste dams or embankments, and no refuse piles at this mine site.

Burning And Burned Waste Utilization

Return of Coal Processing Waste to Abandoned Underground Workings

Excess Spoil:

Coal is carried to the tipple from the mines by the conveyor system described in Sec 527 (Transportation Facilities) above. It is sized and sorted in the tipple process. It is then loaded into trucks at the tipple and carried from there to its various destinations, primarily the Hunter Power Plant (pages 3-26 through 3-27).

OPERATION PLAN

Little, if any, overburden or spoil is now produced at this mine. That which was produced in the past was produced before 1977 and was incorporated into the various earthen fill structures and will be used as fill in final reclamation (pages 3-22).

No coal processing waste is produced as coal is not washed at this site.

There are no excess spoil disposal facilities or structures.

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

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:

General

The plan includes the measures to prevent, to the extent possible, additional contributions of suspended solids to streamflow within the mine area. Data from the test plots near the county road (former haul road) have not been generated regarding success or failure of various types of erosion control.

Groundwater Monitoring

The plan includes the measures to prevent, to the extent possible, additional contributions of suspended solids to streamflow within the mine area. Data from the test plots near the county road (former haul road) have not been generated regarding success or failure of various types of erosion control. There are no ground-water resources in or adjacent to the Des Bee Dove Mine, including the sedimentation pond and sedimentation-pond road. [11212005]

Surface Water Monitoring

The only surface-water resource in or adjacent to the Des Bee Dove Mines, including the sedimentation pond and sedimentation-pond road, is the ephemeral stream channel that drains the minesite and reports to the sedimentation pond. The only sampling location at the Des Bee Dove Mines is the UPDES discharge point for the sedimentation pond. With removal of the

pond, there will no longer be UPDES permitted discharge and no further planned surface-water monitoring. [09192005]

Acid- and Toxic-Forming Materials and Underground Development Waste

Overburden and soil analysis results in Sec 600, Appendix A and Sec 200 of Appendices XIV and XV did not detect acid- or toxic-forming materials. Nevertheless, the Permittee commits to protecting surface and ground water by handling materials, runoff, ground-water discharge to minimize infiltration and potential pollution of surface and ground waters (Sec 731.100, Appendices XIV, XV, and XVI). The Permittee has committed to covering all acid- and/or toxic-forming materials with at least four ft of nonacid- and nontoxic-forming materials or disposing of said material in an approved disposal facility within a Permitted area.

If analyses of pond sediment detect acid- or toxic-forming materials, that material will be buried on-site or hauled to the waste-rock site for disposal (Appendix XVI, Sec 731.300). [09232005]

Appendix V of the Des Bee Dove MRP has the waste rock disposal and reclamation plans for the old (now reclaimed) Cottonwood/Wilberg Waste Rock Storage Site in. Future waste rock and sedimentation pond waste will be disposed of in the Cottonwood/Wilberg Waste Rock Facility (Volume 10, Cottonwood/Wilberg MRP. [09232005]

The Permittee committed to covering all concrete, asphalt, and coal with at least 4 ft of nonacid and nontoxic-forming material at the bathhouse pad during reclamation or disposing of it at an approved disposal facility (Volume 2, Part 4, Toxic or Acid Forming Material). Because of USFS restrictions on waste disposal on USFS property, asphalt was not disposed of on the bathhouse pad but was hauled to a licensed landfill operated by Nielson Construction. Asphalt from other areas, off USFS property, was placed against cuts and buried on-site (Sec 731.100, Appendices XIV, XV, and XVI). Concrete from the sedimentation pond and road will be disposed of on-site (Appendix XVI, Table 5-1). [09232005]

Transfer of Wells

No wells have been identified within the Des Bee Dove permit area. [09232005]

Discharges Into An Underground Mine

No discharges into an Underground Mine are permitted within the Des Bee Dove permit area. [09232005]

Gravity Discharges From Underground Mines

All portal seals are designed to prevent gravity discharges from the mine.

OPERATION PLAN

Water-Quality Standards And Effluent Limitations

The only sampling location at the Des Bee Dove Mines is the UPDES discharge point for the sedimentation pond. With removal of the pond, there will no longer be UPDES permitted discharge. [09192005]

Diversions: General

All diversions on the main mine site have been reclaimed.

The ditch that controls runoff from the soil pile will be removed during Phase 3 of the reclamation. The channel of the ephemeral stream will be restored to approximate pre-mining location and conditions (Appendix XVI, Sec 762.100). [09192005]Diversions: Perennial and Intermittent Streams

There are no perennial or intermittent streams at Des Bee Dove. [09192005]

Diversions: Miscellaneous Flows

The channel of the ephemeral stream will be restored to approximate pre-mining location and conditions (Appendices XV and XVI, Sec 762.100). [09192005]

Stream Buffer Zones

Stream Buffer Zones are not applicable to this PAP, due to the fact that all drainage is ephemeral in nature.

Sediment Control Measures

The total disturbed area of the mine site, including the sedimentation pond, is 36.22 acres. Because of the steep topography and lack of space, the area designed for runoff collection and sediment control is almost 300 acres. The sediment pond, as shown on Plate HM-1, treats runoff from the mine site and the surrounding area. The soil storage pile area is an ASCA. The operational runoff collection system, including the sedimentation pond, was designed to handle a 10-year, 24-hour storm event (Appendix VII). [09232005]

After removal of sedimentation pond and ASCA and grading and recontouring, surface pocking and vegetation will be the only means of providing sediment control. The Permittee has created a watershed model using RUSLE (created by the NRCS) to demonstrate the effectiveness of the sediment controls control techniques applied to the Des Bee Dove site. This model was developed for the Phase 1 and Phase 2 areas. Because of the smaller size and gentler slopes at the Sedimentation Pond and pond-access road with respect to the Phase 1 and 2 areas, sediment

loss should be much lower, described as “negligible” in the narrative in Appendix XVI, Sec R645-301-752, and a new RUSLE model was not generated for the sedimentation pond and road area. The RUSLE modeling indicates that the requirements of R645-301-731.224 will be met. [09192005]

The restored channel was designed to safely pass a 100-yr, 6-hr storm event (Appendix XVI, Sec 762.100). [09232005]

Siltation Structures: General

No siltation structures will remain after removal and reclamation of the sedimentation pond and road. Pocking and vegetation will provide sediment and erosion control. [09192005]

Siltation Structures: Sedimentation Ponds

The Permittee commits to making quarterly inspections of the sediment pond and to include these inspections in the Annual Report. The sedimentation pond is to be removed during this Phase 3 reclamation. [09192005]

Siltation Structures: Other Treatment Facilities

There are no Other Treatment Facilities. [09232005]

Siltation Structures: Exemptions

There are no exempt areas. [09232005]

Discharge Structures

Discharge structures associated with the sedimentation pond are to be removed during this Phase 3 reclamation. [09232005]

Impoundments

Other than the sedimentation pond, there are no impoundments. [09192005]

To meet State and Federal effluent limitations, a single sedimentation pond was constructed in 1979, south of the mine site in the bottom of the main channel of the canyon. The design capacity was 19.8 acre-ft, adequate to completely contain a 10-year, 24-hour storm event. The pond was partly incised and partly banked (Appendix VII). [09192005]Ponds, Impoundments, Banks, Dams, and Embankments

OPERATION PLAN

The Permittee plans to remove and reclaim the sedimentation pond and road during Phase 3 reclamation, beginning in 2005. There are no other impoundments, banks, dams, or embankments. [09232005]

Findings:

Information provided in the MRP meets the Hydrologic Operation Information requirements of the regulations. [09232005]

SIGNS AND MARKERS

Regulatory Reference: 30 CFR Sec. 817.11; R645-301-521.

Analysis:

The Permittee commits to maintaining mine and permit identification signs, perimeter markers, buffer zone markers, topsoil markers, and explosive warning signs in the appropriate places. All signs will be made of thin sheet metal and each type will be of a uniform design (pages 3-17 through 3-18).

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

USE OF EXPLOSIVES

Regulatory Reference: 30 CFR Sec. 817.61, 817.62, 817.64, 817.66, 817.67, 817.68; R645-301-524.

Analysis:

General Requirements

Since the mine site is already fully developed, the Permittee does not foresee the need for any surface blasting. However, should the need for explosives arise, the Permittee commits to develop a blasting plan in accordance with this section (Appendix VI and page 3-46).

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

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:

Maps 1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 2-12, 2-14, 2-16, 2-17A, 2-17B, 2-18A, and 2-18B in Volume 3 have been updated to show the relinquishment of BLM ROW UTU-53809. Map 3-10 (Existing Earthen Structures) in Volume 3 shows pre-reclamation areas affected by mining operations. Except for the maps specified in the following sections, all other maps in Volumes 3 and 4 have been superseded or otherwise rendered outmoded by mine reclamation: they are currently retained in the MRP for reference purposes. [09232005]

Affected Area Maps

Maps 1-1 and 1-2 in Volume 3 correctly show the boundaries and present owners of all lands within or contiguous to the permit area as well as those lands upon which the Permittee has the legal right to enter and begin coal mining operations. [09232005]

Mining Facilities Maps

Maps 3-6, 3-7, and 3-10 in Volume 4 show the pre-reclamation locations of buildings, facilities, features, and roads within and adjacent to the permit area. [09232005]

Maps 1-2 and 1-5 in Volume 3 show bonded areas. [09232005]

Mine Workings Maps

Maps 1-3 and 1-4 in Volume 3 show the location and extent of known workings of active, inactive, and abandoned underground mines within the permit and adjacent areas. [09232005]

Monitoring and Sampling Location Maps

With removal of the pond, there will no longer be UPDES permitted discharge, so there will be no water monitoring at the Des Bee Dove Mines. [09232005].

Certification Requirements

Most cross-sections, maps, plans and engineering designs which require certification under this section have been certified by a qualified, registered, professional engineer (page 6 and certification stamps on individual maps and plans).

OPERATION PLAN

Findings:

Information provided in the MRP meets the Maps, Plans, and Cross Sections requirements of the regulations. [09232005]

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:

Table 5-2 of Appendix XVI includes a timetable for the completion of each major step in the reclamation of the sedimentation pond. Reclamation of the sedimentation pond and road is being done in a manner that minimizes disturbance of the hydrologic balance within the permit and adjacent areas, prevents material damage to the hydrologic balance outside the permit area, and supports approved postmining land uses in accordance with the terms and conditions of the approved permit and performance standards. The Division is not requiring additional preventative, remedial, or monitoring measures. Mining and reclamation practices that minimize water pollution and changes in flow are being used. [09232005]

Findings:

Information provided in the MRP meets the General Reclamation requirements of the regulations. [09232005]

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 "Buzzard Bench" gas field includes lands in T17 S, R 7 E Sec 25, Sec 26, and 36, but **excludes privately held lands in T17 S, R 7 E Sec 26.** [01312007]

XTO Energy Inc. holds UTU-75666 a federal gas lease that includes lands in Sec 25 and the federal gas lease UTU-75667 that includes the lands in Sec 26 of T17 S, R 7 E. XTO's Application to Drill (APD) indicates that a gas well will be located in the SW ¼ SW ¼ Sec 25, on surface managed by the Manti-LaSal National Forest, the same location as the reclaimed access road to the mine site within the disturbed area. In accordance with federal lease UTU-

75667, there is also a potential for well development in the NESE Sec 26 (within the current disturbed area boundary). XTO also holds a state mineral lease ML-45567 for the NW ¼ Sec 36 T17 S, R 7 E. All of the above information demonstrates a strong likelihood of industrial/commercial development on state and federal lands within the permit area. Therefore, the 19.8 acres of federal and 7 acres of state land is recommended for a change in post mining land use to industrial/commercial, as there is a reasonable likelihood of achieving this post mining land use. [01312007]

The fee lands are not included in either state or federal mineral leases. This application describes a post mining land use change for 9.1 acres of fee land to include recreation as well as the current wildlife and grazing uses. The MRP Vo. 2. Part 4 pp 4-42 – 4-44 described the use of a trail that has been established for the livestock and recreational use. [01312007]

Findings:

The information provided meets the requirements of the Regulations to support a post mining land use change for **19.8 acres of federal and 7 acres of state land** within the 36 acre disturbed area to commercial/industrial use. The remainder of the disturbed acreage is fee land where the post mining land uses of wildlife, grazing and recreation have been established.

PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES

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

Analysis:

The MRP includes the following measures to be taken during reclamation:

1. Rock piles will be formed for small mammal habitat.
2. The approved seed mix is prescribed for wildlife.
3. Pocking will limit erosion, retain moisture and create micro niches for wildlife.
4. Vegetation enhancements will include the addition of mulch and tackifier.

Findings:

The information provided is adequate to meet the requirements of this section of the regulations.

RECLAMATION PLAN

APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR Sec. 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -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:

Timetable and Plan for Sediment Pond Removal -- In accordance with this section, the PAP includes a plan and timetable for removal of the sediment pond. Removal of the sediment pond will take place five years after the start of the reclamation period. The pond will first be drained and allowed to dry. It will then be broken down and backfilled to achieve the original contour of the area and reestablish the original drainage (pages 4-88 through 4-89 and Map 4-1, sheet 3).

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

BACKFILLING AND GRADING

Regulatory Reference: 30 CFR Sec. 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

Analysis:

General

Backfilling Plan -- In accordance with this section, the PAP includes a plan for backfilling, soil stabilization, compacting and grading (see R614-301-553 "Backfilling and Grading").

There are eight areas where backfilling and grading will take place. They are (1) the Beehive/Little Dove Portal Area, (2) the Deseret Portal Area, (3) the Stockpile Area, (4) the Tipple Pad, (5) the Bathhouse/Warehouse/Parking Area, (6) the Portal Access Road, (7) the Des-Bee-Dove/Wilberg Haul Road, and (8) the Sediment Pond Area. These areas will be graded and/or backfilled as follows:

- 1) Beehive/Little Dove Portal Area

This is a fill area at the head of the canyon. Material from the fill will be used to completely backfill the highwall and the portals. Some surplus material will also go into the

Bathhouse/Warehouse/Parking fill. The fill will then be excavated to bedrock to restore the drainage. The maximum slope will be 2h:1v (pages 4-3, 4-4, 4-6, 4-121, Plates 3-10 and 4-1).

2) Deseret Portal Area

This is a fill area just below the Beehive/Little Dove Portal Area. Material from the fill will be used to completely backfill the highwall and the portals. Some surplus material will also go into the Bathhouse/Warehouse/Parking Fill. The fill will then be removed to bedrock to restore the drainage (pages 4-3 and 4-6, Plates 3-10 and 4-1).

3) Stockpile Area

This is a fill area just below the Deseret Portal Area fill. The area has no highwalls or portals. Material from the fill will be pulled back to fill the area. Some surplus material will also go into the Bathhouse/Warehouse/Parking fill (pages 4-3 and 4-6, Plates 3-10 and 4-1).

4) Tipple Pad

This is the largest of the earthen fill structures. The outslope of the structure was cut back in 1984 to a slope of 2h:1v in order to improve stability and raise the factor of safety above the required 1.5 (R614-301-537.230). This fill, which was constructed before 1977, constitutes a "settled and revegetated" fill under R614-301-537.200 and, as such, will not be removed. Instead, the drainage will be established around the fill by way of a riprap channel and will descend the face of the fill by way of a large riprap fan (pages 4-4, 4-5, 4-92, Plate 3-10 and 4-1).

The material in the Tipple Area Fill will be characterized by subsurface sampling during the summer of 1991 (see Condition R614-301-233). This will serve to determine whether or not the fill is made up of acid- and toxic-forming material (pages 4-3, 4-5, 4-91, Plates 3-10 and 4-1).

5) Bathhouse/Warehouse/Parking Area

This is a large cut and fill structure that lies southwest of the Tipple Area. It will be completely backfilled and terraced using material from its outslope as well as material borrowed from the other fill structures. The maximum slope will be 3h:1v (pages 4-4, 4-5, 4-6, 4-122 through 4-125, Plate 3-10 and 4-1).

6) Portal Access Road

This is the main road through the property from the entrance gate to the Beehive/Little Dove Portal Area. It will be reclaimed during the initial phase of reclamation. The asphalt surface will be removed and buried at the base of the bathhouse/warehouse fill (page 4-132). The road surface will then be ripped, covered with topsoil, and revegetated (pages 4-89 through

RECLAMATION PLAN

4-90). The road, in its roughened condition, will be left as a cattle trail to East Mountain as part of the postmining land use of grazing and wildlife habitat (pages 4-106 and 4-107, Plates 3-10 and 4-1).

7) Des-Bee-Dove/Wilberg Haul Road

This road will be left in place during the first five years of the reclamation period to provide access to the sediment pond. At the time of sediment pond removal, the road will also be reclaimed. The asphalt surface will be removed and buried with at least four ft of inert material at the north end of the road. All culverts will then be removed and the drainages restored. The road will then be backfilled and graded with material displaced during its construction and revegetated (pages 4-7, 4-8, 4-9, 4-126, and 4-127).

8) Sediment Pond

The plan indicates in App. XVI, Table 5-1 that two small drainage channels will be ripped and the main drainage channel will be re-established on Mancos shale bedrock (Dwg 700-1).

Land sloping to the drainage will be graded to 2h:1v slope, with 32,123 yd³ of material being moved (Sec. 241). A diagram for placement is provided on Map 200-2.

Cut slopes will remain on the northern and eastern sides of the pond according to the maps provided. Cut slopes at cross sections 8+00, 9+00, 10+00 and 17+35 along the sediment pond access road (Dwg. 500-3) will remain. These cut slopes will be roughened and seeded, no substitute topsoil will be applied to the cut slopes.

Findings:

The Permittee is in compliance with all sections of R614-301-500, except condition R614-301-514.300-(1) and R614-301-542.300-(1) (JK).

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:

Final Abandonment of Mine Openings and Disposal Areas -- All portals have been fenced and posted to prevent entry of wildlife or unauthorized persons. During reclamation, all portals will be sealed with concrete block walls and backfilled with at least 25 ft of

noncombustible fill material. Since the mine workings are down dip from the portals, no hydrologic seals or drainage structures will be necessary (page 4-1 and Figure 1 of Chapter 4).

No fills, embankments, or other structures for disposal of spoil, coal mine waste, or noncoal mine waste are present at this site. Spoil and underground development waste were incorporated into the various earthen fills when the mine was opened, which was prior to 1977. These materials will be used in the backfilling and grading of the site during final reclamation.

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

TOPSOIL AND SUBSOIL

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

Analysis:

Phase I [04162002]

- The Little Dove/Beehive pad (2.13 acres) will require 15,000 cubic yards of backfill (Section 240 Reclamation Plan - Portal Pad Area).
- The substation and water storage area (0.75 acres) will require 2,500 cubic yards of backfill (Section 240 Reclamation Plan - Substation and Water Storage Area).
- The access road down to the Desert pad (0.97 acres) will require 3,000 cubic yards of backfill (Section 240 Reclamation Plan - Access Road).

Together, these three areas of Phase I will require 2,100 cubic yards of substitute topsoil ((Chapter 2, Soil Trenching and Management Plan, Phase 1 and 2 Estimated Soil Distribution Acreage table), based upon a six inch replacement depth and all slopes equal to or less steep than 2h:1v. The outslope of the Little Dove/Beehive pad will be excavated down to three feet to provide a stockpile of substitute topsoil (potentially amounting to 1,065 cubic yards) for use either in Phase I or Phase II. Use of the substitute topsoil in Phase I area will depend upon the quality of the subsoils unearthed at the Phase I site during reconstruction of the slopes and drainages.

All slopes will be created between 1.5h:1v and 2h:1v. Substitute topsoil will be graded over slopes of 2h:1v. Slopes greater than 2h:1v will have isolated pockets of soil placed in the rock slope, as required by the R, B, &G Engineering Inc, Slope Stability Report dated September 2001 (Section 540, Appendix C).

RECLAMATION PLAN

Phase 2 [11082002]

Phase II reclamation covers 22 acres (Section 310). The area of cut and fill activity is 8.4 acres as outlined in the submittal Section 553.100:

- Deseret Mine portal pad/material storage (1.1 acres)
- Bathhouse pad (2.0 acres),
- Tipple pads (3.4 acres),
- ancillary access roads (0.76 acres)
- access road from the mine site to the cattle guard (4.3 acres).

This leaves 10.44 acres out of the 22 acres total area that by default must fall within the reconstructed main drainage.

Drawing #200-2 shows substitute topsoil will be redistributed over 5.25 acres of reconstructed fill slopes on the bathhouse pad and in the lower main drainage and at the Deseret portal and access road to the Beehive. Another 3.16 acres of cut slope area may receive substitute topsoil depending upon the rock outcrop and "native ground" exposed.

The Deseret Portal area is approximately 1.1 acres. The Deseret Portal area will be graded utilizing in place material. Six inches of substitute topsoil will be applied to the surface and the soil will be pocked to a depth of 18 inches.

Bedrock exists at a depth of about 5 feet below the surface in the pad area. Little suitable substitute topsoil exists in this area (see field report dated December 17, 2001), although the soils consultant did comment that the soil/coal mixture found in trenches T4A would be suitable substitute topsoil.

The Tipple area is approximately 3.4 acres. The Tipple area will be graded utilizing in place material. Six inches of substitute topsoil will be applied to the graded surface and the soil will be pocked to a depth of 18 inches.

A source of cover material exists beneath the access road to the tipple area in trench T5 and beneath the main access road in trench T10, see Appendix C of Appendix XIV Phase 1 of the MRP.

The Bathhouse Pad area is approximately 2.2 acres. The area will be filled using spoil and coal processing waste from the Deseret and Tipple pads. Six inches of substitute topsoil will be applied to the graded surface and the soil will be pocked to a depth of 18 inches.

The pad access road is an area of 0.73 acres. The area will be filled with spoil and coal processing waste from the Deseret pad and Tipple pad. No substitute topsoil will be replaced.

The cover material will come from the adjacent berm and outslope.

The main access road to be reclaimed is 4.3 acres. The area will be filled with the adjacent berm and outslope. No substitute topsoil will be replaced.

Phase 3 [09292005]

Sediment pond fill will consist of 12,714 yd³ of stored subsoil material along with 13,166 yd³ from the pond embankments, 3,146 yd³ of pond clean-out material, and 5,500 yd³ of undisturbed subsoil from the topsoil salvage area shown Dwg. 200-2. Land sloping to the drainage will be graded to 2h:1v, using a total of 32,123 yd³ of fill. The process is described in Sec. 241 and illustrated in a diagram on Dwg. 200-2.

All fill materials were sampled to a depth of two feet, except the subsoil which was sampled to 14 feet (Dwg 200-1 and App. B of App XVI). As a result, the known sodic material will be buried beneath eight inches of material which has been shown through testing to be the best available in the permit area.

In addition, the plan will disturb approximately 0.04 new acres that will provide a small amount of additional topsoil cover (640 yd³).

Soils found to be unsuitable according to the guidelines will be buried with four feet of material (Section 224).

Redistribution

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

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:

Reclamation

Roads -- In accordance with this section, the PAP includes plans for reclaiming all roads. There are two primary roads: the Portal Access Road and the Des-Bee-Dove/Wilberg Haul Road.

RECLAMATION PLAN

The portal access road will be reclaimed during the initial phase of reclamation. The asphalt surface will be removed and buried at the base of the bathhouse/warehouse fill (page 4-132). The road surface will then be ripped, covered with topsoil, and revegetated (pages 4-89 through 4-90). The road, in its roughened condition, will be left as a cattle trail to East Mountain as part of the postmining land use of grazing and wildlife habitat (pages 4-106 through 4-107).

The Des-Bee-Dove/Wilberg Haul Road has been transferred to Emery County and is no longer covered by the MRP. At the time of sediment pond removal, the access road to the pond will be reclaimed in accordance with the same techniques utilized for the pond as described in the application and section R645-301-500 of the MRP. . The asphalt surface will be removed and covered with at least four ft of inert material at the north end of the road. All culverts will then be removed and the drainages restored. The road will then be backfilled and graded with material displaced during its construction and revegetated (pages 4-7 through 4-9 and 4-126 through 4-127).

Retention

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

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:

Hydrologic Reclamation Plan

Appendix XVI contains a plan to restore the natural drainage pattern of the sedimentation pond and adjacent areas, including the pond access road. All structures will be removed. Natural drainage patterns will be restored, and all cut and fill slopes reshaped to be compatible with the postmining land use and match the drainage pattern of the surrounding terrain.

[09232005]

Ongoing quarterly surface-water monitoring is described in Sec R645-301-731.200, Appendix XVI. Outfall from the sedimentation pond will be monitored in accordance with the UPDES permit until removal of the pond is complete, at which time this monitoring point will no

longer exist. The Permittee will notify the DWQ when the site is eliminated and will notify the Division when DWQ has granted permission to cease monitoring at this site. [09232005]

The Permittee has produced a watershed model using RUSLE (created by the NRCS) to demonstrate the effectiveness of the sediment controls control techniques applied to the Des Bee Dove site. This model was developed for the Phase 1 and Phase 2 areas Appendices XIV and XV). The model demonstrates that implementation of the Sediment Control Plan will result in average annual sediment yields that will not be greater than the sediment yield levels from pre-mined, undisturbed conditions. The RUSLE model indicates that the requirements of R645-301-731.224 will be met. Because of the smaller size and gentler slopes at the Sedimentation Pond and pond-access road with respect to the Phase 1 and 2 areas, sediment loss should be much lower, described as "negligible" in the narrative in Appendix XVI, Sec R645-301-752, and a new RUSLE model was not generated for the sedimentation pond and road area. [09232005]

Appendix A of Appendix XVI contains a Storm hydrograph printout used to design the restored channel. Appendix B, labeled Channel Design Information, is the location for all channel design calculations: it contains photos, FlowMaster printouts, and cross sections for the main channel. [09192005]

Findings:

Information provided in the MRP meets the Hydrologic Reclamation Plan requirements of the regulations. [09232005]

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:

General

Reclamation of the sediment pond and associated access road will occur as contemporaneously as practicable with the mining operations. The first normal planting period following approval of the application would be the fall of 2005. [09302005]

Findings:

The information provided is adequate to meet the requirements of this section of the regulations. [09302005]

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 Permittee has developed a revegetation schedule which should allow sufficient times to complete all tasks (page 4-75.1).

Three different seed mixtures are proposed for final reclamation. The seed mixtures are the mine site - Pinyon-Juniper vegetation type (page 4-76), haul road - Pinyon-Juniper vegetation type (page 4-82), and haul road sediment pond - Salt-Desert shrub vegetation type (page 4-83).

The mine site seed mixture will be applied by broadcasting methods. The area will be raked to cover the seed and fertilizer. Areas which have been hand broadcast seeded will be covered with 2 tons per acre mulch and netting or erosion control blanket. Following hydroseeding, 2,000 pounds mulch with tackifier will be applied. The Permittee was asked to delineate where each mulch treatment would be applied. The Permittee felt that the requirements of the regulation had been met without this designation (response to technical deficiency, letter dated February 7, 1991). The spring following planting, 200 shrub and tree species per acre will be planted (pages 4-76 through 4-79).

The appropriate haul road seed mixtures will be applied with a hydroseeder. No plans are stated to try to incorporate the seed by raking. The request was made to the Permittee by the Division to drill seed accessible area along the haul road. The Permittee's response was that the request is not supported by the regulations (letter dated February 7, 1991). Fertilizer and sulphur will be applied by the hydromulcher. Hydromulch will then be applied at the rate of 2,000 pounds per acre (pages 4-82 through 4-84).

Final reclamation will restore drainage channels and revegetate the disturbed area. Rock piles of varying sizes will be left as small mammal habitat. Some of the revegetation seed mixture is similar to the adjacent undisturbed community. The mine site seed mixture is primarily designed for erosion control on steep slopes, and not for wildlife value. However, if sufficient plant diversity is established, sufficient food and cover for wildlife should be obtained (page 4-165).

The plan for planting trees and shrubs at the mine site calls for clumping and layering in order to optimize cover value (page 4-78). Shrubs seeded along the haul road have proven nutritional value for wildlife species, particularly deer in this high priority winter range area. Shrubs seeded in the Salt-Deseret shrub community along the haul road were primarily selected for the ability to grow in Mancos Shale. Nutritional value was also selected for in some shrubs however, test plot information will determine if the shrubs will grow in this soil type.

Revegetation: General Requirements

Table 3-1 of the application describes the seed mix to be used in the reclamation of the sediment pond and associated access road. The seed mix includes species native to the area that should provide a diverse, effective permanent cover for the reclaimed area. [09302005]

Revegetation: Timing

The MRP indicates that seeding will take place following contouring and pocking. Anticipating reclamation activities commencing during October of 2005, seeding practices should be initiated by mid to late October. This would be an optimum time for the establishment of vegetation. [09302005]

Revegetation: Standards For Success

The proposed vegetative cover is designed to be diverse, effective, permanent and capable of stabilizing the soil surface. However, two problem areas exist in the disturbed area:

Area 1 In final reclamation the Pinyon-Juniper mine site disturbance area will have topsoil applied of which some has been seeded with Crested Wheatgrass and Smooth Brome. This potential seed bank of Crested Wheatgrass and Smooth Brome could establish plants on the final reclaimed area. The permit (page 4-73 through 4-75) justifies the use of these species due to deep rooting depth (Smooth Brome) and drought resistance (Crested Wheatgrass). These are the characteristics that tend to make these species aggressive and out compete the native species. This could potentially reduce diversity in this area. However, the U. S. Forest Service insists that this seed mixture is consistent with the management plan for the area (page 4-66).

Area 2 The Salt-Desert shrub disturbed area along the haul road is in the Mancos Shale formation. The soil is high in clays, erosive and high in salts. Some steep slopes also occur in this area. Some success has occurred from interim seeding on gentle slopes. However, to date, no success has been achieved from interim seeding on the steeper slopes. Deep erosion gullies have formed on the road fill slopes. Currently, a test plot was installed by the operator (in 1989) to test a synthetic emulsion for erosion control and the seed mixture. Additional test plots are scheduled to be installed in the Fall of 1991.

Total vegetative cover of the Salt-Desert shrub reference area is 26 percent. If 26 percent cover is achieved on the reclaimed Mancos Shale steep slopes, this still may not be sufficient vegetative cover to control erosion. The reclaimability of this area to predisturbance conditions is yet to be proven. These areas were approved by OSM in 1985.

The disturbed areas will be seeded in the Fall. Fall is the locally accepted season of planting in this area.

RECLAMATION PLAN

Success standards for Phase II bond release will be judged by comparing the reclaimed areas to reference areas and pre-determined shrub density standards. Two reference areas were selected; a Pinyon-Juniper and Salt-Desert shrub. Reference areas are shown on Map 2-12 (Map 2-13 has been removed from the MRP) [03112005]. Baseline vegetative data for the two reference areas are detailed in a consultants report on pages 2-145 through 2-166 and 2-168. Vegetative cover, shrub and tree density and species lists were measured and compiled for these sites.

The postmining land use is for wildlife and livestock grazing. Therefore, diversity, cover productivity, and shrub stocking rates will be used to determine revegetation success using Division accepted statistical comparisons and confidence intervals (page 4-85). The period of extended responsibility will continue for a minimum of ten years. Quantitative vegetation monitoring will occur in years 2, 3, 5, 9 and 10. Productivity measurements will be taken in years 9 and 10 (pages 4-80 through 4-82 and 4-85 through 4-87) and reference area data in year 10.

Findings:

The Permittee is in compliance with all sections of R614-301-300.

Reclamation Treatments Maps

Map 300-1, Revegetation Area represents the final topography of the reclaimed sediment pond. [09302005]

Findings:

The information provided is adequate to meet the requirements of this section of the regulations. [09302005]

STABILIZATION OF SURFACE AREAS

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

Analysis:

Phase 1 [04162002]

All slopes will be created between 1.5h:1v and 2h:1v. Substitute topsoil will be graded over slopes of 2h:1v. Slopes greater than 2h:1v will have isolated pockets of soil placed in the

rock slope, as required by the R, B, &G Engineering Inc, Slope Stability Report dated September 2001 (Sec. 540, App.C, App. XIV).

Phase 2 [11082002]

Erosion control will be by extreme gouging (Section 553.100, page 17) and rock placement (Sec. 553.110, App. XVI of Volume 5).

Phase 3 [09292005]

Erosion will be controlled through extreme gouging (defined as 18 inch deep pocks that are 3 ft in diameter, Section 242.130), with seeding (Table 3-1), and by surface mulch (Section 341). Boulders will be placed on the slopes for enhancement of habitat and aesthetics (Section 244,552 and 553), but will not provide slope stability. According to the baseline soils information provided, the adjacent ground has 50 – 75% rock and boulder cover.

Rills and gullies will be repaired if they affect the post-mining land use or cause a violation of water quality standards (Section 244.300). (Land use is described in Section 411 as grazing, wildlife, coal be methane development, and recreation.)

Findings:

The information provided meets the requirements for soil stabilization.

CESSATION OF OPERATIONS

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

Analysis:

The site has been reclaimed.

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

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.

RECLAMATION PLAN

Analysis:

Final Surface Configuration Maps

Drawings CS1814D and CS1854D in Appendix XIV show Final Surface Configuration for the Phase 1 reclamation area. Drawings 5000-3 and 500-4 in Appendix XV show Final Surface Configuration Maps for the Phase 2 reclamation area. The post-reclamation surface configuration for the sedimentation pond and road area is shown on Drawings 500-5 and 700-1 in Appendix XVI. The configuration of the road is shown with cross sections and a centerline profile on Drawings 500-3 and 500-4. These are all pre-construction maps; none are as-builts. [09232005]

Reclamation Monitoring And Sampling Location Maps

With removal of the pond, there will no longer be UPDES permitted discharge, so there will be no water monitoring at the Des Bee Dove Mines. [09232005]

Reclamation Surface And Subsurface Manmade Features Maps

No manmade features, other than the recontoured surface, will remain in the area. [09232005]

Reclamation Treatments Maps

Certification Requirements.

Maps submitted in Appendix XVI are certified. [09232005]

Findings:

Information provided in the MRP meets the Maps, Plans, and Cross Sections Of Reclamation Operations requirements of the regulations. [09232005]

BONDING AND INSURANCE REQUIREMENTS

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

Analysis:

General

The reclamation cost is complete and represents the cost of final reclamation.

Determination of Bond Amount

The Division determined that the bond amount is adequate to ensure reclamation in the event of bond forfeiture.

Terms and Conditions for Liability Insurance

Findings:

Information on this section is sufficient to meet the requirements of the R645 Coal Rules.

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT (CHIA)

Regulatory Reference: 30 CFR Sec. 784.14; R645-301-730.

Analysis:

The Des Bee Dove Mines are in the East Mountain CIA. The latest version of the East Mountain CHIA is dated August 2005. There is no evidence of material damage to the hydrologic balance outside the permit area from underground coal mining and reclamation activities at the Des Bee Dove and adjacent mines.

Removal of the sedimentation pond is not a significant revision of the MRP, and the Division has determined the CHIA does not need to be updated for this action. [09232005]

Findings:

The Division has prepared a CHIA for the Des Bee Dove Mines and adjacent areas. Proposed coal mining and reclamation operation have been designed to prevent material damage to the hydrologic balance outside the Des Bee Dove permit area. [09232005]