C/015/009 Incoming

#5027

Canyon Fuel Company, LLC
A Subsidiary of Bowie Resource Holdings, LLC

Fossil Rock Mine
Rick Parkins
General Manager
225 North 5th Street, Suite 900
Grand Junction, CO 81501
(970)263-5130

Received
11/17/2015

November 13, 2015

Permit Supervisor, Utah Coal Regulatory Program
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, UT 84114-5801

Re: Amendment too Change Name from Trail Mountain to Fossil Rock within the Waste Rock Facility Text, Canyon Fuel Company, LLC, Permit Number C/015/0009

Dear Sirs:

Please find enclosed with this letter an amendment to the Fossil Rock Permit to the change name of the Waste Rock Facility from Trail Mountain to Fossil Rock. We have added a copy of the BLM Right-of Way to the exhibits. In the text the right-of way was previously referenced in a volume no longer part of the M&RP.

If you have questions or need addition information please contact Vicky Miller at (435)286-4481.

CANYON FUEL COMPANY, Fossil Rock Mine

Vicky A Miller for

Rick Parkins
General Manager

Encl.

cc: DOGM Correspondence File

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change ☒ New Permit ☐ Renewal ☐ Exploration ☐ Bond Release ☐ Transfer ☐

Permittee: Canyon Fuel Company, LLC
Mine: Fossil Rock Resources, LLC **Permit Number:** C/015/0009
Title: Amendment to Change Name from Cottonwood or Trail Mountain within the Text of M&RP to Fossil Rock
Description, Include reason for application and timing required to implement:

Instructions: If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

☐ Yes ☒ No 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: _____ ☐ increase ☐ decrease.
☐ Yes ☒ No 2. Is the application submitted as a result of a Division Order? DO# _____
☐ Yes ☒ No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
☐ Yes ☒ No 4. Does the application include operations in hydrologic basins other than as currently approved?
☐ Yes ☒ No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
☐ Yes ☒ No 6. Does the application require or include public notice publication?
☒ Yes ☐ No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
☐ Yes ☒ No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
☐ Yes ☒ No 9. Is the application submitted as a result of a Violation? NOV # _____
☐ Yes ☒ No 10. Is the application submitted as a result of other laws or regulations or policies?
Explain:
☐ Yes ☒ No 11. Does the application affect the surface landowner or change the post mining land use?
☐ Yes ☒ No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
☐ Yes ☒ No 13. Does the application require or include collection and reporting of any baseline information?
☐ Yes ☒ No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
☐ Yes ☒ No 15. Does the application require or include soil removal, storage or placement?
☐ Yes ☒ No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
☐ Yes ☒ No 17. Does the application require or include construction, modification, or removal of surface facilities?
☐ Yes ☒ No 18. Does the application require or include water monitoring, sediment or drainage control measures?
☐ Yes ☒ No 19. Does the application require or include certified designs, maps or calculation?
☐ Yes ☒ No 20. Does the application require or include subsidence control or monitoring?
☐ Yes ☒ No 21. Have reclamation costs for bonding been provided?
☐ Yes ☒ No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
☐ Yes ☒ No 23. Does the application affect permits issued by other agencies or permits issued to other entities?

Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations herein.

RICHARD S. PERKINS — Richard S. Perkins, GENERAL MGR, 11-12-15
Print Name — Sign Name, Position, Date

Subscribed and sworn to before me this 12th day of NOVEMBER, 2015

Kathleen Widner
Notary Public

My commission Expires: 8-3, 2015)
Attest: State of COLORADO)) ss:
County of MESA

KATHLEEN WIDNER
Notary Public
State of Colorado
Notary ID 19944011144
My Commission Expires Aug 3, 2018

For Office Use Only:	Assigned Tracking Number:	Received by Oil, Gas & Mining

Form DOGM- C1 (Revised March 12, 2002)

APPLICATION FOR COAL PERMIT PROCESSING
Detailed Schedule Of Changes to the Mining And Reclamation Plan

Permittee: Canyon Fuel Company, LLC
Mine: Fossil Rock Resources, LLC **Permit Number:** C/015/0009
Title: Amendment for Changing Trail Mountain to Fossil Rock within the Rock Waste Rock Facility M&RP Volume 4

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

			DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED
☐ Add	☐ Replace	☐ Remove	M&RP
☐ Add	☒ Replace	☐ Remove	Chapter 2, Soils - Text
☐ Add	☒ Replace	☐ Remove	Chapter 3, Biology - Text
☐ Add	☒ Replace	☐ Remove	Chapter 4, Land Use and Air Quality - Text
☐ Add	☒ Replace	☐ Remove	Chapter 5, Engineering - Text
☐ Add	☒ Replace	☐ Remove	Chapter 6, Geology - Text
☐ Add	☒ Replace	☐ Remove	Chapter 7, Hydrology - Text
☐ Add	☒ Replace	☐ Remove	Chapter 8, Bond - Text
☒ Add	☐ Replace	☐ Remove	Exhibit XXIII - BLM Right-of-Way
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Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.	**Received by Oil, Gas & Mining**
November 13, 2015	

INTRODUCTION

The original Cottonwood/Wilberg Waste Rock Storage Area (BLM right-of-way UTU-37642) was filled to design capacity thus making it necessary to construct a new storage facility to handle the on-going disposal needs of the Cottonwood, Des-Bee-Dove and Trail Mountain mines. Calculations have been made, based on past history, the rate and amount of waste rock generated during mining operations, these quantities have been used to formulate the design of the new facility.

The area selected for the "new" Waste Rock Storage Facility is located on public land managed by the US Department of Interior, Bureau of Land Management. The area is located in the southeast quarter of Section 34, Township 17 South, Range 7 East, west of the coal haul road used for the Cottonwood/Wilberg Coal Mine facility. The area was selected because it is close to the mine facilities and has the required capacity to contain ~~all~~ the waste rock generated at the Cottonwood/Wilberg, Des Bee Dove and Trial Mountain mines for the anticipated life of each mine. Since the Cottonwood/Wilberg is being reclaimed and the Des Bee Dove Mine has been reclaimed, the site is used ~~specifically~~ for the refuse disposal for the ~~Trail Mountain~~ Fossil Rock Mine.

The Waste Rock Storage Facility is designed to fit into the existing topography of the area with as little disturbance as is possible to the existing drainage system. Only one ephemeral drainage channel will require a permanent diversion for the construction and operation at the Waste Rock Storage Facility. When the site is completed, ~~only~~ 15.82 acres will have been disturbed. A sediment pond designed as part of the Waste Rock Storage Facility will catch and treat ~~all~~ the runoff from the site before releasing it back into the natural channel. This volume (Volume 4 of the ~~Trail Mountain~~ Fossil Rock Mine Permit) includes detailed construction, operation and reclamation plans for the Waste Rock Storage Facility.

NOTE: This site's name has changed from Cottonwood/Wilberg waste rock site to Trail Mountain waste rock site as of January 2015. The name was changed to the Fossil Rock waste rock site in October 2015. Any references found in this document of the site's former name should be construed to indicate the ~~Trail Mountain~~ Fossil Rock waste rock site or facility.

RIGHT OF ENTRY

PacifiCorp was granted a BLM right-of-way for the additional permit area (BLM Right-of-Way Grant UTU-65027). This 25.85 acre site was permitted to replace the "old" Waste Rock Storage Area: UTU-37642 which reached designed capacity. The Right-of-Way grant was issued by the BLM on June 8, 1990. The Right-of-Way has been modified to accommodate coal bed methane well sites constructed by Texaco Inc. and to reflect as-built conditions. Listed below is a list of the acreage descriptions for the Right-of-Way including original grant, modifications and disturbance associated with the Waste Rock Storage Facility:

BLM Right-of-Way UTU-65027

Original Grant: 6/8/90	**25.49 acres**
Amendment: 8/15/90 (Staging Area)	**1.78 acres**
Subtotal	**27.27 acres**
1999 Relinquishment (Texaco Well 34-80) Staging Area	**- 1.78 acres**
As-Built Addition (1999)	**0.36 acres**
TOTAL RIGHT-OF-WAY UTU-65027	**25.85 acres**
Disturbed Area (Total Project Life)	**15.82 acres**

During the 1999 Texaco well assessment project, PacifiCorp re-surveyed the disturbed and permit boundaries associated the R/W UTU-65027. Two small areas of disturbance were located outside the original metes and bounds permit boundary description. To rectify this situation, PacifiCorp has revised the R/W description to include all areas of disturbance associated with the Waste Rock Storage Facility. The 1999 relinquished area referred to as the "staging area", was previously disturbed by oil & gas drilling activities in 1956. PacifiCorp retained access to State Highway 57 and has installed permit and disturbed boundary signs as indicated on map 4-1 (CM-10826). Texaco will re-disturb the staging area with development of well 34-80 and will assume reclamation liabilities.

RIGHT-OF-WAY LEGAL DESCRIPTION

BLM Right-of-Way UTU-65027, issued to PacifiCorp and transferred to Fossil Rock in August of 2015, provides right of entry for the Waste Rock Storage Facility (See Exhibit XXIII). ~~An updated description is found in the PacifiCorp/Energy West Mining Company, Legal and Financial Volume, Appendix G.~~

RIGHT-OF-WAY PERMIT TERM

Right-of-Way UTU-65027 will terminate on June 7,2025, thirty five (35) years from its effective date unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the

terms and conditions of this grant or of any applicable Federal law or regulation.

MAPS - GENERAL REQUIREMENTS

Land Ownership drawings number TMS1454D (Plate 1-1) found in this volume show all boundaries of lands and names of present owners of record of those lands, both surface and subsurface, included in or contiguous to the Waste Rock Storage Facility permitted area.

CHAPTER 2
SOILS

CHAPTER 2 - SOILS

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Appendix A Soils Report

Appendix B Prime Farmland Statement

Appendix C 2001 Soil Sampling Analysis Results and Location Map

R645-301-200: Soils

R645-301-210 Introduction

An on-site soil survey was conducted at the Waste Rock Storage Facility by T.H. Furst in July 1989 (refer to Appendix A). The survey identified that the site correlated well with the Strych soil series and Rockland. The Strych soil series is classified as an Ustollic Calciorthid, loamy-skeletal, mixed, mesic family. This series is a very stony loam, dry, 3-30% slopes, as described in the Carbon-Emery Area Soil Survey, 1970.

The Rockland is comparable to the Badland-Rubbleland-Rock Outcrop complex as described in the Carbon Area Soil Survey of 1970. Refer to the full report of the soils of the Cottonwood/Wilberg Waste Rock Storage Facility in Appendix A.

R645-301-220 Environmental Descriptions

R645-301-221 Prime Farmland Investigation

A prime farmland investigation has been made by the State Agricultural Agent, Dennis Worwood. The results of the investigation found that the land of the Waste Rock Storage Facility shall not be considered prime farmland in that the land:

1. Has not been historically used as cropland.
2. The slope of the land is 10% or greater.
3. The land is not irrigated.
4. Has a very rocky surface,
5. The land has no soil map units that have been designated prime farmland.

Refer to Appendix B for letters from the Utah State Extension and Soil Conservation Service (now Natural Resource Conservation Service).

R645-301-221 Soil Survey

As mentioned above, a complete soil survey conducted by T.H. Furst can be found in Appendix A.

R645-301-222.100

Plate 7-1 ~~Map~~ (CM-10818-WB) delineates the different soil types in the area of the Waste Rock Storage Facility. Refer to this map in the Maps Section.

R645-301-230 Operation Plan

The following sections describe the methods for the removal and storage of topsoil and subsoil from the Waste Rock Storage Facility. The construction sequence covers approximately 17 acres that required the removal of topsoil. Subsoil within this area was also removed and stored. The location of the topsoil and subsoil storage areas is found on Plates 4-4 and 4-5 in the Maps Section.

Greater details to the construction and reclamation of the Waste Rock Storage Facility are given in R645-301-500 Engineering.

R645-301-231.100 Methods for Removing and Storing Topsoil and Subsoil

The initial construction of the facility included the construction of the sediment pond, stripping and stockpiling of the topsoil and subsoil, and construction of the initial diversion ditch on the west side of the valley.

Topsoil

After the vegetative material was removed from the site the topsoil was stripped and stockpiled as shown on Plates 4-4 and 7-2. Stripping areas and depths were staked to facilitate topsoil excavation. Care was taken to avoid unnecessary compaction of the topsoil material. Following soil placement, the stockpiles were planted with an interim seed mix. Refer to R645-301-300 Vegetation.

Subsoil

Following removal of the topsoil material the remaining material needed for the subsoil stockpile was excavated to the lines and grades specified on the cross-sections. The material was placed, leveled, and compacted in 12" maximum lifts. Rocks larger than the lift thickness were worked into the fill to avoid forming voids. Those rocks that made good rip-rap were separated and hauled and stored for use as rip-rap. Any acid or toxic forming material found was segregated from the stockpile construction and placed on the bottom of the Waste Rock Storage Facility.

In 2015/2016 a plan is proposed to re-mine the waste rock site and salvage contemporaneously placed soils if they will be impacted by the re-mining process. Only the southern slope (18,183 square feet) adjacent to the sediment pond of the existing waste rock pile appears to have salvageable soils for storage. The other slopes have a mixture of coal waste with some soil, which will not be salvaged/stockpiled.

There are 3 tiers, 10+ feet each on the southern slope, the soils will be salvaged one tier at a time. Text indicates that these soils were placed during the original construction of the waste rock facility. The assumption will be made that soils were placed in depths according to those designated in the plan, i.e. 12" of topsoil and 24" of subsoil. If required, approximately 673 cubic yards of topsoil and 1347 subsoil will be salvaged off the three tiers of the southern slope. The subsoil will be stockpiled on the north end of the existing subsoil pile (12 'deep) and the topsoil will be stockpiled on the west end of the southern #2 topsoil stockpile (additional 6' deep). Refer to Plate 4-5 for the proposed placement location of the soils should they be salvaged. The salvaged subsoil will receive interim revegetation, along with the use of one or more of the following drainage structures: subsoil berms, straw bales, silt fence or rolled erosion control products for containment. For topsoil storage drainage structures and interim revegetation refer to Section R645-301-234.

Within six months of the completion of the mining of the pile an as-built drawing and salvaged soil

quantities will be incorporated into the permit. Section R645-301-526 has a description of the planned process for re-mining the waste rock pile.

R645-301-234 Topsoil Storage

Construction of the Waste Rock Storage Facility commenced as soon as the permit was issued. Sediment control measures were put in place to minimize the effects of the initial construction. Straw bales and silt fences were erected in the natural drainages to treat any runoff during the initial construction period. Interim revegetation was used on the bare slopes of the soil stockpiles and along the roadway to stabilize and prevent erosion. The topsoil stockpiles have been marked as such. Drainage structures have been constructed and will be maintained to ensure that they are in good repair and capable of handling the design flow rates. Silt fences have been constructed at the base of the soil stockpiles outside slopes. These silt fences will also be monitored and repaired as needed to ensure they are in good working order.

R645-301-240 Reclamation Plan

Construction of the refuse pile will incorporate a plan to allow contemporaneous reclamation of the outside slopes of the pile. Refuse material will be used to construct a berm, approximately 10 feet high, to contain the waste material to be deposited.

Prior to contemporaneously reclaiming the slopes, quality sampling shall be conducted as outlined in R645-536 Coal Mine Wastes. Prior to covering the top surface of the waste pile, quality sampling shall be conducted as outlined in R645-541 Reclamation Plan. These sampling procedures shall be conducted to identify any acid-forming and/or toxic-forming materials within the top four (4) feet of the proposed reclaimed surface. The top four (4) feet consists of 1 foot of waste material and 3 feet of soil cover.

R645-301-242 Soil Redistribution

As reclamation commences of the waste pile slopes, 24 inches of subsoil and 12 inches of topsoil will be placed on the outside slope of the berm and revegetation of the slope. Successive berms will be constructed on top of the previous berms as the level of the waste material rises. There will be a two to three foot offset of the toe of the upper berm to provide a small terrace to reduce runoff velocities. (See Exhibit XXI in Exhibits Section) Once the waste pile construction is complete, the top surface of the pile will be graded for proper drainage and covered with subsoil and topsoil (24 and 12 inches, respectively), then revegetated.

When the final berm is constructed, contemporaneous reclamation will be conducted as explained above on the outside slope. The outside slope will be revegetated with the approved seed mix as outlined in R645-301-341.200.

The remaining subsoil will be stored at the north side of the waste rock pile (refer to Plate 4-7) and seeded. The original subsoil storage will then be covered with approximately 1' of topsoil, pocked and seeded. The remaining topsoil will then be relocated next to the subsoil pile on the north end of

the site as shown on Plate 4-7. The original topsoil storage will be pocked and seeded for final reclamation.

The access road to the waste rock pile will be re-routed for a north access to an east access from the pond access road. At this time, the two year time clock (as required by R645-301-763.100 of the Utah Coal Regulations) for sediment pond removal will commence as the remaining waste rock site is filled to the top level of the berm.

When the waste rock pile has been filled to capacity, the subsoil and topsoil stored at the north side of the waste rock pile shall be used to cover the top surface of the pile. The volumes of these piles are 5,050 cubic for subsoil, and 2,525 cubic yards for topsoil. This volume will cover the top of the pile with two feet of subsoil and one foot of topsoil. Pocks will be constructed as a means for alternative sediment control for this area. This surface shall be seeded utilizing the seed mix found in R645-301-341.200.

At the end of the two year time clock (mentioned above), the sediment pond and remaining access roads shall be removed to the lines and grades as shown on Plates 4-8 and 4-10. The areas will be pocked and seeded according to the plan in R645-301-700 and R645-301-300. Topsoil stored along the main access road shall be used to cover this regraded area.

R645-301-243 Soil Nutrients and Amendments

The procedure for seed bed preparation for all reclaimed slopes of the Waste Rock Storage Facility site is given in R645-301-300 Biology. All reclaimed areas have been or will be fertilized, mulched and seeded to establish a successful vegetative cover.

Additional nutrients may be needed to improve the physical, chemical, and water holding capacity of the soils. Determining nutritional requirements of the replaced soils shall require sampling of the topsoil material. Sampling shall occur prior to roughening of the surface. Analytical methods for nutrient characterization shall follow the parameters and recommended methods as outlined in Table 3 of the Division's *Guidelines for Management of Topsoil and Overburden (Jan. 2008)*. Soil nutrient application rates shall follow the laboratory recommendations or the stated application rates outlined in R645-301-341.200 Description of Seeding Methods. Samples shall be collected at a rate of two samples per acre to a depth of 1 foot.

R645-301-244 Soil Stabilization

Various sized rocks and boulders (litter) will be randomly placed on slopes of reclaimed areas to control slope slippage, promote microhabitats, and provide a natural aesthetic appearance. Where it is deemed necessary, especially on slopes greater than 20%, a soil tackifier (refer to R645-301-300: Biology, Seeding Techniques) will be used during the reclamation process to stabilize soil material.

Rills and gullies which develop in areas that have been regraded and topsoiled and which either; 1) disrupt the approved postmining land use or the reestablishment of the vegetative cover, or 2) cause or contribute to the violation of water quality standards for receiving streams will be filled, regraded, or otherwise stabilized.

R645-301-250 Performance Standards

~~All~~ Topsoil and subsoil will be removed, maintained and redistributed according to the plan given under R645-301-230 and R645-301-240.

~~All~~ Stockpiled topsoil and subsoil will be located, maintained and redistributed according to plans given under R645-301-230 and R645-301-240.

CHAPTER 3
BIOLOGY

Chapter 3 – Biology

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Appendix A: Waste Rock Site Vegetation Report

Appendix B: SCS Vegetation Production Report

R645-301-300: Biology

R645-301-310 Introduction

R645-301-320: Environmental Descriptions

The following sections of this application contain descriptions, information, and plans to protect the biological, aquatic, and wildlife resources within and in the vicinity of Waste Rock Storage Facility.

R645-301-321: Vegetation Information

The site location for the proposed disturbed area of the Waste Rock Storage Facility is 1.75 miles south of the Wilberg Mine, Emery County, Utah. The township and range of the site is: Township 17 South, Range 7 East, Section 34. Elevation of the Waste Rock Storage Facility ranges between 6,700 ft. and 7,000 ft. above sea level. The slopes are varied between 3 degrees and 36 degrees and are composed of exposures to the east, west and south.

A vegetation survey was conducted on the proposed disturbed area in August 1989 by Mt. Nebo Scientific. The purpose of the survey was to supply meaningful and scientific data that provides accurate standards for future reclamation of the area. Both proposed disturbed and reference areas were surveyed.

Major plant communities found in the general area are typical salt desert shrublands and comprise of communities with the following plant species as dominates and/or subdominates: Pinyon Pine (Pinus edulis), Utah Juniper (Juniperus ostersperma), Mat Saltbush (Atriplex corrugata), Gardner Saltbush (Atriplex gardneri), Shadscale (Atriplex confertifolia), Salina Wildrye (Elymus salinus), and Black Sagebrush (Artemisia nova). The Waste Rock Storage Facility, including the access road, drainage control diversions and sediment pond will occupy approximately 25 acres of land within the following associated vegetation communities:

Pinyon-Juniper	10 acres
Black Sagebrush	4 acres
Gardner Saltbush	11 acres

A complete report of this survey is found in Appendix A.

Proposed Disturbances

The two types of proposed disturbances are planned for the Waste Rock Storage Facility are: 1) a waste rock storage area; and 2) an access road. The proposed disturbances will impact three plant communities. The access road will dissect a Pinyon-Juniper community whereas the

Waste Rock Storage Facility disturbance affects Gardner Saltbush and Black Sagebrush/Salina Wildrye plant communities.

Reference Areas

A reference area is used to develop a standard for success at the time of final reclamation for each of the proposed disturbances. These areas were chosen to comply with guidelines provided by DOGM and had similar slopes, soils, exposures, species composition, precipitation, elevations and other environmental variables.

R645-301-321.200 Productivity

Productivity and range condition estimates for the Waste Rock site were performed by the US Soil Conservation Service (now Natural Resource Conservation Service), Price, Utah in 1990. A letter from the Service is found in Appendix B.

R645-301-322 Fish and Wildlife Information

The Waste Rock Storage Facility occupies portions of an Upper Sonoran/Transition life zone ecotone, within the Wasatch Plateau biogeographic area. A general discussion of wildlife species associated with these ecological zones is contained in Volume 2 of the Cottonwood/Wilberg Coal Mine Permit Application.

The area is ranked by the Utah Division of Wildlife Resources (DWR), as critical deer (Odocoileus hemionus) winter range and limited-value elk Cervus canadensis) winter range. DWR also ranks the area as substantial-value yearlong habitat for the Desert Cottontail (Sylvilagus audubonii).

Wildlife movement occurs throughout the area of the Waste Rock Storage Facility; however, the facility will not pose a barrier to big game movement. The facility is not expected to increase the potential for deer road-kill occurrences. (Personal communication with Larry Dalton, DWR, September 8, 1989.)

The BLM (San Rafael Draft Resource Management Plan/EIS) classifies a portion of the area (approximately 12 acres) as crucial deer winter habitat.

The Waste Rock Storage Facility is within the territories of golden eagles (Aquila chrysaetos) and common ravens (Corvus corax). But, it is outside the buffer zones associated with nest sites of both species. The nearest raptor nests (Raven nests 64A and B) are approximately 0.8 mile from the facility. The golden eagle nest (62) is approximately 1.2 miles from the facility. The nests are included in the raptor monitoring program described in the Cottonwood/Wilberg PAP, Appendix XVI, Part H. Nest 62 was active in 1989 with one (1) young produced. Nests 64A and 64B were inactive in 1989.

R645-301-322.210 Listed Endangered or Threatened Plants and Animals of Emery County

The following plant, fish, and wildlife information tables includes Threatened and Endangered Species, listed in Emery County, Utah, and may be present in the Grimes Wash area. The data from these tables are reference from the Utah Division of Wildlife Resources website at http://www.dwrcdc.nr.utah.gov/ucdc/)

Table 300-1: Endangered or Threatened Plant, Fish, and Animal Species

Common Name	Scientific Name	Status*
Jones Cycladenia	*Cycladenia humilis var jonesii*	T
Last Chance Townsendia	*Townsendia aprica*	T
Barneby Reed-mustard	*Schoenocrambe barnebyi*	E
San Rafael Cactus	*Pediocactus despainii*	T
Winkler Pincushion Cactus	*Pediocactus winkleri*	E
Wright Fishhook Cactus	Sclerocactus wrightiae	E
Humpback Chub	*Gila cypha*	E
Bonytail	*Gila elegans*	E
Colorado Pikeminnow	*Ptychocheilus lucius*	E
Razorback Sucker	*Xyrauchen texanus*	E
Greater Sage-grouse	*Centrocercus urophasianus*	C
Yellow-billed Cuckoo	*Coccyzus americanus*	C
Mexican Spotted Owl	*Strix occidentalis lucida*	T
Black-footed Ferret	*Mustela nigripes*	Extirpated
Canada Lynx *Lynx*	*Lynx canadensis*	T
Gray Wolf	*Canis lupus*	E

*T=Threatened, E=Endangered, C=Candidate

None of the above stated species are found within the area of the ~~Cottonwood/Wilberg~~ Waste Rock Storage Facility. There is no suitable habitat within this area to support the above stated species.

R645-301-323 Maps and Aerial Photographs

Plate 8-1 in the Maps Section displays the vegetation communities within and adjacent to the Waste Rock Storage Facility. Plate 9-1 shows the locations for winter habitat and critical winter habitat for deer and elk within and adjacent to the Waste Rock Storage Facility.

R645-301-323.100 Reference Area Locations

Plate 8-1 in the Maps Section shows the location for the reference areas for specific plant species in the Waste Rock Storage Facility.

R645-301-320 Operation Plan

The original Cottonwood/Wilberg Waste Rock Storage Area is located south and east of Highway 57. This site was filled to its capacity in 1989 (Phase III Bond Release of the original site was granted in July of 2009) making it necessary to construct a new facility to handle the disposal needs of the mine. Calculations have been made, based on past history, the rate and amount of waste rock generated during mining operations, these quantities have been used to formulate the design of a new facility. Refer to R645-301-500 Engineering for these calculations. Additional information on the original and current Waste Rock Storage Facility is provided in the introduction of this M&RP volume.

~~The area selected for the Waste Rock Storage Facility is located on public land managed by the US Department of Interior, Bureau of Land Management. The facility is located in the southeast quarter of Section 34, Township 17 South, Range 7 East, west of Highway 57 and used in support of the mining operations. The area was selected because it is close to the mine facilities and has the required capacity to contain all the waste rock generated at the Cottonwood/Wilberg, Des Bee Dove, and Trial Mountain mines for the anticipated life of each mine. Since the Cottonwood/Wilberg is being reclaimed and the Des Bee Dove Mine has been reclaimed, the site is used specifically for the Trail Mountain Mine. Final reclamation has been conducted on the Des Bee Dove mine facilities. These activities were completed in 2006.~~

R645-301-331 Mitigation Measures

The Waste Rock Storage Facility was constructed and is operated in such a manner as to minimize, to the extent possible, disruption of normal wildlife activities in the area.

The Waste Rock Storage Facility is located approximately two (2) miles northwest of Grimes Wash, an ephemeral stream, and approximately four (4) miles from Cottonwood Creek, the nearest fishery. Therefore, no fish species or fish supporting habitat are present on the site and no streams containing biological communities exist within the site. No riparian habitat or wildlife species associated with such habitat exist on the site.

No electric power lines or other transmission facilities have been constructed to serve the Waste Rock Storage Facility.

Fences have been designed and constructed to allow uninhibited big game passage. It is not anticipated that the sediment pond will contain hazardous concentrations of toxic-forming materials; therefore, exclusion fencing of the pond was not proposed.

No persistent pesticides were used on the area, unless approved by the Division. If it is determined that pest control is needed, approved species-specific control measures will be implemented.

To the extent possible, range or forest fires will be prevented, controlled or suppressed, unless

directed otherwise by the Division.

The primary post-mining land use is wildlife habitat and livestock grazing. Final reclamation plant species have been selected for that purpose and generally follow information provided to PacifiCorp by UDWR, which is identified as "Recommended Plant Materials and Rates of Application for Restoration or Enhancement of Wildlife Habitats." Adequate wildlife cover is available adjacent to the waste rock storage site; therefore, plant species were chosen primarily for forage production.

As discussed previously, approximately 25 acres of big game habitat will be displaced by the facility; therefore, mitigation in accordance with procedure was proposed prior to construction. Mitigation was achieved through implementation of procedures outlined in the approved Wildlife Habitat Mitigation Plan which was developed for the original Cottonwood/Wilberg Waste Rock Storage Area and the Des Bee Dove haul road (August 27, 1986).

R645-301-333 Mitigation Procedures

Mitigation sites were selected in the adjacent pinyon-juniper community (see Plate 9-1). Selection was made following consultation with BLM, DWR and DOGM. Prior to site work, an archaeological assessment was performed at the proposed locations. No resource conflicts were identified.

Trees were removed at the selected sites by bulldozer. Clearing work followed the natural contour of the sites (ridge tops). The trees were pushed over, crushed by the bulldozer and left on the site to provide some protection for plant establishment. Access to the sites was restricted by placement of large boulders at potential vehicles access points.

Soil samples were analyzed to determine fertilizer application rates and the need for additional soil amendments. The fertilizer and amendments were broadcast prior to removal of the trees and were incorporated into the soil during the tree removal operation.

Seeding took place between October 1st and November 30th. The following seed mixture was broadcast concurrently with tree removal. The seeds were covered during the tree removal operation.

Following seed covering a layer of alfalfa hay mulch was applied at the rate of approximately two (2) tons per acre. The mulch was crimped into the soil. Crimping was done in such a manner that implement tracks will intercept potential runoff water thus improving the potential for vegetation establishment.

Inspection and evaluation of the mitigation measures was made by PacifiCorp, DWR, BLM and DOGM personnel following the first and subsequence growing season.

Table 300-2: Mitigation Area Seed Mix

PLANT MATERIAL		LBS/ACRE (PLS)[1]
GRASSES:		
Smooth brome	*Bromus inermis* - *southern varity*	3
Alkali Sacation	*Sporobolus airoides*	2
Russian wildrye	*Elymus junceus*	2
Indian ricegrass	*Oryzopsis hymenoides*	1
Piute orchardgrass	*Dactylis glomerata*	3
FORBS:		
Utah sweetvetch	*Hedysarum gremiale*	3
Alfalfa	*Medicago sativa* - *ladak*	3
Small Burnett	*Sanguisorba minor*	2
Yellow Sweetclover	*Melilotus officinalis*	1
Palmer penstomen	*Penstemon palmeri*	1
Lewis flax	*Linum lewisii*	2
SHRUBS:		
Antelope bitterbrush	*Purshia tridentata*	1
Wyoming big sagebrush	*Artemisia tridentata wyomingensis*	1
Great Basin sagebrush	*A. t. tridentata*	1
Mountain sagebrush	*A. t. vaseyana*	1
Fourwing saltbush	*Atriplex canescens*	2
Winterfat	*Ceratoides lanata*	1
TOTAL		30

[1] Seed mixture was supplied by DWR

NOTE: See Cottonwood/Wilberg PAP, Vol. 2, for justification of introduced species.

Deer pellet-group counts were made in 1989 at the Wilberg/Des Bee Dove mitigation areas. Transects were run on the mitigation sites and in the pinyon-juniper community adjacent to the mitigation sites. The results were an average use level of 37 deer days per hectare at the mitigation sites and 25 deer days per hectare in the adjacent areas. This indicates the use level at the mitigation sites is 48% greater than in the adjacent pinyon-juniper. It is assumed that a similar increase in use can be achieved in the vicinity of the Waste Rock Facility. Mitigation measures were implemented on 45 acres of pinyon-juniper community to compensate for the disturbance of 25 acres at the facility site.

As has been stated, adequate cover exists in the area of the Waste Rock Storage Facility. The habitat requirements which limit the carrying capacity of the area are forage and water. Therefore, in addition to the forage enhancement measures conducted, a guzzler was also installed within the mitigation area. Specifications for the guzzler and its installation were

coordinated with DWR, BLM and DOGM.

R645-301-333.100 Maintenance and Monitoring

As required, protective measures shall be used during the active mining phase of the operation. Such measures shall include protections to interim revegetation areas such as topsoil storage piles, subsoil storage piles, and road embankments. Protections shall include the following:

1. Signs will be placed around the planted slopes for their protection.
2. An annual site visit shall be conducted by representatives from the permittee and the Division of Oil, Gas, and Mining. Representatives from the Division shall include a plan specialists and/or a soil specialist. The site visit shall occur between the months of May and September.

R645-301-340 Reclamation Plan

The following discusses the process by which the permitee shall conduct reclamation activities associated with revegetation of the Waste Rock Storage Facility during operations and at final reclamation.

R645-301-341.100 Detailed Scheduled for Revegetation

Table 300-3 shows the timetable by which reclamation will be conducted on the Waste Rock Storage Facility. Many of the reclamation operations will occur simultaneously.

R645-301-341.200 Description of Seeding Methods

Interim Revegetation

Interim revegetation will be implemented on the road embankment slopes, the top and outslopes of the soil stockpiles and the sediment pond banks. Timing of interim revegetation will be in accordance with R645-301-341.100. The Division will be notified prior to the beginning of revegetation activities.

The primary purpose of interim revegetation is soil stabilization: therefore, plant species were selected for their suitability to site conditions, ease of establishment, rate of growth and growth forms. Species selected include some that occur naturally at the site. Refer to Appendix A, "Vegetation of the Waste Rock Site".

Table 300-3: WRS Reclamation Schedule													
#	Project	Estimated Scheduling											
	Months	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
1	Structure Removal		•										
2	Hauling, Backfilling & Grading				•	•							
3	Review of Revegetation Plan			•	•								
4	Order Seed			•									
5	Seed Bed				•								
6	Fertilization				•		•	•					
7	Seeding & Mulching							•	•				

Note: Timeframes are approximate and will vary depending on site conditions and the acreage involved.

Table 300-4 shows the scheduled activities throughout the responsibility period.

Table 300-4: WRS Reclamation Schedule: 1st thru 10th Year											
#	10 Year Revegetation & Monitoring	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year
1	Plant Monitoring Disease & Pest Control *	•	•	•	•	•	•	•	•	•	•
2	Soil Stabilization Rills & Gullies	•	•	•	•	•	•	•	•	•	•
3	Contingent Seeding		•		•						
4	Sediment Pond and Access Road			•							
4	Revegetation Inventory for Bond				•					•	•

300-5: Interim Revegetation Seed List

PLANT MATERIAL		LBS/ACRE (PLS*)
GRASSES:		
Thickspike Wheatgrass	*Agropyron dasystachyum*	2
Streambank Wheatgrass	*A. riparium*	2

Basin Wildrye	*Elymus cinereus*	3
Indian Ricegrass	*Oryzopsis hymenoides*	2
Bottlebrush Squirreltail	*Sitanion hystrix*	1
Sandberg Bluegrass	*Poa sandbergii*	0.5
Alkali Sacaton	*Sporobolus airoides*	0.25
FORBS:		
Prairie Aster	*Aster tanacetifolius*	0.5
Northern Sweetvetch	*Hedysarum boreale*	1
Yellow Sweetclover	*Melilotus officinalis*	3
Firecracker Penstemon	*Penstemon eatonii*	0.5
Alfalfa	*Medicago sativa var. Ladak*	1
SHRUBS:		
Shadscale	*Atriplex confertifolia*	3
Castle Valley Saltbush	*A. cuneata*	3
Winterfat	*Ceratoides lanata*	3
Basin Big Sagebrush	*Artemisia tridentata*	
	sp. tridentata	0.25
TOTAL		26.00

*PLS = Pure Live Seed

The proposed seed mixture and application rates results in approximately 115 seeds per square foot (55 grass, 45 forb, 15 shrub).

Interim Revegetation Methodology

1. Seedbed Preparation

Seeding will take place as contemporaneously as practicable following soil placement; therefore, the seedbed will be in a roughened condition suitable for seed application. However, if a surface crust has developed it will be broken up by hand or mechanical tilling to achieve maximum roughness.

2. Seeding

The seed mixture will be hand broadcast with "hurricane spreaders" or applied by hydroseeder at the specified rate. The seed and water slurry will remain in the hydroseeder no longer than two hours. Seeding will take place during late Fall after October 1.

3. Fertilizer Application

The fertilizer will be applied by hand broadcasting with "hurricane spreaders" or as a separate operation of hydroseeding. Fertilizer application rates will be determined from soil analysis (refer to R645-301-243 Soil Nutrients and Amendments). The following is an approximate combination and rate:

Ammonium Nitrate	50 lbs/acre
Triple Superphosphate	75 lbs/acre

4. Seed Covering
   Following hand broadcasting of the seed mixture and fertilizer, and whenever possible on hydroseeded areas, the sites will be hand or mechanically raked to cover the seeds.
5. Mulch Application
   Following hand broadcasting and raking, the seeded areas will be covered with an erosion control mulch blanket or hay mulch (2 tons/acre and netting). The blanket/netting (if used) will be mechanically anchored per the manufacturer's specifications.

All seed and hay mulch will be inspected by a State Department of Agriculture inspector prior to application. Copies of inspection certificates will be submitted to the Division.

Following hydroseeding, a wood fiber hydromulch with tackifier will be applied at the rate of approximately 2000 lbs/acre.

The criteria for interim revegetation success will be the establishment of at least 60% ground cover, on the majority of the slope, which prevents or minimizes erosion. This will be determined by spring and fall site inspections. If erosion damage occurs, it will be repaired and revegetated as needed.

Final revegetation

Final revegetation will be implemented on the completed disposal area upon completion of the backfilling and grading activities. Revegetation will follow the scheduled as outlined in the on Tables 300-3 and 300-4.

The potential for re-establishing vegetation is discussed in R645-301-200 Soils, Appendix A, Final Report: A Report on the Soils of the Waste Rock Site (pages 7-9 through 7-11). Additionally, the revegetation success achieved at the existing waste rock site is an indicator that revegetation can be achieved.

300-6: Final Revegetation Seed List

PLANT MATERIAL		LBS/ACRE (PLS*)
GRASSES:		
Thickspike Wheatgrass	*Agropyron dasystachym*	2
Streambank Wheatgrass	*A. riparium*	2
Basin Wildrye	*Elymus cinereus*	3
Galleta	*Hilaria jamesii*	1
Indian Ricegrass	*Oryzopsis hymenoides*	2
Sandberg Bluegrass	*Poa sandbergii*	0.5
Bottlebrush Squirreltail	*Sitanion hystrix*	1
Alkali Sacaton	*Sporobolus airoides*	0.25

FORBS:		
Prairie Aster	*Aster tanacetifolius*	0.5
Northern Sweetvetch	*Hedysarum boreale*	1
Yellow Sweetclover	*Hedysarum boreale*	3
Firecracker Penstemon	*Penstemon eatonii*	1
Scarlet Globemallow	*Sphaeralcea coccinea*	0.5
Alfalfa	*Medicago sativa var. Ladak*	1
SHRUBS:		
Black Sagebrush	*Artemisia nova*	1
Fourwing Saltbush	*Atriplex canescens*	5
Shadscale	*A. confertifolia*	3
Castle Valley Saltbush	*A. cuneata*	5
Low Rabbitbrush	*Chrysothamnus viscidiflorus*	1
Green Mormon Tea	*Ephedra viridis*	5
Mat Saltbush	*Atriplex corrugata*	5
Winterfat	*Ceratoides lanata*	2
Basin Big Sagebrush	*Artemisia tridentata*	
	var. tridentata	0.25
TOTAL		43.00

The post-mining land use for the Waste Rock Storage Facility is wildlife habitat, primarily deer and elk winter range and livestock grazing. Therefore, the species selected for final revegetation were chosen for that purpose.

The proposed seed mixture and application rates result in approximately 190 seeds per square foot (62 grass, 58 forbs, 70 shrub). The shrub seeding rate results in approximately 3049 stems per acre (based on an establishment rate of 1:1,000).

Final Revegetation Methodology

1. Seedbed Preparation

   Seeding will take place as contemporaneously as practicable following soil placement; therefore, the seedbed will be in a roughened condition suitable for seed application. However, if a surface crust has developed it will be broken up by hand or mechanical tilling to achieve maximum roughness.

2. Seeding

   The proposed seed mixture will be applied at the specified rates on sloping sites by hand broadcasting with "hurricane spreaders" or with a hydroseeder. The seed and water slurry will remain in the hydroseeder no longer than two hours. Seed application on level areas will be completed by the above methods or through drill seeding. If drill seeding

is utilized, the application rates of grasses and forbs will be reduced by fifty (50) percent. Seeding will take place during the late part of the fall season and no earlier than October 1.

3. Fertilizer Application
The fertilizer will be applied by broadcasting or as a separate operation of hydroseeding. Fertilizer application will be determined from soil analysis (refer to R645-301-243 Soil Nutrients and Amendments). The following is an approximate combination and application rate:

Ammonium Nitrate	50 lbs/acre
Triple Superphosphate	75 lbs/acre

4. Seed Covering
Following hand broadcasting of the seed mixture and fertilizer, and whenever possible on hydroseeded areas, the sites will be hand or mechanically raked to cover the seeds.

5. Mulch Application
Following hand broadcasting and raking, the seeded slope areas will be covered with an erosion control mulch blanket or hay mulch (2 tons/acre). The blanket will be mechanically anchored per the manufacturers' specifications.

Following hydroseeding, a wood fiber hydromulch with tackifier will be applied at the rate of approximately 2000 lbs/acre.

Following broadcast seeding, alfalfa hay mulch will be applied at the rate of two (2) tons per acre. The mulch will be mechanically crimped into the soil.

All seed and hay mulch will be inspected by a State Department of Agriculture inspector prior to application. Copies of inspection certificates will be submitted to the Division.

Since the initial construction of the waste rock site (June 1990) to this date of August 2013, three berms have been constructed around the waste rock pile, filled to their capacity, and their side slopes reclaimed according to the approved reclamation plan.

R645-301-350 Performance Standards

Construction/reclamation activities will not take place between December 1st and April 15th.

Signs will be placed around the planted slopes for their protection. The area will be entered only to provide maintenance (as needed) and/or monitoring duties.

Standards for successful revegetation include weed species not more than 10% and no noxious weeds. Weed control will not be undertaken unless it is determined necessary due to weed dominance and delayed rate of succession. All noxious weeds will be eradicated either chemically or physically if they become established on the site. Chemical applications will be approved by UDOGM in consultation with the BLM.

Rodent damage on revegetated areas will be assessed during monitoring periods. Species specific control measures will be implemented as necessary. Control measures must be approved by the Division in consultation with the Utah Division of Wildlife Resources prior to application.

Annual monitoring will also include inspection for rills and gullies. Should these be present, they will be filled and the soil reseeded. Rill and gully repair will follow the regulations set forth in the Coal Rules R645-301-357.360 through R645-301-357.365. As repairs are recognized, the Division will be notified and the affected area will be reported in the annual vegetation report.

All vegetation sampling will be undertaken in the late summer for maximum plant growth. The line intercept or ocular estimation methods will be used to measure cover and species composition. The point-center quarter method will be used to measure shrub and tree density.

Productivity measurements will be a double sampling procedure of clipped plots and ocular estimates. Rectangular plots (6.27 in. x 100 in.) will be randomly located in reference areas and revegetation sites. Sampling will be at the 90% confidence level.

The reference area will be checked to detect any change from natural or man-induced activities and to verify they are in fair or better condition. Sampling of the reference sites at the time of bond release will be conducted concurrently with final reclamation sampling, using the same methodology used to sample the reclaimed areas.

The standards for success to be applied for ground cover and production of living plants on the reclaimed areas at the Waste Rock Storage Facility will be at least equal to 90% (with a 90% confidence level) to that of the corresponding reference area at the time of bond release. Cover in the reclaimed areas will not be less than that required to achieve the approved post-mining land use outlined in R645-301-400: Land Use and Air Quality.

The criteria for measuring revegetation success will be production, cover, and woody plant density. Although three (3) vegetation communities will be impacted, (Pinyon-Juniper, Saltbush, Black Sage/Grass) only one (1) mixed vegetation community (Shrub/Grass/Forb) will be re-established. Revegetation success will be dependent on soil and slope factors as well as proper species selection.

Revegetation success will be measured against the reference areas (soil type, slope and vegetation factors) as follows:

Revegetated Site	Production (1) & Cover (2)	Density (3)
Access Road (Ustollic Calciorthid, 3-30% slopes)	P-J Reference Area	2500
Waste Material Outslope (Lithic Ustic Toprriorthents, 50% slopes)	Saltbush Reference Area	2500
Top of Waste Material (Lithic Ustic Torriorthents, <5% slope	Black Sage/Grass Reference Area	2500

(1) See SCS Range Condition Survey , Appendix B
(2) See Vegetation Report, Appendix A
(3) A woody plant density of 2500 plants per acre should be adequate for post-mining wildlife habitat. This level is also achievable based on the success observed at the reclaimed cells and berms at the "Old" Cottonwood Waste Rock Site. Vegetation monitoring conducted in 1989 on Cell and Berm 3 indicated an average plant density of greater than 2300 plants/acre.

At the time of bond release or after the 10 year responsibility period has passed, similarity between the reclaimed area and corresponding reference area will compare life forms and/or species present in each community by the use of similarity indices. Indices of similarity provide the means of mathematically comparing the plant communities in the two areas. One, or a combination of the three indices found in the Vegetation Guidelines, February 1992, will be used to determine the similarity between the reclaimed and reference area. If another index (or combination thereof) is used, Division approval will be required. Similarity will be considered successful when the index value is at least 70% of the reference area.

All vegetation monitoring data will be reported annually. This report will contain a narrative of the actual monitoring methods used, results, and a discussion of the overall success or failure of each area. Raw data sheets will also be included in the annual reports. Standards attained at the time of bond release will be approved by the Utah Division of Oil, Gas and Mining (UDOGM).

CHAPTER 4
LAND USE AND AIR QUALITY

Chapter 4 – Land Use and Air Quality

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Appendix A: Cultural Resource Evaluation

R645-301-400: Land Use and Air Quality

R645-301-410 Land Use

This chapter includes the general requirements to meet the State of Utah's regulatory requirements to conduct coal mining and reclamation operations at the Waste Rock Storage Facility. ~~and operate these facilities in Grimes Wash as part of the Trail Mountain Mine refuse disposal site.~~ This application includes descriptions of the pre-mining and proposed post-mining land uses.

The post mining land uses for the area, based on the BLM Land Resource Management Plan and Emery County Zoning regulations, are wildlife habitat and livestock grazing.

R645-301-411 Environmental Description

The site for the proposed disturbed area of the Waste Rock Storage Facility is located 1.75 miles south of the Cottonwood/Wilberg Mine, Emery County, Utah. The legal description of the site is: Township 17 South, Range 7 East, Section 34. Elevation of the site range between 6,700 ft. and 7,000 ft. above sea level. The slopes are varied between 3 degrees and 36 degrees and are composed of exposures to the east, west and south.

The Waste Rock Storage Facility occupies approximately 25 acres of public land administered by the U.S. Department of the Interior, Bureau of Land Management. It is located in the San Rafael Resource Area of the Moab District, within BLM ecological sites described as follows:

Semi-desert shallow loam

The vegetation associated with the semi-desert shallow loam site consists of Utah juniper and pinyon-pine overstory with black sagebrush and Salina wildrye understory. Slopes range from 15 to 50 percent and vegetative production (air-dry) is poor (100 to 250 pounds/ac.)

Semi-desert stony loam

The vegetation associated with the semi-desert stony loam site consists of Utah juniper and pinyon-pine overstory with black sagebrush and Salina wildrye understory. This site occurs on fan terraces and fan remnants with an average slope of 15 to 50 percent. Vegetative production (air-dry) is from 350 to 700 pounds/ac due to the presence of pinyon and juniper.

The general area is classified by the BLM as Deer Winter Habitat and Crucial Deer Winter Habitat. UDWR classifies the area as Critical Deer Winter Range (Southeast Manti Herd) and

Limited-value Elk Winter Range (see Plate 9-1). Further discussion of the wildlife habitat associated with the site can be found in R645-301-300 Biology.

The Waste Rock Storage Facility is located within the West Grimes livestock grazing allotment (754 acres). This allotment is grazed from April 1 to June 10 each year. A total of 477 animal use months (AMU's) are allotted to the West Grimes Wash allotment; however, only 295 AUM's are active.

The mitigation/enhancement measures conducted for the disturbed wildlife habitat (R645-301-300 Biology) will be effective to offset the impacts resulting from the 3 percent (25acres/754 acres) reduction in the livestock grazing allotment. As stated in the Draft RMP/EIS (page 3-20), "...a greater number of water sources are in demand (within the resource area), particularly for wildlife and livestock. More water sources could help redistribute livestock and wildlife and assist in range management."

Section 34 is part of Oil and Gas Lease U-56024 held by Estelle H. Yates. An abandoned well exists approximately 1800 feet northeast of the waste rock facility. The facility will not negatively impact the oil and gas lease.

R645-301-411.130 Land Use Classifications

The area surrounding the Waste Rock Storage Facility is listed as Class IV in the BLM's Visual Resource Management (VRM) classification system. Class IV is described as follows:

"The objective of this class is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements."

The location, design, construction, and operation of the facility are consistent with this VRM class.

The Waste Rock Storage Facility is also located within the Roaded Natural Class according to the BLM Recreation Opportunity Spectrum (ROS) classification. The setting opportunity within the Roaded Natural Class is described as follows:

> "Area is characterized by a generally natural environment with moderate evidence of the sights and sounds of man. Resources modification and utilization practices are evident, but harmonize with the natural environment."

The location, design, construction, and operation of the Waste Rock Storage Facility are compatible with the Roaded Natural ROS class.

R645-301-411.140 Cultural and Historic Resources Information

Archeological-Environmental Research Corporation (AERC) prepared a report in 1987 called "Cultural Resource Evaluation of Potential Subsidence and Escarpment Failure Areas in the East Mountain Locality of Emery County (Project UPL-87-6)". This report was amended in 1989 to include the ~~Cottonwood/Wilberg~~ Waste Rock Storage Facility. AERC prepared and addendum to the 1987 report as a statement that an intensive archeological evaluation was conducted of the proposed waste rock disposal and access road areas. It was reported that no cultural resource sites or isolated cultural material were observed during the evaluation. Refer to this addendum in Appendix A.

R645-301-412 Reclamation Plan

In areas where surface disturbances result from coal mining and reclamation operations, regrading and revegetation will be conducted to restore the areas to their pre-mining conditions which they were capable of supporting prior to mining. Because such a small surface disturbance is planned for the Waste Rock Storage Facility, little or no effect to the past or future land use is anticipated. The land will be reclaimed to the original land use practices of grazing and wildlife habitats.

A detailed reclamation plan has been developed for the Waste Rock Storage Facility and is included in Section R645-301-200 through R645-301-700 of this volume.

R645-301-412.300 Suitability and Compatibility

The reclamation soil sampling will identify any soil that is not suitable. All unsuitable soils will be placed at least 4 feet below the final grade surface. This will ensure suitable growth material for vegetation. ~~All~~ Fills will be graded at slopes compatible with the surrounding areas.

R645-301-413 Performance Standards

~~All~~ Disturbed areas will be restored in a timely manner to conditions they were capable of supporting before mining. Liability will be for the duration of the coal mining and reclamation operations and for the period of extended responsibility for achieving successful revegetation. ~~All~~ Post mining land use criteria will be satisfied before the bond is fully released.

R645-301-420 Air Quality

Air pollution control measures are described in the Approval Order DAQE-835-91 issued by the Division of Air Quality. This order has conditions that the operator must comply with to control fugitive dust emissions, quantity of refuse hauled, maintenance to road to control fugitive dust emissions, etc. Those emissions will be controlled by typical dust suppressant measures. The Division of Air Quality requires that the Approval Order be in place and complied with by the operator for the life of the facility's operation. Periodic inspections, by the Division of Air Quality, are conducted at the site to verify compliance. This air quality Approval Order is ~~filed at the Energy West Mining offices in Huntington, Utah and is also~~ attached as Appendix B of this chapter.

R645-301-421 Clean Air Act

Coal mining and reclamation operations will be conducted in compliance with the requirements of the Clean Air Act (42 U.S.C. Sec. 7401 et seq.) and ~~any~~ other applicable Utah or federal statutes and regulations containing air quality standards.

R645-301-422 Utah Division of Air Quality

The operator has coordinated compliance efforts with the State of Utah, Division of Air Quality. The current Approval Order (AO) issued to the operator is DAQE-895-91 and is dated December 16, 1991.

CHAPTER 5
ENGINEERING

Chapter 5 – Engineering

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Appendix A: Geotechnical Investigation

Appendix B: Physical and Chemical Analysis of Waste Material

R645-301-500: Engineering

During the operation of the ~~Trail Mountain~~ Fossil Rock mines, certain waste products are generated that are not part of the coal product, they include; underground development waste, trommel screen reject, and sediment from the pond and drainages. The fill of the disposal site will comprise of these materials that will be permanently stored within the Waste Rock Storage Facility. This chapter includes the general requirements to meet the State of Utah's regulatory requirements to conduct coal mining and reclamation operations at the Waste Rock Storage Facility and operate these facilities in Grimes Wash as part of the ~~Trail Mountain Mine~~ refuse disposal site. This application includes descriptions of the Engineering design, operation, and reclamation of the waste rock site and access road area.

R645-301-510 Introduction

The original Cottonwood/Wilberg Waste Rock Storage Area is located south and east of Highway 57. This site was filled to its capacity in 1989 (Phase III Bond Release of the original site was granted in July of 2009) making it necessary to construct a new facility to handle the disposal needs of the mine. Calculations have been made, based on past history, the rate and amount of waste rock generated during mining operations, these quantities have been used to formulate the design of a new facility. Additional information on the original and current Waste Rock Storage Facility is provided in the introduction of this M&RP volume.

~~The area selected for the Waste Rock Storage Facility is located on public land managed by the US Department of Interior, Bureau of Land Management. The facility is located in the southeast quarter of Section 34, Township 17 South, Range 7 East, west of Highway 57 and used in support of the mining operations. The area was selected because it is close to the mine facilities and has the required capacity to contain all the waste rock generated at the Cottonwood/Wilberg, Des Bee Dove, and Trial Mountain mines for the anticipated life of each mine. Final reclamation has been conducted on the Des Bee Dove mine facilities. These activities were completed in 2006. Since the Cottonwood/Wilberg is being reclaimed and the Des Bee Dove Mine has been reclaimed, the site is used specifically for the refuse disposal for the Trail Mountain Mine.~~

R645-301-511 General Requirements

This application includes descriptions of the Waste Rock Storage Facility's operation which includes maps, cross-sections, and plans for its operation and reclamation of the site.

R645-301-512. 100 Cross-Sections and Maps

Maps and cross-sections detailing environmental resources of the area and plans for construction of the site are included in the Maps Section of this Chapter. ~~All~~ design maps and

cross-sections when required by regulation have been certified by a qualified, registered professional engineer.

R645-301-512.230 Coal Mine Waste

~~The~~ A professional engineer experienced in the design of similar earth and waste structures has certified the design of the disposal facility according to R645-301-536.

R645-301-512.250 Primary Roads

A primary access road has been planned for entrance into the Waste Rock Storage Facility. The professional engineer has certified the design and construction of the road as meeting the requirements of R645-301-534.200 and R645-301-742.420.

R645-301-514 Inspections

The storage pile will be inspected for stability by a qualified, registered professional engineer at least quarterly and during the following critical construction periods and throughout its operation:

1. Removal of all organic material and topsoil
2. Installation of surface drainage system
3. Construction of soil stockpiles
4. Revegetation
5. Placement and compaction of fill material

The report will be submitted in writing to the Division within the subsequent quarter following the inspection. A copy of the inspection report will be maintained at the ~~Energy West~~ Mining Office for inspection by interested parties.

R645-301-520 Operation Plan

R645-301-521 General

The area selected for the Waste Rock Storage Facility is located on public land managed by the US Department of Interior, Bureau of Land Management. ~~The area is located in the southeast quarter of Section 34, Township 17 South, Range 7 East, west of the coal haul road used for the Cottonwood/Wilberg Coal Mine facility. The area was selected because it is close to the mine facilities and has the required capacity to contain all the waste rock generated at both the Cottonwood/Wilberg, Des Bee Dove and Trial Mountain mines for the anticipated life of each mine. Refer to Plates 1-1, 1-2, and 4-1 for Coal Lease and Ownership map,~~ Surface Ownership

map, and Right-of-Way and Permit Boundary map, respectively. Construction of the site occurred in June 1990.

R645-301-521.200 Signs and Markers

Signs and markers will be made of durable material, such as thin sheet metal, and will be maintained during the conduct of all activities to which they pertain or until bond release. Each type of sign and marker will be of uniform design and shape and will be located so as to be easily seen and read.

Perimeter and topsoil markers will be approximately 10" x 14", post mounted and read "Perimeter Do Not Disturb, or Topsoil" respectively.

No stream buffer zone markers are required as there are no streams adjacent to the permit area.

On the day in which blasting occurs, a portable sign which says "Warning: Explosives in Use" will be displayed near the entrance sign.

R645-301-521.240 Mine and Permit Identification Signs

A Waste Rock Storage Facility permit identification sign will be placed at each point of access from public roads to areas of surface operations within the permit area. The sign will state the facility's name, owner/operator business address and phone number, Utah Reclamation Permit No. and MSHA ID No. ~~., and UPDES Permit No.~~ The sign's size will be sufficient to make the information clear and legible. ~~approximately 40" wide by 18" high.~~ Upon cessation of operations or bond release, signs and markers will be removed as appropriate.

R645-301-524 Blasting and Explosives

~~All~~ Blasting operations will be conducted by persons who have been trained, examined and certified as provided by 30 CFR 850 and applicable regulations of the State Industrial Commission. No resident or owner of a dwelling or structure is located within one-half mile of where surface blasting activity will occur.

All blasting will be conducted between sunrise and sunset. Warning and all-clear signals will be given before and after blasting. Access to the area possibly subject to fly rock from blasting shall be regulated. Access to the area shall be blocked until an authorized representative has determined that after blasting no unusual circumstances exist and that access to and travel in or through the area can be safely resumed.

Records of blasting will be kept on file at the ~~PacifiCorp - Energy West~~ Mining office in Huntington. The records shall contain the following:

- Name of Operator ~~- PacifiCorp: Energy West Mining Company~~
- Location - ~~Cottonwood/Wilberg~~ ~~Trail Mountain~~ Waste Rock Site - date and time of blast
- Name, signature and license number of blaster-in-charge
- Direction and distance to nearest structure
- Temperature, wind directions and approximate velocity
- Type of material blasted
- Number of holes, burden and spacing
- Diameter and depth of holes
- Types of explosives used
- Maximum weight of explosives detonated within any 8-millisecond period
- Maximum number of holes detonated within any 8-millisecond period
- Initiation system
- Type and length of stemming
- If applicable - mats or other protection used
- Type of delay detonator and delay periods used
- Sketch of delay pattern
- Number of persons in blasting crew

R645-301-526 Mine Facilities

This section includes the design and operational plans for the facilities that make up the Waste Rock Storage Facility. These facilities include the access road, refuse pile, and sediment pond. Construction of the site occurred in June 1990.

Access Road Design

The access road begins at the intersection with State Road 57 and extends in a southwesterly direction for 1435 feet to the northeast corner of the Waste Rock Storage Facility. The road is constructed through an area dominated by pinyon-juniper vegetation with several natural ephemeral stream channels. The road is used by trucks carrying waste rock materials from the ~~Trail Mountain~~ Fossil Rock mine~~s~~ and Hunter Prep Plant Facility for disposal in the Waste Rock Storage Facility.

The road is located in Section 34, Township 17 South, Range 7 East, SLBM, on public lands managed by the US Department of the Interior, Bureau of Land Management. The total area disturbed by the road and road construction activities is approximately 1.7 acres. Refer to Plate 4-1.

The horizontal and vertical alignment, the cuts and fills and the drainage structures have been

designed and located to conform to the existing topography. The overall grade of the road is less than 1.8% with a maximum pitch grade of 3.4%. The road cross-section has a 28 foot wide graveled surface of 6" depth sloped at 1% toward the roadside drainage ditches. Roadside drainage has been constructed to carry road drainage to the cross culverts. Embankment sections have out slopes built on a 1V:1.5H. Cut sections are built on a 1V:1.5H in unconsolidated areas. A locked gate is located at the beginning of the access road, station 2+20, to the Waste Rock Storage Facility. A typical road cross-section is shown in Exhibit I.

~~All~~ foundations for embankments shall be free from organic material and topsoil. The top layer of the ground underlying the roadway embankment was moistened and scarified to a depth of 6" and then compacted to 90 percent of standard proctor according to AASHTO Designation T-99 Method D. Placement of the embankment material was in 12" maximum lifts. All rocks were worked into the fill to avoid forming voids.

The road base course consists of 10" of pit run gravel. The base course was watered and thoroughly mixed and compacted in one lift to 90% of standard as determined by AASHTO Designation T-99 Method D.

The surface course consists of crushed stone meeting the gradation requirements listed in Table 500-1. The material was thoroughly mixed with water to optimum moisture content. The material was then be placed and compacted in a single lift. This material was compacted to 95% of standard as determined by AASHTO Designation T-180 Method D. The finished grade was graded smooth and uniform with surface deviations not exceeding 0.5 inch plus or minus in 10 feet.

Maps and drawings associated with the design and construction of the access road are Plates 4-3 (Pre-Existing Topography Map), 4-4 (Initial Construction Map), 4-8 (Access Road Cross-Section Map), and 4-9 (Profile/Centerline of Access Road). Refer to Maps Section.

Table 500-1: Gradation Requirements

UNTREATED ROAD BASE SPECIFICATION		
Sieve Size	**Ideal Gradation (% passing)**	**Ideal Gradation Tolerance**
1 INCH GRADATION		
1 inch	100	0
½ inch	85	± 6
No. 4	55	± 6
No. 16	31	± 4
No. 200	9	± 2
3/4 INCH		
3/4 inch	100	0
3/8 inch	85	± 7

No. 4	61	± 6
No. 16	33	± 5
No. 200	9	± 2

Note:

1. That portion of the material passing the No. 40 sieve shall be non-plastic when tested by AASHTO Designation T-90

2. The above gradation specifications are to be done by AASHTO Designation T-27

3. The aggregate shall be of uniform density and quality and shall have a rodded weight of not less than 75 pounds per cubic foot according to AASHTO Designation T-19.

Access Road Placement and Handling of Materials

The road was designed and laid out to minimize the amount of cut and fill operations required for construction. The cuts were balanced with the fills so little excess material was generated.

Topsoil

The initial step of the road construction was to remove all vegetative matter from the area to be disturbed by road construction. Once the vegetative material was removed, the top soil (where existing in sufficient quantities to allow for mechanical collection) was removed and temporarily stockpiled until it was evenly redistributed on the embankment slopes after their construction. The temporarily stockpiled soil has been stored in three areas along the access road and away from the activities of the road construction. The piles were fertilized and planted as per the approved plan in 1990. The topsoil piles support a vigorous mature vegetative stand that controls runoff and erosion. Refer to Plate 4-4.

Silt fences were installed along the toe of the embankment slopes to provide erosion protection until the interim vegetation was established. Refer to R645-301-300 Biology for Interim Vegetation Plan.

Subgrade

Following removal of the topsoil and subsoil, the subgrade material was removed to the lines and grades shown on the plans as required to construct the cuts and fills. Each layer of embankment was placed, leveled and compacted in 12" maximum lifts. Large rocks were worked into the fill to avoid creating voids, etc. in the fills. The subgrade material was monitored during excavation to identify potential acid or toxic forming properties. If aberrant appearing (i.e. accumulated salts, etc.) materials were encountered, it was analyzed to determine if it is potentially toxic or acid forming. No aberrant material was found at the site.

Road Surface

Following the construction of the subgrade, 10 inches of road base gravel was placed and compacted. Then 6 inches of crushed stone was spread and compacted on the road surface. This serves as the final travel surface. The final configuration of the road was constructed to the lines and grades shown on the plans. Refer to Plates 4-8 Access Road Cross-Sections.

Dust Control

During construction of the road fills and soil stockpiles, water was spread (as needed) over the working level of the fill surface to aid in compaction and to control fugitive dust.

Access Road Drainage Control

The disturbed area consists of the roadway and associated cuts and fills in an Alternate Sediment Control Area (ASCA) and has treatment facilities as described below. (See Map 4-2 for area designated as ASCA's.)

The drainage system for the road consists of road side ditches and cross culverts. The drainage system is designed to safely pass the peak runoff from a 10-year, 6-hour precipitation event. The system is designed to minimize to the extent possible, erosion and degradation of surface.

To minimize erosion on the road bed the road cross-section was sloped 1% toward the roadside ditch (refer to Exhibit I). Roadside ditches have been provided along the entire length of the road to channel runoff into the cross culverts. Sediment controls, i.e. strawbales and/or silt fences perpendicular to the flow have been placed at no more than 200 foot intervals to prevent additional sediments from entering the natural channel.

All drainage culverts are designed to safely pass the 10 year, 6 hour precipitation event without a buildup of head water at the inlet. The inlet of all culverts has been provided with a rock rip-rap headwall to protect against erosion. The culverts have a minimum of 12 inches of compacted cover and have been installed in line with the natural drainage channel. Refer to Plate 4-4 for location of all culverts and R645-301-700 Hydrology, Appendix C for calculations.

Operation and Maintenance

On an as needed basis, as the road surface deteriorates due to usage and weather, a blade will be used to recontour the travel surface of the road. The rills and gullies will be backfilled and a smooth surface will be developed with side slopes of 1%. Road base gravel will be added to the surface as needed.

The ditches along the access road will be maintained at the same time as the road surface.

A blade will be used to clean sediment and debris from the ditch. In areas where excessive erosion occurs, rock rip-rap will be placed to help control it.

The inlet and outlet works of all culverts will be maintained as needed. Any debris clogging these structures will be removed. Rock rip-rap will be used to control erosion. Any erosion that occurs on the fill or cut slopes will be repaired by either backfilling or in those cases where a small channel has developed, due to drainage concentration, a rip-rap channel will be established.

The silt fences along the toe of the road fill sections or in the roadside ditches will be cleaned of sediment accumulation by backhoe or hand methods. This material will be either used to backfill rills and gullies or disposed in the waste rock site.

Waste Rock Storage Facility Design

The facility is designed to fit into the existing topography of the area with as little disturbance as is possible to the existing drainage system. Only one ephemeral drainage channel required a permanent diversion for the construction and operation at the facility. At completion, only 15.82 acres have been disturbed. A sediment pond designed and constructed as part of the facility catches and treats all the runoff from the site before releasing it back into the natural channel (refer to R645-301-700, Appendix C). The construction, operation, and reclamation of the facility will occur in the following sequence:

1. Installation of sediment control (i.e. silt fence, straw bales, etc.) prior to initial disturbance.
2. Construction of access road.
3. Initial construction of Waste Rock Storage Facility, including the topsoil and subsoil stockpiles, sediment pond dam and the initial diversion ditch. Construction date: June 1990.
4. Installation of silt fences at the base of soil stockpiles.
5. Construction of the perimeter fence.
6. Interim revegetation of soil stockpiles and road cut and fill slopes.
7. Placement of underground development waste and sediments, and construct perimeter berms.
8. Cover perimeter berms with soil and revegetate.
9. Construction and maintenance of diversion ditches to be ongoing for the duration of the facility's utilization.
10. Contemporaneous reclamation of outside slopes of berms.
11. Construction of permanent diversion around waste rock site into sediment pond.
12. Monitoring and cleaning of sediment pond as required.
13. Two years after seeding of outslopes and completed filling of the waste rock pile, reclaim top of pile according to plan, remove of sediment pond, and regrade of access roads begins.

14. Monitoring of revegetation efforts for bond release.

Waste Rock Storage Facility Drainage Control

The drainage of the Waste Rock Storage Facility is confined to a single ephemeral stream at the bottom of a small valley. There is 15.3 acres of undisturbed land which normally drains through the valley that's diverted around the waste pile. This undisturbed runoff and the runoff from 15.82 acres of disturbed land are diverted into a sediment pond where it is retained to remove suspended solids prior to release into the natural channel. Alternative sediment control areas (ASCA) on the outside slopes of the soil stock piles consisting of 0.9 acres are treated through use of silt fences and straw bales. (refer to Area 1D, Plate 4-2.)

Initial Construction

The initial construction of the Waste Rock Storage Facility included the construction of the sediment pond and stripping and stockpiling of the topsoil and subsoil and construction of the initial diversion ditch on the west side of the valley. This diversion ditch was designed to convey the runoff from a 100 year, 6 hour storm event in a V-ditch with a 2% channel slope. This gentle slope keeps the velocity below 5 feet per second to minimize erosion. As the waste material pile grows and encroaches upon the initial diversion ditch and against the western and northern slopes, approximately 10" of soil material will be salvaged across the slopes. The ditch will be reconstructed at the toe of the waste pile to the same specifications as the initial ditch. Interim control of drainage on the surface of the pile will slope in a southwesterly direction. Runoff from the surface of the pile will discharge in a controlled manner into ditch DA and then to the sediment pond as shown on Drawing CM-10877-WB, Plate 4-14. Should water accumulate in depressions on the surface of the waste material, to a level which may affect the stability of the waste pile, this water will be pumped to the sediment pond. When the active surface of the refuse pile reaches an elevation of approximately 6,795 feet, drainage control will be as the following describes. The western diversion ditch, labeled DA on Plate 4-5, drains the upland undisturbed areas, the top of the waste pile, the west slope of the waste pile and the top and inside slope of the topsoil pile. The eastern diversion ditch (DB) drains the east slope of the waste pile and top and inside slope of the subsoil stockpile. The total runoff to be collected into the sediment pond is 2.17 acre feet for the 10 year, 24 hour storm event. The estimated annual sediment production for the site is 1.65 acre feet. The actual design of the sediment pond provides 4.58 acre feet of storage so that there is 2.41 ac. ft. of sediment storage available. The spillway for the sediment pond safely passes runoff from a 25 year, 6 hour storm event with the required one foot freeboard. Refer to R645-301-700 Hydrology, Appendix C for all hydrological calculations.

The outside slopes of the two soil stockpiles have silt fences constructed at their bases to treat the runoff from precipitation and are designated as alternate sediment control area 1D, Plate 4-2. Interim revegetation was accomplished as soon as practical after construction to stabilize the slopes.

Monitoring of these drainage controls will be on a regular basis and maintenance will be scheduled as needed to ensure that they operate as designed. The ditches and silt fences will be cleaned, repaired and reshaped with a backhoe or hand methods as appropriate.

Waste Rock Storage Facility Placement and Handling of Materials

During the operation of the mine, certain waste products are generated that are not part of the coal product, they include; underground development waste, trommel screen reject, and sediment from the pond and drainages. The fill of the disposal site comprises of material that will be permanently stored within the ~~Cottonwood/Wilberg~~ Waste Rock Storage Facility.

Topsoil

After the vegetative material was removed from the site the topsoil was stripped and stockpiled as shown on Plates 4-4 and 7-2. Stripping areas and depths were staked to facilitate topsoil excavation. Care was taken to avoid unnecessary compaction of the topsoil material. Following soil placement, the stockpile was planted with an interim seed mix (refer to R645-301-300 Biology).

Subsoil

Following removal of the topsoil material the remaining material needed for the subsoil stockpile was excavated to the lines and grades specified on the cross-sections. The material was placed, leveled and compacted in 12" maximum lifts. Rocks larger than the lift thickness was worked into the fill to avoid forming voids. Those rocks that make good rip-rap and were separated, hauled and stored for future use. No acid or toxic forming materials were found in the materials cut for fill. Any acid or toxic forming materials will be treated as spoil and placed in the Waste Rock Storage Facility. (Refer R645-301-200 Soils for soil information.)

Underground Development Waste

The underground development waste generated during coal mining, sediments from the sediment pond, and trommel rejects will be hauled to the site by truck and dumped. The composition of this material i.e. waste rock will be a mixture from the various sources. The coal rock ratio is estimated to be less than 50/50. As the material is spread and placed in the fill, it will be thoroughly mixed helping to blend the materials.

The mixing action will come as a result of the handling required to get the material delivered to the site and the spreading and leveling actions at the site itself. The underground development waste is picked up and dumped at least three times prior to being deposited on the waste pile. The spreading and leveling is performed with a tracked dozer and will mix all of the dump truck piles of waste material, to disperse any waste which may be of higher concentrations than allowed.

When the quantity of material dumped at the site needs to be leveled it will be spread, placed and compacted in 24" thick horizontal lifts. Large rocks etc., will be worked into the fill to avoid

forming voids. As the fill lifts are made, the top working surface will be sloped to allow for drainage. Any acid or toxic forming materials found in the final lift of the waste pile will be buried in the fill with a least 4 feet of non-toxic cover material.

To allow for contemporaneous reclamation of the outside slopes of the waste pile, a phased construction schedule will be implemented. A berm of waste rock materials will be constructed approximately 10 feet high at the outside edge of the waste pile. The waste material will be placed inside of the berm, spread out with a dozer and compacted in place. As the material level reaches the top of the berm, a new berm will be constructed with a 2 to 3 foot offset to provide a small terrace. This process will continue until the first three 10-foot high berms have been filled. Subsequent berms will be set back eight (8) feet from the outside edge of the top of the previously completed berm. This process will continue until site construction is completed. This configuration will result in an overall outslope of approximately 2.5:1 as recommended by Rollins, Brown & Gunnel (Stability Analysis, October 1992). Contemporaneous reclamation activities will progress along with the construction of each berm. See Exhibit XXI, Exhibits Section.

Soil will be salvaged at a depth of approximately 10 inches along the western and northern slopes of the Waste Rock Storage Facility. Once a lift has enough refuse material that leveling beyond the existing ditch line and against the western and northern slope is required, soil material will be salvaged across the slope. The width of material to be salvaged will be determined by the depth of refuse to be leveled to the slope. The ditch line will be constructed in compliance with the permit requirements. These parameters will be followed each time refuse is leveled to the slope.

Salvaged soil material will be handled in the following ways. If the berm is in the process of being constructed, the salvaged soil material will be used in stabilization of the berm. If a berm is not being constructed, the salvaged material will be hauled to the subsoil pile for storage.

During the leveling process, extraneous material, trash and etc. will be separated from the fill material and disposed of in an approved sanitary landfill.

Sediment Pond Sludge

Material removed during cleaning of the ~~Trail Mountain~~ Fossil Rock sediment ponds will be placed in the Waste Rock Storage Facility. Sludge material that is dry enough to be immediately incorporated into the refuse material will be mixed with the waste rock and placed as previously described above. Sludge which contains more moisture than can be properly handled on the refuse pile will be placed in a containment area and allowed to dry. The containment area will be constructed within the refuse disposal area at a location that will allow drying of the sludge and maintain adequate working room for normal operation of the facility. When dry, the sludge material will be excavated and distributed throughout the refuse area for incorporation and compaction. This procedure will help maintain the proper coal-to-rock ratio throughout the site and ensure uniform stability.

R645-301-530 Operational Design Criteria and Plans

R645-301-531 General

This permit application includes a general plan and detailed design plans for each siltation structure, water impoundment, and coal processing waste bank, dam or embankment within the permit area. A discussion and design of the sediment pond and earthen dam is outlined in R645-301-700 Hydrology, Appendix C. Design of the Waste Rock Storage Facility is discussed above in R645-301-526.

R645-301-532 Sediment Control

The Waste Rock Storage Facility covers approximately 15.82 acres of disturbed area. All water within this area is conveyed to ditches, and/or culvert systems. Sediment control allows for undisturbed runoff to bypass the facilities via a diversion ditch and culvert system into the surrounding ephemeral drainage adjacent to the site. Disturbed runoff from the site is diverted to the sediment pond. Refer to R645-301-700 Hydrology for a complete discussion on sediment control.

R645-301-533 Impoundments

As described previously, a sediment pond is utilized to collect storm water runoff from the disturbed area of the Waste Rock Storage Facility. The design of the pond is found in R645-301-700 Hydrology, Appendix C. Pond design encompasses approximately 1.0 acre of disturbed land.

R645-301-533.200 Foundations

The pond is designed as an incised structure. Foundations for embankments and impounding structures are constructed utilizing the information outlined in the Geotechnical Study conducted by Rollins, Brown, and Gunnel September, 1989. Refer to this report in Appendix A of this section. Stability analysis for the construction of the earthen dam is found in Exhibits XII through XVIII in the Exhibits Section.

R645-301-536 Coal Mine Waste

In order to better understand the chemical and physical properties of the rock that will be placed in the waste rock site, over 130 samples from both outcrop and drill cores were analyzed.

Samples were selected that would best represent the material that will be placed in the site over its useful life. The samples were tested individually and the results are summarized in the table in Appendix B according to the common rock types that will be stored in the site.

In addition to these analyses, representative samples were tested for their potential alkalinity, pyrite/marcasite content and clay content. The results are shown below:

Zone Sampled	Number of Samples	pH	Pyrite/Marcasite	Clay Alkalinity	$\%FeS_2$ Potential
Hiawatha roof	3	7.8	3.3	-	218,400
Hiawatha floor	3	7.5	1.3	5.5	127,300
Blind Canyon roof	2	8.1	0.5	-	252,600
Blind Canyon floor	3	8.3	1.3	9.0	3,500

A review of the above data concerning the sodium absorption ratio of the Blind Canyon floor reveals that three out of four samples have values less than 5.0 (4.8, 1.5 and 1.3). One sample has a value of 60.4 which raised the sample mean to 17.36 and created a high standard deviation of 25.14. This indicates that in general the Blind Canyon floor rock will not pose a problem from its high SAR but from time to time higher than average values will be encountered. These concentrations will be diluted by other rocks with low SAR values when stored in the Waste Rock Storage Facility. These results show there is little potential for acid or toxic conditions to exist for the disposed of coal mine waste material.

Analysis results from the roof and floor samples taken at the Trail Mountain Mine are found in the Trial Mountain MPR, Volume 1, Chapter 6 and Appendix 6-2. Similar results are found in these samples.

To identify the acid- or toxic-forming potential of materials disposed of at the Waste Rock Storage Facility prior to covering the refuse pile berms for final reclamation, the top two (2) feet of the surface will be sampled according to the Division's "*Guidelines for Management of*

Topsoils and Overburdens", January 2008, Tables 3 and 7. Grab samples will be taken during construction of the berm. Samples shall be collected at a rate of two samples per 200 linear foot of berm; one composite sample at 0-1 feet, and one sample at 1-2 feet. Suitability of the coal mine waste materials shall be evaluated to comply with the acceptable criteria of Tables 4 and 8 of the Division's guidelines. If initial sampling finds that the material does not comply with the acceptable criteria, than additional sampling will be implemented to define the extent of the problem material. All unacceptable material will be removed, buried, and covered with 4 feet of non-acid/non-toxic forming materials.

R645-301-540 Reclamation Plan

R645-301-541 General

The Waste Rock Storage Facility consists of 15.82 acres of disturbed land to be used for disposal of underground development waste. An access road 1,435 feet long is constructed in conjunction with the site and involves 1.7 acres of disturbed land. The site is located on public lands managed by the US Department of the Interior, Bureau of Land Management and its principal use is wildlife habitat and livestock grazing. When the facility is completed, reclamation will return the area to these same uses.

Construction of the facility commenced as soon as the permit was issued. Sediment control measures were put in place to minimize the effects of the initial construction. Straw bales and silt fences were erected in the natural drainages to treat any runoff during the initial construction period. Interim revegetation was used on the bare slopes of the soil stockpiles and along the roadway to stabilize and prevent erosion. The topsoil stockpiles were marked as such. Drainage structures were constructed and maintained to ensure that they were in good repair and capable of handling the design flow rates. Silt fences were constructed at the base of the soil stockpiles outside slopes. These silt fences have been replaced with straw logs and are monitored and repaired as needed to ensure they are continuously in good working order.

Construction of the waste material pile incorporated a plan to allow for contemporaneous reclamation of the outside slopes of the pile. Waste material is used to construct a berm, approximately 10 feet high, to contain the waste material to be deposited. Quality sampling of this material is discussed above in R645-301-536.

As contemporaneous reclamation commences, 24 inches of subsoil and 12 inches of topsoil will be placed on the outside slope of the berm and revegetation of the slope will begin. Successive berms will be constructed on top of the previous berms as the level of the waste material rises. There will be a two to three foot offset of the toe of the upper berm to provide a small terrace to reduce runoff velocities. (See Exhibit XXI, Exhibit Section.) Since the initial construction of the waste rock site (June 1990) to this date of August 2013, three berms have been constructed around the waste rock pile, filled to their capacity, and their side slopes reclaimed according to the approved reclamation plan. Approximately 15,740 cubic yards of subsoil and 7,870 cubic

yards of topsoil will be needed to fully cover the outside slope of the berms.

When the final berm is constructed, contemporaneous reclamation will be conducted as explained above on the outside slope. The outside slope will be revegetated with the approved seed mix as outlined in R645-301-341.200. Ditches DA and DB will also be constructed as outlined in Plate 4-12 and the pond will be left in place.

Soils from the top and subsoil piles will be move to the north side of the waste rock pile (refer to Plate 4-7) and seeded. There is ample room to store approximately 11,300 cubic yards in this location. This includes enough subsoil to cover the top of the site with 2' of material (5,050 cubic yards), and enough topsoil to cover the top of the site with 1' of material (2,525 cubic yards). An addition of approximately 2,725 cubic yards of subsoil and 1,000 cubic yards of topsoil will be stored to fill this storage area to capacity.

The original subsoil storage will then be covered with approximately 1' of topsoil (2,060 cy), pocked and seeded. The original topsoil storage area will be pocked and seeded for final reclamation. If there remains additional soil at these original storage locations, it will be blended in with the surrounding topography.

The access road to the waste rock pile will be re-routed for a north access to an east access from the pond access road. At this time, the two year time clock (as required by R645-301-763.100 of the Utah Coal Regulations) for sediment pond removal will commence as the remaining waste rock site is filled to the top level of the berm.

When the waste pile construction is complete, the top surface of the pile will be graded for proper drainage. To identify the acid- or toxic-forming potential of materials disposed of at the Waste Rock Storage Facility prior to covering the refuse pile for final reclamation, the top two (2) feet of the surface will be sampled according to the Division's "Guidelines for Management of Topsoil and Overburden", January 2008, Tables 3 and 7. Grab samples will be taken prior to covering with soil. Samples shall be collected at a rate of two samples per acre; at each sample site one composite sample will be taken at 0-1 feet, and one sample at 1-2 feet. Suitability of the coal mine waste materials shall be evaluated to comply with the acceptable criteria of Tables 4 and 8 of the Division's guidelines. If initial sampling finds that the material does not comply with the acceptable criteria, than additional sampling will be implemented to define the extent of the problem material. All unacceptable material will be removed, buried, and covered with 4 feet of non-acid/non-toxic forming materials.

Subsoil and topsoil stored at the north side of the waste rock pile shall be used to cover the top surface of the pile. The volumes of these piles are 7,775 cubic for subsoil, and 3,525 cubic yards for topsoil. This volume will cover the top of the pile with at least two feet of subsoil and one foot of topsoil. Pocks will be constructed as a means for alternative sediment control for this area. This surface shall be seeded utilizing the seed mix found in R645-301-341.200.

At the end of the two year time clock (mentioned above), the sediment pond and remaining access roads shall be removed to the lines and grades as shown on Plates 4-8 and 4-10. The areas will be pocked and seeded according to the plan in R645-301-700 and R645-301-300. Topsoil stored along the main access road shall be used to cover this regraded area.

Discussion of Salvaged Soil Volumes

Salvaged soil volumes have been calculated for the subsoil pile and topsoil piles. Calculations show that the waste rock site area can be covered with approximately 3.4 feet of subsoil and 1.7 feet of topsoil. The access road can be covered with the salvaged topsoil to a depth of approximately 1.9 feet.

Energy West (owned/operated the WRS until 2015) has a limited confidence that the calculated subsoil and topsoil depths will be achieved. Calculations were based on the pre-existing contours established in the 1980's and compared to contours established in 2013. Energy West feels that there may be some discrepancy in the earlier established contours.

In 2013, pile volume calculations were conducted utilizing Carlson software which constructs a grid and drapes the grid over a surface. It cannot distinguish between boulders and solid ground surface. For that reason, it is felt that salvaged pile volumes are a bit over estimated. However, there is a high level of confidence that subsoil distribution can achieve a 2 foot depth and topsoil distribution can achieve a 1 foot depth.

Once the surface of the refuse pile and access road is completed, the surface will have been covered with subsoil and topsoil (a minimum of 24 and 12 inches, respectively) and revegetated. This equates to approximately 23,462 cubic yards of subsoil over a 7.3 acre area and 17,687 cubic yards of topsoil over an 11 acre area. Soils shall be distributed as shown in Figure 1 below. All other additional soils shall be used to enhance depths where needed and blend the reclaimed areas into the adjacent natural areas to achieve a post mining topography that complies with all section of the Utah Coal Regulations.

At the time of final bond release for the reclaimed areas, all reclamation will have been completed. (Refer to Plate 4-7) This will include removal of the sediment pond dam and access road, diverting the ditches into the natural drainage channel, covering the disturbed area with topsoil and removing the perimeter fence. Temporary sediment controls will again be used to prevent impact on the downstream areas during these construction efforts. Revegetation will take place on all reclaimed disturbed areas. Monitoring and maintenance, as required, will continue until final bond release is approved. Refer to R645-301-300 Biology.

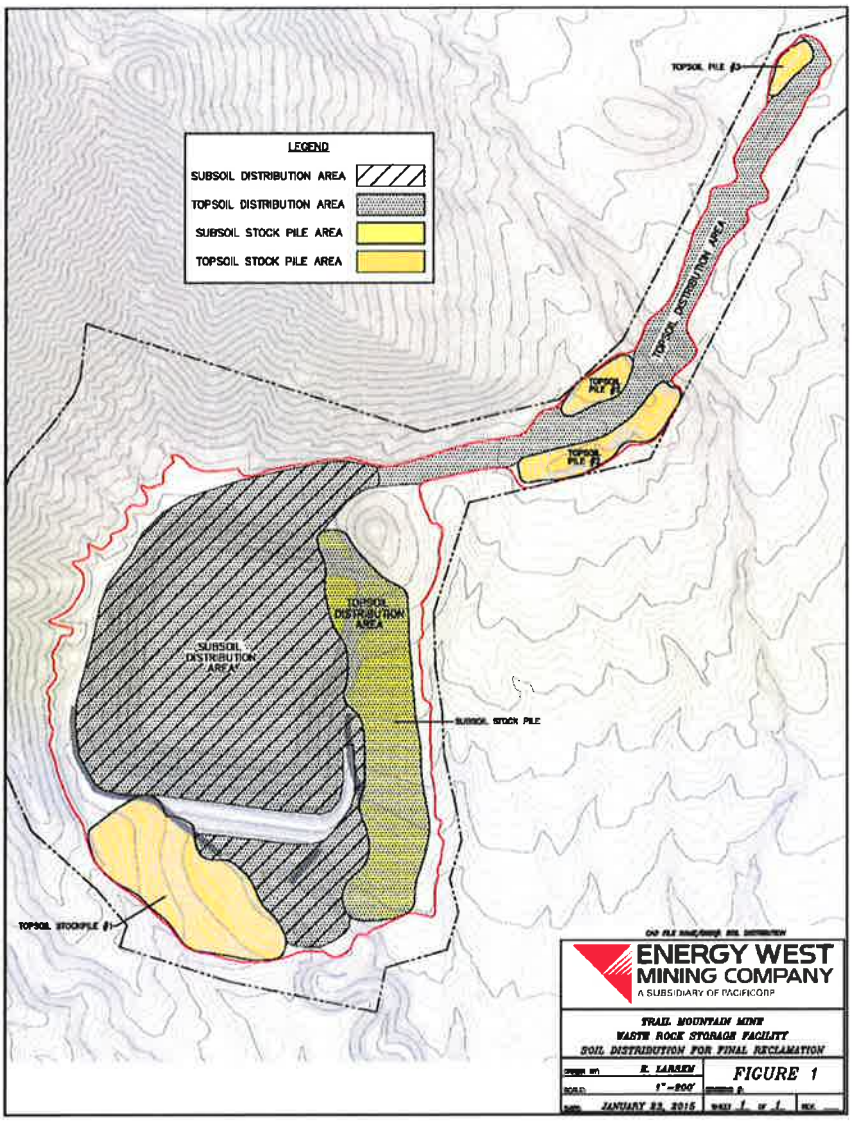

Figure 1: Soil distribution diagram.

R645-301-542 Narratives, Maps and Plans

A detailed timetable for the completion of each major step in reclamation is outlined in R645-301-300 Biology. Certified contour maps and soil placement maps can be found in the Map Sections of each chapter. A detailed plan for backfilling, soil stabilization, compacting and grading is outlined below in R645-301-553, Backfilling and Grading.

R645-301-542.600 Roads

The site access road will no longer be needed after the refuse pile is reclaimed. The road will

be removed and the area reclaimed during the reclamation operations. All drainage structures will be removed and the natural drainage systems through the access road area will be returned to their pre-existing state.

R645-301-550 Reclamation Design Criteria and Plans

Reclamation activities at the Waste Rock Storage Facility includes plans and designs for 1) Permanent features, and 3) Backfilling and grading. These plans and designs are outlined below.

R645-301-552 Permanent Features

Small depressions (pocks) will be constructed to retain moisture, minimize erosion, create and enhance wildlife habitat, and assist revegetation. The pocks will be constructed with a track-hoe or similar machinery and placed in random order. The pocks will measure approximately 1.5 feet deep by 3.0 feet in diameter. Pocking techniques and sediment loss is explained in detail in the Soil and Hydrology sections.

R645-301-553 Backfilling and Grading

Access Road

Final reclamation of the road will take place as detailed below. The gravel road surface material and subgrade material will be removed and placed against the inside cut slope of the road cross-section. The topsoil off the embankment outslope will be removed and temporarily stockpiled in an area at the road construction beginning. The subsoil material from the embankment slopes will then be spread over the road cross-section to obliterate the road. Natural drainageways shall be extended through the reclaimed area and blended in with the downstream segment. The sizing of this channel will be the same as the natural channel. The topsoil material from the temporary stockpile will then be evenly spread over the area and seeded.

Waste Rock Storage Facility

To provide for contemporaneous revegetation, a phased construction program will be implemented. Waste material will be used to construct a berm on the outside of the waste pile. Once the berm is completed and tested for toxic or acid forming materials, subsoil and topsoil materials will be used to cover the outside slope of the berm. Prior to placement of the subsoil, the waste material will be roughened to a depth of 18 inches. The soil materials will be loaded and hauled to the berm and distributed with either a track mounted backhoe or small tracked dozer. The subsoil will be spread to a thickness of approximately 24 inches and the topsoil to approximately 12 inches. Special efforts will be made to minimize the compaction of the topsoil layer. Revegetation will then take place on that portion of the waste pile which has been covered. As the waste pile elevation rises, new berms will be constructed and reclaimed. At

the completion of the construction of the waste pile, the top surface will be covered with approximately 24 inches of subsoil and approximately 12 inches of topsoil and then revegetated (refer to R645-301-300 Biology).

The drainage plan for the reclamation of the facility is the same as the Operating Plan. The diversion ditches are sized for 100 year, 6 hour storm event and no changes should be necessary for reclamation. When the final stages of reclamation are initiated, an extension of the diversion ditches will be required to pass through the area of the sediment pond and dam and into the natural channel. The diversion will use the same shape and lining specifications used in Ditch DA except for the channel slope, which will be 10% instead of 20%. Refer to Plate 4-12 for ditch details.

R645-301-553.140 Minimization of Erosion and Water Pollution

Terraces will be provided (refer to Exhibit XXI) to reduce runoff velocities and ultimately erosion. A straw bale and silt fence filter will be constructed in the natural drainage channel during these activities to minimize the impact on the downstream areas.

R645-301-560 Performance Standards

Coal mining and reclamation operations will be conducted in accordance with the approved permit and requirements of R645-301-510 through R645-301-553.

CHAPTER 6
GEOLOGY

Chapter 6 - Geology

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R645-301-600: Geology

R645-301-610 Introduction

The geology of the Waste Rock Storage Facility is fairly simple and straightforward. This site is located on the southern flanks of East Mountain south of Newberry Canyon. Rocks exposed in the area are marine derived mudstones in the lower portion of the Masuk Member of the Mancos Shale. The Masuk Shale on the bench which adjoins the proposed site on the north and east is covered by a five to twenty foot thick layer of terrace gravel of Quaternary age. North-south treading normal faults has disrupted the strata in the region. However, no faults are known to exist within the area of the Waste Rock Storage Facility.

R645-301-620 Environmental Description

The oldest rocks exposed in the region are part of the marine Mancos sequence deposited in Late Cretaceous time. This formation contains several alternating units of off-shore marine mudstones and near-shore marine sandstones. This discussion will address only the two upper members of the Mancos which are the Emery Sandstone and the Masuk Shale in ascending order.

Emery Sandstone
The Emery Sandstone member of the Mancos Shale is comprised of several upward fining transgressive sandstone deposits. To the east, where the Emery Sandstone is exposed on the surface, it is approximately 800 feet in thickness. However, subsurface data collected from the gas wells near the site indicate that the Emery Sandstone is positioned about 600-800 feet beneath the proposed waste rock site and is probably very thin (100 feet). Regionally, this member is water-bearing and may be classified as a limited regional aquifer. However, its importance as an aquifer is minimal in respect to other major water-bearing formations located at depth (Navajo and Wingate Sandstones).

Masuk Shale
The Masuk Member of the Mancos Shale overlies the Emery Sandstone and consists of light to medium gray marine mudstones. It forms the bedrock in the vicinity of the site. The Masuk Shale is generally devoid of significant water. However, it does transport small amounts of water along fractures present in the rock.

Terrace Gravels
The benches surrounding the north and east sides of the Waste Rock Storage Facility are covered by a Quaternary terrace gravel deposit. These gravels are located on a gentle slope leading down from the base of the southern tip of East Mountain and are thought to be glacial outwash in origin. The gravel deposits are five to twenty feet in thickness and are moderately permeable. Because of this, much of the rainfall percolates into these deposits and flows down

dip toward Grimes Wash and Cottonwood Creek.

Alluvial Valley Floors
There are no alluvial valley floors within the Waste Rock Storage Facility. The nearest one is located in Straight Canyon approximately 2 miles to the south. This alluvial valley floor has been shown to contain groundwater but the operation of the waste rock site should have no impact on the quality or quantity of the water it contains due to the impermeability of the Masuk Shale separating the site from the alluvial valley floor.

Structure
The stratum in the area of the waste rock site is dipping gently in a westerly direction into the Straight Canyon Syncline (2 to 3 degrees). The nearest known fault to this area is the Pleasant Valley Fault which is located approximately one mile to the north where its displacement terminates. No faults exist in the area of the proposed site.

Regionally, the stratum contains a set of vertical joints trending in both a northwest and northeast direction. It is hard to identify jointing in the weathered Masuk shale outcrops, but in fresh cuts the joints appear to be wide spaced. Very limited amounts of ground water migrate down these fractures because the clays present in the rock swell when in contact with water, thus sealing the fractures.

R645-301-624 Geologic Information

As part of the preparations to construction of the Waste Rock Storage Facility, a geotechnical investigation was performed by Rollins, Grown and Gunnel Inc. in 1989. This document reports the existing site conditions, subsurface soil and water conditions, foundations considerations and recommendations, site preparations and compacted fill requirements, and results of field and laboratory tests. Refer to this report in R645-301-500 Engineering, Appendix A.

~~R645-301-624.100 Description of Geology~~

~~For a detailed description of the geology of the permit and adjacent areas down to and including the deeper of either the stratum immediately below the lowest coal seam to be mined or any aquifer below the lowest coal seam to be mined which may be adversely impacted by mining, refer to Volumes 1 and 2 of the Cottonwood/Wilberg Mining and Reclamation Plan. This plan will show the lithologic characteristics of the stratum, physical and chemical properties, chemical analysis of those strata as well as the coal seam. Most data will be presented in the appendix volume, Volume 3.~~

CHAPTER 7
HYDROLOGY

Chapter 7 - Hydrology

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R645-301-700: Hydrology

R645-301-710 Introduction

R645-301-711.200

The Waste Rock Storage Facility encompasses a dry wash which flows water for a short time immediately following a storm. Water from this wash flows into Grimes Wash which is located about 2 miles to the southeast, which in itself is ephemeral. Grimes Wash then flows to the south for approximately 2 1/2 miles where it intersects Cottonwood Creek.

Not all runoff from storms flow into the drainages. Some of the rain water migrates into the terrace gravels, where present, and flows down dip toward Grimes Wash and Cottonwood Creek. The waste rock disposal site should not impact this water occurrence because it is located at a lower elevation than the gravel terraces. Very limited quantities of ground water may be present by way of fractured permeability in the Masuk Shale.

The Mancos Shale typically contains large quantities of soluble minerals such as gypsum thus, any water passing through it or eroding it will be naturally high in dissolved solids.

R645-301-724 Baseline Information

Baseline information for hydrologic, geologic, and climatologic information for the area of the Waste Rock Site is described in the sections below.

R645-301-724.100 Ground Water Information

Initially three test wells (drill holes 1, 2 and 3) were drilled within the Waste Rock Storage Facility to identify the soil conditions present (see Map 4-3). At each drill-hole location, water introduced in the hole from drilling was bailed from the drill hole at the end of the day. The next day the water level was checked and in most cases, the water level would rise. Drill holes 1 and 2 were cement filled upon completion to prevent any unnatural groundwater migration to occur, but drill-hole No. 3 was cased. Groundwater in this hole was intersected at the bedrock contact at 50 feet. The upper 55 feet of drill-hole No. 3 consisted of unconsolidated material followed by weathered shale to 63 feet, and the remainder of the hole was a solid gray, silty shale. An attempt to sample the water in drill-hole No. 3 was made on September 11, 1989 but the hole was dry to a depth of 62 feet where the casing was silt blocked. On

November 29-30, 1989, an additional hole (No. 4) was drilled adjacent to hole No. 3 (see Map 4-3). Drill-hole No. 4 was drilled to a depth of 87 feet and will serve for groundwater monitoring. The data collected during the original drilling program and subsequent drilling indicate that groundwater enters the hole between a depth of 45 to 63 feet and stabilizes at approximately 56 feet. The hole was cased from 37 feet to 87 feet depth with 1 1/2 inch schedule 80 slotted PVC pipe and with solid riser from 37 feet to the surface. The slotted section was gravel packed and a bentonite seal was placed above the slotted section to prevent cement, utilized to seal the upper portion of the hole, from migrating into the gravel section. A locked well cap was installed to protect against outside contamination.

Baseline analysis was performed after a one-week stabilization period. It was apparent from the first sample that the hole still contained an elevated suspended solid content. In an attempt to reduce the amount of suspended solids the hole was purged with water until the discharge from the well was clear. Baseline analysis was again performed after a one week stabilization period. The suspended solid was still elevated but some improvement was noticed. Due to the suspended solid content, a third sample was collected and filtered before being fixed with acid to improve the accuracy of the results. As anticipated with groundwater associated with the Mancos Shale formation, the dissolved solids were extremely high and dominated by calcium, chloride, magnesium, sodium, and sulfate Refer to Appendix A for application for water well construction, and Appendix B for well water quality sampling results.

Although two years of baseline data were not collected specifically at the waste rock site, the samples discussed above are consistent with other Mancos influenced samples. To augment the data from the samples taken on-site, sampling continued through construction of the facility; thus providing at least one year's site-specific data prior to actual operation. Sampling of the waste rock well (WCWR) has continued since the construction of the facility and will continue until final reclamation of the site. Sampling is conducted on a quarterly basis or four (4) times per year. Refer to the annual report for current quality data for WCWR.

Aquifer Characteristics of the Terrace Gravels

The geologic section of the Waste Rock Storage Facility discusses the terrace gravels that surround the area. These gravels were deposited by glacial outwash and form a cap on the slopes leading down from East Mountain to the north and west. The thickness of these terrace gravels generally increases as one progresses down slope away from the mountain. Also, the lower contact of the gravels is unconformable and as such its thickness varies with paleotopography. A good example of this is at Test Hole No. 3 where the terrace gravel is 55 feet thick and its base is much lower there than where it is exposed in the dry wash to the west.

Although the terrace gravels are more permeable than the Mancos Shale that they overlay, permeability tests indicate that both soils are impervious (permeability coefficient 0.90 and 0.55 ft/yr respectively, per Rollins, Brown and Gunnel letter dated 24 September, 1989, page 4-62). On the down slope side of the Waste Rock Site, the base of the terrace gravel is exposed. No springs or damp areas exist along this contact which indicates that the limited recharge into this region is not sufficient to cause formation saturation. The recharge is most likely in balance with transpiration that occurs.

The design of the Waste Rock Storage Facility is such that any water that flows into the site either from precipitation or from the terrace gravels will migrate to the southeastern portion of the site where a sedimentation pond is located.

R645-301-724.200 Surface Water Information

The areas around the Waste Rock Storage Facility contain ephemeral washes where surface water flows for short periods of time immediately following a storm event. This surface storm water is diverted around the site where it eventually flows into Grimes Wash approximately two (2) miles to the southeast. Grimes Wash then flows to the south for approximately 2 1/2 miles where it intersects Cottonwood Creek. ~~All~~ Storm water which flows within the boundaries of the disturbed areas of the site, is diverted through a sedimentation structure prior to being discharged into the natural drainageways.

The Mancos Shale typically contains large quantities of soluble minerals such as gypsum. Therefore, any water passing through it or eroding it will be naturally high in dissolved solids.

R645-301-724.400 Climatological Information

Rocky Mountain Power has maintained a weather station on East Mountain which is located two miles to the northeast from the Waste Rock Storage Facility since 1979. Historical records collected there show an average of 12.5 inches of precipitation annually. Much of this precipitation comes in the form of late summer thunder showers. This weather station is at a much higher elevation and consequently receives higher precipitation than at the Waste Rock Storage Facility. It is estimated that the site itself receives about 7-9 inches of moisture annually.

Temperatures in the area range from highs in the upper 90's to lows to -10 degrees below zero. The area experiences a frost-free period of about 120-140 days annually.

R645-301-728 Probable Hydrologic Consequences (PHC) Determination

The Waste Rock Storage Facility is located in an area which is very dry from a standpoint of both surface and groundwater. The only time surface water flows is during storm events. Also, the geotechnical study performed by Rollins, Brown and Gunnel Inc. shows that the near surface permeability is very low, being measured in terms of feet/year. The groundwater present in the Mancos Shale strata is high in total dissolved solids as documented in Hydrology of Area 56, Northern Great Plains and Rocky Mountain Coal Provinces, Utah, published by the U. S. Geological Survey in 1983. Rocks from the strata in the Blackhawk formation normally contributes less TDS to the groundwater. Therefore, because of the lack of surface and groundwater in the Waste Rock Storage Facility and the fact that what surface water does occur during storm events will be diverted around the site, this facility will not have any negative impacts on the hydrologic regime of the area. As discussed on earlier, the nearest alluvial valley floor is approximately two (2) miles from the site.

R645-301-730 Operation Plan

R645-301-731.100 Hydrologic Balance Protection

~~All~~ rain water that falls onto the disturbed area of the Waste Rock Storage Facility and forms surface runoff, shall be collected in diversion ditches and diverted into a sediment pond prior to discharge into the surrounding ephemeral drainage systems.

R645-301-731.220 Surface Water Monitoring

The applicant commits to monitoring the surface waters surrounding the Waste Rock Storage Facility throughout the permit period. This monitoring shall include the measurement of quantity and quality of the water that is discharged from the sediment pond. Reasonable effort shall be made to measure the natural drainage during storm events in that it is almost always dry. The sediment pond discharge samples collected shall be analyzed as specified in UPDES permit ~~(refer to Appendix Volume, Appendix 7)~~.

R645-301-740 Design Criteria and Plans

This permit contains site specific plans that incorporate minimum design criteria for the control

of drainage from the disturbed and undisturbed areas. Drainage control is accomplished by means of diversions ditches and a sedimentation pond.

R645-301-742 Sediment Control Measures

Sediment control measures include practices carried out within and adjacent to the disturbed area. The sedimentation storage capacity of practices in and downstream from the disturbed areas will reflect the degree to which successful mining and reclamation techniques are applied to reduce erosion and control sediment. Sediment control measures consist of the utilization of proper mining and reclamation methods and sediment control practices, singly or in combination. Sediment control methods include, but are not limited to:

a. Retaining sediment within disturbed areas;
b. Diverting runoff away from disturbed areas;
c. Diverting runoff using protected channels or pipes through disturbed areas so as not to cause additional erosion;
d. Using best management practices (BMP's) to reduce overland flow velocities, reduce runoff volumes and trap sediment.

R645-301-742.220 Sediment Ponds

Runoff from the area above the Waste Rock Storage Facility will be diverted into a ditch designed for the 100 year, 6 hour storm event. This runoff, as well as runoff from areas within the site will be diverted into a sediment pond which will contain the runoff of a 10 year, 24 hour storm with a spillway designed for the 25 year, 6 hour storm event. Refer to Appendix C for sediment pond design.

R645-301-742.230 Other Treatment Facilities

During the design process it was found that there some disturbed areas which could not be reasonably treated by the sedimentation pond due to remote geographic locations, and which could not meet effluent limitations without treatment. These areas are considered Alternative Sediment Control Areas (ASCA). These areas will be treated by best management practices (BMP's) which include, but are not limited to: silt fences, berms, catch basins, vegetation, sediment filters, rolled erosion control products. ASCA areas present at the Waste Rock Storage Facility include the access road and the subsoil pile. Refer to Plate 4-2 for location of ~~all~~ ASCA areas with this site. Also refer to Appendix C for the design of drainage control structures.

R645-301-747 Disposal of Non-Coal Mine Waste

Inherently, non-coal mine waste finds its way into the coal produced from the underground mining process. This waste is transported out of the mine with the produced coal. During breaking and screening (sizing) of the coal product, coal mine waste (refuse) is removed and separated from the final coal product. This waste stream is transported to the Waste Rock Storage Facility for permanent disposal.

As required by R645-301-528.330, non-coal wastes including, but not limited to, grease, lubricants, paints, flammable liquids, garbage,....., and other combustible materials generated during mining activities will be disposed of in a solid waste disposal area. Non-coal wastes found in the storage pile are removed prior to permanent placement of the material. The non-coal waste is temporarily stored at the site until such time it can be transported off-site to a proper solid waste disposal site.

R645-301-748 Casing and Sealing of Wells

The water well located at the Waste Rock Storage Facility shall be cased, sealed, or otherwise managed, as approved by the Division, to prevent acid or other toxic drainage from entering ground or surface water, to minimize disturbance to the hydrologic balance, and to ensure the safety of people, livestock, fish and wildlife, and machinery in the permit and adjacent area.

The well has been provided with a steel casing and cemented in place at the surface. A lockable end cap is installed to prevent unauthorized access to the well.

R645-301-750 Performance Standards

~~All~~ Coal mining and reclamation operations will be conducted to minimize disturbance to the hydrologic balance within the permit and adjacent areas, to prevent material damage to the hydrologic balance outside the permit area and support approved post-mining land uses in accordance with the terms and conditions of the approved permit and the performance standards of R645-301 and R645-302. For the purposes of SURFACE COAL MINING AND RECLAMATION ACTIVITIES, operations will be conducted to assure the protection or replacement of water rights in accordance with the terms and conditions of the approved permit and the performance standards of R645-301 and R645-302.

R645-301-751 Water Quality Standard and Effluent Limitations

Discharges of water from areas disturbed by coal mining and reclamation operations will be made in compliance with ~~all~~ Utah and federal water quality laws and regulations and with effluent limitations for coal mining promulgated by the U.S. Environmental Protection Agency set forth in 40 CFR Part 434.

If the site receives a storm greater than the designed capacity of the sediment pond, discharge from the sediment pond will be routed through the designed emergency spillway~~s~~ and into the ephemeral drainage. Discharge from the sediment pond would constitute an emergency situation and comply with State of Utah Department of Environmental Quality Division of Water Quality storm water regulations.

R645-301-752 Sediment Control Measures

Sediment control measures will be located, maintained, constructed and reclaimed according to plans and designs given under R645-301-732, R645-301-742 and R645-301-760 (refer to Appendix C: Drainage Control Plan for design, construction and maintenance of sediment controls for the Waste Rock Storage Facility).

At reclamation of the Waste Rock Storage Facility, pocking (or surface roughening) will be used to intercept and trap sediment on a microscale. Roughening also collects moisture, which improves vegetation establishment and consequently prevents erosion. Pocking is highly recommended for moderate to steep slopes (up to 1h:1½v) but is also useful for flat or gently sloping areas with erosive soils and arid climates. Pocks are created by the use of a track-hoe shovel to dig, poke, or push basins with a minimum depth of eighteen inches. These basins should be 1 ½ to 2 feet deep and have the width of the bucket. This allows the basins to be up to four feet wide. The most common construction method is to dig a bucket load of soil and then drop it 2 to 3 feet above the soil surface. Repeat this process in a random and overlapping pattern, making it impossible for water to flow down slope.

Sediment control shall be maintained as runoff will be limited or eliminated by ponding water within the pocks. To illustrate the effectiveness of the pocks for controlling erosion and sedimentation, the revised universal sediment loss equation is used in a modeling program as discussed below (UDOGM, Practical Guide to Reclamation in Utah, pg 106).

Justification to control runoff is made by utilizing the computer program RUSLE2. This program solves a set of mathematical equations that compute values for rill and inter-rill erosion on the

overland portion of the landscape. The user inputs variables to describe the site conditions such as climate, topography, soils, management practices, etc. to compute estimates for soil loss within the site.

Three areas were modeled using RUSLE2. These areas are the reclaimed berms of the refuse pile, the reclaimed top of the pile, and the reference area immediately north of the pile. The reference area was chosen because it is a main contributor of sediment near the site.

Variables used are those listed in the database files of the RUSLE2 program version 2.0.4.0. Not all variables are directly representative (i.e. location) of the site conditions; however they were similar to the conditions found at the site.

Results of the modeling calculations showed that sediment contributions from the pile are 0.23 t/ac/yr (top of reclaimed pile) and 0.16 t/ac/yr (reclaimed berms). The soil loss eroded portion of the reclaimed berms computed a 2.6 t/ac/yr. However, because of how terraces are constructed on the berms during reclamation, the program credits for deposition of sediment.

The reference area calculations (or soil loss from areas out of the permit area) showed sediment contributions of 16 t/ac/yr. The yield from this area is appreciably more than the sediment contributions from the reclaimed area. Therefore, a case is made that shows there will be no additional contributions of suspended solids to areas outside of the permit area than what naturally exist. Refer to Appendix XXII to review the Erosion Calculation Worksheets.

752.100 Siltation structures and diversions are located, maintained, constructed and will be reclaimed according to plans and designs given under R645-301-732, R645-301-742 and R645-301-763.

752.200 Road Drainage. Roads are located, designed, constructed, reconstructed, used, maintained and will be reclaimed according to R645-301-732.400, R645-301-742.400 and R645-301-762 and to achieve the following:

752.210 Control or prevent erosion, siltation and the air pollution attendant to erosion by vegetating or otherwise stabilizing ~~all~~ exposed surfaces in accordance with current, prudent engineering practices;

752.220 Control or prevent additional contributions of suspended solids to stream flow or runoff outside the permit area;

752.230 Neither cause nor contribute to, directly or indirectly, the violation of effluent standards given under R645-301-751;

752.240 Minimize the diminution to or degradation of the quality or quantity of surface- and ground-water systems; and

752.250 Refrain from significantly altering the normal flow of water in streambeds or drainage channels.

R645-301-753 Impoundments and Discharge Structures

Impoundments and discharge structures have been located, maintained, constructed and will be reclaimed to comply with R645-301-733, R645-301-734, R645-301-743, R645-301-745 and R645-301-760. The sediment pond will be reclaimed no sooner than two years after the last augmented seeding of the reclaimed berms and soil storage pile locations.

R645-301-755 Casing and Sealing of Wells

All wells will be managed to comply with R645-301-748 and R645-301-765. The water well will be cased, sealed, or otherwise managed, as approved by the Division.

R645-301-760 Reclamation

Before abandoning a permit area or seeking bond release, the ~~PacifiCorp~~ will ensure that ~~all~~ temporary structures are removed and reclaimed, and that ~~all~~ sedimentation ponds, diversions, impoundments and treatment facilities meet the requirements of R645-301 and R645-302 for permanent structures, have been maintained properly and meet the requirements of the approved reclamation plan for permanent structures and impoundments. PacifiCorp will renovate such structures if necessary to meet the requirements of R645-301 and R645-302 and to conform to the approved reclamation plan. For complete discussion related to the reclamation plan for the Waste Rock Storage Facility refer to R645-301-500 Engineering, and Plates 4-7 and 4-12 in the Maps Section.

R645-301-763 Siltation Structures

It is planned for the sediment pond to be removed during the reclamation of the ~~Cottonwood~~ Waste Rock Site as outlined in R645-301-540. State and Federal regulation require such structures to remain for at least two years after the last augmented seeding unless removal is authorized by the Division. For the Division to authorize removal a case must be made by the permittee that removal of the siltation structure will not contribute additional suspended solids to stream flow or runoff outside the permit area.

R645-301-765 Permanent Casing and Sealing of Wells

When no longer needed for monitoring or other use approved by the Division upon a finding of no adverse environmental or health and safety effects, the water well shall be abandoned and provided a watertight barrier to the migration of water in the well bore, in the annular spaces or in fractures and openings adjacent to the well bore. Well abandonment shall be conducted as approved by the Division.

CHAPTER 8
BOND

R645-301-800: Bonding

A detailed bond estimate is provided for in Volume 1, Chapter 3, Appendix 1 of the Fossil Rock ~~Trail Mountain~~ Mining and Reclamation Plan.

Exhibit XXIII

BLM RIGHT-OF WAY

UTU-65027

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Green River District
Price Field Office
125 South 600 West
Price, UT 84501
http://www.blm.gov/ut/st/en/fo/price.html

AUG 17 2015

In Reply Refer To:
UTU-65027
2800 (UTG020)

CERTIFIED MAIL-RETURN RECEIPT REQUESTED:
7014-2120-0004-6185-9703

Van Cott
Attn: Jason D. Steiert
36 S. State Street, Suite 1900
Salt Lake City, Utah 84111-1478

Re: Assignment of ROW Grant UTU-65027

DECISION

Right-of-Way Grant UTU-65027 Assigned

Enclosed is a copy of a right-of-way grant (serial number UTU-65027) which has been approved by the Bureau of Land Management and issued under authority of Title V of the Federal Land Policy and Management Act of October 21, 1976, as amended through September 1999, (90 Stat. 2776; 43 U.S.C. 1761). The assignment of this right-of-way grant constitutes a final decision by the Bureau of Land Management in this matter.

This decision may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR, Part 4, and the enclosed Form 1842-1. If an appeal is taken, your notice of appeal must be filed in this office (at the above address) within 30 days from receipt of this decision. The appellant has the burden of showing that the decision appealed from is in error.

If you wish to file a petition pursuant to regulation 43 CFR 4.21 (58 FR 4939, January 19, 1993) or 43 CFR 2801.10 for a stay of the effectiveness of this decision during the time that your appeal is being reviewed by the Board, the petition for a stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards

listed below. Copies of the notice of appeal and petition for a stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the Solicitor (see 43 CFR 4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

Standards for Obtaining a Stay

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

(1) The relative harm to the parties if the stay is granted or denied;

(2) The likelihood of the appellant's success on the merits;

(3) The likelihood of immediate and irreparable harm if the stay is not granted; and

(4) Whether the public interest favors granting the stay.

Please note that under the regulations in 43 CFR Group 2800, this decision is effective even if an appeal is filed. If you have any questions, please contact Connie Leschin, Realty Specialist, at the above address, by e-mail cleschin@blm.gov, or by phone (435) 636-3610.

Sincerely,

Ahmed Mohsen
Field Manager

Enclosure

FORM 2800-14
(August 1985)

Issuing Office
Price Field Office

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
RIGHT-OF-WAY GRANT

SERIAL NUMBER UTU-65027

1. A right-of-way is hereby granted pursuant to Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761).

2. Nature of Interest:

a. By this instrument, the holder:

Fossil Rock Resources, LLC
6100 Dutchman's Lane, 9th Floor
Louisville, KY 40205

receives a right to operate, maintain, and terminate the Cottonwood / Wilberg waste rock storage facility on public lands described as follows:

T.17 S., R. 7 E., Salt Lake Meridian, Emery County, Utah
Section 34: SE¼NE¼, N½SE¼, SW¼SE¼.

b. The right-of-way or permit area granted contains 25.87 acres, more or less.

c. This instrument shall expire on June 7, 2025, unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.

d. This instrument may be renewed. If renewed, the right-of-way or permit shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the Field Manager or other authorized officer deems necessary to protect the public interest.

e. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

3. Rental:

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer unless specifically exempted from such payment by regulation. Provided, however, that the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application of sound business management principles, and so far as practicable and feasible, in accordance with comparable commercial practices.

Terms and Conditions:

4. Standard

   a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations part 2800.

   b. Each grant issued for a term of 10 years or more shall, at a minimum, be reviewed by the authorized officer at the end of the 10th year and at regular intervals thereafter not to exceed 10 years. Provided, however, that a right-of-way or permit granted herein may be reviewed at any time deemed necessary by the authorized officer.

   c. The stipulations, plans, maps, or designs set forth in Exhibits A (Maps) and B (Professional Engineer Drawing), attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.

   d. BLM may suspend or terminate your grant if you do not comply with applicable laws and regulations or any terms, conditions, or stipulations of the grant (such as rent payments), or if you abandon the right-of-way. Your failure to use your right-of-way for its authorized purpose for any continuous 5-year period creates a presumption of abandonment.

   e. In the event that the public land underlying the right-of-way (ROW) encompassed in this grant, or a portion thereof, is conveyed out of Federal ownership and administration of the ROW or the land underlying the ROW is not being reserved to the United States in the patent/deed and/or the ROW is not within a ROW corridor being reserved to the United States in the patent/deed, the United States waives any right it has to administer the right-of-way, or portion thereof, within the conveyed land under Federal laws, statutes, and regulations, including the regulations at 43 CFR Part [2800][2880], including any rights to have the holder apply to BLM for amendments, modifications, or assignments and for BLM to approve or recognize such amendments, modifications, or assignments. At the time of conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the United States in all matters relating to the right-of-way, or portion thereof, within the conveyed land and shall be subject to applicable State and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions of the ROW shall be considered a civil matter between the patentee/grantee and the ROW Holder.

5. Applicable Laws

   a. The holder shall comply with all Federal, State, and local regulations whether or not specifically mentioned within this grant.

   b. Use of pesticides shall comply with the applicable Federal and state laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides, the holder shall obtain from the Field Manager or other authorized officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the authorized officer. Emergency use of pesticides shall be approved in writing by the authorized officer prior to such use.

   c. The holder of this right-of-way grant or the holder's successor in interest shall comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) and the regulations of the Secretary of the Interior issued pursuant thereto.

   d. The holder shall meet Federal, State, and local emission standards for air quality.

   e. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State

government.

f. The holder shall comply with the construction practices and mitigating measures established by 33 CFR 323.4, which sets forth the parameters of the "nationwide permit" required by Section 404 of the Clean Water Act. If the proposed action exceeds the parameters of the nationwide permit, the holder shall obtain an individual permit from the appropriate office of the Army Corps of Engineers and provide the authorized officer with a copy of same. Failure to comply with this requirement shall be cause for suspension or termination of this right-of-way grant.

g. The holder of Right-of-Way No. UTU-65027 agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901 et seq.) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

h. The holder is prohibited from discharging oil or other pollutants into or upon the navigable waters of the United States, adjoining shorelines, or the waters of the contiguous zone in violation of Section 311 of the Clean Water Act as amended, 33 U.S.C. 1321, and the regulations issued there under, or applicable laws of the State and regulations issued there under. Holder shall give immediate notice of any such discharge to the authorized officer and such other Federal and State officials as are required by law to be given such notice.

6. Miscellaneous

a. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.

b. The holder shall designate a representative who shall have the authority to act upon and to implement instructions from the authorized officer. The holder's representative shall be available for communication with the authorized officer within a reasonable time when construction or other surface disturbing activities are underway.

c. The holder shall permit free and unrestricted public access to and upon the right-of-way for all lawful purposes except for those specific areas designated as restricted by the Field Manager or other authorized officer to protect the public, wildlife, livestock or facilities constructed within the right-of-way.

d. The holder shall inform the Field Manager at (435) 636-3600 within 48 hours of any accidents on federal lands.

e. All surface disturbing activities will have a cultural survey completed (if one has not been previously completed) and submitted to the BLM before activities begin and may be monitored by a BLM permitted archaeologist if determined necessary by the BLM. If any cultural materials are discovered during construction, work in the area will halt immediately and the authorized official notified.

f. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

g. The holder shall protect all survey monuments found within the right-of-way. Survey monuments include, but are not limited to, General Land Office and Bureau of Land Management Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the authorized officer and the respective installing authority if known. Where General Land Office or Bureau of Land Management right-of-way monuments or references are obliterated during operations, the holder shall secure the services of a registered land surveyor or a Bureau cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying

Instructions for the Survey of the Public Lands in the United States, latest edition. The holder shall record such survey in the appropriate county and send a copy to the authorized officer. If the Bureau cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the holder shall be responsible for the survey cost.

7. Construction / Maintenance

   a. The holder shall conduct all activities associated with the construction, operation, and termination of the right-of-way within the authorized limits of the right-of-way.

   b. The holder shall construct, operate, and maintain the facilities, improvements, and structures within this right-of-way in strict conformity with the plan of development which was approved and made part of this grant. Any relocation, additional construction, or use that is not in accord with the approved plan of development, shall not be initiated without the prior written approval of the authorized officer. A copy of the complete right-of-way grant, including all stipulations and approved plan of development, shall be made available on the right-of-way area during construction, operation, and termination to the authorized officer. Noncompliance with the above will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.

   c. The holder shall provide for the safety of the public entering the right-of-way. This includes, but is not limited to barricades for open trenches, flagmen/women with communication systems for single-lane roads without intervisible turnouts, and attended gates for blasting operations.

   d. If any clearing is needed, the right-of-way will be brush-hogged to prevent unnecessary disturbance. Only those areas where safety, absolute need for construction or other regulations may warrant the use of topsoil removal by blading or scalping. This right-of-way clearing shall be limited to the limits of the right-of-way. Suitable topsoil material removed in conjunction with clearing and stripping shall be conserved in stockpiles within the right-of-way.

   e. All roads and parking areas shall be constructed to provide drainage and minimize erosion. Culverts shall be installed if necessary to maintain drainage. All areas to be used for roads and parking shall be surfaced with gravel (before the drilling rig or other drilling equipment moves onto the pad).

   f. The site shall be maintained in a sanitary condition at all times; all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment shall be disposed of promptly at an appropriate waste disposal site.

   g. If during any phase of the construction, operation, or termination any oil or other pollutant should be discharged from containers or vehicles and impact Federal lands, the control and total removal, disposal, and cleanup of such oil or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of holder to control, cleanup, or dispose of such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting therefrom, the authorized officer may take such measures as he deems necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the authorized officer shall not relieve the holder of any liability or responsibility.

   h. Fences, gates, brace panels and any other impacted range improvements shall be reconstructed to appropriate Bureau standards and/or specifications as determined by the authorized officer.

   i. When construction activity in connection with the right-of-way breaks or destroys a natural barrier used for livestock control, the gap, thus opened, shall be fenced to prevent the drift of livestock. The subject natural barrier shall be identified by the authorized officer and fenced by the holder as per instruction of the authorized officer.

   j. Construction-related traffic shall be restricted to routes approved by the authorized officer. New access roads or cross-country vehicle travel will not be permitted unless prior written approval is given by the authorized officer. Authorized roads used by the holder shall be rehabilitated or maintained when construction activities are complete as approved by the authorized officer.

   k. No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of four inches deep, the soil shall be deemed too wet to adequately support construction equipment.

l. The holder shall be responsible for weed control on disturbed areas within the limits of the right-of-way. The holder is responsible for consultation with the authorized officer and/or local authorities for acceptable weed control methods (within limits imposed in the grant stipulations).

m. Holder shall maintain the right-of-way in a safe, usable condition, as directed by the authorized officer.

8. Reclamation / Rehabilitation / Termination

a. Ninety (90) days prior to termination of the right-of-way, the holder shall contact the authorized officer to arrange a pre-termination conference. This conference will be held to review the termination provisions of the grant.

b. Upon grant termination by the Field Manager or other authorized officer, all improvements shall be removed from the public lands within 90 days or as directed by the authorized officer.

c. The holder shall restore drainages, to the greatest extent possible, to the original bank configuration, stream bottom width, and channel gradient. Loose soil, fill, and culverts shall be removed from drainage channels as directed by the authorized officer.

d. The holder shall re-contour the disturbed area and obliterate all earthwork by removing embankments, backfilling excavations, and grading to re-establish the approximate original contours of the land in the right-of-way.

e. The holder shall prepare a seedbed by scarifying the disturbed area, distributing topsoil uniformly, or disking the topsoil.

f. The holder shall seed all disturbed areas that have been or are being reclaimed with a seed mixture(s) submitted to and approved by the authorized officer.

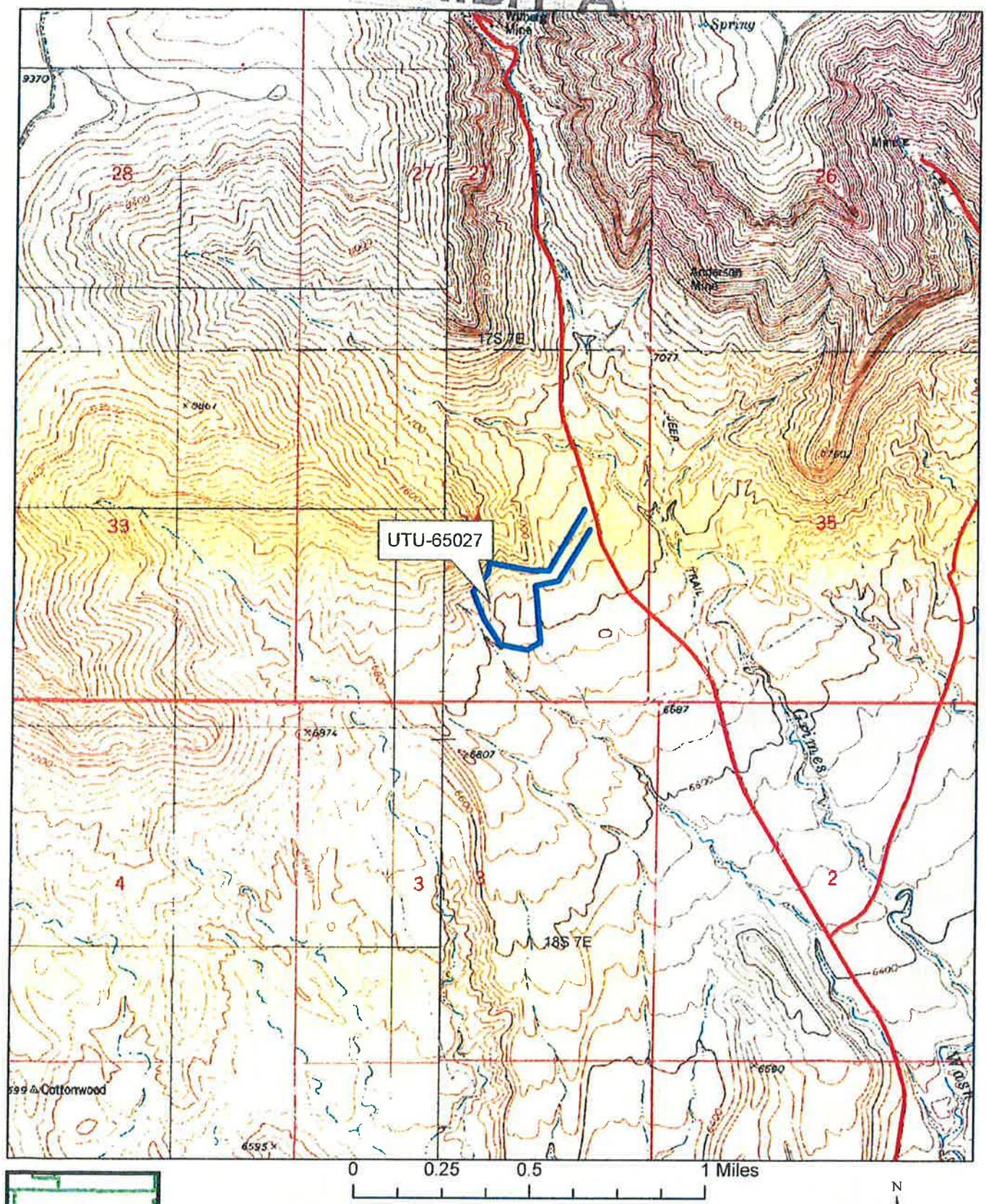
IN WITNESS WHEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant or permit.

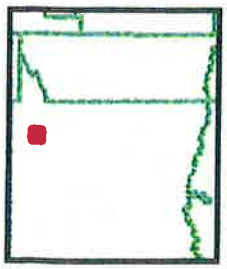
(Signature of Holder)	(Signature of BLM Authorized Officer)
Senior VP & General Counsel (Title)	Field Manager, Price Field Office (Title)
8/4/15 (Date)	8/17/2015 (Effective Date of Grant)

UTU-65027

June 11, 2015

EXHIBIT A





Legend

BLM

PRICE FIELD OFFICE

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

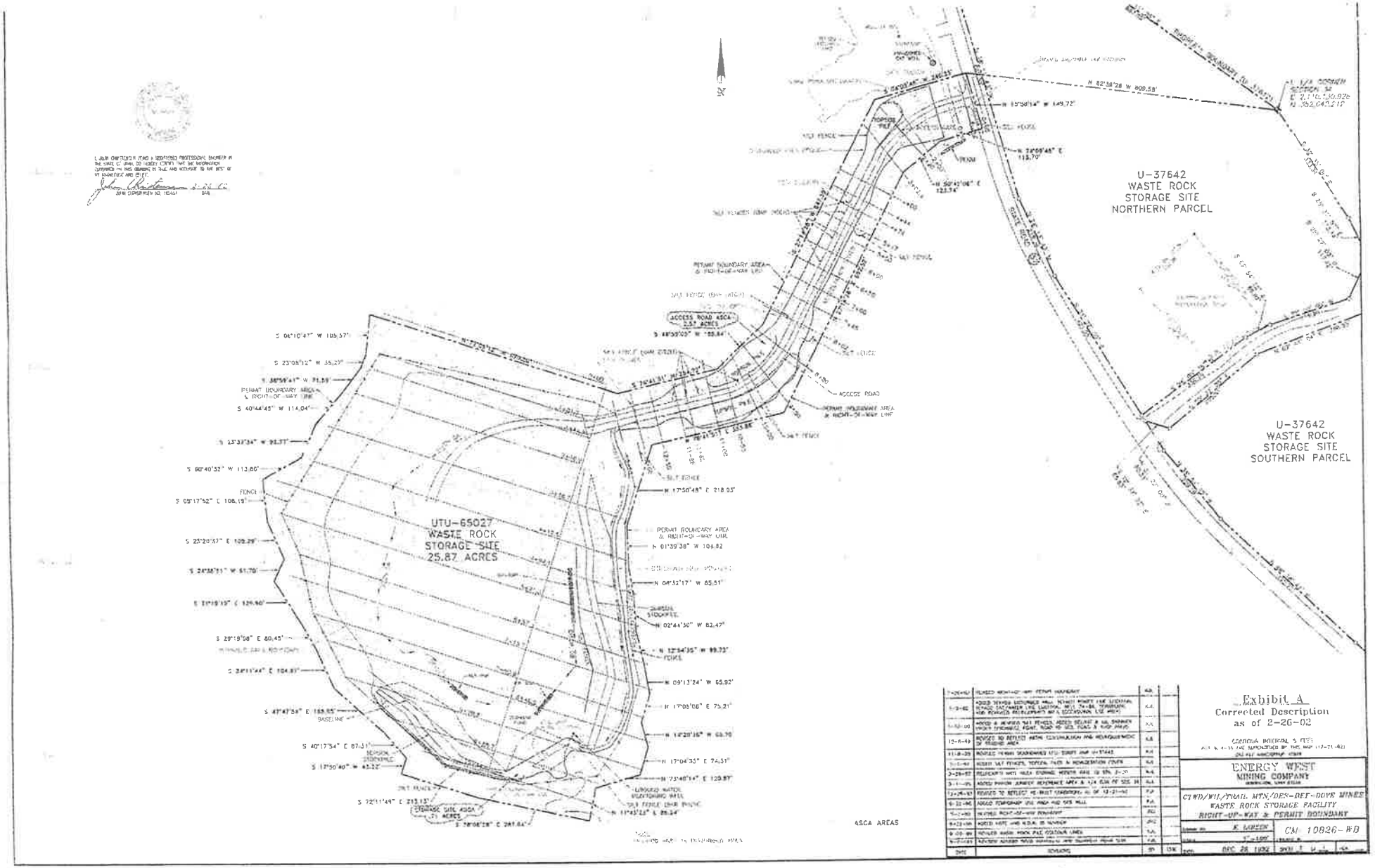

U-37642
WASTE ROCK
STORAGE SITE
NORTHERN PARCEL
U-37642
WASTE ROCK
STORAGE SITE
SOUTHERN PARCEL
UTU-65027
WASTE ROCK
STORAGE SITE
25.87 ACRES
ACCESS ROAD
ASCA AREAS
Exhibit A
Corrected Description
as of 2-26-02
ENERGY WEST
MINING COMPANY
CWD/WIL/TRAIL MTN/DES-DEF-DOVE MINES
WASTE ROCK STORAGE FACILITY
RIGHT-OF-WAY & PERMIT BOUNDARY
CN: 10826-WD

EXHIBIT B