



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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March 21, 2002

TO: Internal File

FROM:  Priscilla Burton, Soils Reclamation Specialist and Team Lead

RE: Topsoil Stripping Amendment, Savage Industries Inc., Savage Coal Terminal C/007/022-AM02A

SUMMARY:

On February 28, 2002 the Division received a permit amendment to develop 13.3 undisturbed acres within the permit area for a coal stockpile. The area is located Southwest of the Trail Canyon Truck Dump, within the railroad loop. Maps 3-1, and 3-2 show the location of the storage area. Prior plans were to develop this area as a "Coal Refuse" storage area. This analysis follows the requirements of R645-303-227 for review of permit amendments.

A soil survey for the permit area was conducted in 1980 and one pit was dug within the proposed disturbed area of Killpack soils. That pit and accompanying laboratory analysis indicates that up to sixteen inches of soil could be salvaged from the map unit. At present, the plan proposes to salvage six inches of soil. The site as a whole is running on a deficit of topsoil, for that reason, soil salvage from the proposed disturbed area could be extended to a depth of 16 inches based upon a qualified soil scientist's evaluation of the site. There is one exception and that is the barren area of Chipeta soils adjacent to the haul road along the southern length of the site, where only 3-6 inches of soil exists over weathered shale.

It would be advantageous to the Permittee to quantitatively document the condition of the wetland vegetation within the proposed disturbed area so that successful reclamation for wetland areas within the permit can be patterned after previously existing wetland descriptions. i.e. the baseline data method described in the Vegetation Information Guidelines.¹ The wetland within the proposed disturbance is one of two last wetlands remaining in the permit area. As required under R645-301-731, Savage Coal Terminal must determine the extent of the wetland, and comply with the requirements of the Clean Water Act and the U.S. Army Corps Nationwide Permit 21.

¹ Utah Division of Oil, Gas and Mining. February 1992. Vegetation Information Guidelines. p 6.

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After a review of the disturbed area soil survey and test plot #2 summation, the Division concludes that the scenario for reclamation of the disturbed ground at the site is not likely to succeed based upon the laboratory analysis provided of the disturbed soil. Since only one sample was taken for analysis of the disturbed soil in 1980, it is recommended that the plan include a commitment for further sampling at the time of reclamation to determine the scope of the sodic hazard within the disturbed area.

TECHNICAL ANALYSIS:

GENERAL CONTENTS

IDENTIFICATION OF INTERESTS

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

Analysis:

Section 2.2.1 of the MRP indicates that the Permittee and Operator is Savage Industries Inc.; 5250 South 300 West, Ste 200; Salt Lake City UT 84107. Send all correspondence to the Attention of Mr. James T. Jensen, Executive Vice President and General Counsel.

Savage Industries Inc is a Utah corporation. Officers and Directors of the corporation are listed in Section 2.2.7.1. Savage Industries Inc. also operates the Catale Oklahoma Loadout in Catale, Oklahoma (MRP, Section 2.2.7.3).

Section 2.2.6 of the MRP indicates that the Resident Agent for the Permittee is C.T. Corporation Systems; 50 West Broadway; Salt Lake City, Utah 84101. Phone: 1 (800) 441-9820.

Authorized Representatives of the Permittee are listed in Appendix 2-8 of the MRP. They are James Jensen, Boyd Rhodes, and Dan W. Guy for Boyd Rhodes.

Throughout the MRP the Permittee is variously called "Swisher Coal Co," "Beaver Creek Coal Company" or "Mountain Coal Company" or "Savage Industries Inc," reflecting the change in ownership over the years (MRP, Section 2.1).

The surface and subsurface ownership belongs to Mountain Coal Company; P.O. Box 591; Somerset CO 81434. Savage Industries Inc holds a lease on the surface and subsurface minerals. Mountain Coal Company has posted the bond for the site (MRP, Section 2.8 and Appendix 2-4).

The MSHA Identification Number for the site is 42-01444. The MSHA identification number for the refuse pile is found in the MRP Appendix 2-5: 1211-UT-9-0033 for temporary refuse storage and 1211-UT-9-0034 for permanent refuse storage.

Findings:

The information provided meets the Identification of Interests requirements of the Regulations.

VIOLATION INFORMATION

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

Analysis:

Compliance information on the site is found in the MRP Appendix 2-2, incorporated July 6, 1995.

Findings:

The information provided should be updated with this application. Prior to approval and in accordance with:

R645-303-227 and **R645-301-113.300**, Please update the compliance information found in Appendix 2-2.

RIGHT OF ENTRY

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

Analysis:

Table 4-1 and 4-2 of the MRP show required leases, easements and rights to access.

Finding:

The information provided meets the Right of Entry requirements of the Regulations.

LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS

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

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Analysis:

Exhibit A of Appendix 2-4 of the MRP describes the permit area as the SW1/4 Section 11, T. 15 S., R. 10 E., SLM, Utah, (160 acres more or less). This figure is more exactly described in the MRP Section 2.6 as 153.46 acres. The Permit issued in 1999 refines the legal description as follows:

Township 15 South Range 10, East, SLBM

Section 11: W1/2SW1/4 except 0.24 ac in NW corner, E1/2SW1/4 except East 100 feet and 5.42 ac. in SW corner.

The operation is within 100' of a public road providing access to the site. There are no dwellings within a ¼ mile of the permit area (MRP, Section 2.5).

Findings:

The Division's Findings (July 6, 1995 State Decision Document Permit Transfer, ACT/007/022) concerning the status of lands unsuitable remains unchanged with this Permit Modification as there has been no change to the legal description of the lands involved.

PERMIT TERM

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

Analysis:

The current permit for the Savage Coal Terminal was issued August 7, 1999 to Savage Industries Inc. The permit expires August 7, 2004. The life of mine is indefinite and renewals will be sought every five years (MRP Section 2.6).

Findings:

The information provided meets the permit term requirements of the regulations.

ENVIRONMENTAL RESOURCE INFORMATION

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

PERMIT AREA

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

Analysis:

The site is located about four miles southeast of Price Utah at the following address: 2025 East 5000 South; Price Utah 84501. The site is referred to throughout the MRP as the Castle Valley Spur Processing and Loadout Facility or CV Spur (MRP, Section 2.2.10), however the name was changed to the Savage Coal Terminal with transfer of the permit in 1999 to Savage Industries, Inc. (Attachment A of the 1995 Permit).

The 126 acre site is located approximately 4,000 feet southwest from the Price River floodplain and 4,000 feet north of Miller Creek. The permit area lies on what used to be undeveloped rangeland dominated by shadscale and mat saltbush. The area is zoned for industrial use (Section 4.4.3) and developing as an industrial corridor along Ridge Road between State Hwy 10 and Wellington.

Findings:

The information provided meets the permit area requirements of the Regulations.

CLIMATOLOGICAL RESOURCE INFORMATION

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

Analysis:

From the soils descriptions and Map Unit Descriptions provided in Chapter 8, the mean annual precipitation is given as 6 – 11 inches and the mean annual soil temperature ranges is 47 – 48 degrees Fahrenheit. The frost free period is 110 to 160 days.

Table IV-5 Estimated Return Periods for Short Duration Precipitation indicates that Table IV-6 shows the average monthly precipitation for the period 1936 – 1976 and the climatology summary by month for the period 1936 – 1965 is given in Table IV-7. Table IV-6 and Table IV-7 could not be found within the MRP.

Climatological information is provided in Section 11 of the MRP. Table 11 -1 provides the Mean Monthly Precipitation (inches) 1931-1955. Current climatological information is requested for the Price/Wellington area.

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Findings:

Current climatological resource information must be provided in the Mining and Reclamation Plan (MRP). Prior to approval and in accordance with:

R645-301-724, Please locate Tables IV-6 and IV-7 of the MRP and amend Tables IV-6 and IV-7 and Table II-1 to have current climatological data.

VEGETATION RESOURCE INFORMATION

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

Analysis:

Table 9-1 outlines the aerial extent of each vegetation type within the permit area. Industrial and agricultural disturbed ground accounts for 132 acres within the permit area. Undisturbed acreage amounts to 22 acres.

Plate 9-1 of the MRP shows three phases of vegetation within the salt desert vegetation type that will be disturbed by the proposed coal storage area: shadscale phase, greasewood phase and saltgrass phase. In addition, approximately 2 acres of the proposed coal storage area is shown as previously disturbed on Plate 9-1.

In September 1982, Stoecker-Keammerer & Associates Ecological Consultants of Boulder, Colorado, quantitatively described the shadscale phase of the salt desert community, with cover, production and density information. The other salt desert community phases were qualitatively described by dominant and conspicuous species.

In the shadscale phase, shrubs accounted for 71.3% of the total vegetation cover, with the average total vegetative cover being 19%. The dominant plants in the proposed disturbed area are shadscale (*Atriplex confertifolia*) and rubber rabbitbrush (*Chrysothamnus nauseosus*). The most common grass was galleta (*Hilaria jamesii*) and important forbs were marsh alder (*Iva axillaris*) and globe mallow (*Sphaeralcea* sp.).

The vegetation reference area is discussed under the revegetation section of this analysis.

Findings:

Information provided in the mining and reclamation plan is adequate to meet the Vegetation Resource requirements of the Regulations.

FISH AND WILDLIFE RESOURCE INFORMATION

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

Analysis:

The proposed disturbed area is home to the Ring-neck Pheasant and Morning Dove, songbirds, black-tailed jackrabbit (*Lepus californicus*), white-tailed jackrabbit (*L. townsendi*) and desert cottontail (*Sylvilagus auduboni*), badger (*Taxidea taxus*) and coyote (*Canis latrans*). Table 10-1 lists all species that could inhabit the area. Plate 10-1 maps the burrows of the white-tailed prairie dog (*Cynomys leucurus*). A Threatened and Endangered Species survey also conducted in 1980 did not reveal any of the three federally listed species of concern: Bald Eagle, Peregrine Falcon, and Black-footed Ferret (Section 10.3.3).

Mr. Joe Helfrich, a wildlife biologist with the Division, has been inspecting the site for the past two years and has not seen any evidence of species of concern.

Findings:

Information provided in the mining and reclamation plan is adequate to meet the Fish and Wildlife Resource requirements of the Regulations.

SOILS RESOURCE INFORMATION

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

Analysis:

Savage Coal Terminal soils were surveyed in 1980 by James P. Walsh and Associates in July 1980 (MRP, Section 8, p8-1). The survey is referred to but not included with the plan.

The following pedons were described at the loadout site: Billings Series; Chipeta Series; Disturbed Lands; Killpack Series; Killpack Series High Water Table Variant; Saltair Series (pp 8-3 to 8-11). All are gypsiferous soils formed from Mancos shale.

Pedon descriptions are provided for six major soil series at the site (MRP, p 8-1). Five of the six soils were sampled and sent for analysis by Colorado Agricultural Consultants of Brighton, Colorado. [In classifying the soils, field descriptions took precedence over laboratory information (p 8-2).] Analytical results for all but the Saltair Series are presented in Table 8-5, Soil Chemical and Physical Analysis. Assessments of soil quality are presented in Table 8-4, Evaluation of Seedbed Quality Material, based upon the criteria of Table 8-3, Soil Suitability As Seedbed Quality Material.

Table 8-5 Soil Chemical and Physical Analysis does not present the original laboratory sheets for the samples taken, but has been retyped into the application. Table 8-5 indicates that

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the surface three inches of Chipeta soil had an accumulation of salts: pH 7.7 and an Electrical Conductivity of 4.8, with an SAR of 6.1. Below the surface the pH is neutral 7.0 and the EC climbs to 9.2 but the SAR falls to 3.5, reflecting the presence of calcium sulfate (gypsum) rather than sodium carbonate in the soil.

Table 8-5 also indicates that the Killpack soil has near neutral pH with an EC of approximately 5.0. The reported values for SAR are peculiar in this soil: 2.8 in the top two inches, 8.1 between 2 and 8 inches, and 2.1 from 8 – 22 inches, jumping to 13.6 below 22 inches. The Kill pack soil is a loam on the surface and clay loam from two to eight inches. Below eight inches the soil is clay, 45% by analysis. The Killpack, High Water Table Variant, is similar except that clay loam texture extends to sixteen inches. This suggests that the soil salvage of the Killpack soils could extend to sixteen inches.

Disturbed land is described on pages 8-6 and 8-16 and in Table 8-5. The original surface layer was removed and twelve inches of gravel fill was placed over the subsoil. Below twelve inches the earth is light grayish brown, massive, hard, very sticky and very plastic, calcareous, with numerous gypsum crystals and threads. This information is contradicted by Table 8-5 where the percent clay is listed as 10% and the texture is given as silty loam and the saturation is 37%, typical of loam soil, not clays. Below twelve inches the pH is 7.6 and the EC is 47.9, the SAR is 18.8 and the Nitrogen content is 72%. This soil is toxic (sodic) and will be very difficult to use as germination medium. Further sampling is recommended to evaluate the extent of the sodic hazard and to develop a management plan that will provide adequate soil cover for germination and rooting.

Findings:

Information provided in the mining and reclamation plan is not adequate to meet the Soils Resource requirements of the Regulations. Prior to approval and in accordance with,

R645-301-121.200, Please correct the statement on page 8-1 of the MRP to read that six major soil series were described at the site and five were sampled.

R645-301-122, The Division requests to see a copy of the James P. Walsh and Associates (July 1980) soil survey and an original copy of the laboratory analyses conducted by Colorado Agricultural Consultants of Brighton Colorado.

R645-301-322, Please provide a commitment in the plan to conduct further sampling of the disturbed soils upon final reclamation such that the extent of the sodic hazard can be determined and a management plan can be developed for the disturbed soils of the site.

ALLUVIAL VALLEY FLOORS

Regulatory Reference: 30 CFR 785.19; 30 CFR 822; R645-302-320.

Analysis:

Alluvial valley floor determination

The 1989 Technical Analysis document accompanying the Beaver Creek Coal Company permit outlines the existence of an alluvial valley floor in sections 1, 2, and 12 of T15S, R10E, based on published information and Plate 6-1 of the permit. The 1989 document also confirms the connection between the unconfined, upper aquifer beneath the permit area and the Quarternary alluvium within the Price River Alluvial Valley Floor. Ground water moves generally in an east-northeast direction.

Although French drains were installed to intercept the ground-water flow along the northern and western margins of the permit area towards the Price River, the eastern portion of the permit still has a moderately high potential for being hydrologically connected, year round, in the subsurface to the Price River Alluvial Valley Floor. The Permittee has monitored the shallow, unconfined aquifer along the eastern and western portions of the permit area. Plate 7-1 shows the monitoring locations, both of which are to the east of the proposed disturbance. Monitoring information is being filed in the electronic water database.

Recently, the water monitoring data for the site was reviewed by Mr. Gregg Galecki (Inspection Report, December 18, 2001). Mr. Galecki agrees with the Division's 1989 determination that there is a low potential for degrading alluvial valley floor ground-water quality.

Applicability of statutory exclusions

The Division determined in 1989 that the Savage Coal Terminal

1. Does not include the extraction of coal;
2. Will not result in a significant disturbance to the surface or groundwater regime; and
3. Occurs on undeveloped rangeland which is not significant to farming, grazing, or any other agricultural activity.

Therefore, the statutory exclusion from operating within an alluvial valley floor was invoked.

Findings:

The statutory exclusion from operating within an alluvial valley floor has been invoked for this permitted site.

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PRIME FARMLAND

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

Analysis:

Abandoned agricultural land makes up 12.9% of the land at Savage Coal Terminal. The land was under cultivation in the 1930's, but was deemed uneconomical and abandoned (MRP, Section 9.3.2.2).

In June of 1980, the Soil Conservation Service determined that the site did not contain prime farmland, Figure 8-1, page 8-23.

Findings:

The Division concludes that there is no prime farmland within the permit area.

OPERATION PLAN

MINING OPERATIONS AND FACILITIES

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

Analysis:

General

The area to be redesignated as a "Coal Stockpile Area," encompasses 13.34 acres. The area is located Southwest of the Trail Canyon Truck Dump, within the railroad loop. Maps 3-1, and 3-2 show the location of the storage area. The area is approved and permitted in the MRP as a "Coal Refuse" storage area. At present the area is undisturbed and contains approximately 10,620 cubic yards of topsoil material based on a stripping depth of 6 inches. Drainage control structures are in place and adequately sized to accommodate additional runoff from the area. Minor adjustments to the reclamation cost estimate may require a slight change to the reclamation bond (3.87% increase).

Findings:

The information provided in the application and the MRP is adequate to meet the requirements of this section of the regulations.

AIR POLLUTION CONTROL PLAN

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

Analysis:

The approved MRP contains an Air Pollution Control Plan for the loadout facility. The protection of air quality is described for in section 3.4.6 and appendix 11-1 of the approved MRP. The plan allows for 8,000,000 tons of coal storage at the loadout facility. Currently there is 250,000 Tons of coal stored on site and approximately 1,000,000 tons of refuse. The additional 13 acre site is expected to hold 350,000 Tons of coal.²

Findings:

The information provided in the application and the MRP is adequate to meet the requirements of this section of the regulations.

TOPSOIL AND SUBSOIL

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

Analysis:

Removal and Storage

Table 8-6 of the submittal indicates that there will be 8,160 bank cubic yards of topsoil stripped from the Chipeta map unit and 2,460 bank cubic yards of topsoil stripped from the Killpack map unit for a total of 10,620 cubic yards. Stripping depth is listed as six inches for both map units. Therefore, the Division calculates that there will be approximately 10 acres of Chipeta soils and 3.0 acres of Killpack soils disturbed.

Table 8-6 of the MRP indicates that ten inches of the Killpack soils are suitable for salvage. If ten inches of Killpack are removed, that would increase the salvaged volume to 4,017 bank cubic yards for the Killpack Series, an increase of 1,557 bank cubic yards. This increase in salvage would cover an additional 2 acres of disturbance with six inches of soil at reclamation.

Perhaps even sixteen inches of soil could be removed from the Killpack soil (see discussion under Environmental Resource – Soils). In that case an additional 6,292 bank cubic yards of soil could be salvaged, an increase of 3,832 bank cubic yards. In this case almost 4.7 more acres of disturbed ground could receive a six inch soil treatment at the time of final reclamation.

² Personal communication between Priscilla Burton and Dan Guy on March 21, 2002 and with Boyd Rhodes on March 15, 2002.

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The MRP indicates in Section 3.5.2, page 3-53 that as additional topsoil and subsoil is placed on the respective stockpiles they will be reclaimed contemporaneously with the first suitable growing season. The term contemporaneous should be changed to interim. Contemporaneous reclamation is final reclamation done in a contemporaneous, timely manner. **There are two key elements of interim reclamation that have been learned by the Division over time and that have been proven by the 1997 evaluation of test plot #2 and the existing condition of the soil stockpiles (FV030602.doc):**

- 1. Incorporation of organic matter into the surface, and**
- 2. Extreme surface roughening.**

Please refer to the Practical Guide to Reclamation in Utah³ available on the internet at <http://dogm.nr.state.ut.us> for further information on extreme surface roughening and organic matter additions. Any source of organic matter could be utilized. i.e. adjacent to the Savage site is a lumber mill. By products from this mill could be obtained to incorporate into the surface of disturbed land where nitrogen levels were reported to be 70%. The Price River Water Improvement District could supply a source of composted biosolids that could be applied to the topsoil/subsoil storage piles. Green Alfalfa hay could be used again.

Findings:

Information provided does not meet the minimum soils operational requirements of the Regulations. Prior to approval and in accordance with

R645-301-232, Please include a commitment in the plan that a qualified soil scientist will be on site during soil salvage and construction of soil storage piles.

R645-301-232.500, Please fill in the acreage in revised Table 8-6 and evaluate the potential of the Killpack soil to provide up to sixteen inches soil for salvage as described in the existing MRP, Tables 8-5 and 8-6.

R645-301-231.400, Please describe in Section 3.5.2 the use of extreme roughening and incorporation of organic matter into the surface of the salvaged and stockpiled soil.

R645-301-352, Please replace references to contemporaneous reclamation with interim reclamation when the referring to reclamation to be conducted prior to final reclamation.

³ Utah Division of Oil, Gas and Mining, Department of Natural Resources. 2000. The Practical Guide to reclamation.

VEGETATION

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

Analysis:

Seeding of the topsoil piles has been with the temporary seed mix found in Table 3-1 (MRP, page 3-54 and 3-57). The current seed mix has not been too successful in creating a diverse cover. Except for Indian Rice Grass and Winterfat, it contains undesirable, introduced species. The Mining and Reclamation plan indicates on page 3-58 that the seed mix may undergo refinement. The following species were chosen for their tolerance of fine-textured soil and low water requirements and their success or lack thereof in test plots #1 and #2. This seed mix may be suitable for seeding on the salvaged topsoil pile:

Species	Pounds of Pure Live Seed/Acre*
Shrubs:	
<i>Atriplex corrugata</i> (Mat saltbush)	2.0
<i>Atriplex gardneri</i> var. <i>cuneata</i> (Castle valley clover)	2.0
<i>Ceratoides lanata</i> (Winterfat)	2.0
<i>Atriplex canescens</i> (Fourwing saltbush)	2.0
Forbs:	
<i>Sphaeralcea coccinea</i> (Scarlet globemallow)	1.5
Grasses:	
<i>Stipa hymenoides</i> (Indian ricegrass)	4.0
<i>Bouteloua gracilis</i> (Blue grama)	1.0
<i>Elymus elymoides</i> (Bottlebrush squirreltail)	4.0
<i>Pseudoroegneria spicata</i> (Bluebunch wheatgrass)	7.0
<i>Sporobolus airoides</i> (Alkali sacaton)	<u>0.5</u>
	31.0

*Broadcast or hydroseeded.

Several of the species above a warm season and should be seeded to take advantage of summer rains. Generally, a June or early July seeding is acceptable. If seeded in the fall warm season species usually cannot compete with the other weed and seeded species and will not be seen.

Findings:

The information provided does not meet the minimum requirements of the interim stabilization of disturbed areas to minimize surface erosion. Prior to approval and in accordance with

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R645-301-331, Please revise the temporary seed mix in Table 3-1 to reflect native species that are tolerant of fine-textured soil and have low moisture requirements.

SPOIL AND WASTE MATERIALS

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

Analysis:

Refuse piles

The production of coal refuse ceased when washing coal became cost prohibitive in 1981. The portion of the facility associated with washing coal shut down and the existing refuse is being shipped to a cogeneration facility. In the next year it is expected that 112,000 tons of refuse will be shipped to Sunnyside Cogen.

Findings:

The information provided is adequate for the purposes of the Regulations.

HYDROLOGIC INFORMATION

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

Analysis:

General

Vegetation Map Plate 9-1 indicates that there is an area of saltgrass-wetlands. Soils Map 8-1 illustrates an area of Killpack high water table variant soils. The existence of the wetland must be verified. If a wetland exists, then a permit from the U.S. Army Corps must be obtained under Nationwide Permit 21. For the purposes of obtaining a permit from the U.S. Army Corps, qualified individuals who have received training from the U.S. Army Corps must be employed to delineate the wetland.

Findings:

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

R645-301-731, A permit from the U.S. Army Corps must be obtained under Nationwide Permit 21 to fill the wetland soils as shown on Plates 8-1 and 9-1. (For the purposes of obtaining a permit from the U.S. Army Corps, qualified individuals who have received training from the U.S. Army Corps must be employed to delineate the wetland.)

RECLAMATION PLAN

POSTMINING LAND USES

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

Analysis:

The post-mining land use for the site is small mammal and songbird habitat (MRP, Section 10-5). Enhancement of the riparian zones within the disturbed area and the proximity of the site to the Price River would encourage utilization of the reclaimed site by migratory birds (see deficiency listed under R645-301-342.100). Surrounding land is cropland and industrial in use.

Findings:

The information provided is adequate for the post-mining land use requirements of the Regulations.

TOPSOIL AND SUBSOIL

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

Analysis:

Redistribution

Currently, there are 112.6 acres disturbed and 40,475 cubic yards of topsoil and subsoil stored at the site.

Changes to the Topsoil Mass Balance Table 8-9 reflect the additional 13.3 acre disturbance as follows:

- Topsoil available = 60,095 cu yds

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- Disturbed area = 125.9 acres
- Post Law Disturbance = 48.7 acres
- Topsoil Required (Post Law) = 39,285 cubic yards, reflecting the commitment to re-apply six inches of topsoil to post-law areas.
- Max area for 6" redistribution = 74.5 acres, reflecting the area that could be covered to a depth of six inches by the stored soil.

If ten inches could be salvaged from 13.0 acres, the Maximum Area for 6" redistribution would be 76.5 acres.

Findings:

The information provided does not meet the topsoil redistribution requirements of the Regulations. Prior to approval and in accordance with:

R645-301-240, Please modify the Topsoil Mass Balance Table 8-9 to reflect actual salvage depths of soils after evaluation by a qualified soil scientist, i.e. topsoil available may increase as well as maximum area for 6" redistribution.

REVEGETATION

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

Analysis:

Standards for success

As shown on Plates 3-2 and 9-1 and discussed in Sections 3.4.4.2 and 9.3.2.5, the reference area was set up in 1980 for the shadscale phase of the salt desert community to establish revegetation success standards for the entire mine site. Production of the reference area was estimated at 450 lbs/acre air dry and the site was rated in good condition in September 1983 by Mr. Don Andrew, Range Conservationist with the USDA SCS (MRP, Figure 9-1). None of the Annual Reports for the site have included a reference area evaluation. The Vegetation Information Guidelines state that range condition of the reference area should be reevaluated every five years.

Table 9-6 of the MRP outlines the percent cover by species in the reference area. Total percent vegetative cover was reported as 17.6% with the most dominant shrubs being shadscale (*Atriplex confertifolia*), winterfat (*Ceratoides lanata*) and an unknown Compositae shrub. The most predominant grass was galleta (*Hilaria jamesii*) and the most dominant forb was *Penstemon* sp.

The permit area includes areas disturbed both before and after passage of the Surface Mining Control and Reclamation Act (SMCRA). Success standards for all areas, will be 90% of

the cover found on the shadscale reference area (Section 3.5.5.2 and Section 9.5, p 9-22). However, the plan indicates in Section 3.5.5.2, page 3-61 that the Permittee does not intend to meet the density of 2,267 shrubs/acre found in the reference area. The Permittee is taking this position because the shrubs were all under one foot in height in the reference area. To my knowledge there has been no distinction made at other mine sites⁴ between the requirement for shrub establishment and shrub height. However, there has been a distinction made between pre-law (areas affected prior to August 3, 1977) and post-law sites. The Permittee should make every effort to re-establish diversity on the reclaimed site.

The reference area soils are described as Chipeta silty clay slopes 3-20%. The reference area soils differ from much of the permit area including a small acreage of those to be disturbed in that their elevation places them above the water table and they are not subject to accumulations of salt from ponding water as are the Killpack soils that support the wetland salt grass vegetation.

The Division suspects that upon reclamation, sizeable areas of ponded water will exist at the entire site for the following reasons:

- During recent removal of refuse, the Permittee was obliged to remove equipment from areas along the eastern boundary of the permit due to the elevated water table.
- As noted in the MRP Section 9.5 "eventual soil saturation or inundation of the low western permit area is possible upon final reclamation."
- As noted in the MRP Section 9.2.1, page 9-2, "A sedge meadow was mapped during the original study (June 1980), adjacent to the current western permit boundary. Although no such type was actually mapped within the permit area, a low area does exist within the currently mapped Disturbed, Agricultural area, now drained by a French drain."

These wetlands will not likely meet the criteria for success established for higher ground. i.e. diversity. It would be advantageous to the Permittee to quantitatively document the condition of the wetland vegetation within the proposed disturbed area so that successful reclamation for wetland areas within the permit can be patterned after previously existing wetland descriptions. i.e. the baseline data method described in the Vegetation Information Guidelines.⁵ The wetland within the proposed disturbance is one of two last wetlands remaining in the permit area.

Findings:

Information in the mining and reclamation plan does not meet the revegetation requirements of the Regulations. Prior to approval, and in accordance with

R645-301-356.100, Please document quantitatively the vegetation of the saltgrass wetland, confirm the areal extent as shown on Plate 9-1 in the documentation.

⁴ Emery Deep Mining and Reclamation Permit C/015/105, Section VIII.C.9 , page 24 and Wellington Preparation Plant Mining and Reclamation Plan C/007/012, Section 3.41, page 54.

⁵ Utah Division of Oil, Gas and Mining. February 1992. Vegetation Information Guidelines. p 6.

TECHNICAL MEMO

R645-301-342.100, Please include in the reclamation plan enhancement measures to be used to restore the saltgrass wetland.

R645-301-356.110, Please arrange for an evaluation of the range condition and productivity of the reference area by the Natural Resources Conservation Service during the 2002 growing season.

STABILIZATION OF SURFACE AREAS

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

Analysis:

Previous treatment of soil stockpiles is described in Section 3.5.2. The piles were smoothly graded and tilled to a depth of 5 inches. Slopes greater than 20% were prepared using a crawler tractor at right angles to the slope to leave grouser tracks parallel to the slope. This sort of treatment should be abandoned in favor of a stockpile that has limited south exposure, that is left in a roughened condition by pocking. A request for this type of treatment was made under Operation Plan, Topsoil and Subsoil Handling.

Mulch will be applied at a rate of 2,000 pounds/acre and either crimped with a disc or stabilized with a tackifier (page 3-47). Wood fiber mulch will be over sprayed at a rate of 2000lbs/acre in combination with 60 lbs of Tac per acre (page 3-54a). Mulching is also described in Section 3.5.5.3, page 3-62.

The Division recommends that hay mulch is incorporated with the extreme roughening technique, followed by a hydromulch application of wood fiber mulch and tac.

Findings:

The information provided is not the best technology for stabilization of surface areas. Prior to approval and in accordance with:

R645-301-244, Please modify the plan on page 3-54 and 3-54a, Section 3.5.2, to state that 2,000 pounds/acre of hay mulch will be applied to the soil stockpile prior to roughening the soil and 2,000 lbs/ac of wood fiber mulch and 60 lbs/ac tac will be applied to the surface with the hydroseeding operation.

BONDING AND INSURANCE REQUIREMENTS

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

Analysis:

General

Appendix 2-4 lists the reclamation bond as of December 9, 1997 of \$2,525,000.00.

Findings:

The information provided in the amendment and MRP is under review.

COAL PREPARATION PLANTS NOT LOCATED WITHIN THE PERMIT AREA OF A MINE

Regulatory Reference: 30 CFR Sec. 785.21, 827; R645-302-260, et seq.

Analysis:

The Savage Loadout falls within this category of a preparation plant not located within the permit area of a mine. Coal refuse production ceased when washing coal became cost prohibitive in 1981. The portion of the facility associated with washing coal shut down and the existing refuse is being shipped to a cogeneration facility. Currently Savage crushes, sizes and blends coal.

Findings:

The Division's review of amendment AM02A to the MRP recognizes the requirements for compliance with R645-302-263 and R645-302-264.

RECCOMENDATIONS:

Further information is requested of the Permittee prior to approval.

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