



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

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July 30, 2001

TO:

Internal File

THRU:

Gregg A. Galecki, Project Team Lead

FROM:

Priscilla W. Burton, Soils Reclamation Specialist

RE:

Leach Field, Canyon Fuel Company, LLC, Dugout Canyon Mine, C
AM01A-2

SUMMARY:

Canyon Fuel Co. has submitted an amendment to their MRP to construct a leach field approximately 1.25 miles southeast of the Dugout Mine. The leachfield will be located along the Dugout Canyon road in the W ½ NW ¼ NW ¼ of T13S, R12E on a triangular tract of land between Dugout Creek and an unnamed ephemeral drainage. A pipeline will convey gray water from the mine to the leach field. The pipeline will be buried in the county road drainage ditch. The pipeline corridor is not proposed to be included in the disturbed area. This submittal adds 2.55 acres to the disturbed area within the permit. Of the 2.55, approximately 1.3 acres will be disturbed by this construction, the remainder will be held in reserve. Clearing the vegetation within the disturbed area boundary should still allow for a visual vegetation screen between the County Road and the disturbed area boundary.

A response to the Division's initial review of the submittal was received June 29, 2001. This is the second soils review of the submittal. The submittal is recommended for approval.

TECHNICAL MEMO

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

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

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:

The site is at 6,715 feet elevation on an alluvial fan. The slope is 6 – 8 %. The average annual precipitation is 12 – 14 inches. The location is in a pinyon-juniper community. An Order I soil survey (found in Attachment 2-1) was conducted by Mr. Dan Larsen, Soil Scientist with Environmental Industrial Services.

Two soil test pits were dug at the site in October 1999. A third pit was dug in the reserve* location in May 2000. The pit locations are shown on the Soil Description Location Map in Attachment 2-1. Mr. Larsen describes the soil as Map Unit 50, Haverdad loam, moist, 1 to 5 percent slopes. The soil descriptions are found in Appendix S3 of Attachment 2-1. The SCS classification of the soil is as a fine-loamy mixed (calcareous), mesic Ustic Torrifluvent. An SCS description of the soil type is provided in Attachment 2-2.

Samples were taken of the soil adjacent to the soil test pits six months after the soil test pits were dug. These results are found in Appendix S-2 of Attachment 2-1. The three locations are represented by composite samples taken at intervals throughout the profile down to 80 inches (6.5 feet).

The soil is a deep, Haverdad loam with five percent or less coarse fragments in the upper 45 inches and no more than 25% below 45 inches. Most of those coarse fragments are less than 3 inches in diameter. Roots are generally in the upper 20 inches. For the purposes of reclamation, the soil is suitable.

Findings:

The information provided in the proposed amendment is considered adequate to meet the environmental soils resource requirements of The regulations.

* Attachment 5-1, Leachfield Plans and Specifications, page 3, requires enough land to develop a second complete seepage trench system (Reserve Area).

OPERATION PLAN

TOPSOIL AND SUBSOIL

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

Analysis:

Removal and Storage

Before topsoil removal, vegetation will be removed (page 2-6, Chapter 2) from the entire 1.3 acre area. A portion of this scrubbed vegetation will be used as mulch to protect the soil during plant establishment and for habitat creation. Clearing the vegetation within the disturbed area boundary should still allow for a visual vegetation screen between the County Road and the disturbed area boundary.

After clearing the vegetation, an eight- inch topsoil layer will be removed from the 1.3 acre site (colored blue on Plate 7-2), generating approximately 1, 446 cubic yards of material (page 2-4). (By Division calculations, eight inches over 1.3 acres will yield 1,384 cu yds.) This topsoil will be temporarily stored in a stockpile, to be redistributed immediately after construction (location shown on Figure 2-1). The stockpile will be protected by berms and a silt fence (page 2-9, Section 234.200). The location of the stockpile is indicated on Figure 2-1. The topsoil will be stockpiled in a trapezoidal shaped pile which is eight feet deep and 50 – 125 feet on the sides of its base (page 2-4).

Attachment 5-1, Leachfield Plans and Specifications, indicates on pages 3 that each seepage trench will be excavated to a depth of seven feet. Then, five feet of gravel will be placed in the trench and two feet of soil will be replaced on top. Section 222.400 (page 2-3) provides a 17,640 cu ft volume calculation for the trench excavation. Of the 17,640 cu ft, 3, 780 cu ft will be backfilled into the trench on top of the gravel. The remaining 13, 860 cu ft of subsoil will be graded over the the surface of the 1.3 acre disturbed area (Figure 2-1) in a 2.8 inch lift (page 2-3).

The recommendation of the soil consultant, Mr. Dan Larsen, was that "Soil handling activities should consider retaining natural soil layer sequence although some soil mixing should not be detrimental." The four to five inch layer of the C horizon over the Bk1 horizon will not be detrimental to vegetation as long as the C horizon does not create a calcic hard pan. These lower C horizon soils were massive, hard and high in calcium carbonates. The amendment specifies loosening the soil surface to a depth of 8 inches after grading of the excess spoil (page 2-10, section 242.100) to turn the C horizon into the Bk1 horizon before replacement of the topsoil.

TECHNICAL MEMO

The procedure for laying the sewer pipe from the septic tank to the Dugout Canyon Road within the surface facilities area was not discussed within the text of the submittal, but it appears from Contour7-2.DWG that no additional topsoil will be generated as the pipe lies within the disturbed area boundary of the surface facilities area.

Findings:

The information provided in the proposed amendment is considered adequate to meet the minimum operations topsoil and subsoil requirements of The Regulations. .

RECLAMATION PLAN

BACKFILLING AND GRADING

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

Analysis:

General

Drawing 5 of Attachment 5-1 shows the current and final surface configurations for the leach field site. The sewer pipeline and leach field piping and concrete boxes will remain in place in perpetuity (Section 553.200). Reclamation will occur immediately after construction.

Findings:

The information provided in the proposed amendment is considered adequate to meet the requirements of this section.

TOPSOIL AND SUBSOIL

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

Analysis:

Immediately after construction, the site will be regraded, ripped and topsoil will be redistributed to a depth of eight inches (page 2-9, section 242.100). As reported in Appendix S2 of Attachment 2-1, nitrogen and phosphorus levels in the soil are adequate for native species. There will be no supplemental fertilization.

Findings:

The information provided in the proposed amendment is considered adequate to meet the minimum reclamation topsoil and subsoil requirements of the Regulations.

STABILIZATION OF SURFACE AREAS

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

Analysis:

During construction, sediment control will consist of silt fences (Section 553.100). Berms, surface roughening and seeding for contemporaneous reclamation of the site will control runoff in the long term. The seeding that occurs immediately after construction will be with the final seed mix. The site will not be redisturbed.

Findings:

The information provided in the proposed amendment is considered adequate to meet the requirements of this section.

REQUIREMENTS FOR PERMITS FOR SPECIAL CATEGORIES OF MINING

PRIME FARMLAND

Regulatory Reference: 30 CFR Sec. 785.16, 823; R645-301-221, -302-300 et seq.

Analysis:

The soils in the vicinity of the Dugout Canyon Mine permit area were surveyed in 1980 (Appendix 2-1 and page 2-2 of Section 221). At that time, the SCS determined that prime farmland was located along the Soldier Canyon Road in the East ½ of Section 1 and East ½ of Section 12 both in T14S, R11E.

The leachfield is located along the Dugout Canyon road in the W ½ NW ¼ NW ¼ of T13S, R12E. Although the soils in the vicinity of the leach field are Haverdad Loam, the lack of irrigation water and lack of historic use for farming precludes a designation of prime farmland.

TECHNICAL MEMO

Findings:

The information provided in the proposed amendment is considered adequate to meet the requirements of this section.

RECOMMENDATION:

The amendment is acceptable in its present form.

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