



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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TO: Daron Haddock, Permit Supervisor

FROM:  Priscilla Burton, Senior Soils Reclamation Specialist

DATE: February 23 1993

RE: Renewal of Mining and Reclamation Plan, review of submittal received 1/12/93, Genwal Coal Co. Crandall Canyon Mine, ACT/015/032. Folder #2. Emery County. Utah

SUMMARY

The Mining and Reclamation Plan (MRP) was revised and submitted to the Division on 1/12/93. This review discusses outstanding requirements for compliance with the R645-301-200 rules and R645-301-731.100. In the approved MRP, the soils information is found in Volume 3, Chapter 8. In the present submittal, the soils information is found in Volume 1, Chapter 2.

The total acreage requiring topsoil redistribution and the final reclamation topsoil depth is revised in this renewal submittal. The final topsoil depth in the previously approved plan (6/14/89) was one foot over 5.15 acres.

The renewal submittal plans for a six inch final topsoil layer over 4.07 acres. A 70' wide roadway is retained in the reclaimed disturbed area (cross-section G-G', Plate 5.17A).

TECHNICAL ANALYSIS

R645-301-121.200. Be clear and concise; and

Proposal:

References to the old UMC regulations are found on pages 2-2, and 2-9 of Chapter 2 and possibly elsewhere in the MRP.

Analysis:

The MRP must clearly address the regulations which are currently in use. The UMC regulations were superseded by the R645 regulations in 1992. Genwal Coal Co. signed an application for permit change accepting the governance of the R645 regulations on 1/29/92.

Deficiencies:

1. All references to regulations within the MRP should be revised to refer to the R645 regulations to ensure full communication between the public, Genwal Coal Co. and the Division.
2. Page 4 of Appendix 2-3, Soils Study, is missing in all copies of the plan.
3. A designation on Plate 5-3 north of (behind) the coal storage retaining wall is not in the legend of the plate.
4. Contour intervals described on Plate 2-1 are incorrect. The correct interval is 10' as opposed to 2'.

R645-301-131. Names of persons or organizations

Proposal:

E.I.S. is referred to in Chapter 2., page 2-3 as the organization which collected and analyzed data included in the MRP.

Analysis:

The full business name of E.I.S. should be used to clearly identify the organization conducting technical work at the mine site.

Deficiencies:

1. The business which is represented by the initials E.I.S. referred to on page 2-3 of Chapter 2 should be clearly identified by the full business name.

R645-301-200. SOILS
R645-301-230. OPERATION PLAN.
R645-301-231.300. Testing plan

Proposal:

Sampling of the topsoil storage piles prior to soil redistribution is addressed in Chapter 2, page 2.10 of the MRP.

Analysis:

The bonding calculations in appendix 5-20 reveal that a single lab sample will be analyzed. This does not agree with the description of the soil fertility testing of the topsoil piles (see page 2-10).

Deficiency:

1. The bonding calculations should be revised to accurately reflect plans committed to in the Mining and Reclamation Plan with regard to testing of the topsoil piles for fertility. (See description of tests on page 2-10, Chapter 2.)

R645-301-231.400. Narrative that describes the construction, modification, use and maintenance of topsoil handling and storage areas.

Proposal:

Plate 2-3 shows the location of the three topsoil piles with reference to the location of surface facilities. Plate 2.2 supersedes Plate 3-8 and provides contours, cross-sections, area, yardage for each topsoil pile.

Analysis:

Section 8.3.2 of the approved plan indicates that 8,410 cubic yards are required for topsoiling of 5.15 acres of disturbance with one foot of topsoil or substitute topsoil. The plan for the recovery of 8,410 yd³ is presented. An estimated 5,171 yd³ of topsoil and 3,239 yd³ of subsoil were to have been salvaged from the site prior to disturbance (page 8-8 of the approved plan).

Actual stockpiled soil amounts to 3701 yd³ of topsoil and substitute topsoil.

Page 8-6 of the approved plan indicates that there is temporary storage of topsoil above the substation pad and across from the coal stockpile and above the #2 stockpile. And, Section 8-7, page 8-8 of the approved plan also indicates that topsoil and subsoil is stored adjacent to the public parking area on the USFS road (the trailhead). Soil stored in these locations is designated for final reclamation of areas above the substation pad and across from the coal stockpile. References to these temporary storage piles is no longer in the MRP. Genwal investigated the area opposite the coal loadout and determined (by probing, see pages 2-3 and 2-4) that the depth of the soil was less than 2'. The present reclamation plan does not include redisturbing the "wooded" area opposite the coal loadout or the trailhead or the undisturbed vegetation within the disturbed area.

Genwal must determine where likely sources of substitute topsoil are located and provide identification of those sources on a surface facilities map as well as in the narrative.

Deficiencies:

1. The location of adequate substitute topsoil should be determined and indicated on a surface facilities map and in the narrative to eliminate the present deficit of topsoil material stored in piles on site (see also R645-301-233, 'Deficiencies' #1 and #2). The approved topsoil depth is 1 foot.

R645-301-233. Topsoil Substitutes and Supplements.

Proposal:

A plan to remedy the topsoil deficiency described above under R645-301-231.400 is not included in the plan.

Analysis:

The plan is inadequate in describing the area of disturbance requiring topsoil replacement and in addressing the volume of topsoil required for acres disturbed. The amount of topsoil in the stockpiles is itemized in Plate 2-2 at 3,701 cubic yards of material.

The presently approved MRP commits to the replacement of one foot of soil material over the entire site (page 8-8, Chapter 8). The Division calculates that for the 6.65 acre site, this will require 10,728 cu yds of stockpiled soil (reduced slightly by the area to remain as an access road but increased slightly by the slope of the reclaimed site). The applicant has a serious shortage of topsoil, the stockpiles account for only one-third of the amount calculated to be required.

Deficiency:

1. The MRP should describe a plan for salvaging substitute topsoil during regrading of the site or of salvaging additional material from the present topsoil storage areas to remedy the topsoil deficiency presented in the renewal submittal of 1/12/93. The approved topsoil depth is 1 foot.
2. The applicant must provide the Division with information on the quality and suitability of the potential substitute topsoil (item 1, above) according to the requirements of R645-301-233 et seq.

R645-301-234. Topsoil Storage.

Proposal:

A discussion of topsoil protection measures was not found within Chapter 2 of the MRP. The presently approved plan has such information in Section 8-7.

Analysis:

A description of the methods utilized to protect the topsoil piles is necessary since the performance standard of R645-301-250 reflects the plans provided under R645-301-200. The renewal submittal should indicate the measures taken to protect the topsoil stockpiles along the forest service road from degradation by road salt (snow plowing) and water erosion.

Presently, the three stockpiles within the disturbed area are protected by an asphalt berm, and strawbales. Several inspectors over the past two years have described the potential contamination of topsoil by snow clearing activity. The plan should indicate what precautions are being taken to limit the potential contamination with salts from the road.

A commitment is lacking in the plan to gain approval prior to moving stored topsoil as per R645-301-234.240.

Deficiencies:

1. The Mining and Reclamation Plan must provide a description of the methods which are in use to protect the topsoil stored along the Forest Service road from water and wind erosion, and accumulations of sediment and salts.
2. The plan must include a commitment to maintain the stockpiles in their present

configuration until required for redistribution as per R645-301-234.240.

R645-301-240. RECLAMATION PLAN.
R645-301-242. Soil Redistribution.

Proposal:

Calculations on page 2-8 list the acreage requiring topsoil coverage as 4.07 acres. (This figure is actually 4.97 acres. It is incorrectly calculated on page 2-8.)

Topsoil and subsoil salvage did not produce the amount of material projected in the approved plan. Approximately 3,700 yd³ have been salvaged and stored in three topsoil pile locations.

Analysis:

Previous calculations (page 8-3, Section 8-3 and Plate 3-1 of the approved plan) were reported as 6.03 acres of disturbed land less 0.03 acres of undisturbed ground and less 1.2 acre of road, arriving at 5.15 acres. (This figure also appears to be inaccurate as 6.03 ac - [0.03ac + 1.2 ac] = 4.8 acres.)

The acreage of topsoil storage areas has been increased from .62 to .9 acres with this submittal. The undisturbed areas within the disturbed area has been increased from 0.03 acres to 0.48 acres in the narrative and by 0.13 acres from Plate 3-1 (dated 12/20/89) to Plate 5-3. The rationale for changing disturbed and undisturbed acreages should be discussed with the Division.

The approved MRP provided a commitment to return 12" of topsoil cover to the disturbed area. Five acres would thus require at a minimum 8,066 yd³ of topsoil and/or substitute topsoil. Presently, the storage piles of topsoil and subsoil total 3,700 yd³. This is enough for 2.3 acres at 1 foot deep.

The renewal submittal suggests 6 inches of coverage over the 5 acres, a minimum of 4,033 yd³ required. (Topsoil coverage would actually be less than these calculations due to the effect of slope. The bonding calculations indicate that the majority of the land to be seeded has greater than 30% slope. The cross-sections on Plate 5.17a indicate slopes of 70-100%.)

Genwal's proposal to reduce final cover down to six inches is not recommended for approval. Genwal should abide by their previously approved commitment to return one foot

of topsoil to the reclaimed areas. A concerted effort to determine where additional subsoil can be salvaged (during final reclamation) for substitute topsoil use should be undertaken. i.e. reduce the size of the 70' wide roadway as shown in cross-sections 5.17a. The location of substitute topsoil must be specified in the plan and on a surface facilities map, to ensure adequate protection under R645-301-232.200 of the subsoil 'in situ'. Bonding calculations in Appendix 5-20 should be adjusted for the additional loading, hauling, grading, scarification, and fertilization of the additional substitute topsoil material.

Cut/Fill calculations in Appendix 5-20 indicate that 6197 yd³ will be excavated and hauled (page 3 of 7). Calculations at the end of this appendix show that only 2,530 yd³ will be obtained from cut and the remaining fill will be obtained from the topsoil storage piles. Grading plans should not include topsoil as backfill.

Deficiency:

1. The total acreage requiring topsoil replacement on page 2-8 should be corrected to read 6.65 acres disturbed - [0.48 acres of undisturbed area + 0.9 acres of roadway] = 4.97 acres.
2. A verification of the disturbed and undisturbed acreage changes in the renewal submittal should be discussed with the Division.
2. The commitment to replace one foot of topsoil should be maintained in the present submittal and sources of additional substitute topsoil to make up the approximately 5,000 yd³ deficit must be located (see 'Deficiencies' under R645-302-233 and R645-301-231.400).
3. Bonding calculations should be revised to account for the additional substitute topsoil material which will be loaded, hauled, graded, scarified and fertilized under the presently approved plan of 12 inches of topsoil cover.
4. Grading plans and cut/fill volumes provided in Appendix 5-20 must not include the topsoil as backfill material, bonding calculations in Appendix 5-20 and reclamation designs must be revised accordingly.

R645-301-244. Soil Stabilization.

Proposal:

One ton of alfalfa hay will be incorporated into the redistributed topsoil and substitute

topsoil prior to seeding (page 2-10).

Analysis:

This procedure is a good husbandry practice. The additional costs for incorporation of the alfalfa hay into the regraded surface prior to seeding was not noted in the cost estimates.

Deficiency:

1. The bonding cost estimates should include the treatment of regraded substitute topsoil and topsoil with 1 ton of alfalfa hay mulch.

R645-301-731.300. Acid- and Toxic-Forming Materials.

Proposal:

Testing of toxic material below the coal stockpile is referred to on page 2-9 of the MRP.

Analysis:

Details of testing are not included in the MRP or in Appendix 5-20 with the bonding cost estimates. How many samples will be taken and to what depth? The Division recommends that depth segregated samples are drawn from three locations within the coal stockpile area. The samples should be segregated as follows: 0-6", 6-12", 12-24", and 24-36". Samples from corresponding depths from each of the sampling locations can be mixed and a subsample drawn for analysis. This will result in 4 samples sent for analysis. Analytical parameters suggested for analysis are found in Table 6 of the Division's 1988 "Guidelines for Management of Topsoil and Overburden," Due to the coal stockpile storage at the site, molybdenum and arsenic might be added to the list of parameters.

Deficiency:

1. Details of the number of samples to be tested and the analyses to be performed should be included in the discussion on page 2-9, Chapter 2, of the acid/toxic testing procedures to be conducted in the vicinity of the present coal stockpile. These tests should be included in the cost estimates found in Appendix 5-20.

CONCLUSIONS

This renewal submittal includes an amendment to the presently approved MRP to reduce the topsoil cover requirement depth from one foot down to six inches. This is a significant departure from the previously approved plan and is not recommended for approval.

A plan for providing substitute topsoil to make up the 5,000 yd³ deficiency should be presented in the MRP.

The roadway which remains at the site after final reclamation is 70' wide in cross-sections and could be a source of additional fill to lessen the steep slopes remaining at final reclamation in the area of the coal load-out and make up the deficiency in cut/fill balances shown in Appendix 5-20.

Several requests for revision of the bonding calculations are made due to omissions in the present calculations.

Verification of the changes in disturbed acreage and topsoil storage acreage presented in this renewal should be discussed with the Division prior to approval of these changes.