



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

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December 21, 1998

TO: File

THRU: Joe Helfrich, Permit Supervisor *JH*

FROM: Priscilla Burton, Soils Reclamation Specialist *B*

RE: EARTHCO - Bond Release and New Proposed Topsoil Borrow Area, Nevada
Electric Investment Company, Wellington Preparation Plant, ACT/007/012-97BR,
Folder #2, Carbon County, Utah

SUMMARY:

Since July of 1996, the Division has been working with NEICO to locate borrow material.

- The Division's July 25, 1996 Technical Analysis (TA) for the Wellington Mine Reclamation Plan (MRP) contained the following deficiency: *R645-301-533.252, supply the needed amount of borrow material to meet the minimum regulatory requirement of 4 feet of the best available, nontoxic and noncombustible material.*
- On December 23, 1996, soil Borrow Areas "A" and "B" were approved for soil borrow and were incorporated into the MRP.
- On June 20, 1997, NEICO's Midterm submittal requested that the application for using Soil Borrow Areas "A", "B", and "C" (Plate G9-3511) be withdrawn from the MRP.
- On February 18, 1998 the Mid-Term submittal was approved, Borrow Areas "D", "E", "H", and "G" were finalized and Areas A, B, and C were released from the plan.

The present submittal received on November 16, 1998 and December 11, 1998 requests a change of post-mining land use for Areas B and C to that of industrial use and further identifies topsoil borrow Area I.

The background information presented above demonstrates that the reclamation plan for

the Wellington Preparation Plant has varied according to the NEICO business plan and that the Division has attempted to accommodate NEICO in all their propositions.

This latest submittal requests that Area B is released from bond with the intention of selling the land for industrial use. In this transaction, the topsoil resource from Area B would be forever lost. Prior to the release of Area B, the Division should revisit the issue of topsoil salvage from the site based upon the

1. Quality of topsoil material located in Area B;
2. Ease of soil salvage from the site and the proximity to a road and the coarse refuse pile;
3. Area B will not require reclamation prior to being sold as an industrial site;
4. Whereas the alternative, Areas H and I will require road construction and reclamation, and
5. Division's mission statement which requires the promotion of coal mining in an environmentally sound manner.

The other issue raised by this submittal is the disposition of the coal refuse material on the surface in the main plant area.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

SOILS RESOURCE INFORMATION

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

Analysis:

Section 2.22 provides a detailed history of soil sampling in the topsoil borrow areas D, E, F, G, H, and I with soil survey studies presented in 9 different sampling periods. These periods are presented with soil profile descriptions and laboratory analyses.

The following additional environmental resource information is provided with this current submittal:

- A soil survey was performed for Area I. Soil Investigation Reports are provided in Section 2.41 for Area I, approximately 7.55 acres located in the SW corner of the permit area. Map G9-3511 shows the location of Area and the location for each soil pit.

The soil is described as Stormitt series, a loamy-skeletal, carbonatic, mesic Ustic Haplocalcid. The A horizon and Bw horizon is about 9 inches thick (17% rock fragments, primarily gravels) Underlying this is the calcic Bk horizon, about 17 inches thick (36% rock fragments, gravels and cobbles). The C horizon averages 7 feet in depth (59% rock fragments, gravels and cobbles), with a texture variously described as sandy loam, sandy clay loam, and clay loam. Rooting depth was found to be limited to the upper 30 inches of soil (i.e. the A, Bw and Bk horizons).

Stormitt is in the Semidesert Gravelly Loam range site. The average annual precipitation is 8 to 10 inches. The hazard of water erosion is medium. There was 23% plant cover noted at the sites of excavation. Plants such as Sagebrush, Galleta grass, Shadscale, Prickly Pear cactus, Indian Ricegrass, and Rabbitbrush were seen. The suitability of Stormitt series for rangeland seeding is poor. The main limitations are the stoniness of the soil and the low annual precipitation (Jensen and Borchert, 1988).

Nine sites were excavated and described. Three sites were sampled by horizon: W3, W5 and W7; and, the remaining six sites were sampled by compositing the subsurface horizons. Sites W3, W5, and W7 illustrate the quality of the soil which naturally occurs in the germination and growth medium. In the top 8 -10 inches the pH is 7.8 to 8.2; the EC is 0.63 to 1.09 mmhos/cm; the SAR is 1.6 to 4.8; the texture was noted as CL, SL, or SCL; percent organic matter is 0.8%; nitrogen varies from 1.2 to 3.0 mg/L; and water holding capacity is 0.1 in/in. In the lower horizons, the SAR jumps to levels of 5.8 to 13; the available water holding capacity is reduced to levels below 0.05 in/in (poor); and the EC rises to 4.11 to 11.0mmhos/cm (fair to poor range).

The submittal concludes that with the exception of site W7, all soils will be suitable according to the Division's guidelines, after mixing has occurred. The Guidelines for Topsoil and Overburden¹ provide an evaluation of soil for vegetative root establishment. Yet, when the survey results are compared to this table, the Division must take exception to the conclusion reached by the Permittee.

- Even after mixing the samples, a high conductivity value was noted for W1 (7 - 60") and W2 (15 - 48"), with W4, W6, W7 and W8 composite samples approaching the

¹Leatherwood, J., and Duce, D., 1988. Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining. State of Utah Department of Natural Resources, Division of Oil, Gas and Mining.

poor value of 8.0 mmhos/cm.

- Poor to Fair SAR values were noted in the composite samples of W1 (7 - 60" and 60 - 123"), W2 (15 - 48" and 48 - 84"), W4 (9 - 72" and 72-120"), W6 (24 - 60" and 60 - 114"), W8 (48 - 84"), W 9 (48 -114").
- Composite samples which rated poorly for available water holding capacity (based upon the assumptions listed on page 279 of sec. 2.22 of the MRP) were sites W1 (60 - 123"), W2 (48 - 84"), W3(72 - 108"), W4 (72-120), W6 (60 - 114"), W8 (48 - 84"), and W9 (48 - 114"). The lower organic matter in the subsurface horizons would impact the available water capacity in a negative fashion as well.

The Stormitt soil is a soil that is saline just below the surface horizons and sodic at its depths. The deeper, sodic materials would be used to reclaim the disturbed area. The surface horizons would be returned to the borrow site for reclamation. This presents a two-fold problem. First the reclamation of the borrow site would not be easily accomplished, given the amount of rain and the potential for erosion during storm events. Second, the material is not the best available for reclamation of the disturbed area.

The Division is of the opinion that the best available material is that located in Area B, the Greybull series. As noted in section 2.22, page 97, 98, 108, and 122 of the MRP, the Greybull series (represented by the sample NEICO 6) is a fine-loamy, mixed, calcareous, mesic Typic Torriorthent. *It is entirely suitable for salvage. There are no limiting parameters.* There are 10 to 15% gravels in this silty clay loam/ clay loam soil. The pH ranges from 7.9 to 8.1, the SAR values are 1.3 to 2.2; the EC ranges from 1.0 to 2.9 mmhos/cm. This is quality material that would present little problems for reclamation of the disturbed area.

There are economic incentives to this approach as well:

- There would be no required reclamation of borrow site B, as it will convert to industrial use. The removal of topsoil would not affect that use.
- In addition, Area B is in close proximity to an established road and no further road building would be required to access the site. In contrast, Areas H and I would both require roadbuilding from knoll to knoll over hilly terrain. Both road and borrow sites would require reclamation.
- Area H (72 acres) , Area I (7.55acres) and Area B (approx. 100 acres) could all be withdrawn from bonding.

- If the topsoil is immediately placed upon the Coarse Refuse Area 3, then the bond clock would begin on this site.

Section 2.41 discusses amounts of soil available for soil borrow. In the best case scenario site B would supply 43,300 CY (replacing the soil supplied by Area H). Under the worst case scenario, 170,000CY could be used from this site (replacing the soil supplied by both Areas H, and I). Area B is potential source of 320,000 CY of quality soil for reclamation (24 inches over the 100 acres). However, the Division recommends salvage of only 43,300 CY from Area B (best case scenario). This would be the equivalent of the removal of one foot of soil from 26 acres or two feet of soil from 13 acres of Area B. The soil could be immediately placed on the coarse refuse or stored on site and seeded until reclamation..

The Division's Mission Statement would seem to support the request for the salvage of this material prior to transfer of the ownership of the site.

The mission of the Title V Program is to regulate exploration for and development of coal in conformance with the UCA 40-10 and the Surface Mining Control and Reclamation Act of 1977 which:

- *supports the existence of a viable coal mining industry to meet the nation's energy needs,*
- *implements standards that safeguard the environment and protect public health and safety, and*
- *achieves the successful reclamation of lands affected by coal mining activities.*

Findings:

This section of the submittal does not fulfill the requirements of:

R645-301-223.100 and R645-301-232.200 - The Substitute soil materials proposed for use must be the best available within the permit area to support revegetation and must be demonstrated to be suitable according to the Division Guidelines for Topsoil and Overburden.

RECLAMATION PLAN

DISPOSAL OF COAL MINE WASTES

Regulatory Reference: R645-301-542.730, R645-301-553.250.

Analysis:

Section 2.41, page 1, of the existing MRP states that piles of coal waste in the main plant area will be removed and deposited on the coarse refuse pile. The present proposal would allow the coarse rock to remain in the main plant area, for use by the owner of the industrial site.

The regulations clearly state that coal mine waste and refuse must be disposed of within the permit area and properly covered to protect the surface and underground water resource. Absent any further information regarding this material the Division must assume that it is coal mine waste and follow regulations for its disposal. It is recommended that the Permittee sample the waste in question for chemical properties, including BTU rating and acid/toxic properties.

Findings:

This section of the submittal does not fulfill the requirements of:

R645-301-542.730 and R645-301-553.250 - The coal mine waste located at the Main Plant area must be sampled for its chemical properties, including BTU rating and acid/toxic properties to allow the Division to determine its final disposition.

RECOMMENDATION:

As Area B possessed the best available topsoil material within the permit area, the Permittee should remove 43,300 CY of topsoil material from Area B prior to the transfer of the property to industrial use. Further, the coal mine waste scattered over the Main Plant area must be sampled prior to the Division making a determination on its final disposition.

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