



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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December 17, 1992

TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Henry Sauer, Senior Reclamation Soils Specialist *HS*

RE: Technical Deficiencies, Sunnyside Cogeneration Associates, Sunnyside Refuse Pile, PRO/007/035, Folder #2, Carbon County, Utah

SYNOPSIS

The applicant's response to the Division's technical deficiency document (T.D.) dated November 25, 1992 has been reviewed for technical adequacy. The permit application package (PAP) remains technically inadequate. Many of the issues enumerated in the original T.D. have not been adequately addressed and remain unresolved. The applicant has attempted to utilize old data, technical reports and maps formulated by various entities, to address the technical deficiencies raised. This procedure has not proven to be adequate. Inconsistencies abound which render thorough review of the application most difficult. It is this writer's opinion that a current evaluation of the property and the planned excavation of the refuse material must be accomplished in order to fulfill the requirements of the R645 Rules.

The outstanding issues enumerated below must be adequately addressed prior to permit approval. Exclusion of the requested information will prohibit the proper inspection of the site, prevent Division staff from determining technical compliance with the R645 Rules and hinder the tracking, review and ultimate resolution of the issues cited below.

ANALYSIS

General Comments

Plate 3-1 (Pre-Law and Post-Law Disturbed Area Map) does not depict the Coarse Refuse Toe Pond nor the Borrow Area Pond areas

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within the post-law disturbed area. Please make necessary changes.

The south embankment of the East Slurry Cell is not delineated (Sheet 9-1b) as a portion of the mine requiring reclamation. On page 900-5 and Appendix 9-1, Exhibit 1, this area is depicted as "nontoxic reclamation cover". The embankment surface is currently covered with coal refuse. Please revise the appropriate maps and text to reflect the true nature of the area.

The permittee must submit as-built drawings of the topsoil stockpiles. Adequate cross-sectional representations of each topsoil stockpile must be provided to determine the volume of topsoil within each stockpile.

On pages 200-7 and 500-16 of the PAP the applicant states that post mining surface contours will be attained "where practical". The applicant must describe the criteria for practicality.

R645-301-233 Topsoil Substitute and Supplement

The applicant states that approximately 460,000 cubic yards of borrow material will be necessary for the reclamation of the site subsequent to the removal of the refuse material. Because of the outstanding issues presented in this and other documents the reclaimability of the disturbed area cannot be determined at this time. The intended application, suitability and availability of the proposed substitute topsoil material must be clarified and consistently presented through the PAP and be considerate of the waste disposal plans (see Coal Mine Waste below).

On page 200-5 of the PAP the applicant states "Areas which will receive borrow area soil and **the surface area upon which the disturbed fill will be utilized as a plant growth medium** is shown on plate 10-1". The use of disturbed area spoil as substitute topsoil has not been proposed prior to this submittal. The applicant must therefore submit plans for inclusion in the PAP to fulfill the requirements of R645-301-233. et. seq. In addition commitments (page 200-5) are made to conduct "Additional studies of the soil from each borrow area will be performed after the revegetation test plots are completed". The applicant must adequately describe "additional studies".

The topsoil mass balance calculations located on page 200-3 of the Permit Application Package (PAP) are incorrect.

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Excavating topsoil from Industrial Borrow Area 3 (3.36 acres) to a depth of 12.0 feet will yield approximately 65,050 cubic yards of material not 32,525 cubic yards. Excavating topsoil from the Reclamation Borrow Area (30.14 acres) to a depth of 12.0 feet will yield approximately 583,510 cubic yards of material not 550,726 cubic yards. The estimates provided do not consider the removal of coarse rock fragments. However, no mention was made regarding this procedure and the mistakes noted are probably due to calculation errors.

Page 200-3 indicates that the Reclamation Borrow Area is 30.14 acres. Table 8-1 indicates that the Reclamation Borrow Area is 22.0 acres. Please rectify this discrepancy.

On page 400-2 disturbed acreage is estimated to be 175 acres, within the bond estimate the disturbed acreage is estimated to be 202 acres. Please rectify this discrepancy.

In Table 8-1 the applicant states that "Approximately 50% of the West Slurry Cell Embankment (Coarse Refuse Pile, Lifts 1-4) and 25% of the East Slurry Cell have been covered with 24" of material...". The applicant infers that this material can be used as substitute topsoil material for final reclamation. However, physiochemical analysis of the material has not been provided nor are there plans to remove and properly store this material during mining activities.

On page 900-7 the applicant refers to topsoil redistribution depths depicted on Plate 10-1. Narratives regarding depths are mentioned however no isopach representations are available.

On page 500-10 of the PAP the applicant states that accumulated sediment from the sediment pond may be used as borrow material. Prior to use as substitute topsoil the applicant must demonstrate the suitability of the material in question must and thus meet the requirements of R645-301-233 et. seq.

R645-301-528.320. Coal Mine Waste

On Plate 10-1 the applicant refers to disposing "remaining coarse refuse in Area No. 2" (no designs for this facility are available). On page 900-7 the applicant states that "The coarse refuse remaining below elevation 6210 will be (left in place and) covered with four feet of material". These statements are contradictory and unclear. This is even more apparent when one reviews John T. Boyd Company's report Evaluation of the Quantity and Quality of the Material in the Sunnyside Refuse Area. In the

report the estimated quantity of refuse is considered to be 10.3 million tons of refuse material and recoverable refuse is considered to be 8,591,000 tons. According to these estimates approximately 1,709,000 tons of refuse would remain after mining. Based on the reported density of the refuse (80 lbs./cubic foot) approximately 1,582,407 cubic yards of refuse will remain. The refuse disposal plans provided in the PAP do not address the disposal and reclamation of this material and is not adequate to determine compliance with this section of the R645 Rules.

On page 500-16 of the PAP the applicant states that "Culverts (will be) disposed of in the noncombustible waste disposal area". This is contradictory to R645 Rules and must be revised.

The Noncombustible Waste Material Areas depicted in Appendix 9-1, Exhibit 1 indicate that noncombustible waste will be placed in Industrial Borrow Area 1 (Sheet 3-1,8-19-1b etc.). The borrow area is proposed as a source of topsoil cover (approximately 46,899 cubic yards) for final reclamation. The applicant must rectify this descepeny and/or describe how both of these activities will occur. In addition, the applicant must submit, if applicable, the designs for the additional noncombustible waste disposal area.

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

On page 600-10 of the PAP the applicant refers to limited data on the physiochemical quality of the refuse (Figure 6-4, Appendix 6-1, and 6-3). In Figure 6-4 the sample site location is not provided and the sample identification indicates the sample is "coal". Refuse is not mentioned on the laboratory report. The sample site locations for the coal analyses presented in Appendix 6-1 have been adequately located on a map and were originally sampled in 1991 and 1992 to determined combustibility of the refuse material. However, no physiochemical analyses are provided to determine the acid-and/or-toxic forming and alkalinity producing potential (ATFM) of the refuse material. The data presented in Appendix 6-3 includes one sample analysis of "coal refuse fines/adjacent to road" collected in 1981. One sample analysis of "old refuse" and "new refuse" analyzed in 1980. The sodium adsorption ratio (SAR) for these samples was reported as 22.2 and 101.21, respectively. In addition, the analysis of "sediment from the sunnyside mine, road bed dark" conducted by Ford Chemical Laboratory in 1980 reports the boron concentration of 10.65 ppm. In accordance with the Division's Guidelines for the Management of Topsoil and

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Overburden, Table 2, these materials are toxic-forming as defined by the R645 Rules.

The aforementioned results do not fulfill the requirements for determining the acid-and/or-toxic and alkalinity producing potential of the material in question. The refuse data presented is not adequate for the following reasons: incomplete analyses; sample site locations are not provide; field sampling and laboratory methods are not provide; sample adequacy has not been attained; does not include the recommended constituents outlined in the Division's Guidelines for the Management of Topsoil and Overburden; the requirements of R645-301-624.220 & 230, R645-301-731. et.seq. have not been adequately addressed.

The analyses of roof and floor material refered to in the Division's original technical deficiency document dated November 25, 1992, Section R645-301-731.300., have been removed from the PAP for no apparent reason.

The issues raised by this writer (Technical Deficiency, date November 25, 1992, section R645-301-731.300), regarding the identification of potentially ATFM and the impact of refuse disposal on water quality (i.e. Coarse Refuse Seep) remains to be adequately addressed.

The proposal to conduct additional analysis of the coarse refuse material (page 600-11) is inadequate. The applicant must commit to the analysis of **the existing slurry ponds and the coarse refuse pile** for the constituents outlined in the Division's Guidelines for the Management of Topsoil and Overburden, Table 6. The applicant must also specify the sample site locations and the depth increments to be analyzed. Commitments to analyze coal refuse in March of 1993 (samples collected as early as 1991) are difficult to understand since the refuse samples are currently available for laboratory analysis. The storage of these samples may greatly effect the results of the analyses and a discussion of storage environment and its potential effects on the physiochemical nature of the refuse material is warranted. Regardless, upon receipt of the laboratory results the applicant must submit plans which includes a discussion of the potential for, and mitigation of, water quality impacts and/or revegetation problems attendant to the above-mentioned materials.

The applicant has not submitted plans to determine the acid-and/or toxic-forming and alkalinity producing potential of the waste rock material (noncombustible reject material), the "repositioned" refuse and the refuse to remain in place. The

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plans must include at a minimum sample frequency, sample density, field sampling methods, constituents analyzed, and laboratory methods employed.