



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, Reclamation Soils Specialist

DATE: May 9, 1991

RE: Technical Deficiency Slurry Fines Removal. Castle Valley Resources/Genwal Coal Co. Wellington, Utah. Carbon County.
ACT/007/012/91 A. *FOLDER # 2*

SUMMARY

On April 25, 1991, Castle Valley Resources submitted a proposal describing several experimental methods of removing coal from the fine slurry ponds at the former Wellington Preparation Plant.

Coarse and Fine slurry pond refuse contain extremely high sodium and magnesium concentrations, high pH, high boron and selenium levels and high saturation percentage. Removal of the fine slurry would eliminate a source of toxic elements and salts that could potentially:

- 1) diffuse upwards to the plant growth substrate, and;
- 2) migrate downwards into the groundwater.

Removing the fines will also provide a lower elevation for final reclamation (within reach of the water table for some shrub species).

The successful removal of fines will represent the beginning of reclamation at the site as well as a new commercial venture for Castle Valley Resources. If an experimental method is determined to be successful, Castle Valley Resources plans to incorporate the procedure into the upcoming MRP in December 1991. If the techniques described do not develop into a commercially successful venture, then the reclamation plans will remain as written and submitted 1/27/91 and expected 9/1/81 and 12/1/91.

Therefore, this technical deficiency is written on both the Amendment 91-A and the MRP submitted to date.

ANALYSIS

R614-301-130 REPORTING OF TECHNICAL DATA

Applicant's Proposal:

The Appendix of the application provides preliminary sampling results. In personal discussions with Patrick Collins, I am aware that the laboratories that conducted the analyses were Brigham Young University Soils Lab and Interwest Labs. However, this information was not included in the application.

Compliance:

The Applicant is not in compliance with this section. The submittal must indicate laboratories used with address and telephone number. Any deviation of the laboratories from the suggested methods in "The Utah Guidelines," Table #6 must also be noted with reference to the alternate method used.

Additionally, the date of sampling must be indicated in the Appendix and the location depicted on an exhibit.

Stipulations:

Stipulation R614-301-130.-(1)-PWB

Prior to approval Castle Valley Resources must provide information regarding location and date of sampling in the narrative and on an exhibit. The Castle Valley Resources must provide the names, addresses and telephone numbers of the analytical laboratories used to generate the data included in the Appendix of the submittal. Any deviation from the suggested analytical methods in the Utah Guidelines must be mentioned and alternate methods cited.

R614-301-222.100 A MAP DELINEATING DIFFERENT SOILS

Applicant's Proposal:

The MRP submitted 1/27/91 includes an updated Soil Conservation Service Soils map (G9 3510) and a Soils Map and Disturbed Area (E0 3339). These maps compile information from two sampling programs. Samples taken by U.S. Steel have number designations and those taken by Mt. Nebo Scientific have number and letter designations.

Map 4067-6-8B shows the locations of soil samples taken in 1989 by James Leatherwood, prior to the construction of the haulage road.

Several maps were found in Volume IIIA that were not included in the Table of Contents: 4067-6-1A, -8A, -9A, -10A, -17, -17A, -18, -19, -20, and E9 3339, and G9 310. Other maps may also be missing from the Table of Contents.

Compliance:

The Applicant is not in compliance with this section.

Stipulations:

R614-301-222.100-910.-(1)-PWB

Prior to approval Castle Valley Resources must include update the Table of Contents for Vol IIIA of the MRP to include all the maps submitted.

R614-301-222.200 SOIL IDENTIFICATION

Applicant's Proposal:

Survey information provided in the MRP was based on the results of the 1988 SCS Soil Survey and sampling done by U.S. Steel (undetermined date) and by Mt Nebo Scientific in 1983. The soils maps are Drawing G9-3510 and E9 3339.

The soils underlying the fines are alluvial. They are thought to be members of the family fine-silty, mixed (calcareous) mesic Typic Torrifluvents and the family fine-

silty, mixed (calcareous) mesic Aquic Ustifluvents.

The soils below the slurry ponds were not salvaged prior to construction of the ponds. Drilling logs in the MRP Vol IIIB Appendix E provide some general information on the soils present below the dikes of the ponds.

Compliance:

The Applicant is in compliance with this section.

**R614-301-231.100 METHODS FOR REMOVING AND STORING
TOPSOIL**

Applicant's Proposal:

Castle Valley Resources does not anticipate any disturbance outside of the presently affected area. No topsoil handling is proposed.

Compliance:

The Applicant is in compliance with this regulation.

If road construction or equipment movement requires that land not previously disturbed is to be disturbed, than Castle Valley Resources must follow the performance standards of R614-301-250.

**R614-301-231.300 TESTING PLAN FOR EVALUATING TOPSOIL
HANDLING AND RECLAMATION PROCEDURES.**

Applicant's Proposal:

The topsoil uncovered by the removal of the coal fines will be sampled and analyzed for parameters including but not limited to pH, EC, SAR, Se, ABP, OC, and texture. As written, the testing of the topsoil appears to be conditional upon success of the fines removal. But, decisions made prior to choosing the outcomes delineated

on pages 21 and 22 under "Experimental Fine Removal Results" will require sampling of the topsoil as it is uncovered.

Compliance:

The Applicant is not in compliance with this regulation. The topsoil must be analyzed before the determination of methodology is made. As stated in the submittal, there are 5 potential outcomes for which soil sampling will be necessary:

OUTCOME #2 & 3	Cover the compacted topsoil with coarse refuse and then reclaim using other substitute topsoil in the permit area.
OUTCOME #4	Remove compacted topsoil from beneath the fines and store for use as substitute topsoil.
OUTCOME #5	Utilize the compacted soil as a pad for operations during removal and then reclaim the surface. (This outcome is acceptable because the area was disturbed previous to 1977.)

Based on the sample analyses presented in the Appendix for the fine slurry refuse, the Division will request these additional sampling parameters: total selenium, hot water selenium, total boron, hot water soluble boron, saturation extract boron, total nitrogen, nitrate-nitrogen, phosphates, and potassium. The estimated sodium percentage may be requested depending on the sodium absorption ratio.

Stipulations:

R614-301-231.300-(1)-PWB

Prior to approval Castle Valley Resources must commit to sampling the uncovered topsoil during the experimental procedure. Samples will be analyzed for the parameters listed in Table 6 of the "Utah Guidelines" as well as for total selenium, total boron, saturation extractable boron, total nitrogen, nitrate-nitrogen, phosphates, and potassium. Samples will be taken every 6" for a depth of 4 feet.

R614-301-244 RECLAMATION PLAN

Applicant's Proposal:

Castle Valley Resources suggests that the removal of slurry fines may result in uncovering the original topsoil with reclamation potential. The application implies that there may or may not be a need for deep ripping of the buried soils (p.23, item 5, "Experimental Fine Removal Results").

The submittal refers in several sections to the reclamation plan included in the MRP. However, substantial portions of the MRP have not been received by the Division: sections 2.23, 2.24, 2.40, 2.41, 2.42, 2.43, 2.44, and 2.50. As indicated in a letter dated 3/21/91, these sections will be submitted on 9/1/91 and 12/1/91.

Compliance:

The Applicant is not in compliance with this section. Castle Valley Resources must commit to deep ripping the surface of the buried topsoil upon reclamation.

Castle Valley must submit the full reclamation plan to the Division for review on schedule.

Stipulations:

R614-301-244.-(1)-PWB

Prior to approval Castle Valley Resources must commit to deep ripping the surface of the buried topsoil upon reclamation.

Castle Valley Resources must submit the full reclamation plan to the Division for review on schedule.

R614-301-410 LAND USE

Applicant's Proposal:

The land is in Carbon County's Mining and Grazing - 1 zone (M&G-1). A description of the permitted activities within the M&G-1 zone is provided. However, no post-mining land use is explicitly stated in section 4.11 of Volume IA of the MRP.

Compliance:

The Applicant is not in compliance with this regulation.

Stipulations:

R614-301-410.-(1)-PWB

Prior to approval the Mining and Reclamation Plan must clearly state the intended post-mining land use.

R614-301-420

AIR QUALITY

Applicant's Proposal:

Genwal Coal Company has an Air Quality Approval Order to operate the Wellington Crushing/Screening/Loading Facility. An approval for slurry fines removal was issued 12/20/86 to U.S. Steel. The approval was updated and transferred to Genwal on 3/12/90 with one condition. The condition is that a removal schedule is presented to the Executive Secretary.

Compliance:

The application is not in compliance with the regulation. The Department of Health must receive and review a removal schedule for the slurry fines.

Stipulations:

R614-301-420

Castle Valley Resources must submit to the Executive Secretary of Health a schedule for the slurry fines removal. The schedule and removal plans are subject to approval by the Department of Health. This schedule must be included in sec 4.20 of Volume IA of the MRP, due 12/1/91.