



Norman H. Bangerter
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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340

September 16, 1991

Mr. Richard Denning
Permit Coordinator
Consolidation Coal Company
12755 Olive Boulevard
St. Louis, MO 63141

Dear Mr. Denning:

Re: Conditional Approval, Amendment, Backfilling Fuel Tank Excavation, Consolidation Coal Company, Emery Deep Mine, ACT/015/015-91C, Folder #3, Emery County, Utah

The Division has completed review of your company's submittal received on August 22, 1991 regarding backfilling an excavation left by the removal of fuel tanks at the Emery Deep Mine. The plans were reviewed by Randy Harden and Priscilla Burton of the Division's technical staff. Resolution of the following conditions (further discussed in the attached technical review memo) must be accomplished before final approval can be given.

- 1) The material used for backfill must be resampled and shown to be nontoxic and nonacid forming. No toxic or acid forming material may be placed in the excavation.
- 2) To remain in compliance with regulation R614-301-553.250 the final reclamation plan must indicate that four feet of non-toxic, non-acid material will be placed over the mine waste in its permanent disposal on the pad. This will require incremental sampling of the top four feet of cover material for toxicity/acidity at the time of final reclamation.
- 3) The cover material is described in the MRP on page 20 of Chap IV-C and again in App VII-2 of chapter VII. However, these pages in the MRP need to be revised to clarify sampling depths so that the depth of the top, middle

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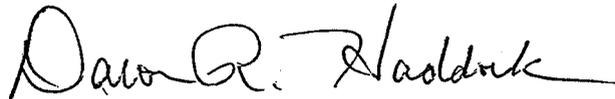
and bottom layers can be determined. If records are not clear on the depths for top, middle and bottom layers, then sampling must be repeated. This time only pH and EC and SAR need be run.

- 4) Soil/groundwater sampling performed in compliance with underground storage tank site assessment protocol R451-205-1 must be provided to the Division.

Please submit the required information by October 16, 1991, along with seven (7) additional copies of the amendment for distribution to other agencies.

If you have any questions please contact Priscilla Burton, Reclamation Specialist, or myself.

Sincerely,



Daron R. Haddock
Permit Supervisor

Attachment
cc: D. Bray (Consol)
P. Burton
TANKBACK.LET



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TO: Daron Haddock, Permit Supervisor
FROM: Priscilla Burton, Soils Reclamation Specialist *PB*
DATE: September 11, 1991
RE: Backfilling of Fuel Storage Tank Excavation, Consolidation Coal Company, Emery Deep Mine, Consolidation Coal Company, ACT/015/015-91C, Folder #2, Emery County, Utah.

SUMMARY

Closure of underground storage tanks are regulated by the Dept. of Health, Environmental Response and Remediation in the R451-204 rules. Emery Deep Mine has excavated two diesel storage tanks in the mine yard. The proposal (received 8/22/91) is to fill the void with coal mine waste. Fifteen samples of this waste were taken in 1986 and the results were presented with this proposal. The samples are toxic and acidic by the standards of the 1988 Utah "Guidelines for Management of Topsoil and Overburden For Underground and Surface Coal Mining." Disposal of coal mine waste is covered under R614-301-536.

TECHNICAL ANALYSIS

R614-301-536 COAL MINE WASTE DISPOSAL

Applicant's Proposal:

Development waste material stored on the surface in the vicinity of the northwest coal pile was sampled in 1986. The analytical information is found in Chapter IV, pages 21-23 of the MRP and were attached with this submittal. In 1986, fifteen samples were taken of the 9,000 cu yd waste pile. Several parameters monitored indicate that the waste is unacceptable for plant growth and presents a potential for leachate contamination of nearby streams.

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This revision calls for permanent disposal of 1,000 cu yds of mine waste into the excavation pit left after the underground diesel tanks were removed from the mine pad. Mine waste will be covered with four feet of material that was removed during the excavation and stockpiled.

Compliance:

From discussions with Mr. Dee Bray, it was confirmed that this revision is for the permanent disposal of 1,000 cubic yards of mine waste. The waste will become part of the pad/facilities area and will remain in this location during final reclamation.

Of the fifteen waste rock samples taken in 1986, half of the samples had pH values less than neutral, including three readings of 5.0 or less. All fifteen electrical conductivity readings indicate that the material is saline (EC greater than 4.0). Six of the EC readings were over 8.0 mmhos/cm, the poor level. One reading was over 15, the unacceptable level. SAR values ranged from a low of 2.39 to a high of 27.0, with seven values over ten (a poor rating for coarse textured material) and three values over the unacceptable level of 15. All reported selenium and boron values were acceptable. The total organic carbon percentage is greater than 50% in six samples, which may require extra care as per R614-301-536.230 (prevent combustion).

The acid/base potential calculation was made on the basis of total sulfur percentage, converted to Tons CaCO₃/1000 Tons of material. This figure most likely overestimates the acidity of the waste rock. Reported values varied from -54.8 to +160. (Unacceptable is less than -5 Tons/1000 Tons of material.) The operator summed the fifteen results to get a positive 24.2 g CaCO₃ for the 9,000 cu yd pile. But only 1,000 cu yds will be used in this backfilling project. And, adequate mixing to produce a uniform 1,000 cu yds of waste is not likely.

The requirements of R614-301-746.100 and 746.200, to minimize mine waste leachate from entering surface and groundwaters must be addressed. The location of this disposal site is at the confluence of Christiansen Wash and Quitcupah Creek. The water bearing strata is the Ferron Sandstone unit of the Mancos Shale as described in Chapter VI of the MRP. The Ferron Sandstone unit forms the mine roof. The team hydrologists are evaluating the potential for contamination of ground or surface waters.

The location of the backfill will continue to be used for pad/facilities activity. The

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mine waste will be covered with stockpiled cut material from the excavation. Cover plans are in compliance with regulations during the operations phase of mining R614-301-536. This is an excess spoil fill therefore, the regulations R614-301-536.300 are applicable. To comply with R614-301-536.300 Consolidation Coal Company must resample the specific waste to be used as backfill for pH EC, SAR, B, non-sulfate sulfur acidity, base potential per the Utah, "Guidelines for Management of Topsoil and Overburden", 1988.

To remain in compliance with regulation R6140301-553.250 the final reclamation plan must indicate that four feet of non-toxic, non-acid material will be placed over the mine waste in its permanent disposal on the pad. This will require incremental sampling of the top four feet of cover material for toxicity/acidity at the time of final reclamation. The Mining and Reclamation Plan must be amended to reflect this testing.

The Division also requests copies of soil/groundwater lab analyses of sampling that was performed in compliance with the underground storage tank site assessment protocol (R451-205-2).

Finally, during the process of evaluating this proposal, I noted flaws in the permanent disposal plans for mine waste (covered in Chapter IV.C and Chap VII, Appendix VII-2). A permanent disposal site has been located in a gravel pit within the disturbed area. The site was chosen due to its isolation from groundwater movement and situation on relatively impermeable Bluegate shale above the Ferron sandstone unit (that comprises the mine roof and is the local aquifer). The required cover material will be harvested from the gravel pit prior to placement of the underground development waste. Analysis of this material in 1989 for substitute topsoil classification shows that only the top and middle layers are suitable for substitute topsoil. The "bottom" layer material is more suitable as fill over the operations pad, because of the higher EC's and SAR values reported. The operator has committed to keep this separate from the top and middle layers. This cover material is described in the MRP on page 20 of Chap IV-C and again in App VII-2 of Chap VII. However, these pages in the MRP need to be revised to clarify sampling depths so that these layers can be determined. If records are not clear on the depths for top, middle and bottom layers, then sampling must be repeated. This time only pH and EC and SAR need be run.

CONCLUSION

The location of the backfill will continue to be used for pad/facilities activity. The mine waste will be covered with stockpiled cut material from the excavation. Cover plans are in compliance with regulations during the operations phase of mining R614-301-536. The material for backfill must be resampled **prior to approval** according to Table 6 of the "Guidelines for Management of Topsoil and Overburden".

The following three requests must be **addressed within 30 days** from the date of approval of the backfilling operation:

- 1) To remain in compliance with regulation R6140301-553.250 the final reclamation plan must indicate that four feet of non-toxic, non-acid material will be placed over the mine waste in its permanent disposal on the pad. This will require incremental sampling of the top four feet of cover material for toxicity/acidity at the time of final reclamation.
- 2) The cover material is described in the MRP on page 20 of Chap IV-C and again in App VII-2 of Chap VII. However, these pages in the MRP need to be revised to clarify sampling depths so that the depth of the top, middle and bottom layers can be determined. If records are not clear on the depths for top, middle and bottom layers, then sampling must be repeated. This time only pH and EC and SAR need be run.
- 3) Soil/groundwater sampling performed in compliance with underground storage tank site assessment protocol R451-205-2 must be provided to the Division.

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