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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

*copy file # ACT/015/018
ACT/015/019*

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355 West North Temple
3 Triad Center, Suite 350
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801-538-5340

January 14, 1992

*Henry
FBI*

Mr. Blake Webster
PacifiCorp Electric Operations
Fuel Resources
One Utah Center; Suite 2100
201 South Main
Salt Lake City, Utah 84140-2100

Dear Mr. Webster:

Re: Waste Rock and Sediment Pond Waste Analysis and Review, PacifiCorp Electric Operations, Cottonwood/Wilberg and Deer Creek Mines, ACT/015/019 and ACT/015/018, Folder #2, Emery County, Utah

Enclosed please find a memo that is a compilation of the analytical results from the waste rock and sediment pond waste disposed of in the Cottonwood/Wilberg Waste Rock Storage Facility Addition, Cell #7, and the Deer Creek Waste Rock Storage Facility. Upon review of the data presented, several concerns arise: 1) There are incomplete data sets for the individual samples; 2) there is incomplete location, lithologic and sample interval information; and 3) the sample preparation procedures are unspecified.

The collection and analysis of waste rock, sedimentation pond waste, roof and floor material, etc. is time-consuming and expensive. Cost effectiveness is important and when the information derived from a sampling program is faulty and/or incomplete, the time and money may not have been used effectively.

It is incumbent upon the permittee to fulfill permit requirements. If unapproved laboratory procedures have been employed, parameters omitted from the analysis, or results indicate that acceptable levels have been exceeded, it is necessary to handle the concern on an individual permit basis.

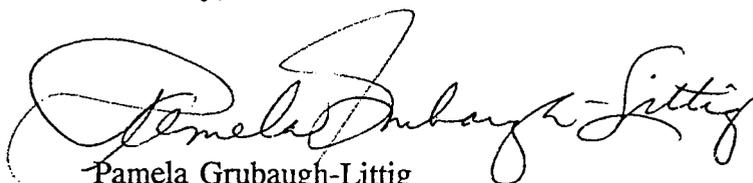
The collection and analysis of topsoil and overburden should entail a comprehensive quality assurance/quality control program. The Division believes that a cooperative effort in this endeavor would result in a cost effective and comprehensive plan to identify and properly manage suitable plant growth material for contemporaneous and final reclamation.

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Mr. Blake Webster
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It would be in the best interest of all parties involved to have a sound and cost-effective program implemented soon. Please call me to arrange a meeting to discuss this concern with you.

Thank you for your continued cooperation.

Sincerely,

A handwritten signature in cursive script, reading "Pamela Grubaugh-Littig". The signature is written in black ink and is positioned above the printed name and title.

Pamela Grubaugh-Littig
Permit Supervisor

jbe
Enclosure
cc: Henry Sauer
015019WA



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January 2, 1992

TO: Pamela Grubaugh-Littig, Permit Supervisor

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

RE: Waste Rock and Sediment Pond Waste Analysis and Review, PacifiCorp Electric Operations, Cottonwood/Wilberg & Deer Creek Mines, ACT/015/018 & ACT/015/019, Folder #2, Emery County, Utah

Synopsis

The forthcoming review is a compilation of analytical results from waste rock and sediment pond waste disposed of in the Cottonwood/Wilberg Waste Rock Storage Facility Addition, Cell #7, and the Deer Creek Waste Rock Storage Facility. Analytical results are presented in abbreviated and tabular format for convenience. The unabridged results were submitted to the Division on November 27, 1991, March 6, 1991 and February 20, 1991. Results from Cell #7 were unofficially given to this writer during a site visit.

Analysis

Specific sampling and laboratory analytical requirements for the Deer Creek Waste Rock Facility and the Cottonwood/Wilberg Waste Rock Storage Facility Addition may be located on pages 7-4 through 7-6 and pages 2-12 through 2-12.1 of the PAP, respectively. Sampling requirements for Cell #7 may be located in Appendix VII of the Cottonwood/Wilberg Mine PAP.

Lab # 91-SI	Deer Creek	Cot/ Wilbg	Cell #7	Sed Waste	Waste Rock	Omiss ions*	Addit ions **	Unacc eptab le***
03543	X			X		1A	2A	Sat%



Lab # 91-SI	Deer Creek	Cot/ Wilbg	Cell #7	Sed Waste	Waste Rock	Omiss ions*	Addit ions **	Unacc eptab le***
03544		X		X		1A	2A	Sat%, SAR
03545		X		X		1A	2A	Sat%, SAR
03180		X			X	1B	1C	Text
03182		X			X	1B	1C	^[Ph, Text
03183		X			X	1B	1C	Ph, Te xt
00573		X			1st Berm	1B	1C	
00574		X			1st Berm	1B	1C	
03184		X			2nd Berm	1B	1C	Text
03185		X			2nd Berm	1B	1C	Text
03186	X				X	1C		E.C., Sat%
03187	X				X	1C		Text
03188	X				X	1C		Sat%
03189	X				X	1C		E.C., SAR
03190	X				X	1C		Sat%, E.C., SAR
03191	X				X	1C		Sat%
03192	X				X	1C		
03193	X				X	1C		Sat%, E.C.

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Lab # 91-SI	Deer Creek	Cot/ Wilbg	Cell #7	Sed Waste	Waste Rock	Omiss ions*	Addit ions **	Unacc eptab le***
00575			X		X	1E	2B	Coal: Rock
00576			X		X	1E	2B	
00577			X		X	1E	2B	Ph
00578			X		X	1E	2B	Coal: Rock
00579			X		X	1E	2B	
00580			X		X	1E	2B	
00581			X		X	1E	2B	Ph
00582			X		X	1E	2B	
00583			X		X	1E	2B	
00584			X		X	1E	2B	
00585			X		X	1E	2B	
00586			X		X	1E	2B	
Ford1	X				X	1D	2C	%Rock ,B
Ford2	X				X	1D	2C	%Rock ,B
FORD3	X				X	1D	2C	%Rock ,B
FORD4	X				X	1D	2C	%Rock ,B,Ph
CORE1	X				X	1C		%Rock ,Sat%
CORE2	X				X	1C		%Rock ,Sat%

Lab # 91-SI	Deer Creek	Cot/ Wilbg	Cell #7	Sed Waste	Waste Rock	Omiss ions*	Addit ions **	Unacc eptab le***
CORE3	X				X	1C		%Rock , Sat%
CORE4	X				X	1C		%Rock , Sat%

*Analyte(s) not submitted as required in the PAP.

**Analyte(s) not required.

***Analyte(s) unacceptable according to the Divisions Guidelines for Management of Topsoil and Overburden, Table 2.

- 1A) %Rock Fragments; Hot Water Soluble Selenium; Nitrate-Nitrogen.
- 1B) Total-Nitrogen; Nitrate-Nitrogen.
- 1C) Total Fe, Mo and Zn.
- 1D) Unapproved analytical procedure for Sodium Absorption Ratio(SAR) and Texture.
- 1E) Unapproved analytical procedure for Selenium; %Rock Fragments, Available Water Capacity.
- 2A) Phosphorus; Total Organic Carbon; Chloride; Total-Nitrogen; Total Cd, Ca, Cr, Cu, Pb, Mn, Mg, Ni, K, Na, Se. Additionally the Toxicity Characteristic Leaching Procedure (TCLP) is not an acceptable methodology for determining the most plant available and soluble form of selenium in an alkaline soil environment [i.e. Selenate (Se +6)]. TCLP-Ar, Ba, Cd, Cr, Pb, Hg, Se, Ag.
- 2B) AB-DTPA extractable-Ca, Co, Cu, Fe, Mn, Mo, Ni, Zn, Se; Chloride.
- 2C) Total Soluble Solids.

Analysis and interpretation of the data presented above is statistically inappropriate for the following reasons: nonreplicable and unknown laboratory methodologies; incomplete data sets for individual samples; incomplete location, lithologic and sample interval information; and unspecified sample preparation procedures.

Collection and analysis of waste rock, sediment pond waste, soil/spoil, roof and floor material, etc., is time consuming and expensive. When the information derived from a sampling programs is faulty, superfluous, incomplete and otherwise meaningless, time and money is consumed with few results.

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Recommendations

Therefore, the Division believes that PacifiCorp, in cooperation with the Division and other appropriate entities, must implement a Quality Assurance / Quality Control Program (QA/QC) for the collection and analysis of topsoil and overburden. The objectives of such a program should be to obtain reliable, replicatable data to be utilized in determining the potential for the formation of acid of acid-and/or-toxic forming drainage and materials and the identification and proper management of suitable plant growth material for contemporaneous and final reclamation.

Additionally, the permittee must fulfill the individual permit requirements when: 1) exceedence of Division guidelines has occurred (i.e., conduct further analysis to determine the extent of the unsuitable material, cover, if necessary, with four feet of suitable material) 2) unapproved laboratory procedure have been employed 3) analyte(s) have been omitted from analysis.

HS/jbe
PACIFIC.WAS