ACT/007/012

Susan D. Hasenjager **permitting/environmental consultant**
9337 W. Iowa Ave.
Lakewood, Colorado 80226

November 10, 1986

Susan Linner
Permit Supervisor
State of Utah Natural Resources
Oil, Gas and Mining
355 W. North Temple
3 Triad Center, Ste. 350
Salt Lake City, Utah 84180-1203

RE: Wellington Coal Cleaning Plant Soil Samples and Reclamation of Spoil Pile

Dear Ms. Linner:

The purpose of this letter is to transmit certain soil analyses to the Division, and to recommend based on these data that non--vegetative measures be employed to stabilize the spoil pile located near the Wellington Preparation Plant. Per the DOGM's request, temporary vegetative reclamation of this area is scheduled for the week of November 10, 1986. However, it is Kaiser's concern that vegetative stabilization of this site will be unsuccessful due to high sodium and SAR values, and that increased erosion will occur as a result of the attempted reclamation. Consequently, Kaiser objects to vegetative stabilization of the site, and recommends that the already regraded pile be further stabilized by constructing a berm at the base of the pile to control runoff. It is further recommended that seeding of this area not occur at this time. Kaiser requests that this alternative stabilization method be approved by DOGM. I discussed this matter with James Leatherwood on November 10, 1986.

Please find enclosed a copy of the analyses for soil samples that were collected at the Wellington Plant in early September, 1986. A continuous, one quart composite sample was obtained from each site to be reclaimed by sampling three to five holes, 0 to 16" deep. Each sample was collected for the individual specific area requiring temporary reclamation; these areas are identified as Samples # 1 through 6.

If you have any questions concerning this proposal please feel free to contact either Brad Bourquin, Sunnyside Mines new Chief Engineer, or myself. Thank you for your assistance.

Sincerely,

Susan Hasenjager

Susan D. Hasenjager
Permitting/Environmental
Consultant

cc: Brad Bourquin
Marty Holmes

Sample #	Site Location
#1	Spoil pile located near preparation plant, 0-8" depth
#2	Rock gabeon and catchment pond, on slurry pond side of river 0-12" depth
#3	Topsoil stockpile, 0-14" depth
#4	Subsoil stockpile, 0-14" depth
#5	Sauerman Dragline tail tower, 0 12" depth
#6	Roadside on way to rock gabeon and catchment pond, 0-16" depth

The spoil pile has been regraded such that the slope is relatively flat; a majority of the pile is probably between 4 or 5h: 1 v, with the steepest portion being approximately 2.5 or 3 h: 1 v. Currently, the area shows no signs of erosion, and appears to be quite stable. Permanent reclamation of this pile will include replacement of the material into the excavated pit, topsoiling, and revegetation utilizing the permanent seed mix.

The DOGM has requested that Kaiser temporarily reclaim the spoil pile area utilizing the mix approved for the fall 1986 seeding. However, the soil sampling results for the spoil pile, Sample #1, indicate very high pH, conductivity, sodium, and SAR values. Consequently, it is Kaiser's concern that if reclamation is attempted on this material without topsoiling or other extensive soil modification such as leaching, any vegetative establishment is extremely unlikely. It should be further noted that prior to reclamation, the area would require deep ripping and scarification, thereby significantly increasing erosion and runoff on this site. Additional questions concerning stabilization and erosion control, would likely arise as a result of this procedure.

Because vegetative stabilization of the site is highly unlikely, Kaiser recommends that in addition to the already completed regrading, the site be further protected by constructing a berm around the base of the pile to contain runoff. This protection would remain in place until final reclamation. Seeding of the pile would not occur at this time. However, if the pile exhibits erosion or other problems prior to final reclamation, Kaiser will utilize soil modification techniques, chemical stabilizers, or reclamation in order to achieve temporary stabilization. Kaiser feels that this proposed procedure would provide for protection of the site, and prevent runoff contamination of the surrounding area.

Kaiser requests that DOGM approve this non-vegetative, temporary stabilization procedure for the spoil pile. We would appreciate any additional comments or suggestions that the Division may have concerning this matter or any other reclamation measures which may be appropriate for the property.

ACZ INC./LABORATORY DIVISION
SOILS ANALYSES REPORT

Report Date: October 10, 1986
Date Received: September 15, 1986

Client: Kaiser Coal Company
Sunnyside Mine
Sunnyside, Utah 84539
Attn: Mr. Doug Pearce
CC: Ms. Susan Hasenjager

LAB NO.	SAMPLE I.D.	SAMPLE DATE	Saturation %	pH 1 (units)	Conductivity 1 (mmhos/cm @ 25 C)	Calcium 1 meq/l	Magnesium 1 meq/l	Sodium 1 meq/l	Boron 2 mg/kg	SAR	Selenium 2 mg/kg	Nitrogen, 2 Nitrate mg/kg	Phosphorus 3 mg/kg	Potassium 3 mg/kg	Neutralization Potential as CaCO3 %
86-1239-Soil	Wellington #1	Unknown	42	8.7	16.8	24.4	20.3	196	1.9	41.5	.03	24.9	68.0	35	13.6
86-1240-Soil	Wellington #2	Unknown	33	7.8	3.08	26.5	13.4	7.44	1.1	1.67	-.01	2.5	2.2	45	13.8
86-1241-Soil	Wellington #3	Unknown	39	7.7	6.00	29.6	8.38	43.6	0.8	10.0	-.01	38.6	10.2	65	5.5
86-1242-Soil	Wellington #4	Unknown	38	7.8	1.66	8.95	3.23	9.46	0.9	3.83	-.01	15.2	12.7	80	6.8
86-1243-Soil	Wellington #5	Unknown	44	7.7	2.95	29.4	7.87	9.84	1.3	2.28	.01	4.2	1.8	50	12.7
86-1244-Soil	Wellington #6	Unknown	38	7.7	3.12	26.5	12.0	11.7	1.4	2.67	-.02	0.2	0.2	30	11.3

LAB NO.	SAMPLE I.D.	SAMPLE DATE	Organic Matter %	Sand %	Silt %	Clay %	Texture
86-1239-Soil	Wellington #1	Unknown	0.4	34	38	28	CL
86-1240-Soil	Wellington #2	Unknown	0.9	56	23	21	SCL
86-1241-Soil	Wellington #3	Unknown	0.8	37	40	23	L
86-1242-Soil	Wellington #4	Unknown	1.0	39	39	22	L
86-1243-Soil	Wellington #5	Unknown	1.0	34	26	40	C,CL
86-1244-Soil	Wellington #6	Unknown	0.4	56	20	24	SCL

1 Saturated Paste Extraction 2 Hot Water Extraction 3 AB-DTPA Extraction

Ralph V. Poulsen
Ralph V. Poulsen, Director