0017

File
ACT/015/017
ACT/015/019
Folder No. 3
copy to Cy, Mary, Lynn, Tom M., Pam, Ev, Wayne
JIM
OCT 12 1983

UTAH POWER & LIGHT COMPANY

1407 WEST NORTH TEMPLE STREET
P. O. BOX 899
SALT LAKE CITY, UTAH 84110

October 10, 1983

RECEIVED
OCT 11 1983
DIVISION OF
OIL, GAS & MINING

Mr. Cyril J. Young
State of Utah
Department of Natural Resources
Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, Utah 84114

Re: Waste Rock Disposal Plan
Wilberg Mine ACT/015/018B
Des-Bee-Dove Mine ACT/015/017

Dear Mr. Young:

The enclosed sheets are a revision to the Waste Rock Disposal Plan submitted to you on October 3, 1983. Please remove sheets 10 thru 13 inclusive of that text and replace them with these revised pages. The remaining plan remains as submitted. This revision is issued at the Bureau of Land Management's request to limit the percentage of coal to be deposited, to include the sediment from the sedimentation ponds and to provide thermal and vegetation monitoring.

Yours truly,

C E Shingleton

C. E. Shingleton
Director of Permitting,
Compliance & Services
Mining and Exploration

CES:BMcQ:bb:4098
Enclosure

cc: Laurell Hughes, BLM

soil stored in the berms will be used as cover for the deposited waste rock.

Background Information

817.71 (a) (1) - Composition of Fill Material - The underground development waste rock from Des-Bee-Dove Mine has been analyzed and shows the material to be non-toxic and non-acid forming. The results of the analyses are contained in Table 2.

The anticipated waste from Wilberg Mine will be generated from construction of a rock slope and excess rock developed during mining. The expected rock types encountered in the rock slope construction will be approximately 70% sandstone, 20% interbedded mudstone and siltstone, and 10% bony coal. Analyses of these materials taken from drill cores are contained in Table 3. This analysis indicates the materials to be non-toxic and non-acid forming.

Delivered waste rock, whose coal/rock ratio exceeds 25/75%, shall be placed with other rock to limit the coal concentration and will be buried with a minimum of two feet of non-coal fill. The coal/rock ratio shall not exceed 50/50%.

Sediment from periodic sedimentation pond cleaning at Wilberg and Des-Bee-Dove Mines will be deposited after a chemical and physical analyses of the material has been approved by the BLM and DOGM.

The analysis of the waste rock from Des-Bee-Dove and Wilberg Mines shows clearly that leachate and/or surface runoff from the fill should not degrade surface or ground waters. As a matter of fact, the alkaline nature of the soils in this region could benefit from

Table 2

Lithology	Number of Samples: Chemical Tests	Number of Samples: Physical Tests		Chemical Tests: Ca Meq/L	Mg Meq/L	Na Meq/L	SAR[1]	Fe ppm	Zn ppm	SO_4-S ppm	Mo ppm	B ppm	pH (Paste)	E.C.[2] mmhos/cm	Sat. %	Physical Tests: Pyrite FeS_2	Sand %	Silt %	Clay %	Texture
in. nyon oof	3	Mean		4.10	1.20	0.87	0.50	5,825	64.42	205.27	<0.1	0.33	7.7	0.83	32.27	8.15	--	--	--	--
		S.D.		1.30	0.56	0.21	0.17	2,528	56.32	61.31	0.00	0.20	0.25	0.25	5.17	10.82	--	--	--	--
lind Canyon plits	1	Mean											8.9				--	--	--	--
		S.D.		0.8	0.1	9.2	14.3	5,905	40.69	145.0	<0.1	0.94		1.1	20.9	0.2	--	--	--	--
lind Canyon loor	5	Mean		3.90	1.86	18.54	17.36	10,342	55.38	593.58	<0.1	0.55	8.34	2.22	26.46	1.50	--	--	--	--
		S.D.		4.02	1.72	25.43	25.14	4,263	43.90	454.96	0.00	0.60	0.64	2.11	6.57	1.41	--	--	--	--
iawatha oof	3	Mean		4.57	4.30	3.43	1.83	10,925	184.93	198.07	<0.1	0.11	7.80	1.07	32.17	3.3	--	--	--	--
		S.D.		2.54	3.20	3.96	2.14	7,110	203.10	153.48	0.00	0.10	0.17	0.31	7.18	0.00	--	--	--	--
iawatha plit	1	Mean		4.9	2.3	1.3	0.7	7,841	69.88	246.1	<0.1	0.26	7.70	0.8	37.5	NA*	--	--	--	--
		S.D.															--	--	--	--
iawatha loor	3	Mean		10.23	16.23	1.27	0.47	3,873	16.32	777.23	<0.1	0.04	5.87	3.03	29.07	NA*	--	--	--	--
		S.D.		1.50	12.53	0.70	0.21	1,394	14.08	313.16	0.00	0.05	2.24	0.90	4.48		--	--	--	--

NA Not Available

Table 3
WILBERG DRILL CORE - SOIL ANALYSES
SEPTEMBER, 1979

Sample #	pH (paste)	E.C. mmhos/cm	Sat. %	Ca meq/l	Mg meq/l	Na meq/l	SAR	Fe ppm	Zn ppm	SO_4-S ppm	Mo ppm	B ppm	Pyrite (FeS_2)	Sand %	Silt %	Clay %	Texture
EM-23C-14	8.2	0.9	21.5	2.3	3.5	1.4	0.9	24223	23.11	20.2	.1	.01		86	5	9	LS
EM-23C-15	8.1	0.6	23.1	1.9	1.6	1.5	1.1	15092	53.77	98.7	.1	0.06					
EM-23C-16	8.0	0.9	19.8	1.7	3.4	1.8	1.1	23064	34.37	148.1	.1	.01					
EM-23C-17	8.1	0.7	19.1	1.7	2.5	1.3	0.9	15423	23.47	67.7	.1	.01					
EM-23C-18	7.7	3.1	19.8	8.4	23.6	2.9	0.7	21730	74.49	1029.6	.1	0.02					
EM-23C-19	7.9	2.5	19.8	7.0	17.9	2.2	0.6	18272	9.17	863.5	.1	.01					
EM-23C-20	8.0	1.6	20.1	3.7	8.9	1.9	0.8	18463	17.49	548.6	.1	.01					
EM-23C-21	7.8	4.1	21.6	11.9	20.8	1.9	0.9	14607	22.38	1089.1	.1	.01					
EM-23C-22	8.0	3.1	25.6	11.8	17.5	2.4	0.6	3122	7.29	1089.1	.1	0.02					
EM-23C-23	8.1	1.6	20.7	4.2	8.2	2.2	0.9	6942	14.23	566.4	.1	0.06					
EM-23C-24	8.1	3.1	22.0	9.8	17.7	3.2	0.9	6527	8.08	999.8	.1	.01					
EM-[illegible]-25	8.3	1.0	20.5	2.0	2.7	1.7	1.1	6085	23.47	204.5	.1	0.06					
EM-23C-26	8.3	0.6	19.9	1.4	0.7	1.3	1.3	572	23.84	79.7	.1	0.10					
EM-23C-27	8.1	1.4	20.3	3.8	6.7	1.5	0.7	10635	55.65	435.8	.1	0.48					
EM-23C-28	7.2	4.1	27.7	13.2	25.5	4.3	1.0	9788	62.40	1207.7	.1	0.55	0.9				
EM-23C-29	8.1	0.8	18.2	1.7	3.4	2.3	1.5	28237	17.16	139.2	.1	0.15					
EM-23C-30	8.3	1.0	16.2	1.2	5.8	2.6	1.4	23064	11.18	198.2	.1	.01					
EM-23C-31	8.1	0.5	33.9	1.4	0.9	1.9	1.8	18272	113.10	38.4	.1	0.40	4.2				
EM-23C-32	8.0	0.7	19.2	1.7	2.7	2.7	1.8	12219	20.95	20.2	.1	0.10					
EM-23C-33	8.3	1.2	18.6	1.4	5.0	3.5	1.9	6195	7.29	97.4	.1	0.06					
EM-23C-34	8.2	0.4	43.1	1.6	8.9	1.9	1.7	2275	13.08	39.8	.1	0.13					
EM-23C-35	8.3	0.5	26.0	1.3	1.0	3.0	2.9	7761	49.14	8.6	.1	0.36					
EM-23C-36	7.8	2.5	21.7	7.4	10.5	6.6	2.2	9788	29.55	798.2	.1	0.36					
EM-23C-37	8.2	1.2	23.8	2.4	8.0	3.4	1.5	11144	7.04	382.6	.1	.01					
AVERAGE	8.05	1.58	22.59	4.37	8.64	2.48	1.26	13062	30.07	423.7	.1	0.13					

FRL #79125

introduction of acids, neutralizing the soil and making it more viable for support of vegetation.

784.19 (b) (1) - Geotechnical Investigation - The character of bedrock at the proposed waste rock disposal was obtained from outcrop exposures in Grimes Wash nearby. The bedrock is part of the Masuk Shale member of the Mancos Shale Formation. The composition consists of light to medium blue-gray sandy shale. It usually weathers readily forming debris covered slopes. This member of the formation is devoid of water.

784.19 (b) (2) - A survey of the proposed disposal area has shown the hydrology to be limited to surface runoff from snow melt and rainfall. As discussed in the description, the nearest possible aquifer, the Ferron Sandstone, is devoid of water at this location.

784.19 (b) (3) - No minable coal seams exist beneath the proposed disposal site. The nearest mining operations (past, present or future) are located more than a mile away. Subsidence will have no effect on the disposal site.

784.19 (b) (5) - An investigation of the site by a registered professional engineer was conducted to determine the stability of the site. The site slopes gradually (max. 7%) to the southeast. The site is stable. The minimal amount of surface relief change due to the proposed disposal of waste will not affect that stability. A statement of site investigation findings is attached.

Design of the facility is based upon efforts to minimize surface alteration and control surface runoff while maintaining the

most stable possible disposal method feasible. The shallow excavation proposed minimizes the amount of surface relief alteration in a single-lift disposal pattern. The excavated material berms provide a means of controlling runoff in the disposal structure and covering the waste once the disposal is complete. The need to construct separate runoff controls is eliminated. Also, by design, hauling large amounts of topsoil and cover material is unnecessary.

The low profile nature of the proposed fill ensures its stability. By clearing the surface and placing the fill in a single four-foot lift, slope stability is assured.

817.71 (i) - Inspections - As required by the Division, inspections will be conducted at least quarterly throughout the construction period and will include monitoring to detect any increase in thermal activity. Inspections will also be conducted during the following critical construction periods in accordance with the proposed disposal plan: (1) removal of all organic material and soil, (2) final placement and leveling of fill materials, and (3) revegetation. Reports will be submitted to the Division within two weeks of inspection and a copy will be retained at Wilberg Mine.

Temporary Revegetation - Temporary vegetation to stabilize berm slopes and completed containment cells will utilize the permanent grass, forb and shrub species as specified in the permanent revegetation section with the exception of the containerized shrubs. The shrubs will be planted in seed form and will be augmented with containerized shrubs and additional grass and forb seedings during

final reclamation as needed to establish the 90% ground cover of the reference area with an 80% confidence level.

Vegetation will be monitored yearly for dominance of various species to adjust the seed mix for final revegetation.

Final Reclamation Costs - Reclamation consists of two major steps, (1) topsoil handling, and (2) revegetation.

Soil grading for the most part is accomplished during the construction of the individual earthen cells. For purposes of determining bonding amounts, applicant allows approximately fifty percent of soils disturbed to be regraded; i.e., on completion of mining and the use of this waste rock site the only topsoil grading necessary will be the exterior berms which will be pulled over the earthen cells.