TerraTek Research

ACT/037/050

October 5, 1983

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DIVISION OF
OIL, GAS & MINING

Mr. Robin Groff
TS&R Mining
94 West 1st North
Moab, Utah 84532

Dear Robin:

Six soil samples were submitted for determination of pH and sodium adsorption ratio (SAR) from the Red Rock Mine in San Juan County, Utah. Large agglomerations of soil were disaggregated and all samples were seived using a 2 mm screen (U.S. Mesh No. 10). Saturation paste extracts were then formed using approximately 2 parts soil to 1 part deionized water. The mass of soil in each extract was approximately 100 grams. The saturated soils were allowed to stand for one hour. The pH of each slurry was then obtained using an Orion Model 701A pH meter. The slurries were allowed to stand overnight. Filtrate was recovered from each extract by vacuum membrane filtration (0.45 micron membrane) and the concentrations of sodium, calcium and magnesium were obtained by atomic adsorption spectrometry.

The SAR was calculated after the method of Richards (1954). SAR is defined as follows:

$$SAR = \frac{Na^{+}}{\sqrt{\frac{Ca^{2+} + Mg^{2+}}{2}}}$$

where Na, Ca and Mg concentrations are expressed in milliequivalents per liter. Test results are summarized in Table 1.

Table 1

Soil Sample Test Results

Terra Tek Sample	TS&R Sample	pH	mg/l			meq/l			SAR
			Na	Ca	Mg	Na	Ca	Mg	
6417	1 ft	7.78	45.2	46.0	22.2	1.97	2.30	1.83	1.37
6418	2 ft	7.93	30.3	189.0	280.0	1.32	9.43	23.0	0.33
6419	3 ft	8.19	73.0	69.0	60.0	3.18	3.44	4.94	1.45
6420	4 ft	8.28	68.0	33.0	43.5	2.96	1.65	3.58	1.83
6421	5 ft	8.41	45.7	18.0	25.4	1.99	0.90	2.09	1.15
6422	6 ft	8.43	63.0	25.0	32.0	2.74	1.25	2.63	1.97

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If you have any additional questions, please give me a call.

Sincerely,

Mike Holland

Mike Holland
Geologist

MH/alm

cc: T. N. Tetting,
Utah State Natural Resources & Energy

S. R. McNeal
Division of Environmental Health

Richards, L.A., ed., 1954. Diagnosis and Improvement of Saline and Alkali Soils: USDA Agriculture Handbook 60, Washington, D.C., U.S. Government Printing Office.