M/015/072

WALLACE LABS
365 Coral Circle
El Segundo, CA 90245
(310) 615-0116

TOTAL ANALYSES

DATE: May 12, 1997

Location: Western Clay Company
Requester: Jeff
Method: hydrochloric acid extraction, nonoxidizing
Material:

RECEIVED
MAY 19 1997
DIV. OF OIL, GAS & MINING

elements	97-132F-1 SS # 3	97-132F-2 SS # 4	97-132F-3 SS # 5	97-132F-4 SS # 6
aluminum	3,040.92	1,868.43	3,724.62	2,257.22
arsenic	2.21	3.68	< 1.65	9.24
barium	35.01	21.21	41.72	22.70
boron	2.78	< 0.45	0.58	< 0.45
cadmium	2.83	2.78	2.16	6.89
calcium	63,828.20	85,793.34	65,638.03	110,944.79
chromium	5.87	3.57	5.00	2.86
cobalt	1.65	< 0.65	2.20	1.19
copper	3.40	2.48	3.49	3.76
iron	3,791.94	1,871.31	3,839.32	2,424.56
lead	9.23	< 3.88	< 3.88	< 3.88
lithium	4.89	0.85	2.92	1.69
magnesium	5,596.91	2,728.44	4,322.03	3,354.44
manganese	92.98	61.41	128.42	108.50
mercury	< 0.38	< 0.38	1.48	0.71
molybdenum	< 0.43	< 0.43	< 0.43	< 0.43
nickel	5.57	2.44	7.72	5.67
phosphorus	195.10	145.75	287.32	186.99
potassium	737.76	529.32	947.84	710.68
selenium	< 6.15	< 6.15	< 6.15	< 6.15
silicon	888.69	740.49	981.65	952.20
silver	2.13	0.63	< 0.20	< 0.20
sodium	213.61	175.36	380.81	247.57
strontium	280.12	296.01	120.66	150.29
sulfur	35,173.82	54,745.69	33,866.88	62,769.16
tin	< 3.50	< 3.50	< 3.50	< 3.50
titanium	33.80	32.60	68.97	34.37
vanadium	8.42	4.94	7.69	5.67
zinc	8.70	4.52	9.51	10.01
	1	1	1	1

Elements expressed as mg/kilogram (parts per million).

The sulfur measured in this method is sulfate sulfur. Pyrite sulfur if present appears to be very low. 10,000 ppm is 1%.

Utah State UNIVERSITY

USU ANALYTICAL LABORATORIES
Utah State University
Logan, UT 84322-4830
Telephone (801) 797-2217
Fax (801) 797-2117

11 March 1997
2 April 1997

Results for:

Jeffery McClellan
Western Clay Company
PO Box 127
Aurora UT 84620

Soils samples receivced 2/28/97

USU#	ID	SP	pH	EC mmhos/cm	SAR	Walkely Black %OM	CEC meq/100g	-- NaHCO3 -- P --- mg/kg ---	K	NO3-N mg/kg	CO3 meq/L	HCO3 meq/L	Alkalinity mg CaCO3/L
1576	1	60.0	6.8	2.6	0.2	0.26	4.1	< 1.0	18	5.1	0.0	0.71	35.7
1577	3	38.5	7.7	3.3	0.8	0.62	5.9	3.6	160	8.2	0.0	1.43	71.4
1578	5	59.5	7.4	2.7	0.3	0.70	5.5	1.7	53	4.8	0.0	1.43	71.4
1579	2		7.5	2.6		0.78							
1580	4		7.6	2.9		1.09							
1581	6		7.5	2.7		1.23							

USU#	ID	Al	B	Ca	Cd	Co	Cr	Cu	Fe	K	Mg	Mn	Mo	Na	Ni	P	Pb	S	Se	Sr	Zn
		----mg/kg---		--%--	----------mg/kg----------					-----%------		----------mg/kg----------				--%--	mg/kg	--%--	-------mg/kg-------		
1576	1	731	<	3.09	<	<	<	<	386	0.02	0.05	11.3	<	26	<	0.03	<	2.05	<	277	5.7
1577	3	7907	22.3	5.01	<	2.4	8.2	<	4770	0.31	0.56	152	<	410	<	0.03	<	0.99	<	153	20.9
1578	5	4513	7.5	4.08	<	<	5.8	<	2672	0.14	0.25	63.8	<	213	<	0.04	<	2.28	<	323	9.1
Detect. Limits		2	5.0	0.01	2.0	2.0	2.0	2.0	2.0	0.01	0.01	1.0	2.0	5	8	0.01	10	0.01	10	1.0	2.0

USU#	ID	SO4-S -mg/kg-
1576	1	836
1577	3	581
1578	5	536

Revised report.

USU ANALYTICAL LABORATORIES

If you have any questions, please contact the lab

Soil Testing Lab • Plant Analysis Lab • Feed Analysis Lab • Irrigation Water Analysis Lab

iml
Inter·Mountain
Laboratories, Inc.

2506 West Main Street
Farmington, New Mexico 87401
Tel. (505) 326-4737

April 21, 1997

Jeff

Mr. Neal Mortensen
P.O. Box 127
Aurora, Utah 84620

Dear Mr. Mortensen:

Enclosed are the rerun results for the soil samples collected on August 27 and 28, 1996. The analyses requested were pH, EC, SAR, CEC, Alkalinity, Sulfur, ABP, P, and K.

Original samples had been archived and new samples were ground and reanalyzed. This will explain the differences in results. Also please note that the original Potassium numbers were reported in meq/L and not ppm as the new results are. The original Phosphorus numbers were also reported incorrectly. The correct numbers would be:

49289-0.25 ppm
49290-0.23 ppm
49291-0.03 ppm
49292-0.02 ppm
49293-0.08 ppm
49294-0.03 ppm
49295-0.16 ppm

This error was an oversight on data input, reporting and reviewing. I apologize for the inconvenience.

Please call if you have any questions regarding the information provided in this report.

Sincerely,

Gloria Bartlett

Gloria Bartlett
Assistant Lab Manager
IML-Farmington

enclosure: Analytical Report

Inter-Mountain Laboratories, Inc.

2506 West Main Street

Farmington, New Mexico 87401

Tel. (505) 326-4737

WESTERN CLAY COMPANY
Aurora, UT
Location: San Rafael Swell
Reruns

Date Sampled: August 28, 1996
Date Reported: April 17, 1997

Lab No.			Total Sulfur %	T.S. AB t/1000t	Neut. Pot. t/1000t	T.S. ABP t/1000t	Sulfate Sulfur %	Pyritic Sulfur %	Organic Sulfur %	PyrS AB t/1000t	PyrS ABP t/1000t
49289	SS#1	0.0-18.0	0.77	24.0	91.8	67.7	0.67	0.10	-0.01	3.12	88.6
49292	SS#4	0.0-18.0	11.2	349	68.5	-281	0.90	5.81	4.49	181	-112
49294	SS#6	0.0-6.0	9.86	308	109	-198.00	-0.01	3.35	6.53	104	4.62
49295	SS#7	0.0-8.0	1.65	51.5	117	65.6	0.96	0.69	-0.01	21.5	95.6

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WESTERN CLAY COMPANY
Aurora, UT
Location: San Rafael Swell
Reruns

Date Sampled: August 28, 1996
Date Reported: April 17, 1997

Lab No.			P ppm	Potassium ppm	Nitrate-Nitrogen ppm	CEC meq/100g
49289	SS#1	0.0-18.0	2.60	154	0.92	122
49292	SS#4	0.0-18.0	2.30	171	1.38	102
49294	SS#6	0.0-6.0	0.30	144	1.70	121
49295	SS#7	0.0-8.0	0.20	99.9	0.60	71.4

CBA

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WESTERN CLAY COMPANY
Aurora, UT
Location: San Rafael Swell
Reruns

Date Sampled: August 28, 1996
Date Reported: April 17, 1997

Lab No.			pH	EC mmhos/c @ 25C	Calcium meq/l	Magne-sium meq/l	Sodium meq/l	SAR
49289	SS#1	0.0-18.0	7.4	2.43	30.0	2.32	0.61	0.15
49292	SS#4	0.0-18.0	7.4	2.56	33.0	3.08	0.64	0.15
49294	SS#6	0.0-6.0	7.6	2.60	33.6	3.10	0.75	0.18
49295	SS#7	0.0-8.0	7.6	2.57	32.9	2.15	0.48	0.11

CBA

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	WESTERN CLAY CO.	Date Reported:	3/20/97
Project:	San Rafael Swell	Date Sampled:	8/27/96
Laboratory ID:	49289	Date Received:	9/4/96
Sample ID:	SS #1 0-18" Composite		
Sample Matrix:	Soil		
Condition:	Intact		

Parameter	Analytical Result	Units		Units
Total Alkalinity as CaCO3	75.3	mg/L		
Bicarbonate as HCO3	91.9	mg/L	1.51	meq/L
Carbonate as CO3	<1.00	mg/L	<1.00	meq/L
Hydroxide as OH	<1.00	mg/L	<1.00	meq/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1973. "Standard Methods For The Examination of Water and Waste Water", 19th ed., 1995.

Reviewed By

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	WESTERN CLAY CO.	Date Reported:	3/20/97
Project:	San Rafael Swell	Date Sampled:	8/28/96
Laboratory ID:	49292	Date Received:	9/4/96
Sample ID:	SS #4 0-18" Composite		
Sample Matrix:	Soil		
Condition:	Intact		

Parameter	Analytical Result	Units		Units
Total Alkalinity as CaCO3	62.7	mg/L		
Bicarbonate as HCO3	76.6	mg/L	1.26	meq/L
Carbonate as CO3	<1.00	mg/L	<1.00	meq/L
Hydroxide as OH	<1.00	mg/L	<1.00	meq/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1973. "Standard Methods For The Examination of Water and Waste Water", 19th ed., 1995.

Reviewed By: [signature]

Inter-Mountain Laboratories, Inc.

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Farmington, New Mexico 87401

Client:	WESTERN CLAY CO.	Date Reported:	3/20/97
Project:	San Rafael Swell	Date Sampled:	8/28/96
Laboratory ID:	49294	Date Received:	9/4/96
Sample ID:	SS #6 0-6" Composite		
Sample Matrix:	Soil		
Condition:	Intact		

Parameter	Analytical Result	Units		Units
Total Alkalinity as CaCO3	96.0	mg/L		
Bicarbonate as HCO3	117	mg/L	1.92	meq/L
Carbonate as CO3	<1.00	mg/L	<1.00	meq/L
Hydroxide as OH	<1.00	mg/L	<1.00	meq/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1973. "Standard Methods For The Examination of Water and Waste Water", 19th ed., 1995.

Reviewed By: CSHelm

Inter-Mountain Laboratories, Inc.

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Client:	WESTERN CLAY CO.	Date Reported:	3/20/97
Project:	San Rafael Swell	Date Sampled:	8/28/96
Laboratory ID:	49295	Date Received:	9/4/96
Sample ID:	SS #7 0-8" Composite		
Sample Matrix:	Soil		
Condition:	Intact		

Parameter	Analytical Result	Units		Units
Total Alkalinity as CaCO3	86.6	mg/L		
Bicarbonate as HCO3	106	mg/L	1.73	meq/L
Carbonate as CO3	<1.00	mg/L	<1.00	meq/L
Hydroxide as OH	<1.00	mg/L	<1.00	meq/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes", 1973. "Standard Methods For The Examination of Water and Waste Water", 19th ed., 1995.

Reviewed By: _____