

1R - 298

REPORTS

DATE:

2001

Presented to:

Conoco, Inc.

PO Box 1040
Hobbs, New Mexico 88240

Lockhart B-12

Pit Capping Chronological Report

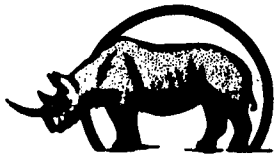
From:



RHINO

Environmental Services, Inc

4007 Lovington Hwy.
Hobbs, New Mexico 88240



RHINO

Environmental Services, Inc.

P.O. Box 25547 • Albuquerque, New Mexico 87125

Phone (505) 247-4646 • Fax (505) 797-4874

March 23, 2001

CONOCO, INC.
PO Box 1040
Hobbs, New Mexico 88240

Attn: Mr. Leo Gatson

RE: Lockhart B-12 Pit Capping

Dear Mr. Gatson:

Rhino Environmental Services, Inc. would like to take this time to thank you and Conoco, Inc. for the opportunity to provide our professional services on the capping that you have requested, for the LOCKHART B-12 pit capping.

Please find the following, chronological report, onsite analysis , final lab analysis, site map and job site photos.

If you have any questions and/or need more data in regards to this project please call at any time.

SINCERELY,

James Todd
Project Manager
Rhino Environmental Services, Inc.

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- 4. Clay Analysis***
- 5. Site Map***
- 6. Job/Site Photos***

Chronological



RHINO ENVIRONMENTAL SERVICES, INC.

Chronology of Operations

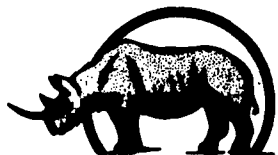
1. On 2-23-01 Rhino's Project Manager, Mr. James Todd was contacted by Mr. Leo Gatson with Conoco Inc, to mobilize equipment to the Lockhart B-12 pit area. The discussion consisted of plans to excavate and cap the pit area.
2. On 2-26-01 Rhino mobilized equipment to location to start pit capping.
3. ON 2-27-01 Rhino was on site, first Rhino had a tailgate safety meeting. Then constructed a three strand barb wire fence around working area. Then plastic was used to cover existing flow lines. Caliche was then used to cover flow lines. The loader was utilized to clear location. Excavation was started utilizing 325 Trackhoe.
4. On 2-28-01 Rhino was on site, first Rhino had a tailgate safety meeting. Then we continued to excavate the pit area, while utilizing a loader to place material in a pre-determined staging area.
5. On 3-01-01 Rhino was on site, first Rhino had a tailgate safety meeting. Then continued excavating and loading trucks with material to be transport to Sundance Services, Eunice New Mexico. Rhino transported a total of 240 yards to Sundance Service.
6. On 3-02-01 Rhino was on site, first Rhino had a tailgate safety meeting. Then Rhino attempted to excavate materials from pit area, Then we shut down for rain.
7. On 3-05-01 Rhino was on site, first Rhino had a tailgate safety meeting. Then continued to excavate, load and transport material to Sundance Service. Rhino transported a total of 680 yards to Sundance Service.
8. On 3-06-01 Rhino was on site, first Rhino had a tailgate safety meeting. Then continued to excavate, load and transport material to Sundance Service. Mr. Gatson then requested that TPH samples be taken from the pit walls. Five samples were taken. (See attached on-site analysis) Rhino transported a total of 820 yards to Sundance Service.
9. ON 3-07-01 Rhino was on site, first Rhino had a tailgate safety meeting. Then continued to excavate, load a transport material to Sundance Service. Rhino transported a total of 840 yards to Sundance Service.
10. On 3-08-01 Rhino was rained out.



RHINO ENVIRONMENTAL SERVICES, INC.

11. On 3-09-01 Rhino was on site, first Rhino had tailgate safety meeting, Then utilizing a loader, moved the stock pile east. Pate Trucking was on location to pull out water in pit. We then finished moving stock pile to the East to access the east wall of the pit.
12. On 3-12-01 Rhino was on site, first Rhino had a tailgate safety meeting. Rhino then continued to load and transport material to Sundance Services. With a total of 520 yards transported off site. The total amount of impacted soil that was taken off site to Sundance Services for disposal was 3100 yards. The pit area was then prepared for final samples for lab analysis.
13. On 3-13-01 Rhino was on site, first Rhino had a tailgate safety meeting. Mike Gilbert was on site to take samples to send to lab. Then discussed with Mr. Leo Gatson the placement of red bed clay in pit area. Rhino then started transporting red bed clay from Wallach Concrete Inc. The loader was then utilized to place clay in bottom of pit area.
14. On 3-14-01 Rhino was on site, first Rhino had a tailgate safety meeting, Then Rhino continued to transport and place red bed clay in bottom of pit area.
15. On 3-15-01 Rhino was on site, first Rhino had a tailgate safety meeting. Then continued to transport and place clay in pit bottom. Rhino transported a total of 1248 yards of red bed clay and place in pit bottom. Then discussed with Mr. Gatson plans of hauling top soil from McNeill ranch, to place on top of red bed clay. Rhino then started to transport top soil. The loader was utilized to place the top soil in pit area. Rhino transported a total of 960 yards of top soil from McNeill pit.
16. On 3-16-01 Rhino was on site, first we had safety meeting. Rhino then continued to transport top soil to place in pit area. Two loaders were used to dress off location and complete backfilling of the pit area. Rhino transported a total of 1240 yards of top soil from McNeill pit.
17. On 3-19-01 Rhino was on site, first we had a tailgate safety meeting, Then utilizing a farm tractor, Rhino plowed and re-seeded work area with #2 BLM seed, to finish the capping process. Rhino then demobilized the equipment from site.

On-Site Analysis



RHINO

Environmental Services, Inc.

P.O. Box 25547 • Albuquerque, New Mexico 87125

Phone (505) 247-4646 • Fax (505) 797-4874

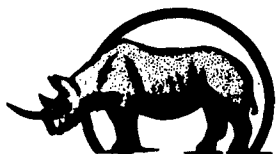
SOIL ANALYSIS REPORT

Date: 3-6-01
Client: Conoco, Inc.
Supervisor: James Todd
Sample Matrix: Soil

Facility: Lockhart B-12
Test Method: EPA 418.1
Order No. Leo Gatson
Sample Received: Intact on site

	<u>TPH</u>		<u>Depth</u>	<u>Location</u>
SAMPLE NO. 1:	940	PPM	3'	Composite of South Wall
SAMPLE NO. 2:	261	PPM	3'	Composite of North Wall
SAMPLE NO. 3:	317	PPM	3'	Composite of West Wall

COMMENTS: These samples were taken to check the remaining TPH levels in the walls at the site.



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SOIL ANALYSIS REPORT

Date: 3-7-01

Client: Conoco, Inc.

Supervisor: James Todd

Sample Matrix: Soil

Facility: Lockhart B-12

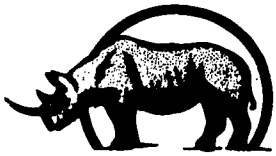
Test Method: EPA 418.1

Order No. Leo Gatson

Sample Received: Intact on site

	<u>TPH</u>		<u>Depth</u>	<u>Location</u>
SAMPLE NO. 1:	87	PPM	3'	Composite of South Wall
SAMPLE NO. 2:	3,720	PPM	3'	Composite of East Wall

COMMENTS: These samples were taken to check the remaining TPH levels in the walls at the site.



RHINO

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Phone (505) 247-4646 • Fax (505) 797-4874

SOIL ANALYSIS REPORT

Date: 3-9-01

Client: Conoco, Inc.

Supervisor: James Todd

Sample Matrix: Soil

Facility: Lockhart B-12

Test Method: EPA 418.1

Order No. Leo Gatson

Sample Received: Intact on site

	<u>TPH</u>	<u>Depth</u>	<u>Location</u>
SAMPLE NO. 1:	227 PPM	3'	Composite of East Wall

COMMENTS: These samples were taken to check the remaining TPH levels in the walls at the site.

Lab Analysis



TRACEANALYSIS, INC.

8701 Aberdeen Avenue, Suite 9
155 McDutcheon, Suite H

Lubbock, Texas 79424
El Paso, Texas 79932

800•378•1298
888•588•3443

808•794•1298
915•585•3443

1 AX 808•794•1298
FAX 915•585•4944

E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

James Todd
Rhino Environmental Serv. Inc.
4007 N. Lovington Hwy
Hobbs, NM 88240

Report Date: March 20, 2001

Order ID Number: A01031305

Project Number: AH-12
Project Name: Lockhart B-12
Project Location: McNeill Ranch Eunice, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
166605	N. Wall	Soil	3/12/01	9:00	3/13/01
166606	Pit Bottom	Soil	3/12/01	9:30	3/13/01
166607	E. Wall	Soil	3/12/01	10:00	3/13/01
166608	W. Wall	Soil	3/12/01	10:30	3/13/01
166609	S. Wall	Soil	3/12/01	11:00	3/13/01

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 18 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.


Dr. Blair Leftwich, Director

- CERTIFICATE OF ANALYSIS -

Client #: 12565

Trace Analysis

6701 Aberdeen Suite 9

Lubbock, TX 79424

Report Date: 03-Apr-01

Attn: Neil Green

Phone: (806) 794-1296 Ext:

FAX: (806) 794-1298

Our Lab #: MAR01-05783

Your Sample ID: 166606

Date Logged-In: 3/15/01

Sample Source: Other/Undefined

Matrix: Soil

Client Project #:

PO#: 166606

Project #:

Date Submitted to Lab: 3/15/2001

- COLLECTION INFORMATION -

Date/Time/By:

Test Group	EPA Method	Test	Result	Units	Analysis Date	Analyst	WS#
AL-ICP-S	6010B	Aluminum, Al	3090 (32)	MG/KG	3/22/01	BLD	3E+04
AS-MS-S	200.8/6020	Arsenic, As	6.4 (1.9)	MG/KG	3/26/01	RCM	3E+04
BA-ICP-S	6010B	Barium, Ba	244 (3)	MG/KG	3/22/01	BLD	3E+04
B-MS-S	200.8/6020	Boron, B	11 (9.7)	MG/KG	3/26/01	RCM	3E+04
CD-ICP-S	6010B	Cadmium, Cd	ND (3)	MG/KG	3/22/01	BLD	3E+04
CA-ICP-S	6010H	Calcium, Cd	64900 (18)	MG/KG	3/19/01	KRG	3E+04
CR-ICP-S	6010B	Chromium, Cr	4 (4)	MG/KG	3/19/01	KRG	3E+04
CO-ICP-S	6010B	Cobalt, Co	ND (4)	MG/KG	3/19/01	KRG	3E+04
CU-ICP-S	6010B	Copper, Cu	ND (10)	MG/KG	3/22/01	BLD	3E+04
FE-ICP-S	6010B	Iron, Fe	2710 (13)	MG/KG	3/22/01	BLD	3E+04
PB-ICP-S	6010B	Lead, Pb	ND (9)	MG/KG	3/19/01	KRG	3E+04
MG-ICP-S	6010B	Magnesium, Mg	2660 (18)	MG/KG	3/19/01	KRG	3E+04
MN-ICP-S	6010B	Manganese, Mn	28 (2)	MG/KG	3/19/01	KRG	3E+04
NI-ICP-S	6010B	Nickel, Ni	ND (4)	MG/KG	3/19/01	KRG	3E+04
K-ICP-S	6010B	Potassium, K	1900 (368)	MG/KG	3/19/01	KRG	3E+04
SE-GFAA-S	7740	Selenium, Se	ND (1.0)	MG/KG	3/19/01	SMM	3E+04
SI-MS-S	200.8	Silicon, Si	0.43 (0.02)	MG/KG	3/30/01	BLD	3E+04
AG-ICP-S	6010B	Silver, Ag	ND (4)	MG/KG	3/19/01	KRG	3E+04
ZN-ICP-S	6010B	Zinc, Zn	9 (2)	MG/KG	3/19/01	KRG	3E+04
TS-%	160.3	Residue, Total, TS	96.5 (0.2)	%	3/20/01	ROH	3E+04
NA-ICP-S	6010B	Sodium, Na	2280 (74)	MG/KG	3/19/01	KRG	3E+04

- CERTIFICATE OF ANALYSIS -

Lab Number MAR01-05785 -Continued from Previous Page

Test Group	EPA Method	Test	Result	Units	Analysis Date	Analyst	WS#
MO-MS-S	6020	Molybdenum, Mo	ND (6)	MG/KG	3/26/01	RCM	3E+04

Note: The result for the Selenium analytical bench spike was biased low and thus the sample result should be qualified due to a matrix effect. The analytical run was not rejected since the method quality control checks were within limits.

End of Report

Report Approved By: _____

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Analytical Report

Sample: 166605 - N. Wall

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC09802 Date Analyzed: 3/15/01
Analyst: JW Preparation Method: E 5035 Prep Batch: PB08410 Date Prepared: 3/15/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.013	mg/Kg	13	0.001
Toluene		<0.013	mg/Kg	13	0.001
Ethylbenzene		<0.013	mg/Kg	13	0.001
M,P,O-Xylene		<0.013	mg/Kg	13	0.001
Total BTEX		<0.013	mg/Kg	13	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.25	mg/Kg	1	0.10	1250	72 - 128
4-BFB		1.24	mg/Kg	1	0.10	1240	72 - 128

Sample: 166605 - N. Wall

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC09778 Date Analyzed: 3/13/01
Analyst: JS Preparation Method: N/A Prep Batch: PB08388 Date Prepared: 3/12/01

Param	Flag	Result	Units	Dilution	RDL
CL		1100	mg/Kg	100	0.50

Sample: 166605 - N. Wall

Analysis: TPH DRO Analytical Method: Mod. 8015B QC Batch: QC09820 Date Analyzed: 3/19/01
Analyst: BP Preparation Method: 3550 B Prep Batch: PB08426 Date Prepared: 3/19/01

Param	Flag	Result	Units	Dilution	RDL
DRO		59	mg/Kg	1	50

Sample: 166605 - N. Wall

Analysis: TPH GRO Analytical Method: 8015B QC Batch: QC09803 Date Analyzed: 3/15/01
Analyst: JW Preparation Method: 5035 Prep Batch: PB08410 Date Prepared: 3/15/01

Param	Flag	Result	Units	Dilution	RDL
GRO		<1.3	mg/Kg	13	0.10

Sample: 166606 - Pit Bottom

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC09785 Date Analyzed: 3/14/01
Analyst: JS Preparation Method: N/A Prep Batch: PB08397 Date Prepared: 3/14/01

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/Kg as CaCO ₃	1	1
Carbonate Alkalinity		4	mg/Kg as CaCO ₃	1	1

Continued ...

Continued Sample: 166606 Analysis: Alkalinity

Param	Flag	Result	Units	Dilution	REL
Bicarbonate Alkalinity		182	mg/Kg as CaCO ₃	1	1
Total Alkalinity		186	mg/Kg as CaCO ₃	1	1

Sample: 166606 - Pit Bottom

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC09802 Date Analyzed: 3/15/01
Analyst: JW Preparation Method: E 5035 Prep Batch: PB08410 Date Prepared: 3/15/01

Param	Flag	Result	Units	Dilution	REL
Benzene		<0.013	mg/Kg	13	0.001
Toluene		0.015	mg/Kg	13	0.001
Ethylbenzene		0.139	mg/Kg	13	0.001
M,P,O-Xylene		0.399	mg/Kg	13	0.001
Total BTEX		0.553	mg/Kg	13	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.02	mg/Kg	1	0.10	1020	72 - 128
4-BFB		1.24	mg/Kg	1	0.10	1240	72 - 128

Sample: 166606 - Pit Bottom

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC09782 Date Analyzed: 3/14/01
Analyst: JS Preparation Method: N/A Prep Batch: PB08394 Date Prepared: 3/14/01

Param	Flag	Result	Units	Dilution	REL
Specific Conductance		5900	µMHOS/cm	1	

Sample: 166606 - Pit Bottom

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC09729 Date Analyzed: 3/15/01
Analyst: SSC Preparation Method: N/A Prep Batch: PB08352 Date Prepared: 3/14/01

Param	Flag	Result	Units	Dilution	REL
Total Mercury		<0.19	mg/Kg	1	0.25

Sample: 166606 - Pit Bottom

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC09779 Date Analyzed: 3/13/01
Analyst: JS Preparation Method: N/A Prep Batch: PB08388 Date Prepared: 3/12/01

Param	Flag	Result	Units	Dilution	REL
CL		2000	mg/Kg	50	0.50
Fluoride		8.8	mg/Kg	5	0.20
Nitrate-N		<1.0	mg/Kg	5	0.20
Sulfate		89	mg/Kg	5	0.50

Sample: 166606 - Pit Bottom

Analysis: TDS Analytical Method: E 160.1 QC Batch: QC09828 Date Analyzed: 3/19/01
Analyst: JS Preparation Method: N/A Prep Batch: PB08431 Date Prepared: 3/15/01

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		3100	mg/L	6.70	10

Sample: 166606 - Pit Bottom

Analysis: TPH DRO Analytical Method: Mod. 8015B QC Batch: QC09820 Date Analyzed: 3/19/01
Analyst: BP Preparation Method: 3550 B Prep Batch: PB08425 Date Prepared: 3/19/01

Param	Flag	Result	Units	Dilution	RDL
DRO		4430	mg/Kg	5	50

Sample: 166606 - Pit Bottom

Analysis: TPH GRO Analytical Method: 8015B QC Batch: QC09803 Date Analyzed: 3/15/01
Analyst: JW Preparation Method: 5035 Prep Batch: PB08410 Date Prepared: 3/15/01

Param	Flag	Result	Units	Dilution	RDL
GRO		34	mg/Kg	13	0.10

Sample: 166606 - Pit Bottom

Analysis: pH Analytical Method: E 150.1 QC Batch: QC09777 Date Analyzed: 3/13/01
Analyst: RS Preparation Method: N/A Prep Batch: PB08391 Date Prepared: 3/13/01

Param	Flag	Result	Units	Dilution	RDL
pH		8.6	n.u.	1	

Sample: 166607 - E. Wall

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC09802 Date Analyzed: 3/15/01
Analyst: JW Preparation Method: E 5035 Prep Batch: PB08410 Date Prepared: 3/15/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.013	mg/Kg	13	0.001
Toluene		<0.013	mg/Kg	13	0.001
Ethylbenzene		<0.013	mg/Kg	13	0.001
M,P,O-Xylene		<0.013	mg/Kg	13	0.001
Total BTEX		<0.013	mg/Kg	13	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.17	mg/Kg	1	0.10	1170	72 - 128
4-BFB		1.25	mg/Kg	1	0.10	1250	72 - 128

Sent By: TRACEANALYSIS;
Report Date: March 20, 2001
AH-12

7941298;
Order Number: A01031305
Lockhart B-12

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McNeill Ranch Eunice, NM

Sample: 166607 - E. Wall

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC09779 Date Analyzed: 3/13/01
Analyst: JS Preparation Method: N/A Prep Batch: PB08388 Date Prepared: 3/12/01

Param	Flag	Result	Units	Dilution	RDL
CL		880	mg/Kg	50	0.50

Sample: 166607 - E. Wall

Analysis: TPH DRO Analytical Method: Mod. 8015B QC Batch: QC09820 Date Analyzed: 3/19/01
Analyst: BP Preparation Method: 3550 B Prep Batch: PB08425 Date Prepared: 3/19/01

Param	Flag	Result	Units	Dilution	RDL
DRO		97	mg/Kg	1	50

Sample: 166607 - E. Wall

Analysis: TPH GRO Analytical Method: 8015B QC Batch: QC09803 Date Analyzed: 3/15/01
Analyst: JW Preparation Method: 5035 Prep Batch: PB08410 Date Prepared: 3/15/01

Param	Flag	Result	Units	Dilution	RDL
GRO		4.36	mg/Kg	13	0.10

Sample: 166608 - W. Wall

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC09802 Date Analyzed: 3/15/01
Analyst: JW Preparation Method: E 5035 Prep Batch: PB08410 Date Prepared: 3/15/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.013	mg/Kg	13	0.001
Toluene		<0.013	mg/Kg	13	0.001
Ethylbenzene		<0.013	mg/Kg	13	0.001
M,P,O-Xylene		<0.013	mg/Kg	13	0.001
Total BTEX		<0.013	mg/Kg	13	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.3	mg/Kg	1	0.10	1300	72 - 128
4 BFB		1.26	mg/Kg	1	0.10	1260	72 - 128

Sample: 166608 - W. Wall

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC09779 Date Analyzed: 3/13/01
Analyst: JS Preparation Method: N/A Prep Batch: PB08388 Date Prepared: 3/12/01

Param	Flag	Result	Units	Dilution	RDL
CL		1400	mg/Kg	100	0.50

Report Date: March 20, 2001
AH-12Order Number: A01031305
Lockhart H-12Page Number: 8 of 18
McNeill Ranch Eunice, NM**Sample: 166608 - W. Wall**Analysis: TPH DRO Analytical Method: Mod. 8015B QC Batch: QC00820 Date Analyzed: 3/19/01
Analyst: BP Preparation Method: 3550 B Prep Batch: PB08425 Date Prepared: 3/19/01

Param	Flag	Result	Units	Dilution	RDL
DRO		<50	mg/Kg	1	50

Sample: 166608 - W. WallAnalysis: TPH GRO Analytical Method: 8015B QC Batch: QC09803 Date Analyzed: 3/15/01
Analyst: JW Preparation Method: 5035 Prep Batch: PB08410 Date Prepared: 3/15/01

Param	Flag	Result	Units	Dilution	RDL
GRO		<1.3	mg/Kg	13	0.10

Sample: 166609 - S. WallAnalysis: BTEX Analytical Method: S 8021B QC Batch: QC09802 Date Analyzed: 3/15/01
Analyst: JW Preparation Method: E 5035 Prep Batch: PB08410 Date Prepared: 3/15/01

Param	Flag	Result	Units	Dilution	RDL
Toluene		<0.013	mg/Kg	13	0.001
Ethylbenzene		<0.013	mg/Kg	13	0.001
m,p,O-Xylene		<0.013	mg/Kg	13	0.001
Total BTEX		<0.013	mg/Kg	13	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFH		1.35	mg/Kg	1	0.10	1350	72 - 128
4-BPH		1.2	mg/Kg	1	0.10	1200	72 - 128

Sample: 166609 - S. WallAnalysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC09779 Date Analyzed: 3/13/01
Analyst: JS Preparation Method: N/A Prep Batch: PB08388 Date Prepared: 3/12/01

Param	Flag	Result	Units	Dilution	RDL
CL		710	mg/Kg	30	0.50

Sample: 166609 - S. WallAnalysis: TPH DRO Analytical Method: Mod. 8015B QC Batch: QC09820 Date Analyzed: 3/19/01
Analyst: BP Preparation Method: 3550 B Prep Batch: PB08425 Date Prepared: 3/19/01

Param	Flag	Result	Units	Dilution	RDL
DRO		59	mg/Kg	1	50

Sample: 166609 - S. WallAnalysis: TPH GRO Analytical Method: 8015B QC Batch: QC09803 Date Analyzed: 3/15/01
Analyst: JW Preparation Method: 5035 Prep Batch: PB08410 Date Prepared: 3/15/01

Report Date: March 20, 2001
AH-12Order Number: A01031305
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McNeill Ranch Police, NM

Param	Flag	Result	Units	Dilution	RDL
CRO		<1.3	ng/Kg	13	0.10

Quality Control Report Method Blank

Method Blank QCBatch: QC09729

Param	Flag	Results	Units	Reporting Limit
Total Mercury		<0.10	mg/Kg	0.25

Method Blank QCBatch: QC09779

Param	Flag	Results	Units	Reporting Limit
CL		4.79	mg/Kg	0.50
Fluoride		0.51	mg/Kg	0.20
Nitrate-N		0.24	mg/Kg	0.20
Sulfate		7.09	mg/Kg	0.50

Method Blank QCBatch: QC09782

Param	Flag	Results	Units	Reporting Limit
Specific Conductance		3.3	µMHOS/cm	

Method Blank QCBatch: QC09785

Param	Flag	Results	Units	Reporting Limit
Hydroxide Alkalinity		<1.0	mg/Kg as CaCO3	1
Carbonate Alkalinity		<1.0	mg/Kg as CaCO3	1
Dicarbonate Alkalinity		<4.0	mg/Kg as CaCO3	1
Total Alkalinity		<4.0	mg/Kg as CaCO3	1

Method Blank QCBatch: QC09802

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.013	mg/Kg	0.001
Toluene		<0.013	mg/Kg	0.001
Ethylbenzene		<0.013	mg/Kg	0.001
M,P,O-Xylene		0.014	mg/Kg	0.001
Total BTEX		0.014	mg/Kg	0.001

TOTAL XYLENES TOOK A HIT POSSIBLY DUE TO RESIDUAL CARRYOVER

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Surrogate	Flag	Result	Units	Spike Amount	Percent Recovery	Recovery Limit
TFT		0.404	mg/Kg	0.10	1510	72 - 128
4-BFB		0.428	mg/Kg	0.10	1340	72 - 128

Method Blank QCBatch: QC09808

Param	Flag	Results	Units	Reporting Limit
GRO		<1.3	mg/Kg	0.10

Method Blank QCBatch: QC09820

Param	Flag	Results	Units	Reporting Limit
DRO		<50	mg/Kg	50

Method Blank QCBatch: QC09828

Param	Flag	Results	Units	Reporting Limit
Total Dissolved Solids		<10	mg/L	10

Quality Control Report Lab Control Spikes and Duplicate Spikes

LCS QC Batch: QC09729

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
Total Mercury		2.54	mg/Kg	1	2.50	<0.19	101		80 - 120	20

LCSD QC Batch: QC09729

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
Total Mercury		2.87	mg/Kg	1	2.50	<0.19	106	5	80 - 120	20

LCS QC Batch: QC09779

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Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
CL	2	16.80	mg/Kg	1	12.50	4.79	134		80 - 120	25
CL	3	16.86	mg/Kg	1	12.50	4.79	134		85 - 115	25
Fluoride	4	2.84	mg/Kg	1	2.50	0.51	113		80 - 120	20
Fluoride	5	2.84	mg/Kg	1	2.50	0.51	113		85 - 115	20
Nitrate-N	6	2.83	mg/Kg	1	2.50	0.24	113		80 - 120	20
Sulfate	7	19.39	mg/Kg	1	12.50	7.09	155		80 - 120	20
Sulfate	8	19.39	mg/Kg	1	12.50	7.09	155		85 - 115	20

LCSD

QC Batch: QC09779

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
CL	9	16.71	mg/Kg	1	0.25	4.79	267	1	80 - 120	25
CL	10	16.71	mg/Kg	1	0.25	4.79	267	1	85 - 115	25
Fluoride	11	2.80	mg/Kg	1	2.50	0.51	112	1	80 - 120	20
Fluoride	12	2.80	mg/Kg	1	2.50	0.51	112	1	85 - 115	20
Nitrate-N	13	2.87	mg/Kg	1	2.50	0.24	114	1	80 - 120	20
Sulfate	14	19.38	mg/Kg	1	12.50	7.09	155	0	80 - 120	20
Sulfate	15	19.38	mg/Kg	1	12.50	7.09	155	0	85 - 115	20

LCS

QC Batch: QC09802

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
MTBE		1.3	mg/Kg	13	0.10	<0.013	100		80 - 120	20
Benzene		1.23	mg/Kg	13	0.10	<0.013	94		80 - 120	20
Toluene		1.2	mg/Kg	13	0.10	<0.013	92		80 - 120	20
Ethylbenzene		1.2	mg/Kg	13	0.10	<0.013	92		80 - 120	20
M,P,O-Xylene		3.54	mg/Kg	13	0.30	0.014	90		80 - 120	20

Surrogate	Flag	Result	Units	Dil.	Spike Amount	% Rec.	% Rec. Limit
TFT		1.29	mg/Kg	13	0.10	99	72 - 125
4-BFB		1.2	mg/Kg	13	0.10	92	72 - 125

*Sample master doesn't subtract the blank from the blank spikes. The correct %EA = 97.

*Sample master doesn't subtract the blank from the blank spikes. The correct %EA = 97.

*Sample master doesn't subtract the blank from the blank spikes. The correct %EA = 93.

*Sample master doesn't subtract the blank from the blank spikes. The correct %EA = 93.

*Sample master doesn't subtract the blank from the blank spikes. The correct %EA = 101.

*Sample master doesn't subtract the blank from the blank spikes. The correct %EA = 98.

*Sample master doesn't subtract the blank from the blank spikes. The correct %EA = 98.

*Sample master doesn't subtract the blank from the blank spikes. The correct %EA = 95.

*Sample master doesn't subtract the blank from the blank spikes. The correct %EA = 95.

*Sample master doesn't subtract the blank from the blank spikes. The correct %EA = 92.

*Sample master doesn't subtract the blank from the blank spikes. The correct %EA = 92.

*Sample master doesn't subtract the blank from the blank spikes. The correct %EA = 105.

*Sample master doesn't subtract the blank from the blank spikes. The correct %EA = 88.

*Sample master doesn't subtract the blank from the blank spikes. The correct %EA = 98.

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LCSD QC Batch: QC09802

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
MTBE		1.3	mg/Kg	13	0.10	<0.013	100	171	80 - 120	20
Benzene		1.4	mg/Kg	13	0.10	<0.013	107	175	80 - 120	20
Toluene		1.4	mg/Kg	13	0.10	<0.013	107	175	80 - 120	20
Ethylbenzene		1.4	mg/Kg	13	0.10	<0.013	107	175	80 - 120	20
M,P,O-Xylene		4.2	mg/Kg	13	0.30	0.014	107	176	80 - 120	20

Surrogate	Flag	Result	Units	Dil.	Spike Amount	% Rec.	% Rec. Limit
TFT		1.4	mg/Kg	13	0.10	1400	72 - 128
4-BFR		1.3	mg/Kg	13	0.10	1300	72 - 128

LCS QC Batch: QC09803

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
GRO		1.03	mg/Kg	1	1	<1.3	103		70 - 130	20

LCSD QC Batch: QC09803

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
GRO		1.03	mg/Kg	1	1	<1.3	103	0	70 - 130	20

LCS QC Batch: QC09820

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
DRO		251	mg/Kg	1	250	<50	100		70 - 130	20

Surrogate	Flag	Result	Units	Dil.	Spike Amount	% Rec.	% Rec. Limit
n-Octane		230	mg/Kg	1	250	92	70 - 130

LCSD QC Batch: QC09820

Continued ...

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... Continued

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
DRD		248	mg/Kg	1	250	<50	99	1	70 - 130	20

Surrogate	Flag	Result	Units	Dil.	Spike Amount	% Rec.	% Rec. Limit
n-Octane		224	mg/Kg	1	250	89	70 - 130

Quality Control Report Matrix Spikes and Duplicate Spikes

MS QC Batch: QC09729

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
Total Mercury		2.52	mg/Kg	1	2.50	<0.19	100		80 - 120	20

MSD QC Batch: QC09729

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
Total Mercury		2.43	mg/Kg	1	2.50	<0.19	97	4	80 - 120	20

MS QC Batch: QC09779

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
CL		1315.09	mg/Kg	1	625	710	96		70 - 116	25
CL		1315.09	mg/Kg	1	625	710	96		75 - 106	25
Fluoride		131.81	mg/Kg	1	125	10	97		77 - 111	20
Fluoride		131.81	mg/Kg	1	125	10	97		82 - 109	20
Nitrate N		136.44	mg/Kg	1	125	<10	109		80 - 112	20
Sulfate		769.28	mg/Kg	1	625	158	97		50 - 131	20
Sulfate		769.28	mg/Kg	1	625	158	97		74 - 118	20

MSD QC Batch: QC09779

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Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
CL		1318.85	mg/Kg	1	625	710	97	0	70 - 115	25
CL		1318.85	mg/Kg	1	625	710	97	0	73 - 106	25
Fluoride		128.99	mg/Kg	1	125	10	95	2	77 - 111	20
Fluoride		128.99	mg/Kg	1	125	10	95	2	82 - 109	20
Nitrate-N		135.20	mg/Kg	1	125	<10	108	1	69 - 118	20
Sulfate		782.61	mg/Kg	1	625	158	99	2	56 - 131	20
Sulfate		782.61	mg/Kg	1	625	158	99	2	74 - 118	20

MS

QC Batch: QC09802

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
Benzene		1.22	mg/Kg	13	0.10	<0.013	93	22	80 - 120	20
Toluene		1.10	mg/Kg	13	0.10	<0.013	91	24	80 - 120	20
Ethylbenzene		1.16	mg/Kg	13	0.10	<0.013	89	24	80 - 120	20
M,P,O-Xylene		3.49	mg/Kg	13	0.30	<0.013	89	23	80 - 120	20

Surrogate	Flag	Result	Units	Dil.	Spike Amount	% Rec.	% Rec. Limit
TFT		1.31	mg/Kg	13	0.10	100	72 - 128
4-BFB		1.25	mg/Kg	13	0.10	95	72 - 128

MSD

QC Batch: QC09802

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
Benzene		1.22	mg/Kg	13	0.10	<0.013	93	0	80 - 120	20
Toluene		1.19	mg/Kg	13	0.10	<0.013	91	0	80 - 120	20
Ethylbenzene		1.19	mg/Kg	13	0.10	<0.013	91	2	80 - 120	20
M,P,O-Xylene		3.53	mg/Kg	13	0.30	<0.013	90	1	80 - 120	20

Surrogate	Flag	Result	Units	Dil.	Spike Amount	% Rec.	% Rec. Limit
TFT		1.2	mg/Kg	13	0.10	92	72 - 128
4-BFB		1.23	mg/Kg	13	0.10	94	72 - 128

MS

QC Batch: QC09820

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
DRO		382	mg/Kg	1	250	59	129		70 - 130	20

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Surrogate	Flag	Result	Units	Dil.	Spike Amount	% Rec.	% Rec. Limit
n-Octane		231	mg/Kg	1	250	92	70 - 130

MST QC Batch: QC09820

Param	Flag	Sample Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec.	RPD	% Rec. Limit	RPD Limit
PRO		381	mg/Kg	1	250	59	128	0	70 - 130	20

Surrogate	Flag	Result	Units	Dil.	Spike Amount	% Rec.	% Rec. Limit
n-Octane		221	mg/Kg	1	250	88	70 - 130

Quality Control Report Duplicate Samples

Duplicate QC Batch: QC09777

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH		8.6	8.6	n.a.	1	0	1

Duplicate QC Batch: QC09782

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Specific Conductance		5961	5900	μ MHOS/cm	1	1	9

Duplicate QC Batch: QC09785

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity		<1.0	<1.0	mg/Kg as CaCO ₃	1	0	11
Carbonate Alkalinity		<1.0	<1.0	mg/Kg as CaCO ₃	1	0	11
Bicarbonate Alkalinity		66	68	mg/Kg as CaCO ₃	1	3	11
Total Alkalinity		66	68	mg/Kg as CaCO ₃	1	3	11

Duplicate QC Batch: QC09828

Continued

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... Continued

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids		11420	11000	mg/L	1	4	11

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QC Batch: QC09729

Param	Flag	Units	CCV _s True Conc.	CCV _s Found Conc.	CCV _s Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/Kg	0.005	0.00509	101	80 - 120	3/15/01

ICV (1) QC Batch: QC09729

Param	Flag	Units	CCV _s True Conc.	CCV _s Found Conc.	CCV _s Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/Kg	0.005	0.00529	105	80 - 120	3/15/01

CCV (1) QC Batch: QC09777

Param	Flag	Units	CCV _s True Conc.	CCV _s Found Conc.	CCV _s Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	7.1	101	-0.1 s.u. - +0.1 s.u.	3/13/01

ICV (1) QC Batch: QC09777

Param	Flag	Units	CCV _s True Conc.	CCV _s Found Conc.	CCV _s Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	7.1	101	-0.1 s.u. - +0.1 s.u.	3/13/01

CCV (1) QC Batch: QC09779

Continued ...

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Continued

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromide		mg/L	2.50	2.59	103	80 - 120	3/13/01
CL		mg/L	12.50	12.13	97	80 - 120	3/13/01
Fluoride		mg/L	2.50	2.48	99	80 - 120	3/13/01
Nitrate N		mg/L	2.50	2.61	104	80 - 120	3/13/01
Sulfate		mg/L	12.50	12.52	100	80 - 120	3/13/01

ICV (1) QC Batch: QC09779

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromide		mg/L	2.50	2.50	100	80 - 120	3/13/01
CL		mg/L	12.50	12.05	96	80 - 120	3/13/01
Fluoride		mg/L	2.50	2.48	99	80 - 120	3/13/01
Nitrate-N		mg/L	2.50	2.67	106	80 - 120	3/13/01
Sulfate		mg/L	12.50	12.66	101	80 - 120	3/13/01

CCV (1) QC Batch: QC09782

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		μ MHOS/cm	1418	1373	97	80 - 120	3/14/01

ICV (1) QC Batch: QC09782

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		μ MHOS/cm	1413	1344	95	80 - 120	3/14/01

CCV (1) QC Batch: QC09785

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/Kg as CaCO ₃	0	<1.0	0	80 - 120	3/14/01
Carbonate Alkalinity		mg/Kg as CaCO ₃	0	232	0	80 - 120	3/14/01
Dicarbonate Alkalinity		mg/Kg as CaCO ₃	0	14	0	80 - 120	3/14/01
Total Alkalinity		mg/Kg as CaCO ₃	250	246	98	80 - 120	3/14/01

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ICV (1) QC Batch: QC09785

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/Kg as CaCO3	0	<1.0	0	80 - 120	3/14/01
Carbonate Alkalinity		mg/Kg as CaCO3	0	236	0	80 - 120	3/14/01
Bicarbonate Alkalinity		mg/Kg as CaCO3	0	8	0	80 - 120	3/14/01
Total Alkalinity		mg/Kg as CaCO3	250	244	97	80 - 120	3/14/01

CCV (1) QC Batch: QC09802

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.10	0.098	98	85 - 115	3/15/01
Benzene		mg/Kg	0.10	0.105	105	85 - 115	3/15/01
Toluene		mg/Kg	0.10	0.103	103	85 - 115	3/15/01
Ethylbenzene		mg/Kg	0.10	0.102	102	85 - 115	3/15/01
M,P,O-Xylene		mg/Kg	0.30	0.302	100	85 - 115	3/15/01

CCV (2) QC Batch: QC09802

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.10	0.098	98	85 - 115	3/15/01
Benzene		mg/Kg	0.10	0.105	105	85 - 115	3/15/01
Toluene		mg/Kg	0.10	0.103	103	85 - 115	3/15/01
Ethylbenzene		mg/Kg	0.10	0.102	102	85 - 115	3/15/01
M,P,O-Xylene		mg/Kg	0.30	0.302	100	85 - 115	3/15/01

ICV (1) QC Batch: QC09802

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.10	0.1	100	85 - 115	3/15/01
Benzene		mg/Kg	0.10	0.099	99	85 - 115	3/15/01
Toluene		mg/Kg	0.10	0.097	97	85 - 115	3/15/01
Ethylbenzene		mg/Kg	0.10	0.099	99	85 - 115	3/15/01
M,P,O-Xylene		mg/Kg	0.30	0.291	97	85 - 115	3/15/01

CCV (1) QC Batch: QC09803

Continued ...

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1	1.11	111	75 - 125	3/15/01

ICV (1) QC Batch: QC09803

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1	0.872	87	75 - 125	3/15/01

CCV (1) QC Batch: QC09820

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	255	102	75 - 125	3/19/01
n-Octane		mg/Kg	250	233	93	75 - 125	3/19/01

ICV (1) QC Batch: QC09820

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	248	99	75 - 125	3/19/01
n-Octane		mg/Kg	250	216	86	75 - 125	3/19/01

CCV (1) QC Batch: QC09828

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/Kg	1000	986	98	80 - 120	3/19/01

ICV (1) QC Batch: QC09828

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1011	101	80 - 120	3/19/01

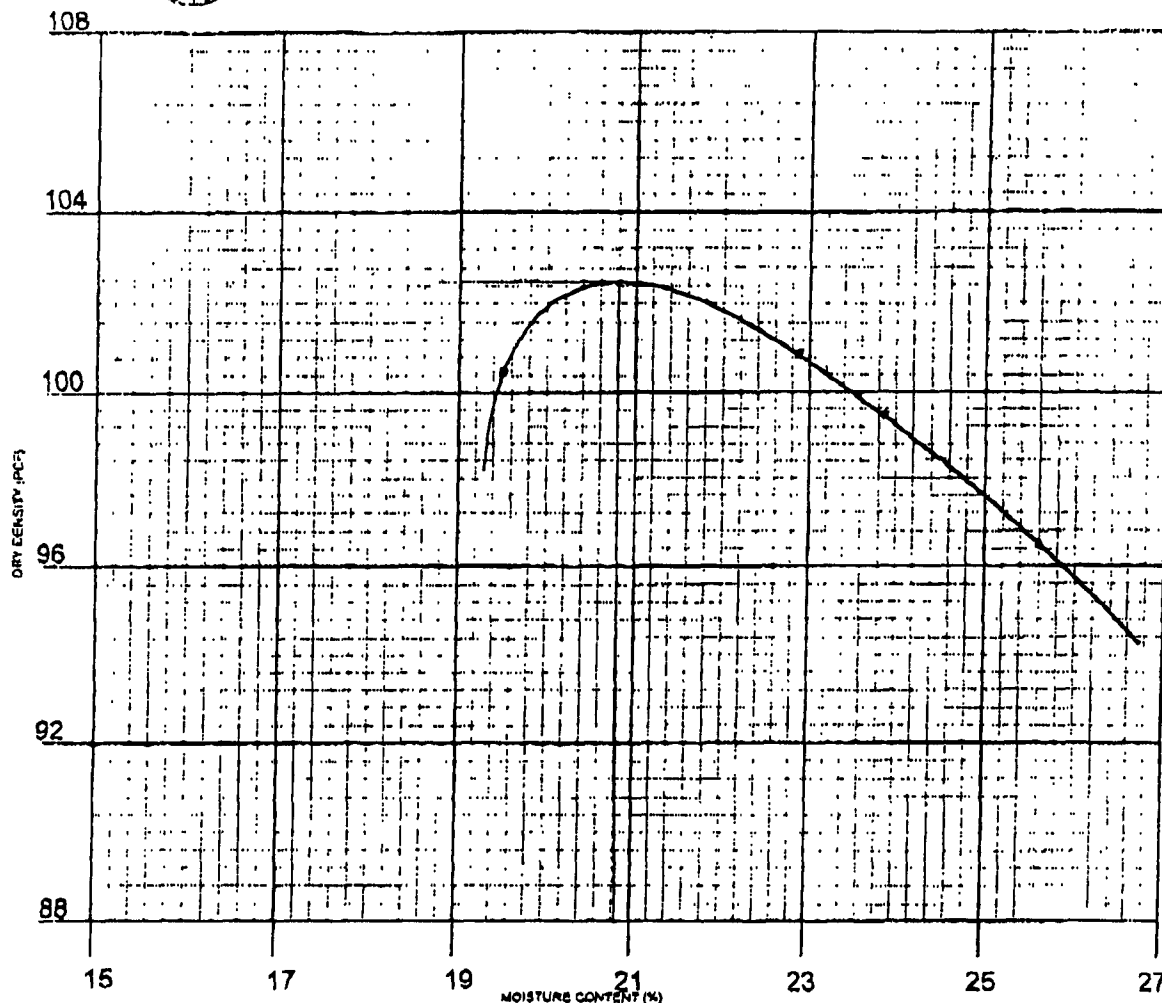
Clay Analysis

PERMEABILITY OF TRAISSIC CLAYS

BORING	DEPTH INTERVAL	ATTERBURG LIMITS			PERMEABILITY (CM/SEC)
		LL	PL	PI	
1	1-2'	51	25	26	1.4×10^{-6}
2	4-5'	38	16	22	5.6×10^{-8}
	7-7.5'	49	21	28	8.4×10^{-10}
3	0.5-1.5'	58	24	34	5.0×10^{-7}
4	7-8.5'	58	22	36	6.5×10^{-8}
5	2-3.5'	59	25	34	4.3×10^{-8}
6	1.5-2.0'	29	15	14	1.7×10^{-7}
	6-6.5	27	12	15	2.6×10^{-7}
7	4-5.5'	56	21	35	8.4×10^{-10}
8	2-2.5'	-	-	-	5.7×10^{-6}
	17'	-	-	-	1.7×10^{-7}
8A	3-4'	27	12	15	3.4×10^{-6}
9	1-2.5'	57	22	35	3.9×10^{-8}
10	2-2.5'	36	16	20	LESS THAN 10^{-3}
11	3.5 - 5.0'	40	20	20	1.9×10^{-7}
	14-15'	47	22	25	1.9×10^{-7}
12	6-7.5'	42	17	25	3.8×10^{-10}
13	1-2'	40	16	24	7.4×10^{-8}
14	11-12.5'	42	15	27	2.9×10^{-9}
6	0-5' (REMOLDED)	-	-	-	8.5×10^{-9}
11	3.5-5.0 (REMOLDED)	-	-	-	2.8×10^{-8}



PETTIGREW and ASSOCIATES
CONSULTING ENGINEERS



CLIENT: Wallach Concrete PROJECT: General Information

SAMPLE LOCATION: Stockpile

SOIL DESCRIPTION: Red Clay

SOIL CLASSIFICATION: _____

TEST METHOD: ASTM D 698

ATTERBERG: LL % PI

Delivered 9/8/00

DATE: September 11, 2000

LAB NO. 0H 2040-2041

DRY WEIGHT LB/CU. FT. 102.5

MOISTURE CONTENT % 20.8

LOOSE UNIT WEIGHT = 80.04 LBS/FT³

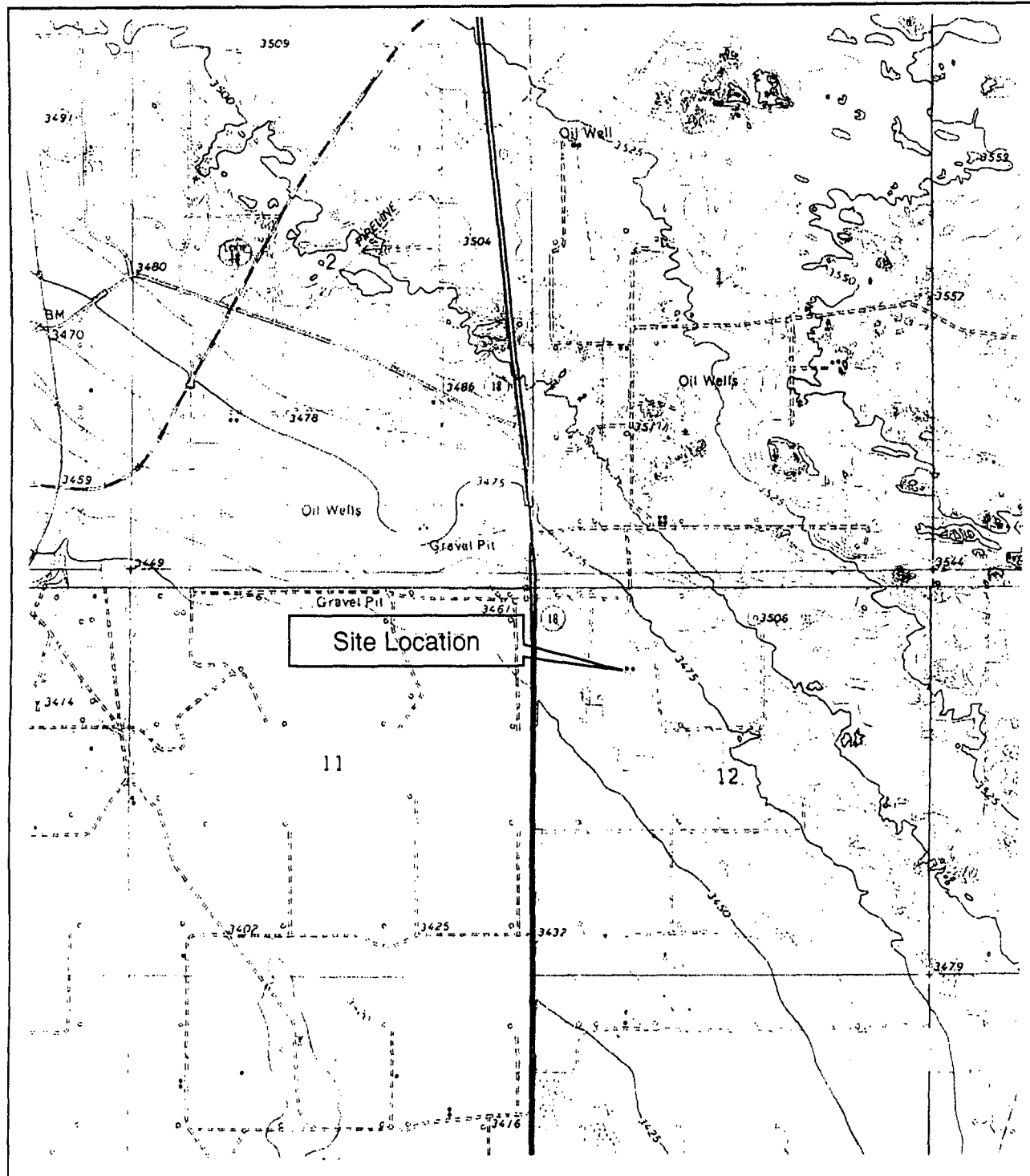
% MOISTURE = 1.2

COPIES: Wallach

PETTIGREW and ASSOCIATES

BY: William Hicks P.E.

Site Map



SCALE



1 inch = 2000 feet

From 1979 photorevised USGS
quadrangle maps, 7.5' series
titled: Hobbs, SW and Eunice, NM and
Hobbs, SE and Eunice, NE,
TEXAS - NM.



OSI

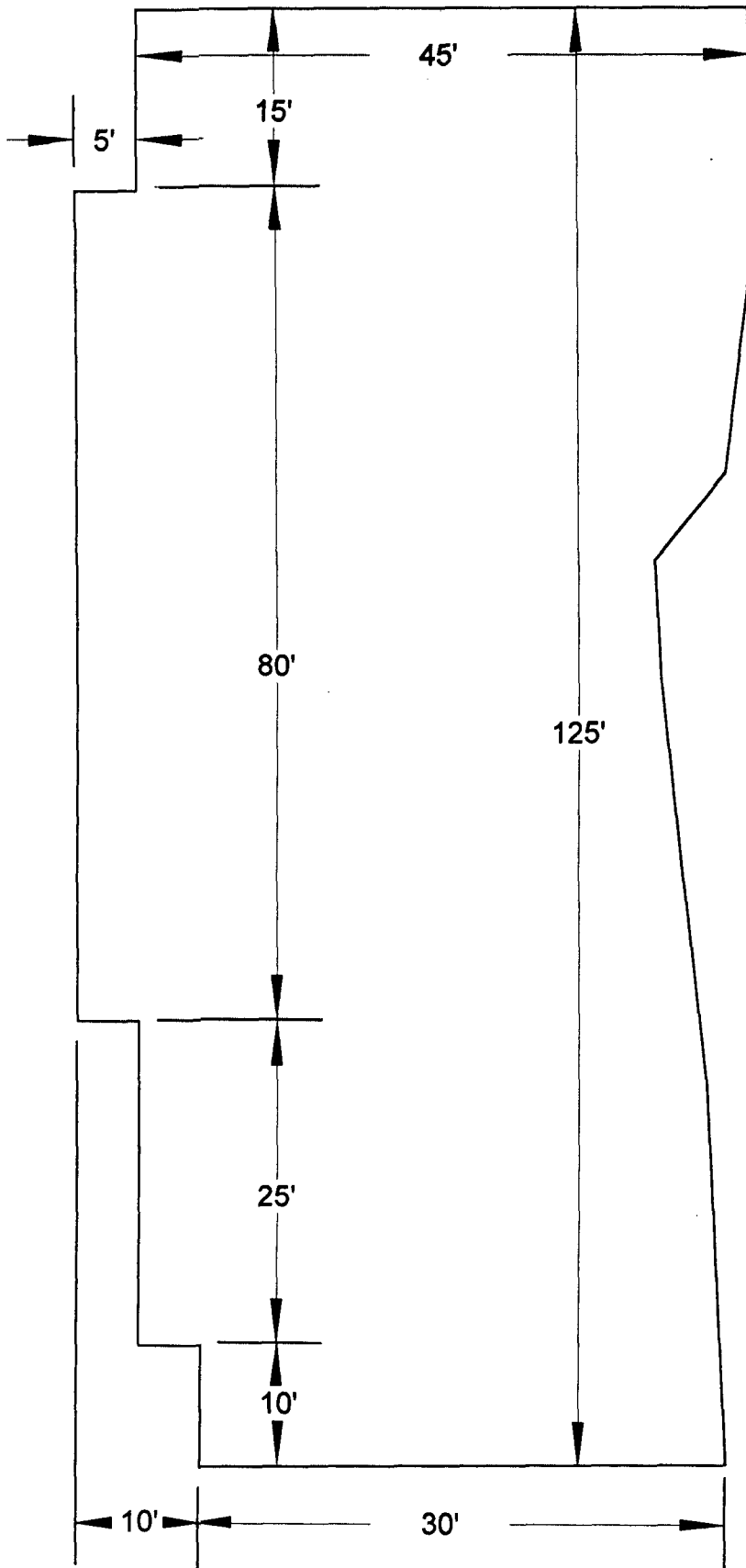
Site Location Map

Figure 1

RH99-AH18

Lockhart B12 - T21S, R37E, Sec. 12

February 2000



Conoco, Inc.

**Lockhart B12
Abandoned Pit**

Date: 2-21-01

Drawn By MFG

Scale: 1" = 15'

Job#

Job/Site Photos

1



Beginning Site Photos

2



3



In Progress Site Photos

4



5



In Progress Site Photos

6



7



In Progress Site Photos

8



9



In Progress Site Photos

10



11



In Progress Site Photos

12



13



In Progress Site Photos

14



15



Final Site Photos

16





PROJECT PHOTO REFERENCE

1. Beginning site photos.
2. Beginning site photos.
3. Excavation of Impacted Soil
4. Excavation of Impacted Soil.
5. Excavation of Impacted Soil.
6. Excavation of Impacted Soil.
7. Preparation for Sampling and backfilling.
8. Preparation for Sampling and backfilling.
9. Start hauling Red Bed Clay for placement.
10. Continuation of Red Bed Clay for placement and compaction.
11. Completion of Red Bed Clay placement and compaction
12. Completion of Red Bed Clay placement and compaction.
13. Completion of top soil placement and compaction.
14. Completion of top soil placement and compaction.
15. Completion of the re-seeding and plowing process.
16. Completion of the re-seeding and plowing process.