

Ocotillo ENVIRONMENTAL

Dirt Work • On-Site Remediation • Soil Testing • Excavation

June 5, 2007

Mr. Larry Johnson
Environmental Engineer
Oil Conservation Division
New Mexico Energy, Minerals and Natural Resources Department
1625 N. French Drive
Hobbs, New Mexico 88240



**Re: Spill Remediation Workplan
Oxy Permian, Federal AB Battery, IRP #1272
Unit Letter H, Section 11, Township 18 South, Range 33 East
Lea County, New Mexico
Lat. N 32° 45.812', Long. W 103° 37.632'**

Dear Mr. Johnson:

Oxy Permian (Oxy) has retained Ocotillo Environmental, LLC (Ocotillo) to remediate impacts to soil from a produced fluids spill located immediately southwest of the Federal AB Tank Battery. The well and battery are located in the southeast quarter (SE/4) of the northeast quarter (NE/4), Section 11, Township 18 South, Range 33 East, Lea County, New Mexico (Site). Approximately 17 barrels of oil and water were released from the heater treater, and approximately 10 barrels were recovered from the site. A C-141 was submitted to the New Mexico Oil Conservation Division (NMOCD) on March 28, 2007, a copy of which is attached as the final page of this report. Figure 1 shows the site location. Figure 2 shows the spill boundary.

Based on published literature (1961), well records of the New Mexico State Engineer, and well records of the United States Geological Survey, groundwater occurs at approximately 70 feet bgs (below ground surface) at the site. No domestic water wells are located within 1,000 feet of the site. The NMOCD has established RRALs for benzene, total BTEX and TPH resulting from spills of natural gas liquids ("Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993"). Remediation levels for benzene, total BTEX and TPH were calculated using the following NMOCD criteria:

Criteria	Result	Ranking Score
Depth-to-Groundwater	50 - 99 Feet	10
Wellhead Protection Area	No	0
Distance to Surface Water Body	>1000 Horizontal Feet	0
	Total:	10

The following RRALs have been assigned based on NMOCD criteria:

Benzene 10 mg/kg
Total BTEX 50 mg/kg
TPH 1,000 mg/kg

Incident - n PAC 0716337920
application - p PAC 0716338013

P.O. Box 1816 • Hobbs, NM 88241
Office (505) 393-6371 • Fax (505) 393-6374

RP# 1345

Mr. Larry Johnson
Page 2
June 5, 2007

Initial Investigation

On April 9, 2007, Oxy collected grab soil samples from nine (9) locations at the site (A through I), using a backhoe. The samples were placed in clean glass samples jars, labeled, chilled, and delivered under chain-of-custody control to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico for laboratory analysis of BTEX and chloride. Figure 2 shows the sample locations. Table 1 presents a summary of the laboratory results. Appendix A provides a copy of the laboratory data. Photographs are presented in Appendix B.

Referring to Table 1, soil samples collected from locations A through I reported benzene concentrations below the RRAL of 10 mg/kg, and all samples reported BTEX concentrations below the RRAL of 50 mg/kg, with the exception of the sample collected from location A at a depth of 18 inches (65.655 mg/kg). Chlorides concentrations exceeded the RRAL of 250 mg/kg in samples collected from the following locations:

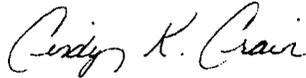
Point A at 18" (2,030 mg/kg)
Point B at 14" (3,090 mg/kg)
Point B at 4' (1,060 mg/kg)
Point C at 1.5' (2,960 mg/kg)
Point E at 2' (2,815 mg/kg)
Point E at 4' (5,340 mg/kg)
Point G at 4.5' (2,050 mg/kg)
Point H at 20" (1,650 mg/kg)
Point I at 2' (3,810 mg/kg).

Proposed Remediation

Oxy proposes to conduct excavation of the impacted soil until analytical results of soil samples report TPH concentrations below the RRAL (1,000 mg/kg) and chloride concentrations are below 250 mg/kg, or at 250 mg/kg or less above background concentrations. Excavated soil will be stockpiled on site and blended until analytical results report TPH concentrations below 1,000 mg/kg and chloride concentrations are either below 250 mg/kg or at 250 mg/kg or less above background concentrations. Blended soil will be used as backfill of the excavation.

Oxy plans to begin remediation activities on Monday, June 11, 2007, and a final report will be submitted following completion. If you have any questions or need additional information, please call Mr. Rick Kerby at (505) 887-8337 or myself at (505) 441-7244. We may also be reached by email at rick_kerby@oxy.com or Cindy.K.Crain@gmail.com.

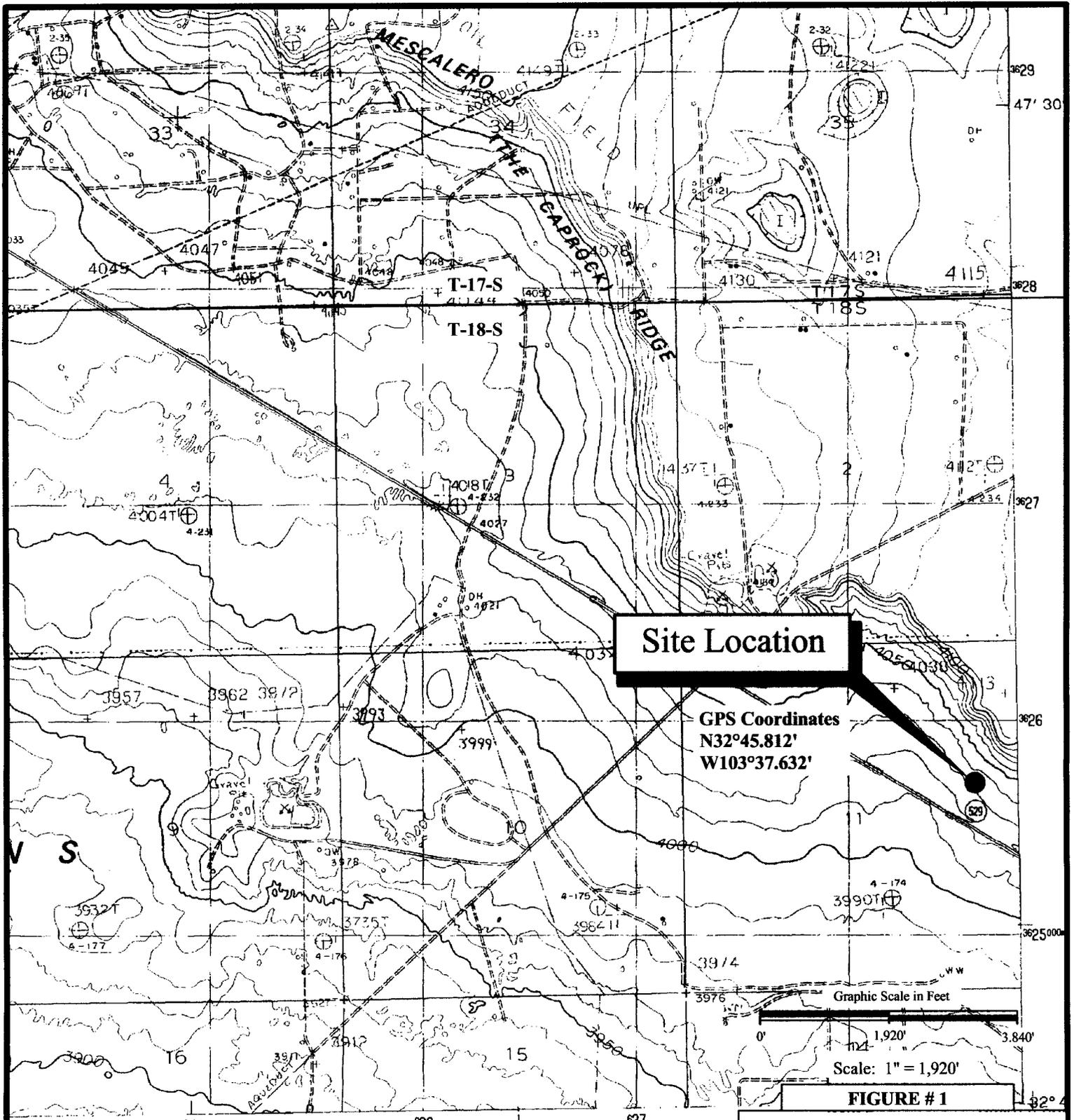
Sincerely,
Ocotillo Environmental, LLC



Cindy K. Crain, P.G.
Environmental Manager

Cc: Rick Kerby, Oxy
Jim Amos, BLM

FIGURES



Site Location

GPS Coordinates
N32°45.812'
W103°37.632'

Graphic Scale in Feet

0' 1,920' 3,840'

Scale: 1" = 1,920'

FIGURE # 1

LEA COUNTY, NEW MEXICO



Oxy Federal AB Lease

Sec.11, T18S, R33E
 1980'FNL, 660' FEL

Site Location

Ocotillo

1 MILE
 7000 FEET
 1000 METER

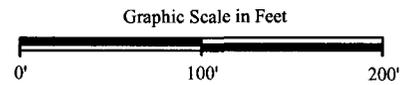
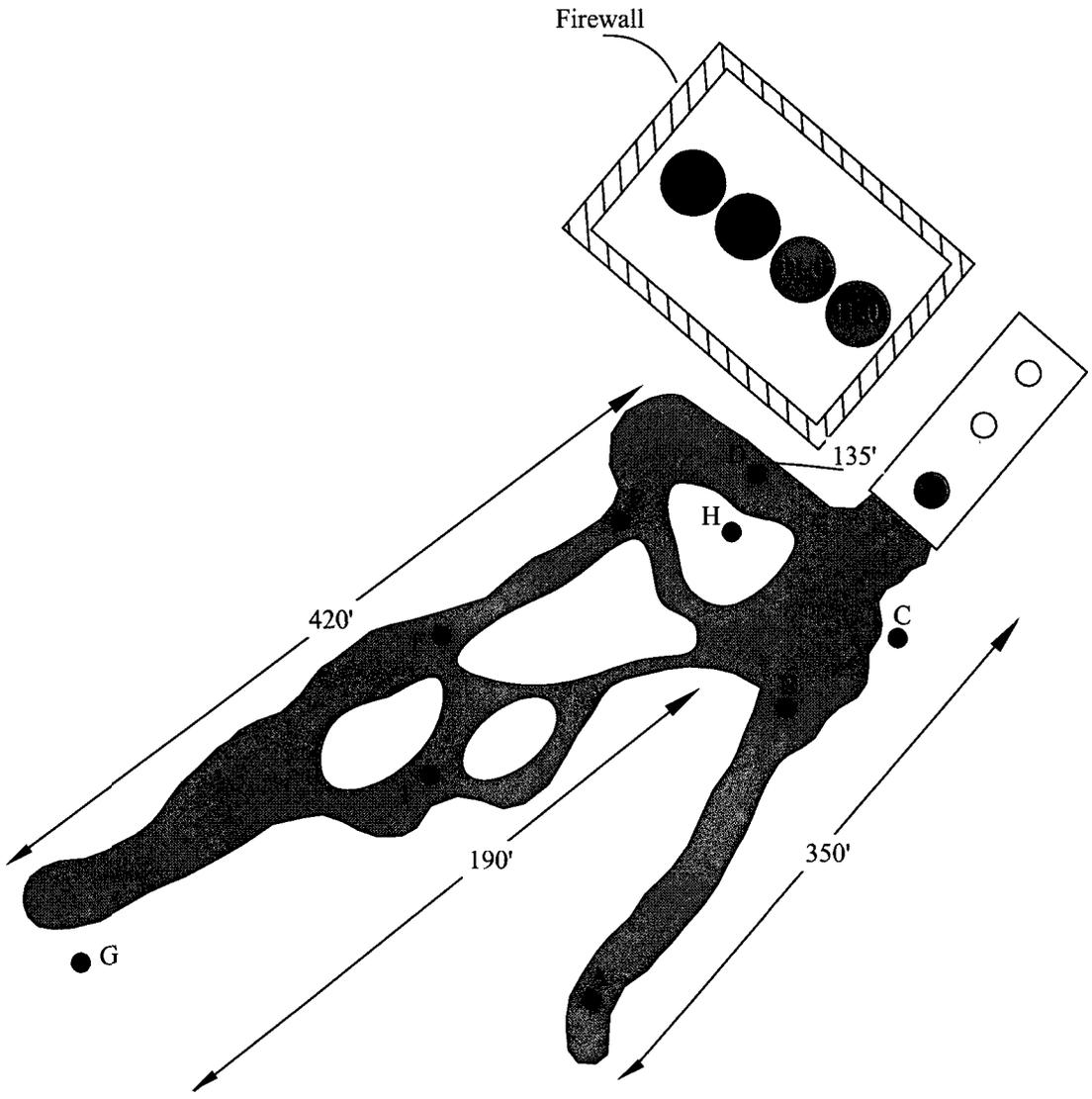


QUADRANGLE LOCATION

1	2	3	1 Maljamar NE
			2 Buckeye NW
			3 Buckeye NE

Interior
 N
 W E
 Improved Road
 Unimproved Road
 Trail

DATE: 5-31-07
 NAME: CHH
 PROJECT NO.: 7-0601



Scale: 1" = 100'

FIGURE # 2

LEA COUNTY, NEW MEXICO



Oxy Federal AB Lease

Sec.11, T18S, R33E
1980'FNL, 660' FEL

Site Drawing

Ocotillo **ENVIRONMENTAL**



DATE: 5-31-07
NAME: CHH
PROJECT NO.: 7-0601

LEGEND

- A ● Soil sample locations
- 500 bbl tanks
- Heater Treater
- Separator

TABLE

Table 1: Summary of Laboratory Analysis of Soil Boring Samples
Oxy Permian, Federal AB Battery
Section 11, Township 18 South, Range 33 East
Lea County, New Mexico

Sample Date	Soil Sample Number	Sample Depth (BGS)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
Standard (RRAL)			10				50	1,000
4/9/07	A	18"	0.415	6.44	16.0	42.8	65.655	2030
4/9/07		5	<0.002	<0.002	0.011	0.039	0.050	96
4/9/07	B	4	<0.002	<0.002	<0.002	<0.006	<0.012	1060
4/9/07		14"	<0.002	<0.002	<0.002	<0.006	<0.012	3090
4/9/07	C	1.5	<0.002	<0.002	<0.002	<0.006	<0.012	2960
4/9/07	D	2.5	<0.002	<0.002	<0.002	<0.006	<0.012	272
4/9/07	D	5	<0.002	<0.002	<0.002	<0.006	<0.012	656
4/9/07	E	2	<0.002	<0.002	<0.002	<0.006	<0.012	2815
4/9/07	E	4	<0.002	<0.002	<0.002	<0.006	<0.012	5340
4/9/07	F	2	<0.002	<0.002	<0.002	<0.006	<0.012	432
4/9/07	F	3.5	<0.002	<0.002	<0.002	<0.006	<0.012	736
4/9/07	G	2	<0.002	<0.002	<0.002	<0.006	<0.012	896
4/9/07	G	4.5	<0.002	<0.002	<0.002	<0.006	<0.012	2050
4/9/07	H	20"	<0.002	<0.002	0.002	<0.006	0.002	1650
4/9/07	I	2	<0.002	<0.002	<0.002	0.006	0.006	3810

Notes: Samples were analyzed by Cardinal Laboratories, Hobbs, New Mexico

- 1. BGS Below ground surface
- 2. RRAL Recommended Remediation Action Level
- 3. mg/kg: Milligrams per kilogram
- 4. <: Below method detection limit

APPENDIX A

Laboratory Data and Chain-of-Custody Documentation



ARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
OXY PERMIAN
ATTN: RICK KERBY
P.O. BOX 1988
CARLSBAD, NM 88220
FAX TO: (505) 887-8350

Receiving Date: 04/09/07
Reporting Date: 04/12/07
Project Owner: NOT GIVEN
Project Name: FED AB BATTERY
Project Location: LEA COUNTY

Sampling Date: 04/09/07
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	GRO (C ₈ -C ₁₀) (mg/Kg)	DRO (>C ₁₀ -C ₂₈) (mg/Kg)
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ANALYSIS DATE:	04/11/07	04/11/07
H12442-1 A 18"	1820	5980
H12442-2 A 5'	<10.0	42.0
H12442-3 B 4'	<10.0	31.1
H12442-4 B 14"	<10.0	45.0
H12442-5 C 1.5'	<10.0	69.1
H12442-6 D 2.5'	<10.0	<10.0
H12442-7 D 5'	<10.0	11.9
H12442-8 E 2'	<10.0	55.9
H12442-9 E 4'	<10.0	17.3
H12442-10 F 2'	<10.0	<10.0
H12442-11 F 3.5'	<10.0	13.4
H12442-12 G 2'	<10.0	211
H12442-13 G 4.5'	<10.0	<10.0
H12442-14 H 20"	<10.0	99.1
H12442-15 I 2'	<10.0	587
Quality Control	723	775
True Value QC	800	800
% Recovery	90.3	96.4
Relative Percent Difference	0.4	2.9

METHOD: SW-846 8015 M

Chemist

Bryant A. Cooke

Date

H12442A OXY



ARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
OXY PERMIAN
ATTN: RICK KERBY
P.O. BOX 1988
CARLSBAD, NM 88220
FAX TO: (505) 887-8350

Receiving Date: 04/09/07
Reporting Date: 04/12/07
Project Owner: NOT GIVEN
Project Name: FED AB BATTERY
Project Location: LEA COUNTY

Sampling Date: 04/09/07
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AB

LAB NUMBER	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		04/10/07	04/10/07	04/10/07	04/10/07
H12442-1	A 18"	0.415	6.44	16.0	42.8
H12442-2	A 5'	<0.002	<0.002	0.011	0.039
H12442-3	B 4'	<0.002	<0.002	<0.002	<0.006
H12442-4	B 14"	<0.002	<0.002	<0.002	<0.006
H12442-5	C 1.5'	<0.002	<0.002	<0.002	<0.006
H12442-6	D 2.5'	<0.002	<0.002	<0.002	<0.006
H12442-7	D 5'	<0.002	<0.002	<0.002	<0.006
H12442-8	E 2'	<0.002	<0.002	<0.002	<0.006
H12442-9	E 4'	<0.002	<0.002	<0.002	<0.006
H12442-10	F 2'	<0.002	<0.002	<0.002	<0.006
H12442-11	F 3.5'	<0.002	<0.002	<0.002	<0.006
H12442-12	G 2'	<0.002	<0.002	<0.002	<0.006
H12442-13	G 4.5'	<0.002	<0.002	<0.002	<0.006
H12442-14	H 20"	<0.002	<0.002	0.002	<0.006
H12442-15	I 2'	<0.002	<0.002	<0.002	0.006
Quality Control		0.097	0.096	0.097	0.295
True Value QC		0.100	0.100	0.100	0.300
% Recovery		97.7	96.0	97.2	98.5
Relative Percent Difference		1.2	1.4	3.1	3.1

METHOD: EPA SW-846 8021B

[Signature]

Chemist

4/12/07

Date



ARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
 OXY PERMIAN
 ATTN: RICK KERBY
 P.O. BOX 1988
 CARLSBAD, NM 88220
 FAX TO: (505) 887-8350

Receiving Date: 04/09/07
 Reporting Date: 04/10/07
 Project Number: NOT GIVEN
 Project Name: FED AB BATTERY
 Project Location: LEA COUNTY, NM

Analysis Date: 04/10/07
 Sampling Date: 04/09/07
 Sample Type: SOIL
 Sample Condition: COOL & INTACT
 Sample Received By: BC
 Analyzed By: AB

LAB NUMBER	SAMPLE ID	Cl ⁻ (mg/L)
H12442-1	A 18"	2030
H12442-2	A 5'	96
H12442-3	B 4'	1060
H12442-4	B 14"	3090
H12442-5	C 1 1/2'	2960
H12442-6	D 2 1/2'	272
H12442-7	D 5'	656
H12442-8	E 2'	2815
H12442-9	E 4'	5340
Quality Control		520
True Value QC		500
% Recovery		104
Relative Percent Difference		5.9

METHOD: Standard Methods	4500-Cl ⁻ B
--------------------------	------------------------

Note: Analyses performed on 1:4 w:v aqueous extracts.

Chemist

4/10/07
 Date

H12442



ARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
OXY PERMIAN
ATTN: RICK KERBY
P.O. BOX 1988
CARLSBAD, NM 88220
FAX TO: (505) 887-8350

Receiving Date: 04/09/07
Reporting Date: 04/10/07
Project Number: NOT GIVEN
Project Name: FED AB BATTERY
Project Location: LEA COUNTY, NM

Analysis Date: 04/10/07
Sampling Date: 04/09/07
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AB

LAB NUMBER	SAMPLE ID	Cl ⁻ (mg/L)
H12442-10	F 2'	432
H12442-11	F 3 1/2'	736
H12442-12	G 2'	896
H12442-13	G 4 1/2'	2050
H12442-14	H 20"	1650
H12442-15	I 2'	3810
Quality Control		520
True Value QC		500
% Recovery		104
Relative Percent Difference		5.9

METHOD: Standard Methods 4500-ClB

Note: Analyses performed on 1:4 w:v aqueous extracts.

Burton J. Cook
Chemist

4/10/07
Date

H12442A



CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: OXY PERMIAN **BILL TO** ANALYSIS REQUEST

Project Manager: Rick Kerby P.O. #: 1988
 Address: Box 1988 Company: OXY Permites
 City: Carlsbad State: NM Zip: 88220 Attn: Rick Kerby
 Phone #: 505-887-8337 Fax #: 505-887-8350 Address: 102 S. MAIN
 Project #: _____ City: Carlsbad
 Project Name: Fed AB Battery State: NM Zip: 88220
 Project Location: Lea Co Phone #: 887-8337
 Sampler Name: Rick Kerby Fax #: 887-8350

Lab I.D.	Sample I.D.	(G) RAB OR (COMP) CONTAINERS	MATRIX	PRESERV		DATE	TIME
				ICE / COOL	SAMPLING		
112442-1	A 8"		SOIL			4/9/07	
-2	B 4"		WASTEWATER				
-3	C 14"		SLUDGE				
-4	D 14"		OTHER				
-5	E 2"		ACID/BASE				
-6	F 4"		OTHER				
-7	F 2"		OIL				
-8	F 3"		GROUNDWATER				

PLEASE NOTE: Liability and Damages: Cardinal's liability and service is limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever, shall be deemed waived unless made by check within 30 days after completion of the applicable service. In no event shall Cardinal be liable for consequential or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits, incurred by client, its subsidiaries, affiliates or successors, singly or in the aggregate, as a result of the performance of the services herein, or any of the above stated reasons or otherwise.

Relinquished By: Rick Kerby Date: _____ Time: _____
 Received By: _____ Date: 4/9/07 Time: 12:40
 Delivered By: (Circle One) _____
 Sampler - UPS - Bus - Other: _____
 Checked By: _____ (Initials)
 Phone Result: Yes No Add'l Phone #: _____
 Fax Result: Yes No Add'l Fax #: _____
 REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: OXY PERMIAN		P.O. #: 1288		Company: OXY Permiian		ANALYSIS REQUEST	
Project Manager: Rick Kerby		Address: Box 1988		Attn: Rick Kerby			
City: Carlsbad		State/Zip: 505-887-8330		Address: 1025 Main			
Phone #: 505-887-8337		Fax #: 505-887-8350		City: Carlsbad			
Project #:		Project Owner:		State/Zip: 505-887-8330			
Project Name: Fed AB Battery		Project Location: Let City		Phone #: 887-8337			
Sampler Name: Rick Kerby		Fax #: 887-8350		City: Carlsbad			
FOR LAB USE ONLY		PRESERV.		SAMPLING			
Lab I.D.		MATRIX		ACID/ASE		DATE	
Sample I.D.		WASTEWATER		ICE/COOL		TIME	
		GROUNDWATER		OTHER:			
		# CONTAINERS		OTHER:			
		(G)RAB OR (C)MP		SLUDGE			
				OF			
				SOIL			
				OTHER:			
				OTHER:			

XXXXX BTEX, EOL, A, CP

H12492-10
F 385
G 287
H 487
I 207
J 2

PLEASE NOTE: Unlucky and Damages: Customer's liability and client's exclusive remedy for any claim arising while based in contact or use, shall be limited to the amount paid by the client for the analysis. All claims regarding losses for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable analysis. All claims shall be subject to the terms and conditions of the applicable analysis. All claims shall be subject to the terms and conditions of the applicable analysis. All claims shall be subject to the terms and conditions of the applicable analysis.

Relinquished By: Rick Kerby Date: _____ Time: _____

Received By: _____ Date: 4/14/07 Time: 12:40

Delivered By: (Circle One) Sample Collection Checked By: Rick Kerby (Initials)

Sampler - UPS - Bus - Other: Yes No

Phone Result: Yes No Add'l Phone #: _____

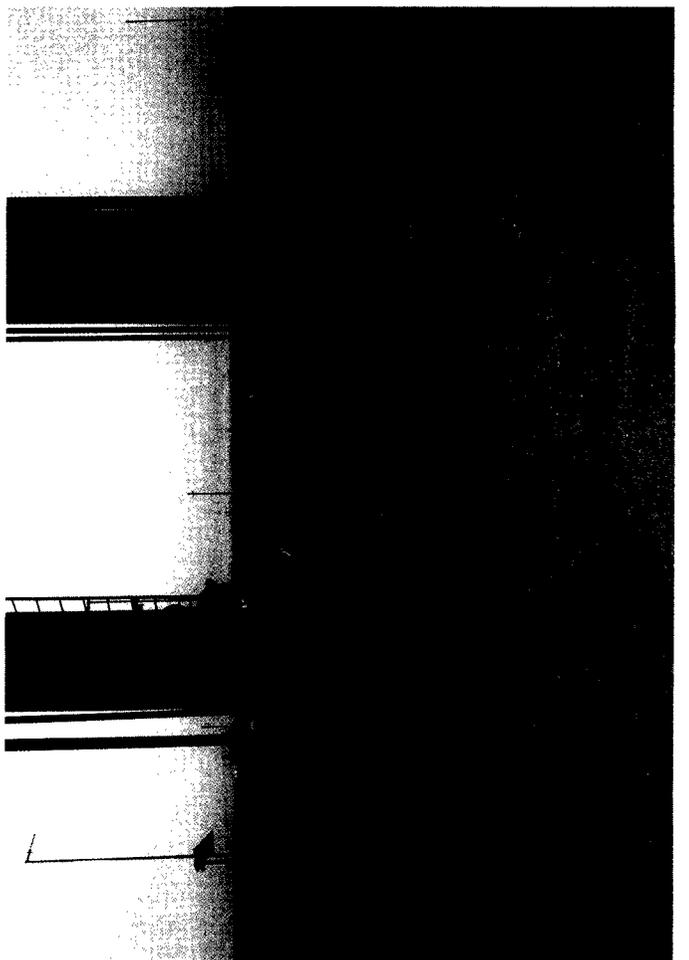
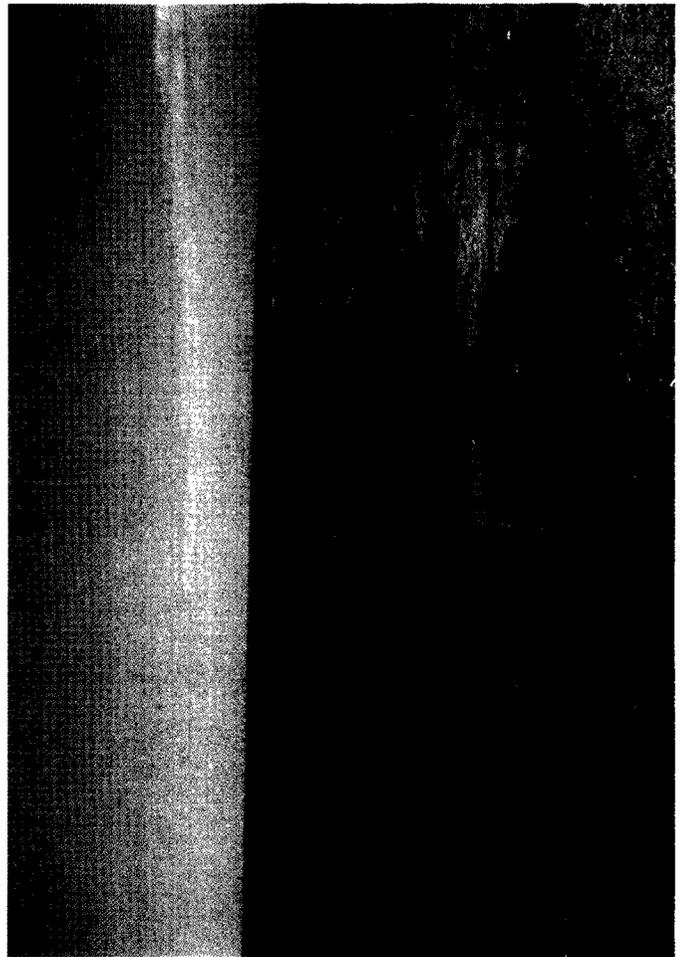
Fax Result: Yes No Add'l Fax #: _____

REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

APPENDIX B

Photographs



**OXY PERMIAN
Federal AB Battery**



1. View to southwest of spill (5/30/07).



2. View to southwest of heater treater and spill (5/30/07).

**OXY PERMIAN
Federal AB Battery**



3. View to northeast of heater treater and separators (5/30/07).



4. View to northeast of spill and equipment (5/30/07).

C141 DOCUMENTATION

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company: OXY USA WTP, LP	Contact: Rick Kerby
Address: 102 S. Main St., P.O. Box 1988, Carlsbad, NM 88220	Telephone No.: 505-887-8337
Facility Name: Federal AB Lease Battery #1	Facility Type: Lease Battery
Surface Owner: BLM	Mineral Owner: Lease No. 30 025 28989

LOCATION OF RELEASE

Unit Ltr	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	11	18 South	33 East					Lea

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release: Produced Fluids	Volume of Release: 17 bbls	Volume Recovered: 10 bbls
Source of Release: Water Leg on Heater Treater	Date and Hour of Occurrence: 03/27/2007 11:00 AM	Date and Hour of Discovery: 03/27/2007 12:00 PM
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RP# 1345

Describe Cause of Problem and Remedial Action Taken.*

Ninty degree "L" on water leg came loose. Fluid was picked up and hauled to disposal.

Describe Area Affected and Cleanup Action Taken.*

Fluid spilled on location and ran into pasture. Fluid was picked up and hauled to disposal. Area allowed to dry. Contaminated dirt will be temporarily amassed onto plastic liner on location. Remedial plan will be submitted to NMOCD and BLM. HES Specialist will notify BLM and NMOCD when remediation plan has been developed.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: <i>Rick Kerby</i>	OIL CONSERVATION DIVISION	
Printed Name: Rick Kerby	Approved by District Supervisor: <i>[Signature]</i>	
Title: HES Specialist	Approval Date: 6.7.07	Expiration Date: 8.7.07
E-mail Address: rick_kerby@oxy.com	Conditions of Approval:	Attached <input checked="" type="checkbox"/>
Date: 04-06-2007 Phone: 505/887-8337	① SUBMIT CHLORIDE CONTENT OF WATER SPILLED ② FULL HORIZ & VERTICAL DECLINATION TO CLEANUP REQUIRED ③ FINAL C-141 w/ FULL DOCUMENTATION, TESTING, & BILLS OF LADEN FOR CLOSURE BY	

* Attach Additional Sheets If Necessary